VILNIUS GEDIMINAS TECHNICAL UNIVERSITY
FACULTY OF ARCHITECTURE
DEPARTMENT OF ARCHITECTURE

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RECREATIONAL ARCHITECTURE. MARINE THERAPY CENTRE IN NIDA

Master's degree Thesis

Architecture study programme, state code 6011PX004
Architecture specialisation
Architecture study field

Vilnius, 2024

VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETAS

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Architektūros fakultetas

(Fakultetas)

Architektūra, ARfau-19

(Studijų programa, akademinė grupė)

BAIGIAMOJO DARBO (PROJEKTO)
SĄŽININGUMO DEKLARACIJA

2024 m. gegužės 28 d.

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ISBN | ISSN
Copies No. .....
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Integrated Studies **Architecture** study programme Master Thesis

Title	**Recreational architecture. Marine Therapy Center in Nida**
Author	**Paulina Stancelytė**
Academic supervisor	**Linas Naujokaitis**

Thesis language: English

Annotation

The final master thesis titled “Recreational Architecture: Marine Therapy Centre in Nida” explores the complex relationship between contemporary recreational architecture and human well-being, extending beyond leisure and entertainment. Recreational spaces are crucial for daily life, enhancing social relationships and overall prosperity. The thesis examines the impact of architecture on social, physical, and emotional well-being, while proposing a marine therapy centre that utilises the therapeutic properties of seawater and marine products. This facility, operating year-round, aims to expand recreational activities and address the seasonality issue in the Curonian Spit. The chosen site in Nida, adjacent to the central beach, is set in a unique natural environment of pine forests, the sea, and dunes. The thesis includes both a research and a project part. The research section covers the concept and classification of recreation and recreational architecture, along with typologies of recreational spaces and buildings. It also delves into the historical development and cultural impact of recreational architecture in Europe, the North and Baltic Sea coasts, and the Curonian Spit. Additionally, the thesis explains marine therapy and its modern applications, particularly in the Curonian Spit, using local resources. The analysis of wellness facility designs identifies key architectural principles such as site adaptation, thoughtful spatial design, and sustainability. A site analysis is also conducted. The design part details the architectural solutions for the marine therapy centre, including the building program. The final work comprises a text file with the research, graphic material on four posters (1000 x 2000 mm), and two models. The thesis consists of an introduction, two main parts, conclusions, references, and a list of illustrations.

Keywords: Leisure, recreation, recreational architecture, resort, Curonian Spit, Neringa, Nida, marine therapy

Vilniaus Gedimino technikos universitetas
Architektūros fakultetas
Architektūros katedra

ISBN | ISSN
Egz. sk. .....
Data .....-.....-.....

Vientisosios studijų **Architektūros** programos magistro baigiamasis darbas (projektas)

Pavadinimas	**Rekreacinė architektūra: jūros terapijos centras Nidoje.**
Autorius	**Paulina Stancelytė**
Vadovas	**Linas Naujokaitis**

Kalba: anglų

Anotacija

Baigiamojo magistro darbo tema: „Rekreacinė architektūra: jūros terapijos centras Nidoje“. Šiuolaikinė rekreacinė architektūra atspindi sudėtingą užstatytos aplinkos ir žmogaus ryšį, kuris neapsiriboja vien tik paprastu laisvalaikiu ar pramogomis. Rekreacinės erdvės yra neatsiejamos nuo kasdienio gyvenimo bei kuria socialinius ryšius ir gerina žmonių savijautą. Darbe nagrinėjami įvairūs rekreacijos ir rekreacinės architektūros aspektai, daugiausiai dėmesio skiriant architektūros daromai įtakai žmonių socialinei, fizinei ir emocinei gerovei. Siūloma įkurti jūros terapijos centrą, naudojantį jūros vandens ir jūros produktų gydomąsias savybes bei veikiantį ištisus metus, taip papildant esamas rekreacines veiklas ir sumažinant sezoniškumo problemą Kuršių nerijoje. Sklypas Nidoje, šalia centrinio paplūdimio, pasirinktas kaip tinkama vieta jūros terapijos centro įkūrimui dėl savitos gamtinės aplinkos - pušynų, jūros, kopų. Darbą sudaro tiriamoji ir projektinė dalys. Tiriamojoje dalyje apžvelgiama rekreacijos sąvoka bei jos klasifikavimas ir rekreacinė architektūra, rekreacinių erdvių bei pastatų tipologijos. Taip pat analizuojama rekreacinės architektūros istorinė raida, kultūrinė įtaka Europoje, Šiaurės ir Baltijos jūrų pakrantėse bei Kuršių nerijoje. Dėmesys skiriamas ir jūros terapijos idėjos paaiškinimui bei jos pritaikymui šiuolaikinėse sveikatingumo įstaigose bei pačioje Kuršių nerijoje panaudojant vietinius išteklius. Remiantis sveikatingumo įstaigų projektų analize, įvardijami esminiai architektūriniai projektavimo principai, apimantys prisitaikymą prie vietovės, apgalvotą erdvinį dizainą bei tvarumą. Atliekama daugiaaspektė vietos analizė. Projektinėje dalyje pateikiami architektūriniai jūros terapijos centro sprendimai bei jų paaiškinimai, pastato programa. Baigiamąjį darbą sudaro tekstinė byla su tiriamuoju darbu, grafinė medžiaga - 4 planšetai (1000 x 2000 mm) ir du maketai. Tiriamasis darbas sudarytas iš įvado, dviejų pagrindinių dalių, išvadų, literatūros ir iliustracijų sąrašo.

Prasminiai žodžiai: Laisvalaikis, rekreacija, rekreacinė architektūra, kurortas, Kuršių nerija, Neringa, Nida, jūros terapija

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1. Introduction

1.1. Topic selection

Selected topic for the master thesis - *Recreational Architecture.* The object of the design - Marine Therapy Centre in Nida.

1.2. Topic relevance

The typology of recreational architecture extends far beyond the regular leisure and the creation of spaces for basic entertainment. Instead, it demonstrates the complex relationship between the built environment and humans. As a result, recreational architecture becomes a key factor in revealing that recreational spaces are necessary in the ways individuals interact with the world. Well-designed recreational spaces shape daily human experiences and social relationships, improve well-being, and increase the overall quality of life.

The location for the recreational object is crucial in enhancing the interaction between humans and the environment. The Curonian Spit, nestled between the Baltic Sea and the Curonian Lagoon, has distinct natural settings and a cultural landscape protected by its status as a UNESCO World Heritage Site. The peninsula's charm, defined by the maritime climate, beaches, sand dunes, pine forests, and small settlements, makes it a perfect place for a wellness facility. However, the resort faces the problem of seasonal tourism when the majority of visitors come in summer, while colder seasons receive only a small number of tourists. This is also influenced by the seasonal recreational activities, which are prominent during the peak season. Consequently, the creation of a marine therapy centre would provide an opportunity to enjoy the Spit all year round, adding new recreational wellness services.

1.3. Research object

Recreation, recreational architecture, and recreational wellness facilities, as well as their evolution, are the main objectives of the research. The extension of the study includes an explanation of marine therapy and its components, which can be applied in a developing typology of a wellness facility called a marine therapy centre. These centres can not only provide traditional amenities common in recreational buildings but also utilise the calming and healing properties of the seawater. The architectural design of these facilities integrates functionality, aesthetics, and innovative solutions to create a space for the promotion of well-being.

1.4. The aim of the thesis

The aim of the thesis is to delve into the concept of recreation and the typologies of recreational architecture, and their evolution on a broader scale. This involves focusing on historical recreational architecture to determine its characteristics and cultural and historical influences. Special attention will be given to studying historical recreational structures that have influenced the shaping of the coast of the Baltic and North Sea, including the location of the project - the Curonian Spit. However, the aim is not only to review the historical information but also to examine the phenomenon of marine therapy and various approaches towards it, including the geographical and environmental factors in the Curonian Spit which could be relevant when deciding what features and facilities to incorporate in the design. Finally, a review of existing wellness architecture projects will be conducted to understand the main design principles in the field. Following examination and summarisation of the research results, the knowledge will be applied to design an architectural object that incorporates leisure, the identity of the place, and sustainable design practices in a protected area.

1.5. Work methods

1. Terminology analysis establishes the main keywords relevant to the thesis topic, including the research and design parts.
2. Selection and study of literature sources about recreation and recreational architecture and analysis of their classification. Further analysis includes research on concepts related to historical recreational architecture.
3. Review of marine therapy and its resources in the location.
4. Selection and study of high-quality architectural projects. The projects match established selection criteria for:

a) Since the typology of a marine therapy centre is not well-developed and is rarely encountered, the examined objects can also be other examples whose purpose is therapy using natural sources.
b) The marine therapy centre is being designed in a sensitive natural environment - dunes, pine forests, and the sea. These conditions are important for high-quality therapy and recreation. Therefore, examples that meet at least one of the mentioned natural elements are chosen. The urban environment is also important. Since the Curonian Spit is characterised by small-scale settlements, the analysed objects are also in less urbanised areas with a unique and distinctive character.

1.6. Terminology

Leisure - non-working time of individuals. The time when they are free from duties, work, and can relax.

Recreation - the definition of recreation can vary depending on the context because it is a vast and comprehensive concept. Cambridge Dictionary defines recreation as *something done for pleasure or to relax, or such activities generally*. Therefore, recreation can include a variety of activities, from outdoor sports and hobbies to cultural and creative activities, and it has a significant impact on improving people and communities' quality of life.

Recreational architecture - architecture specifically designated to accommodate space for recreational purposes such as leisure, sports, or entertainment.

Resort - a place or establishment where people go for relaxation, recreation, and leisure activities. Located in natural and attractive settings, the resort features recreation and entertainment activities, accommodation, and hospitality facilities.

Curonian Spit - a narrow and elongated sand dune peninsula, separating the Baltic Sea and Curonian Lagoon. In Lithuanian: *Kuršių Nerija.*

Neringa - a Lithuanian resort city in the Curonian Spit. The city comprises the settlements of Nida, Juodkrantė, Preila, and Pervalka.

Nida - the southernmost resort settlement of Neringa and the capital of Neringa Municipality.

Marine therapy - a holistic approach to wellness that uses the activities in a coastal environment and therapeutic properties of seawater and natural marine products like mud or seaweed, along with the benefits of a maritime climate.

2. Analytical methodological part

2.1. Types of recreation

Recreation refers to a broad range of leisure activities for relaxation and enjoyment. However, recreation should not be viewed as a professional activity. Instead, it should be treated as an activity that anyone can enjoy in their free time.

Recreation may be generally classified into several categories, accommodating a wide range of hobbies and interests. These categories are:

a) Two fundamental categories of recreational activities are outdoor recreation and indoor recreation. Outdoor recreation involves taking part in activities that are held in natural settings, offering opportunities to pursue outdoor adventures, including hiking, camping, or outdoor sports. Sometimes, the natural settings are established as recreational zones to provide a dedicated space for special outdoor activities. Meanwhile, indoor recreation refers to activities that take place within enclosed spaces or buildings. Activities such as indoor sports, creative and performing arts, entertainment, or other social gatherings fall under the category of indoor recreation. These categories offer options for people to engage in activities based on their interests or environmental conditions. However, it is worth noting that some activities may take place equally indoors and outdoors, for example, open-air concerts, thus forming another hybrid category which demonstrates the fluid boundaries of activities.

b) The other two categories, both suitable for indoors and outdoors, are active and passive recreation. Active recreation represents activities that require physical engagement. The category includes activities like solo or team sports, hiking. On the other hand, passive recreation involves less physical and more relaxed forms of leisure activities, often without a need for developed facilities. Outdoor activities in this category include camping, walking, and cycling, while indoor activities involve attending events, playing games, or engaging in other indoor hobbies such as arts and crafts.

Narrower classification could include theme-based recreation:

a) Cultural recreation refers to the consumption of culture and creation of art, such as visiting museums, attending performances, exploring historical sites, and participating in workshops.
b) Adventure and sports recreation involve physical, challenging, and mostly nature-based activities, such as rock climbing, zip lining, rafting, skiing, hiking, and safaris. Sports recreation includes all types of non-professional sport activities.
c) Water recreation encompasses activities taking place in or near the water, such as swimming, snorkelling, scuba diving, fishing, or relaxing by the beach or pool.
d) Natural recreation involves a wide range of activities in natural or outdoor settings, such as camping, hiking, wildlife observation, and picnicking.
e) Wellness recreation refers to activities which promote physical and mental health or well-being. The activities include spa retreats, various types of therapy, meditation, yoga, and walks.
f) Social recreation focuses on social interaction, relationships, and community through activities such as board games, team sports, parties, social club activities, and events.

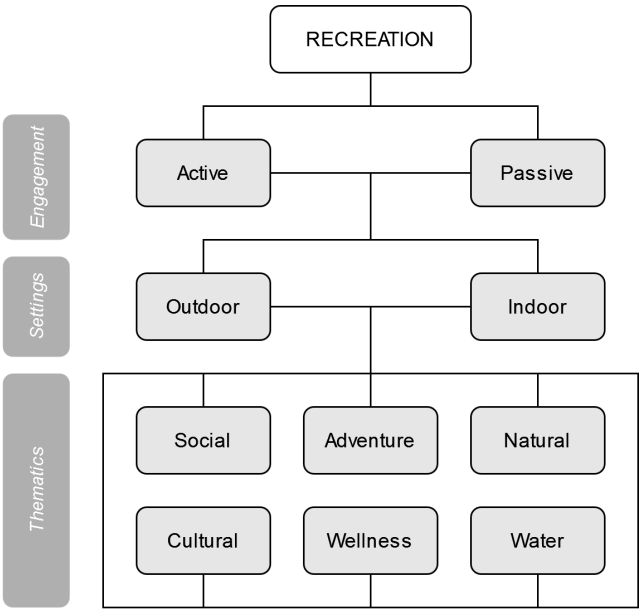

Fig. 1. Classification of recreation types, scheme

2.2. Recreational architecture

Recreational architecture is extensive due to the wide range of activities that serve various needs and interests of people. This typology has distinct types of buildings and spaces, each of which are suited for various recreational activities.

Although there is no commonly agreed-upon classification of recreational architecture, one suggestion for the division could be active and passive participation:

a) Active participation buildings and spaces accommodate active recreation. The most common examples are sports stadiums, arenas, gyms, fitness centres, skate parks, aquatic centres, pools, water parks, skating rinks, adventure parks, recreational trails, and parks, etc.

b) Passive participation structures, an opposite for active participation, host passive recreational activities. Common examples are amphitheatres, cinemas, museums, libraries, galleries, planetariums, zoos, wildlife reserves, botanical gardens, conservatories, observation decks, promenades, public parks, historical sites, etc.

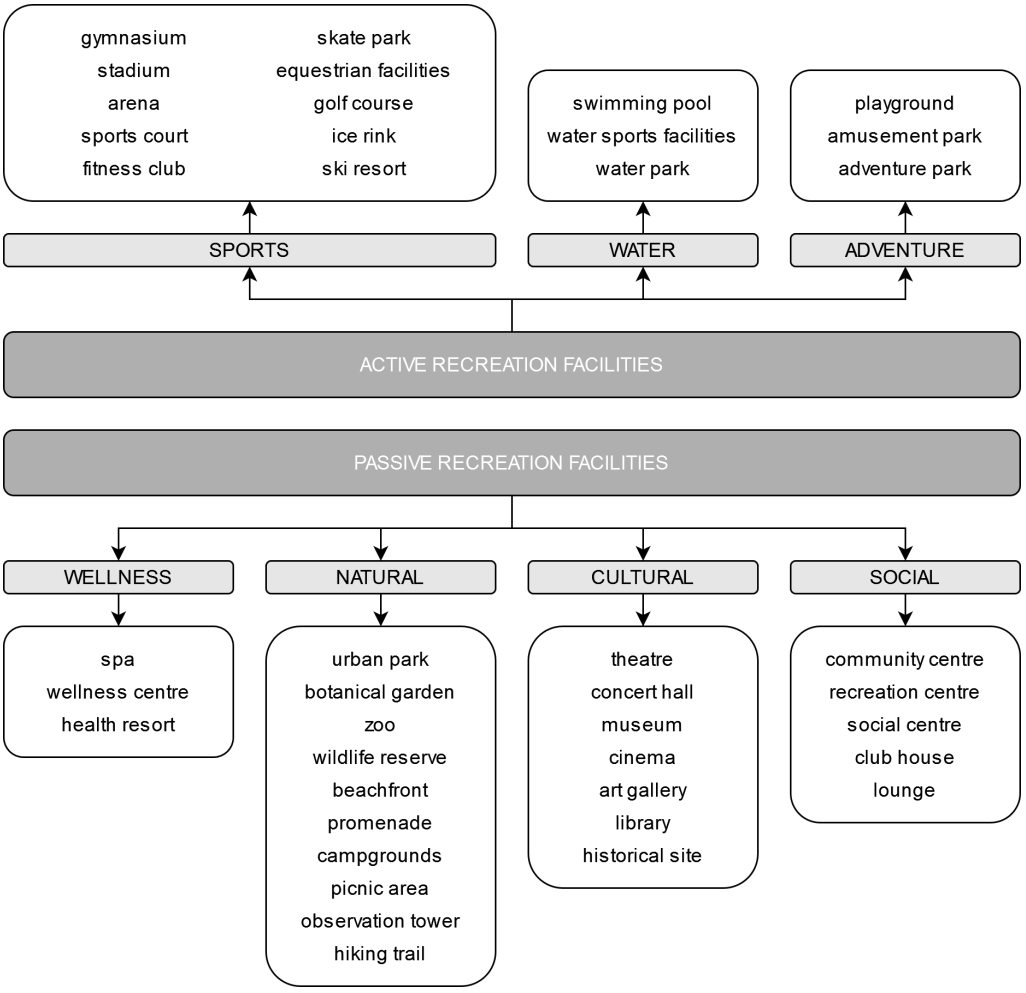

Fig. 2. Classification of recreational architecture facilities, scheme

Another approach for the classification of recreational architecture is based on the characteristics of architectural settings:

a) Designed indoor and outdoor spaces include environments specifically created for recreational purposes. Examples include sports arenas, entertainment facilities, and landscaped gardens, all designed with specific settings to provide the best experience for recreation. However, some recreational structures can comprise both indoor and outdoor spaces, such as museums with outdoor exhibition space or water parks with indoor and outdoor pools. A collection of several recreational buildings creates a recreational complex, accommodating various functions.
b) Adapted existing structures involve repurposed or adapted existing architectural objects for recreational use. Examples include historical or other typology buildings, such as industrial architecture, converted into cultural and recreational venues.
c) Natural outdoor spaces refer to recreational spaces defined by the natural environment. These spaces are not heavily modified and promote the preservation of nature, although they may include some built structures such as shelters, rest areas, and infrastructure.

Other types of recreational spaces are recreational territories. In the Lithuanian context, recreational territories are defined as areas that have a natural and cultural environment for the organisation of comprehensive physical and spiritual recreation. The boundaries, land use, nature of the territory, and the priority of recreational use is defined and granted by territorial planning documents and legislations. The boundaries and the priority for the expansion of the territories are influenced by the recreational richness and quality of natural and cultural environments (*Įsakymas dėl rekreacinių teritorijų naudojimo, planavimo ir apsaugos nuostatų patvirtinimo*, 2004).

Resort is a type of a recreational territory. Resorts have the purpose of therapeutic recreation and are established in locations with natural resort resources for the promotion of wellness. The resorts in Lithuania have strict requirements for the amount of pollution, safety, accessibility, pedestrian and cyclist infrastructure while also having campings, recreational areas such as forests, farmland, and water bodies on-site. Currently, in Lithuania, there are four resorts: Druskininkai, Birštonas, Neringa, and Palanga, while Anykščiai, Aukštadvaris, Juodkrantė, Salantai, Smalininkai, and Zarasai have the potential for the expansion of resort activities (*Dėl reikalavimų kurorto ir kurortinės teritorijos statusui suteikti tvarkos aprašo patvirtinimo*, 2006)

2.3. History of recreation and recreational architecture

The leisure of civilisations was greatly influenced by the emergence of recreational architecture. Architecture not only created spaces for recreation but also served as centres for social interactions, building shared cultural experiences and community. Participating in social and leisure activities became a part of the identity of cultures, as they helped improve human physical and mental well-being through wellness activities and cultural exchange.

2.3.1. Ancient Egypt

According to Ouf (2018), in Ancient Egypt, recreation of a common inhabitant was a personal activity, lacking developed spaces or structures for public gatherings. Leisure and entertainment activities were usually held at a household or village level. The activities included sports such as wrestling, boxing, and ball games, as well as water activities like fishing and boating. Bathing was practised for hygiene and rituals and was conducted in the pools of private houses. Public recreational bathing became popular only during the Roman Period when large public bath houses were constructed, featuring rooms for bathing, exercising, and socialising.

Although Egyptians engaged in activities in public spaces and in the Nile River, only royalty and the upper class had venues dedicated to recreation. Wealthy Egyptians built gardens next to their homes where they would relax, socialise, and enjoy nature. The gardens had landscaping features such as water elements, plantings, and shading. Another building that incorporated recreation was a temple, being the most important building in the Egyptian city. The temples, as well as palaces, not only served as places for worship but also hosted cultural and recreational events such as dance, orchestra, and performances, often having a religious purpose (Ouf, 2018).

Fig. 3. Wall fragment from the tomb of Nebamun depicting ancient Egyptian party entertainers

2.3.2. Ancient Greece

El-Harami, in the study *Entertainment and Recreation in the Classical World* (2015), states that the concept of modern recreation emerged in Ancient Greece. Leisure activities were an inherent part of a citizen's life in Athens, contributing to the ideal of a balanced man who was experienced in military training, philosophy, art, state affairs, and philosophy. Balanced and purposeful recreation was recognised by philosophers as a way to increase well-being and societal relationships. Therefore, recreational activities were enjoyed by every citizen on different levels depending on their class status.

Ancient Greeks developed several typologies of architecture which hosted recreational activities, while city planners reserved space for recreational establishments such as public gardens and market squares, known as *Agoras*. One of the larger structures was a gymnasium, which included spaces for different activities. They had exercise rooms, stadiums, baths, and porticos for training and lectures. Therefore, the citizens could not only train for contests, including the Olympic Games, but also socialise and engage in philosophical discussions. The long and narrow stadiums and hippodromes, equipped with seats for spectators, hosted athletic games and chariot races (El-Harami, 2015).

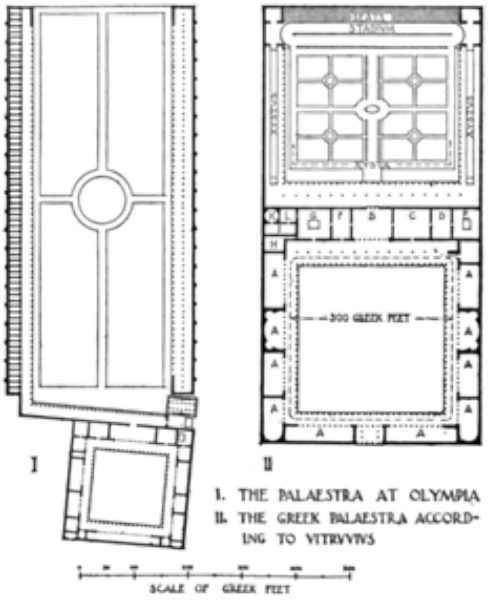

Fig. 4. Plans of a Greek gymnasium type - *Palaestra*. According to excavations and research by Vitruvius.

Bathing was considered an essential life aspect, contributing to hygiene and health. Although not fully developed, the baths incorporated communal bathing, sports, social, and entertainment activities. Greeks developed a steam bath, where water was heated by a fire underneath the floor.

Since Ancient Greece was considered the birthplace of Western theatre, special structures were designed to host the performances. The Greek theatre was an open-air amphitheatre, with a semi-circular design, placed into the slope of the hill to create a stepped seating and provide the best view for the audience. The orchestra was the central space used for choral and actors performances (El-Harami, 2015).

Fig. 5. Ancient Greek theatre in Delphi

2.3.3. Ancient Rome

Recreation was essential for Ancient Roman citizens, who had enough time for leisure, as the majority of the work was delegated to slaves. Romans adopted Greek principles of recreational architecture while adding their own innovations. To begin, Romans redeveloped theatre by maintaining the architectural forms and consequently creating a *colosseum* amphitheatre. The structure had an oval form with sloped seating supported by a vaulted masonry construction system. The arena, where gladiator and hunting performances took place, was in the middle, while the tunnels were put underneath to house animals, gladiators, and equipment. On the other hand, chariot races were held in the *circus*, which was an oval stadium with seating. The tournaments were free to all citizens to keep them happy and for the government to gain support from the public.

Fig. 6. a) *Colosseum* in Rome; b) Illustration of *Circus Maximus* in Rome

Innovations in water supply technology and influence from Greece led to the creation of public bathing houses, *thermae*. Baths were large building complexes with full amenities, including changing rooms, cold and hot rooms, baths, swimming pools, and courtyards. Romans would go to the baths to bathe, socialise and exercise. Because the facilities were available to every citizen, the baths became a place of interactions between various social classes (El-Harami, 2015).

Fig. 7. Surviving Roman Bath in Bath, England

2.3.4. Middle Ages and Renaissance

McLean et al. (2019) claim that during the Early Middle Ages, Roman ways of recreation were forbidden by the Cristian Church, and many recreational structures were destroyed to promote the sacred work over leisure. However, some leisure forms, such as pagan celebrations, were still relevant and were repurposed by the Church. Due to the feudalism system and class division, only the nobility were able to enjoy recreational activities, which included hunting, board games, gambling, dance, sport, and jousting, usually held in the castles. The peasants spent their leisure time having feasts, sport games, animal fights, and occasional religious plays.

Life during the High Middle Ages was more stable, allowing people to have more leisure time and being able to travel more. The noblemen's activities, such as jousting or tournaments, were becoming a more inherent part of recreation, having dedicated spaces in the castle grounds, while common people would travel and gather in public spaces, such as marketplaces, where feasts and parades were being held.

The Renaissance period was defined by a transition from the Church-dictated life towards the reminiscence of Ancient Greek and Roman cultures. Old recreation types were revived and sponsored by the nobility. Such activities included arts, classical drama, for which new theatres were built, and public bathing, being held in the surviving Roman facilities or newly-built public baths. The nobility had private villas built for the retreat from urban life.

Renaissance changed the approach towards urban planning when the compact and walled Medieval town structure was expanded with wide avenues, large squares, monumental features, and recreational spaces. Gardens were the main place for recreation, varying in sizes and purpose. Large parks and preserves were used as a hunting area, while landscaped and ornate parks accommodated regular recreational activities. However, the most popular was an English garden with natural landscaping, bringing nature to the city (McLean et al., 2019).

Fig. 8. a) Villa Rotonda, completed in 1592 in Italy, served as a country estate; b) Boboli Gardens in Florence is an example of landscaped Italian Renaissance gardens

2.3.5. Industrial revolution

Eighteen and nineteenth centuries marked a significant shift in scientific knowledge, technology, social values and philosophies, affecting regular life and recreation. To begin, the urbanisation processes were increasing, bringing more people to the city who would work long hours in the factories. Social and work reforms were being implemented, consequently separating work and leisure after establishing work hours. With the growth of the cities, public parks and

gardens were being developed to provide space for outdoor recreational activities in the urban environment. Interest in other activities, such as sports, culture, entertainment, and social gatherings, was growing and was usually encouraged by governmental initiatives. Organised and team sports were gaining popularity, attracting spectators. Therefore, sports facilities were being built to house large-scale events such as professional and amateur sports, horse racing, while smaller facilities, gymnasiums, and pools were also being established in urban areas to encourage the working class to engage in physical activities and increase hygiene and health.

With the growing economy, education levels, and the expansion of the middle class in the nineteenth century, people had more time and money to spend on amusement. Theatres, concert halls, museums, libraries, and social clubs became popular venues for recreational activities. Amusement parks became a new typology of recreational architecture, often being established on the outskirts of cities and featuring roller coasters, carousels, games, and shows.

The improvements in transportation allowed people to travel more, consequently increasing the need for rural recreation facilities. Resorts and spa towns in picturesque and natural environments were attracting visitors who were seeking to improve their health and engage in recreational activities. On the other hand, preservation of the natural environment was gaining attention from the public, and as a result, national parks and reservations were being established, attracting people to experience untouched nature (McLean et al., 2019).

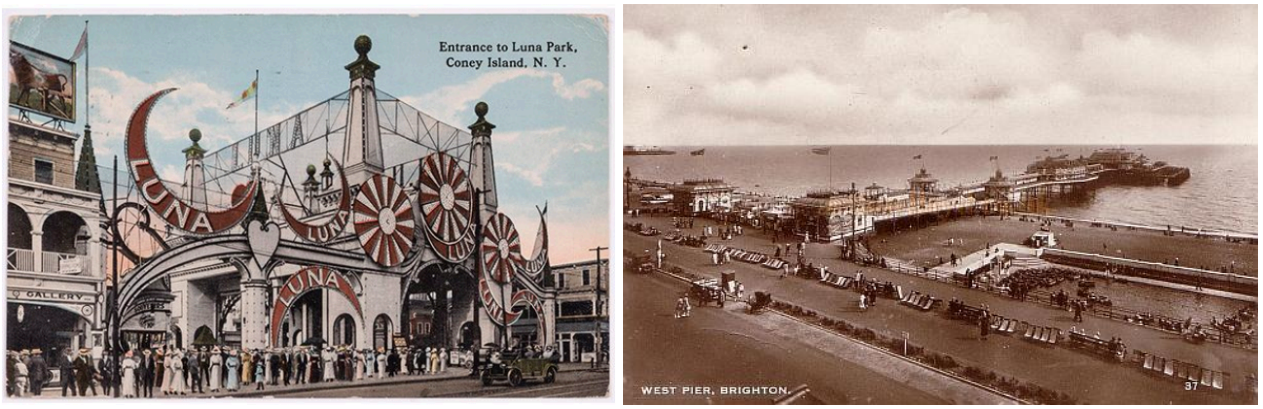

Fig. 9. a) Entrance to an amusement park *Luna Park* in Coney Island, New York City, postcard; b) The West Pier in the resort of Brighton, England, postcard, 1936. The pier was an extension of the promenade, having several pavilions and a concert hall.

2.4. Recreation and recreational architecture history by the Baltic and North seas

The coast along the Baltic and North Seas has drawn people since the Middle Ages, leading to the development of resorts and recreational spaces in natural maritime environments. The calmness and the healing effects of marine air have been a source of inspiration for these developments.

2.4.1. Germany

According to *ostsee.de* (n.d.), Hanseatic League cities and sea trade influenced the development of port cities along the coast, which then evolved, requiring space for recreational activities. Seaside resorts started to grow in the nineteenth century, including the first resort of Heiligendamm on the Baltic Sea, founded in 1793, and Norderney on the East Frisian Islands, considered one of the first resorts on the North Sea. Other significant resorts included Binz on the island of Rügen, Travemünde near Lübeck, Wangerooge on the East Frisian Islands, and Cuxhaven at the mouth of the Elbe River. The resorts were usually visited by the upper class, who built hotels and villas as a holiday retreat. The buildings were designed in the prevailing architectural styles from Victorian to eclectic, featuring seaside aesthetics and ornate details which represented the wealth of the owners. The towns usually had spa facilities built near natural areas, while other visitors could spend their leisure time on a promenade, a pier, or in the natural landscape (*ostsee.de*, n.d.).

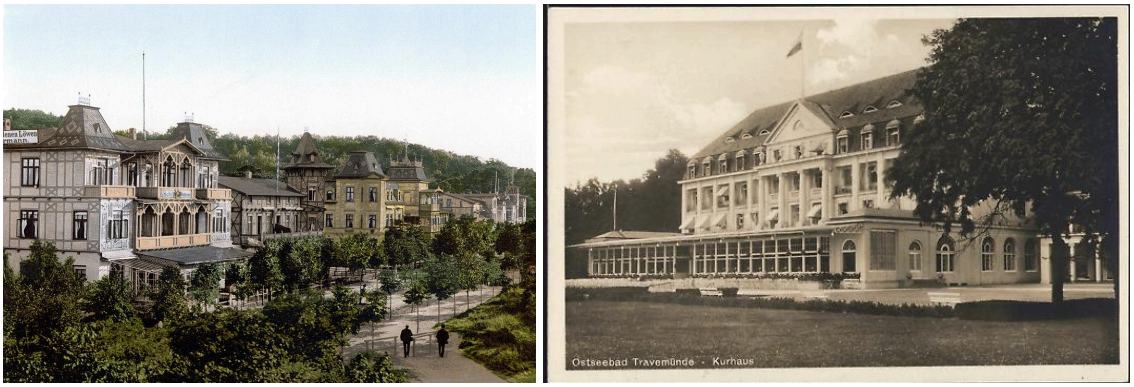

Fig. 10. a) Wilhelmstraße in Binz, 1900; b) *Kurhaus* in Travemünde, postcard

Modernisation and changes in society during the Weimar Republic era influenced the rise of mass tourism, causing the resorts to expand and adapt to the increasing and decreasing flows of incoming visitors. The number of visitors depended on constantly changing economic and demographic situations due to the war and economic crisis (*ostsee.de*, n.d.).

Timpe (2017) discusses how the resorts regained their popularity during the Nazi era when they were used as a tool of propaganda. To begin, the government made the resorts accessible and affordable to the working class people, who were provided with vacations to the resorts, consequently becoming dependent on the regime. Resorts were promoted as a place for relaxation and improvement of health and strength, which were important to the image of an ideal German (Timpe, 2017). Hatherley (2017) describes one of the largest structures built for propaganda purposes which was Prora on the island of Rügen. The large resort was built between 1936 and 1939 as an initiative by a governmental program called *Strength Through Joy (Kraft durch Freude)*, which organised vacations, cultural, sports events, and other leisure activities. The complex was a large structure, spanning about 4,5 kilometres along the coast and able to accommodate 20000 visitors. The original plans included a grand hall, indoor arena, several swimming pools, cinema, theatre, restaurants, and residential rooms with communal bathrooms. However, the war interfered with the construction, and the complex served as a military establishment, housing soldiers during the Cold War and being opened to the public only in the 1990s (Hatherley, 2017).

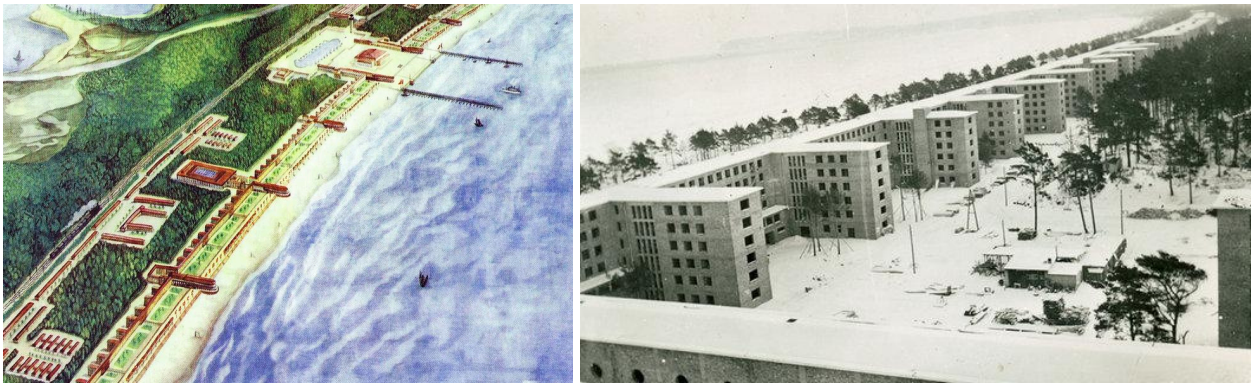

Fig. 11. a) Conceptual drawing from the construction stage of Prora; b) Residential buildings in Prora, 1939

2.4.2. Poland

Bal and Czałczyńska-Podolska (2020) state that the recreational seaside history of Poland is similar to the case of Germany, where resorts emerged during the nineteenth century, influenced by the trends in other European countries. The Polish resorts had common features, such as decorated villas and hotels, promenades, piers, and wellness facilities, which utilised local natural resources. The biggest resorts were being established along the coast, with the most notable examples being Gdańsk, Gdynia, Sopot, and Łeba in the historic region of Pomerelia, while some other resorts included Kołobrzeg, Świnoujście, and Mielno in Western Pomerania.

Fig. 12. The pier, beach and *Kurhaus* in Sopot, postcard, 1939

Resorts continued to grow at the beginning of the twentieth century and during the interwar period, adapting to changing geopolitical and economic situations after Poland gained more coastline, and the working class started travelling. Visitation of the resorts was encouraged by the government as an expression of patriotism. Polish architects distanced themselves from the German style and tried to use a national style, while later structures were inspired by the modernism movement. During the German occupation, the resorts were employed in the *Strength Through Joy* program to promote Nazi ideology by organising events and vacations. However, the initiative primarily targeted German workers, while Polish people were unable to participate due to the war and resistance.

After the Second World War, rebuilding and reconstruction works took place to fix the damaged buildings and infrastructure in the resorts. The socialist government intended to make the vacations to the seaside available for all the population, building state-owned complexes, organising holiday trips, and events. The seaside resorts were converted into wellness facilities, offering treatments from local resources (Bal and Czałczyńska-Podolska, 2020).

2.4.3. Baltic countries

All three Baltic countries - Lithuania, Latvia, Estonia - share a similar geographical and historical context, having coastlines along the Baltic Sea where recreation facilities and resorts have been developed or existing coastal towns adapted for recreational purposes. As each country created its own maritime recreation traditions, depending on local landscapes, many coastal and spa towns emerged in the nineteenth and twentieth centuries, offering various leisure activities and wellness recreation that utilised local resources. However, the shared Soviet occupation redeveloped the recreational facilities and activities, reflecting political ideology which emphasised leisure to boost the productivity of workers.

Migonytė-Petrulienė et al. (2021) describe the history of the first seaside resort in Lithuania, which was the town of Palanga, gaining popularity in the nineteenth century among the wealthy who would travel there for recreation and relaxation. The hotels and villas' architecture in Palanga resembled the German seaside style, characterised by ornate details, balconies, light colours, and the use of wood. The neoclassical Tiškevičiai Palace, built in 1897, became a point of interest, hosting social events and art exhibitions. The landscaped park, which had paths, gardens, and water features, accommodated outdoor activities. Other objects included the *Kurhaus*, built in 1877, which was the main recreational complex of the town. It had a restaurant, a hotel, a reading room, game rooms, and an event hall, hosting events, concerts, and social gatherings. Outdoor recreation took place on the beach, promenade, pier, and Birutė Hill with the surrounding park (Migonytė-Petrulienė et al., 2021).

Fig. 13. a) Tiškevičius Palace and the garden, postcard, 1929; b) Palanga *Kurhaus*, postcard

During the Soviet era, Palanga became the most visited resort in Lithuania, attracting common workers and visitors from other socialist countries. However, the majority of vacations were influenced by the state, which organised holidays for workers and hosted cultural and social events to promote Soviet ideology and socialist values. The architecture of new hotels, restaurants, and public institutions incorporated socialist design principles, characterised by simplicity and functionalism. Additionally, Palanga became a health resort after several state-owned sanatoriums and wellness facilities were established, offering various treatments, water procedures, and accommodation (Migonytė-Petrulienė et al., 2021).

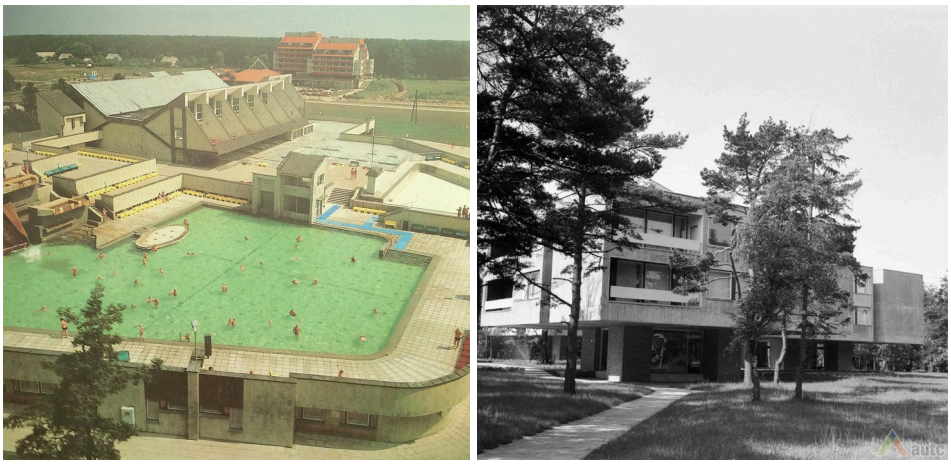

Fig. 14. a) *Linas* pool, built during the Soviet era, had swimming pools, treatment rooms, cafe, and rooms for visitors.; b) *Žilvinas* leisure home, built in 1969, accommodated the Council of Ministers. It has been one of the most recognisable examples of brutalist resort architecture

Vērpe (2023) describes how resorts started to emerge along the Gulf of Riga in Latvia during the nineteenth century. Jūrmala, consisting of several smaller resorts, became a spa destination for the wealthy and officers and started rapidly developing after the establishment of a railway in 1877, connecting the resort to Riga. Wooden hotels, villas, restaurants, concert halls, bathhouses and spas were being developed in a garden city manner. People would come to the resorts for relaxation, wellness treatments, and enjoyment of the healing natural resources such as the forest, beach and sea. Similarly to Palanga, Jūrmala faced mass tourism and the construction of state-owned facilities during the Soviet era. Sanatoriums, natural environment, and large-scale events attracted elite Soviet officials and regular people, making it one of the most visited resorts in the entire Soviet Union (Vērpe, 2023).

Fig. 15. a) Historical bath house on the beach of Jūrmala, built in 1916, offered treatments from natural resources; b) *Dzintari* concert hall complex, built in the 1930s.

Lankots and Ojari (2020) state that Tallinn used to be a popular sea resort among the residents of St. Petersburg, who would come to bathe in the sea. However, the northern coast of Estonia was not suitable for swimming, and the city lost the visitors after the railway connected St. Petersburg with the Black Sea resorts. Consequently, resorts started developing along the western coast, with Pärnu becoming one of the most important towns during the interwar period after the post-war reconstruction and the opening of a railway line to Tallinn. The architecture of Pärnu was diverse and consisted of examples from wooden, Art Nouveau, and modernist styles, such as functionalism. New buildings included beach pavilions, bathing houses, hotels, summer houses, and infrastructure. Sanatoriums were being established as well for water therapy purposes and prevailing sauna culture to fight tuberculosis, which had been previously treated during open-air procedures. Other resorts in Estonia included Haapsalu, where recreational structures such as fishing cabins, wooden villas, sanatoriums, leisure pavilions, parks, and promenade were established (Lankots and Ojari, 2020).

Fig. 16. a) Historical Pärnu *Rannahotell*, designed in Art Deco style by Olev Siinmaa. The hotel on the beach opened in 1939; b) Haapsalu *Kursal*, built in 1898, postcard from the 1930s

2.5. History of recreation and recreational architecture in Curonian Spit

Since the seventeenth century, the Curonian Spit functioned as a postal road between Prussian cities and Riga, connecting small fishermen settlements that were scattered along the lagoon shore. The movement of the surrounding dunes and lagoon, acting as a transportation route for boats and as a primary resource of food, significantly influenced the urban development of the Spit. Finally, in the nineteenth century, the unique natural and cultural landscape caused the development of resort culture in the existing settlements.

2.5.1. Nida

The study by Demereckas et al. (2011) states that the recreational history of Nida began in 1437 when the Nida inn was mentioned in historical sources as a tax-paying institution. In 1529, the inn was mentioned again as a property of Philipp Peppe, who owned not only the inn but lands and a privilege for free fishing in the sea and the lagoon as well. The inn was located by the foothills of Vecekrug sand dune; hence, the name of the dune comes from the Old Curonian language and means *old inn*. Since 1620, the inn had been known to be named *Nedden*. The purpose of the inn was to provide food and shelter for travellers on their journey from Konigsberg to Memel; however, it was not a frequently visited place, being set far away from the road and the first Nida. The settlement at that time was located next to Grobštas bay and horn, in the place of the present Parnidis dune, while the shore of the lagoon was used as a road.

Because sand suddenly covered up the first settlement, the inhabitants were forced to relocate the houses. Therefore, the second Nida was established in 1675 near Tyla bay by the lagoon, about a half-kilometre away from the previous location. The post station and inn were also relocated closer to the new settlement. Unfortunately, the second Nida survived only fifty years until it was once again covered up by the sand.

The third Nida relocated to the current location in 1732. Rich civil servant Friedrich Casimir Kuwert was known to have built a fisherman’s house and an inn in 1737. The inn was a popular destination, having a licence to brew and sell beer. In 1800, the inn was passed to Friedrich’s son, David Gottlieb Kuwert. The inn and the family’s homestead contributed to the formation of the settlement as a street village because the plot was so big that not all houses could fit by the dune-surrounded lagoon shore, while the remaining houses had to be built on the opposite side of the street. After the fire in 1827, the wooden inn was rebuilt as a hotel by David’s son, Georg David Kuwert, who named the establishment after the famous visitor, giving the name *Queen Louise*. The new building had the look of a simple fisherman's house with mansards on sides.

Georg, like his family, was taking care not only of the hotel but of all its surroundings as well. One of the most significant works Georg did was the vegetation planting of the dunes around Nida, which had been started by his father David. Ridges were formed, stopping the drifting of the dunes and protecting the settlements from disappearing.

In 1853, the hotel was bought by Pilkopa tavern owner Johann Cristoph Blode, who initiated reconstruction works. His building was turned into a small wooden house with a large veranda on the side, which had decorative wooden carvings (Demereckas et al., 2011).

Fig. 17. Hotel owned by Johann Cristoph and Gustav Blode, postcard, 19th c.

In 1912, the hotel was reconstructed again by Gustav Blode. This time, the masonry building consisted of two floors with mansard for rooms and was heavily decorated with stucco and wood. It also had a closed veranda that faced the lagoon. The hotel at that time was known to be the biggest establishment between Konigsberg and Memel (Demereckas et al., 2011).

Fig. 18. Reconstructed *Queen Louise* hotel, postcard, 1912

The hotel kept this image until the fire in 1930. Later, it was rebuilt by the architect Herbert Reissmann as a simpler building with fewer decorations and a continuous dormer (Demereckas et al., 2011).

Fig. 19. *Queen Louise* hotel by P. Isenfels, postcard, 1930s

After World War II, the hotel underwent another reconstruction, which added massive triangular dormers. However, the name *Queen Louise* was dropped, and the hotel became a leisure home *Jūratė* (Demereckas et al., 2011).

Fig. 20. Hotel *Jūratė* nowadays

At the end of the nineteenth century, the Curonian Spit was discovered by German impressionist artists who came to paint the landscapes. G. Blode's hotel was the place where they stayed, as Blode was a sponsor. He was also the owner of the biggest leisure complex in Nida. In 1867, Blode bought a house in Skruzdynė, to which he had two new masonry wings attached. The new parts had a veranda facing the lagoon, allowing visitors to sit by the tables and observe the surroundings. It was also valued by painters, who would stay at the complex and engage in plein-air painting. The paintings were then hung in dedicated spaces for exhibitions.

Nida became a spa resort in 1912. New accommodation establishments were built solely for incoming tourists, including *Kurisher Elch*. The hotel was owned by Gustav Stragies, who built a three-floor wooden building (Demereckas et al., 2011).

Fig. 21. Hotel *Kurischer Elch*, postcard, 1932

After the 1923 Klaipėda uprising, the construction of recreational buildings slowed down as the main focus shifted to Klaipėda. In the 1920s, the first shop was built. The building differed from others, reminiscent of city architecture and had two floors with a single-slope roof.

Other newly built but not currently surviving hotels and villas included *Nordische Linda*, which had a terrace with a summer cafe-garden. Furthermore, in 1933, Martin Sakuth reconstructed a former fisherman's house into a tavern and a hotel. The two-floor wooden house had an enclosed yard, a glazed terrace, and a place to park horses and carriages (Demereckas et al., 2011).

Fig. 22. M. Sakuth's hotel, 1933

In order to attract visitors to Nida and Curonian Spit, promotion was needed. One of the promoters was photographer Paul Isenfels, who built a summer house. He released a booklet, *Nidden*, after taking photographs of the surroundings and architecture, especially in Skruzdynė, which represented the traditional architecture the best (Demereckas et al., 2011).

Fig. 23. Paul Isenfels house, postcard, 1930s

One of the architects who worked in Nida was Herbert Reissmann. In 1930, he designed the Nida museum. The building had a traditional house look; however, the architect added a reed roof with a tower. The museum housed a collection of archeological and cultural artefacts, fishing tools (Demereckas et al., 2011).

Fig. 24. Nida museum

Reissmann designed a summer house for the writer and Nobel laureate Thomas Mann in 1932. The inspiration came from traditional Lithuanian houses. The roof was decorated with wooden horses that had the tails of the luce fish, acquiring the image of a seahorse. Mann spent three summers there. The house was damaged during the war and was reconstructed, adding a terrace and tile roof. Observation point is close to the house, opening views towards the lagoon (Demereckas et al., 2011).

Fig. 25. a) Thomas Mann and his family next to the house; b) The house nowadays

Other summer residences designed by Reissmann were painter Carl Knauf's house, built in 1932, and painter Richard Birnstengel's house in Purvynė, built in 1937. Like Mann's house, these buildings also had Lithuanian motifs, including seahorses on the roof (Demereckas et al., 2011).

Fig. 26. a) Carl Knauf's house; b) Richard Birnstengel's house

Nida dunes was a perfect practice place for gliders. Račiūnaitė (2003) mentions that from 1933 until 1939, Nida Gliding School was operating, functioning as a summer camp for Lithuanian gliders. The complex had a hangar for gliders, a canteen, and a school building, located near Sklandytojai dune (Račiūnaitė, 2003).

Fig. 27. a) Gliders on Sklandytojai dune; b) Hangar with gliders

The old inhabitants were forced to evacuate to Germany in January of 1945, fleeing from the Russian army. After the war, Nida, as well as the whole Spit, became a border zone with restricted access. After the opening of a fishing factory and the return of some older residents, Nida slowly regained its appeal as a spot for recreation. At first, Nida was viewed as an abandoned village, having poor connections and restrictions. In the 1960s, Curonian Spit was used as a representation for Germans and Lithuanian emigrants who would come with state-guided tours. It was a popular destination for nomenclature, who turned the Spit into a hunting area (Demereckas et al., 2011).

In 1953, Nida library was opened and five years later, in 1958, a culture house was established. State accommodation facilities were being built to attract working class tourists and youth from all over the Soviet Union. The facilities included youth and adult leisure camps, while establishing services for visitors, such as a hospital, pharmacies, and shops. In 1960, restaurant *Neringa* was opened.

In 1961, Nida, Preila, and Juodkrantė were joined into the city of Neringa, with Nida becoming the capital. As Drėmaitė (2020) notes, Architect Gytis Tiškus was appointed to supervise the city, while Jonas Vaikėnas was responsible for conversion of Neringa into a respectable resort with infrastructure. In 1966, Neringa became a reserve. In 1967, the Neringa management plan and Nida central plan were approved.

New recreational architecture in Nida represented the Modernist style. Architect Liucija Šerepkaitė-Gedgaudienė designed several resort complexes, including villa *Kastytis* and villa *Pušelė* (Drėmaitė, 2020).

Fig. 28. a) Villa *Kastytis*; b) Villa *Pušelė*

The Nida centre plan included a new shop, cultural house with a cinema, restaurant, pier, yachtclub, and accommodation facilities, such as a dormitory and hotel (Drėmaitė, 2020).

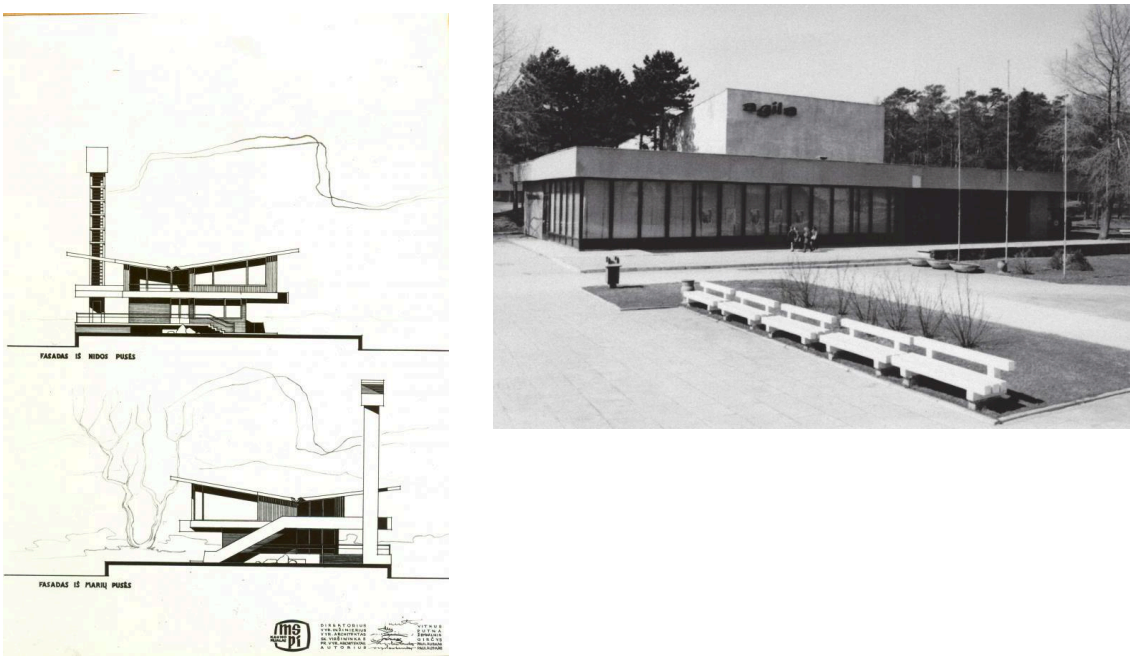

Fig. 29. a) Nida passenger pier project by Alfredas Paulauskas, 1964; b) Cultural house, 1971

2.5.2. Juodkrantė

Juodkrantė was a rival settlement of Nida, becoming the first-class seaside and spa resort in 1880 after getting rich from the amber mining business. In 1881, the Special Resort Committee was formed, which functioned as an institution for the collection of taxes from visitors, the organisation of entertainment, and the maintenance of the infrastructure. The committee built a pier that could be reached by a steam boat from Klaipėda and Tilžė, making Juodkrantė more accessible. In 1888, the first tourist guide of Juodkrantė was released.

Already in 1865, Eduard Stellmacher established the first hotel in the resort, *Kurisher Hof*. The hotel was built on the site of an inn and functioned as a spa house with accommodation facilities for a hundred people. It burned down in 1880 but was rebuilt shortly after. The hotel had an outdoor cafe with a garden. The hotel also had the Music Pavilion built on the site. The Pavilion was the main attraction point of Juodkrantė, hosting orchestra performances and functioning as a summer restaurant. Both buildings were highly decorated; however, the details of the hotel did not survive (Drėmaitė, 2020).

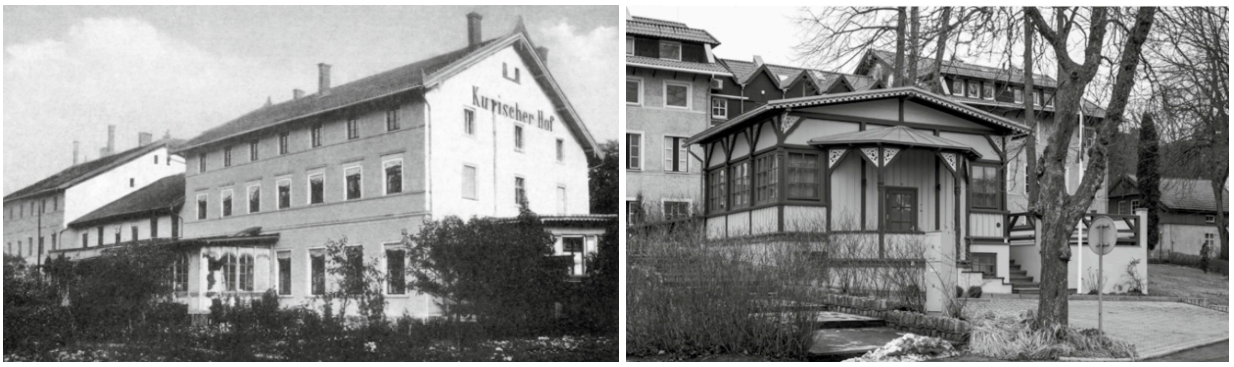

Fig. 30. a) The *Kurischer Hof* Hotel, Juodkrantė, 1925-1930; b) The Music Pavilion

Juodkrantė was popular among wealthy families. While some ordinary visitors would rent old fishermen's houses, the rich were building villas in the villas quarter. In 1868, businessman Moritz Becker built the luxurious and heavily decorated *Villa Flora*, which was used by his family as a holiday home. After the villa was sold, it was converted into a boarding house. The building had an attractive terrace, outdoor cafe, garden, flower clock and fountain (Drėmaitė, 2020).

Fig. 31. Villa Flora

Juodkrantė was known for its wellness facilities, which were built in the beginning of the 20th century and Interwar period. In 1905, The *Luisenbad* Thermal Baths were established to address the lack of hygiene and promote wellness using natural resources. The facility offered hot and salt baths, carbonic acid and mud treatments, as well as sand and steam baths. Other wellness facilities had mud baths and tennis courts, including seasonal establishments, such as pharmacies (Drėmaitė, 2020).

Fig. 32. *Luisenbad*, Juodkrantė, 1900-1910

Willoweit (1970) in the article for the newspaper *Eine Urlaubsfahrt nach Memel* describes *The Tourist Guide*, released in 1934, which lists the offered leisure activities. The visitors in Juodkrantė were entertained with water sports, such as fishing and sailing regattas, while the hotels hosted dance and beach parties. Hikes to the dunes and forests were organised, including moose observation (Willoweit, 1970).

Outside of the settlement, several recreational facilities were built. *Berghalle* inn was established on the foothills of a dune in 1869, becoming a popular leisure place for amber miners. The wooden building had a shop and two restaurant halls for visitors.

Another building was the modernist summer restaurant *Strandhalle,* built in 1909. Located on the sea shore at the main beach, the establishment was visited by vacationers who were enjoying the beach and the scenery. The low-rise wooden building served not only as a restaurant but also hosted recreational and cultural events and even had rooms for sleeping (Demereckas et al., 2011).

Fig. 33. a) *Berghalle*, lithograph; b) *Strandhalle*, postcard

After the war, Juodkrantė was partly abandoned, and the new settlers arrived, occupying old buildings. During the Soviet era, several large accommodation facilities were established, including the hotel *Kurischer Hof*, which was converted into a leisure home *Gintaras*. The building was reconstructed in 1982. Other modern recreational buildings included pioneer camp, built in 1963 and leisure home *Guboja* and *Energetikas*, built in 1979. In 1972, a shopping centre and restaurant were opened (Demereckas et al., 2011).

2.5.3. Smiltynė

According to historical sources, the northernmost settlement of Smiltynė has been serving as a connection point with Klaipėda and a stop along the postal road for over a thousand years, having a ferry and an inn. The fist inn is known to be established in 1525. It had been passed on to many owners and had been rebuilt or relocated due to fires and sand shift throughout the years.

By the end of the 19th century, Smiltynė already had a summer cafe and restaurant, named *Sandkrug*, next to the road and ferry port. The building complex was often visited by travellers, coming to and from other Curonian Spit settlements, who would wait for the ferry there. The facilities were so popular in summer that the garden with tables was opened to accommodate all guests (Demereckas et al., 2011).

Fig. 34. Summer cafe in Smiltynė, postcard

1901 marks the beginning of Smiltynė as a resort when the settlement was joined to Klaipėda city, and plots were sold for the construction of villas. In 1907, a wooden *Kurhaus* was built on a dune near the strait of the lagoon. The establishment had sleeping rooms, a restaurant, and a summer cafe while also having all infrastructure, including electricity, hot water, telephone, and a private pier for steamboats. Outdoor spaces included a stage for musical performances and outdoor cafes. The beach by the sea had all needed facilities, including promenades and paths, cafes and pavilions, and beach dressing cabins. In 1914, a restaurant *Strandhalle* was built on the dune by the sea (Demereckas et al, 2011).

Fig. 35. a) *Kurhaus*, postcard, 1907; b) *Strandhalle* restaurant, postcard

2.5.4. Preila and Pervalka

Preila and Pervalka were the smallest fishermen settlements in the Curonian Spit. However, during the Interwar period, the settlements, due to their poor economic condition, were not popular among tourists, with a small number of them staying in fishermen's houses. In 1933, Preila and Pervalka were granted the status of resort settlements.

Preila was receiving more visitors than Pervalka and had two inns *Preil* and *Zur Nehrung*. The guests could stay at hotels *Zum Preiler Elch* and *Rademacher*, as well as in the guesthouse *Gasthaus Nehrung* (Willoweit, 1970).

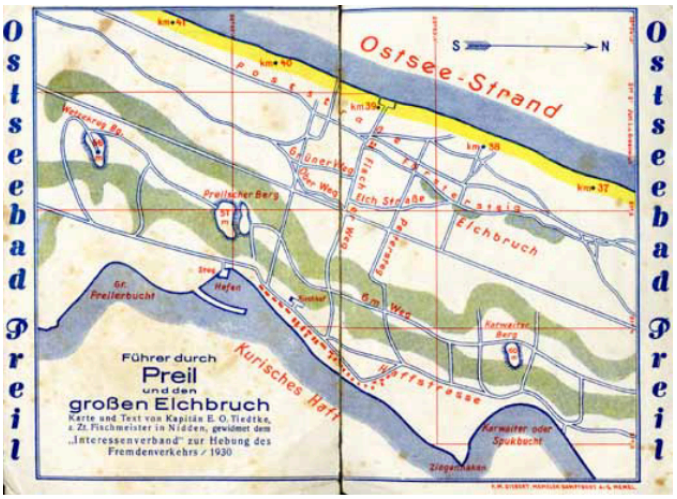

Fig. 36. The tourist scheme of Preila, 1930

After the war, the recreation in both settlements was revived only in the 1970s, after several leisure complexes were built. In Preila, the complexes included the leisure base *Vėtra*, finished in 1978, and the boarding house *Preila,* built in 1979. Pervalka also had accommodation facilities established, including leisure houses *Dainava* and *Ąžuolynas*, and the complex *Baldininkas* (Demereckas et al., 2011).

Fig. 37. a) Leisure house *Dainava* in Pervalka, built in 1971; b) Leisure house *Ąžuolynas*, built in 1983

2.6. Marine therapy and its resources in Nida

Marine therapy is not a regulated medical treatment but an alternative method of therapy, related to engaging in therapeutic activities in close proximity to the sea, such as swimming or walking. Marine therapy is more related to the overall well-being of a person in a coastal environment rather than specific treatments. On the other hand, Antonelli and Donelli (2021) distinguish thalassotherapy as a part of marine therapy, incorporating a range of treatments that employ natural marine resources. Treatments include seawater baths, seaweed and sand baths, sunlight exposure, inhalation of marine air. They are used to treat various skin, rheumatic, and respiratory conditions. However, the evidence supporting the effectiveness of thalassotherapy is not efficient, and the improvements might last only several months, requiring the incorporation of several methods of marine therapy treatments or other forms of therapy for long-lasting effects. Therefore, marine treatments are believed to have a more psychological effect on mental, emotional, and physical well-being (Antonelli and Donelli, 2021).

The Curonian Spit National Park Management Plan (*Kuršių nerijos nacionalinio parko tvarkymo planas,* 2012) states that the marine therapy centre should use unique local resources for treatments and health procedures, including distinctive seaside weather conditions, such as marine climate, pine and juniper forest microclimate. Other resources could be local sapropel and geothermal water.

A study by Povilanskas and Armaitienė (2010) and *Jūros terapijos centro įkūrimo sektorinė studija* (2014) describe resort resources, found in Curonian Spit. The materials and factors, suitable for treatments in the marine therapy centre, are:

d) Mineral and thermal underground water;
e) Seawater;
f) Sapropel;
g) Amber;
h) Climate;
i) Landscape.

2.6.1. Mineral and thermal underground water

Mineral and thermal underground water have the highest potential for the use in balneotherapy, which involves bathing for therapeutic purposes, being the main form of treatment. The water is used in mineral and mud baths, pools, as well as for water massages and inhalation. It is believed that balneotherapy can help relieve the symptoms of diseases and pain.

Mineral and thermal underground water are found in all Spit, 600-2100 metres underground. The most suitable water for therapy is found one kilometre underground, having a temperature of 40 ℃ and a proper amount of minerals, including a high concentration of various chlorides, such as NaCl (Povilanskas and Armaitienė, 2010).

2.6.2. Seawater

Surugue (2019) states that some scientists believe that bathing in the mineral-rich seawater can relieve the symptoms of certain skin conditions. However, the research is limited and not fully supported by evidence, and the recorded improvements have been temporary and have not solved the problem after the treatments. Instead, seawater can be used as a complementary therapy alongside medically approved methods (Surugue, 2019).

According to *Jūros terapijos centro įkūrimo sektorinė studija* (2014), the use of the local seawater is fully possible. However, the extraction should be coordinated with natural protection laws. Additionally, the water and its extraction processes must meet the requirements of hygienic norms to ensure it is safe for use (*Jūros terapijos centro įkūrimo sektorinė studija*, 2014).

2.6.3. Sapropel

Sapropel is a sediment rich in organic matter. It is used for mud masks and baths, believed to have cleansing and relaxing effects on the body. In the Curonian Spit, sapropel can be found underground, both in the spit and in the lagoon, while some portion has been exposed by shifting dunes. However, the majority of the material can be found under the lagoon, 15-17 metres below sea level (Povilanskas and Armaitienė, 2010).

A report from *Jūros terapijos centro įkūrimo sektorinė studija* (2014) mentions that the Management Plan recommends utilising local sapropel resources. Therefore, a quarry should be set up to extract sapropel. However, according to Lithuanian Protected Areas Law (*LR Saugomų teritorijų įstatymas,* 2023), the installation of new facilities for fossil resource extraction is prohibited in the national parks, making the use of the local sapropel impossible. Consequently, it is suggested to supply the sapropel from other locations (*Jūros terapijos centro įkūrimo sektorinė studija*, 2014).

2.6.4. Amber

There is no actual scientific evidence on the benefits of the amber therapy. However, it is still used in the form of healing jewellery and alternative treatments, such as aromatherapy.

Currently, there are no explored amber clusters in Lithuania, while needed amber is imported from abroad. On the other hand, the Curonian Spit may have several promising clusters by the shore, which have not been properly explored yet. However, the same as it is with the sapropel, the excavation of amber is also restricted by the laws, in addition to the fact that amber is a valuable mineral, complicating its use for therapy. The solution is also to supply the amber from other sources (*Jūros terapijos centro įkūrimo sektorinė studija*, 2014).

2.6.5. Climate

Povilanskas and Armaitienė (2010) distinguish the valuable elements of the climate, which are unique weather conditions and ionised air. According to the analysis by Galvonaitė et al (2015), the climate in the Curonian Spit differs from the remaining Lithuania, with an average yearly temperature of 8,0 ℃. The temperatures are heavily influenced by the sea and the lagoon. The winters in the Spit are mild, while the springs are relatively cool because of the cold sea. Summers are the warmest and driest in Neringa compared to other Lithuanian resorts, with higher temperatures heating the water, contributing to a warmer but precipitous autumn. The authors note that the Spit is more humid than the continental part of Lithuania. However, the wind influences low cloudiness, increasing solar radiation. Neringa gets around 1993 hours of yearly sunshine, which is the largest amount in Lithuania (Galvonaitė et al, 2015).

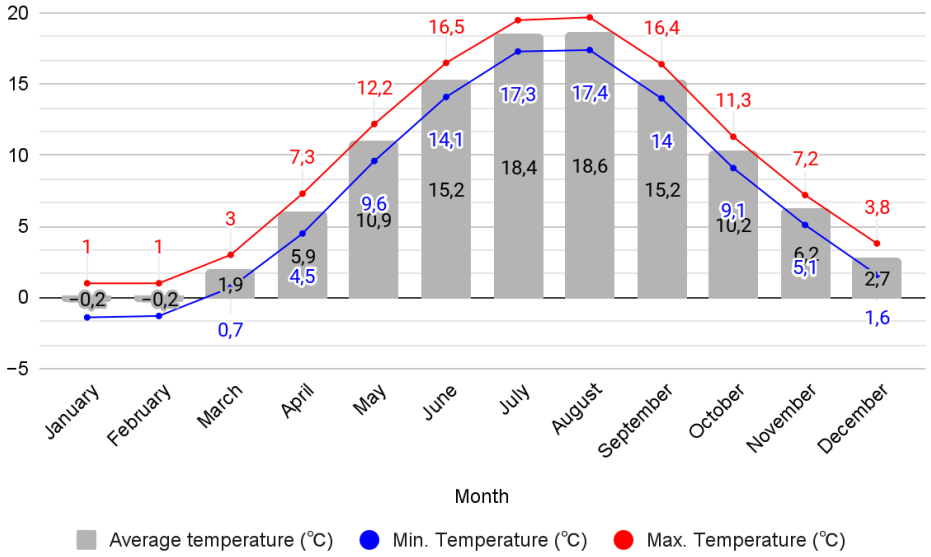

Fig. 38. Temperatures in Neringa, 1999-2021 (based on *en-climate.org*)

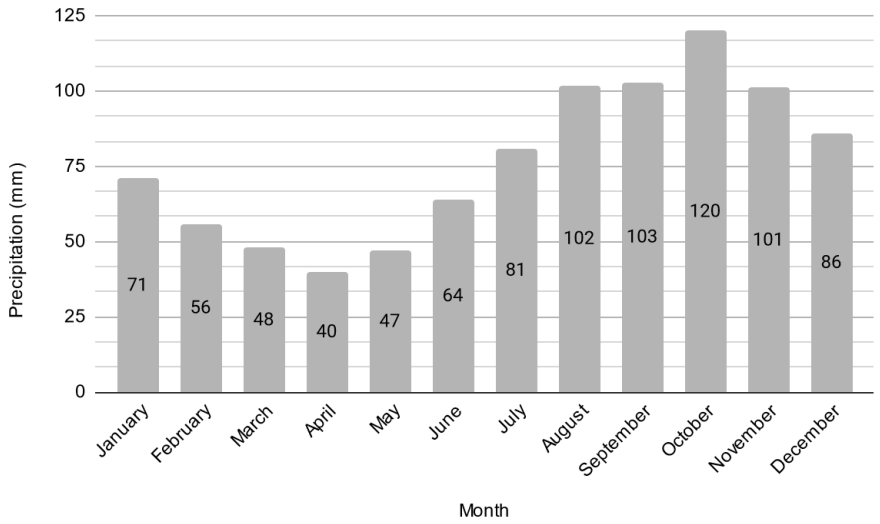

Fig. 39. Average amount of precipitation in Neringa, 1999-2021 (based on *en-climate.org*)

2.6.6. Landscape

Pine and juniper forests occupy about 3000 hectares of Neringa city, of which about a thousand hectares are suitable for recreation. Besides the forests, plants used for medicinal purposes, such as gypsophilas, thymes, and rosehips, grow in the open areas (Povilanskas and Armaitienė, 2010).

2.7. Analysis of analogues

2.7.1. Lanserhof Sylt Health Resort

Fig. 40. *Lanserhof Sylt Health Resort* exterior

Lanserhof Sylt Health Resort is a medical health resort located on the German island of Sylt, designed by *Ingenhoven associates*. Situated in the North Frisian Islands near the coast of Germany and Denmark, Sylt is part of Schleswig-Holstein Wadden Sea National Park, which is under the protection of UNESCO World Heritage Site. The island's coastal landscape is defined by dunes, beaches, heathlands, as well as a rich maritime history and Frisian culture.

The resort was built in 2022 in a former military area by the sea. It features several separate buildings, including the main building, three beach houses, a diagnostics building, and a historical 1930s officers' home. Due to the natural and delicate surroundings, the architectural design idea can be defined as a seamless connection with the existing landscape (*Ingenhoven associates,* 2023).

Fig. 41. *Lanserhof Sylt Health Resort* site plan

The buildings are constructed to minimise their footprint on the landscape, both physically and ecologically. The building is integrated into the surroundings by embedding it into the dune. The glazing on the lower floors is a contemporary and architectural continuation of the dune, while the roof rises above the dune and traces its outline. The form of the roof is soft in order to emphasise this connection. Additionally, the inspiration for the building's architecture comes from traditional Frisian houses, characterised by low-pitched thatched roofs, small facade areas, and windows (*Ingenhoven associates,* 2023).

Fig. 42. *Lanserhof Sylt Health Resort* and the traditional Frisian surroundings

The main building has three floors and features a corridor layout, where the volumes are connected by corridors, while the rooms are placed along them. The corridors meet in the centre where the main representative circular staircase is located.

Basement floor is dedicated to the active spa zones and includes wellness facilities such as a gym, pool, saunas, and private treatment rooms. It also houses a large dedicated area for auxiliary premises, such as technical rooms and the underground parking. The main entrance and lobby are located on the ground floor, surrounded by common areas. These areas include such premises as indoor and outdoor dining zones, rest areas, and conference rooms. There are also some closed areas for work or private relaxation. The private treatment and clinic rooms continue on this floor. Finally, the top floor is dedicated to accommodation and follows a typical hotel layout where rooms are placed along the corridors (*Ingenhoven associates,* 2023).

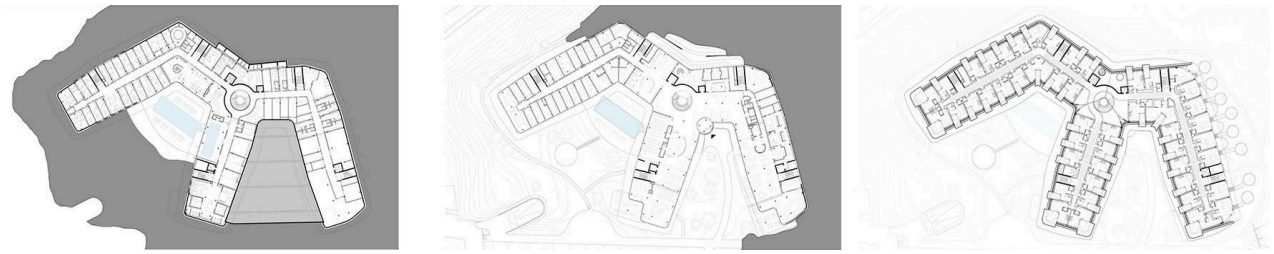

Fig. 43. *Lanserhof Sylt Health Resort* floor plans: a) basement; b) ground floor; c) top floor

The colour palette of the exterior and interior is inspired by the dune landscape, featuring beige, grey, and white colours. Additional materials and textures include wooden floors, transparent glass, clean white surfaces, exposed wooden beams, and details. The selected minimalist sustainable finishes contribute to the object's purpose of the medical facility, promoting concentration and tranquillity (*Ingenhoven associates,* 2023).

Fig. 44. *Lanserhof Sylt Health Resort* interior: a) the main staircase; b) common area

2.7.2. *Alba Thermal Springs and Spa*

Fig. 45. *Alba Thermal Springs and Spa* aerial view

The Australian *Alba Thermal Springs and Spa* wellness facility, located on the Mornington Peninsula south of Melbourne and designed by *Hayball* in 2022, was built in response to the dynamic atmosphere and unique natural environment of the peninsula, which features native plants and a dune landscape. The project utilises these elements to repurpose the empty green area into a wellness complex (*Hayball*, 2023).

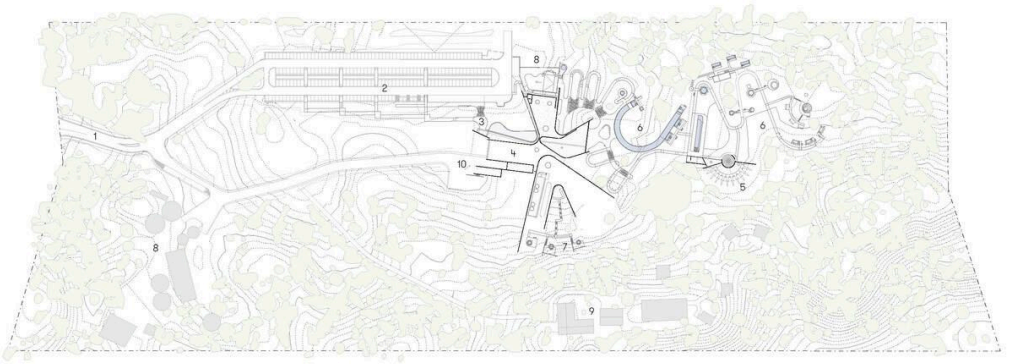

Fig. 46. *Alba Thermal Springs and Spa* site plan

The project employs the slopes of the dunes, with the volumes emerging from the terrain. The site comprises the main building and the pool zone, while additional premises include car parking and technical buildings. The main building features organic curved forms, creating outdoor spaces and courtyards, which are partially covered by the terrain. The pool area with 32 open and hidden circular pools, connected by intuitive paths, responds to the forms of the building and terrain (*Hayball*, 2023).

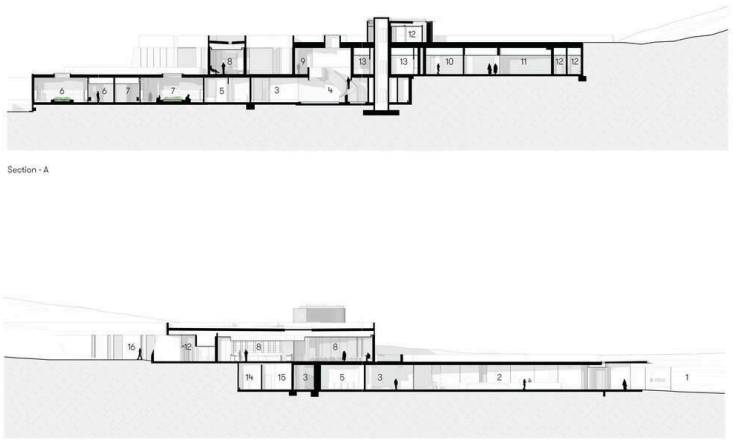

Fig. 47. *Alba Thermal Springs and Spa* sections

The floor plan arrangement repeats the simple organic forms of the volumes throughout all three levels. The building is accessed through the first floor, which is dedicated to the indoor pool area, consisting of saunas and changing rooms that have direct access to the outdoor pool zone. Other spaces comprise auxiliary, technical, and staff rooms. The second floor is divided into two volumes, connected with a rooftop terrace. One smaller volume houses a restaurant with the kitchen, while the other bigger volume is divided into common relaxation spaces, private treatment rooms for massages, beauty procedures, and steaming. The third floor occupies the smallest floor area and includes six closed private salt baths and pools, having direct access to the outdoors as well. Finally, the main spiral staircase rises from the pool on the first floor, connecting all three floors (*Hayball*, 2023).

Fig. 48. *Alba Thermal Springs and Spa* floor plans: a) first floor; b) second floor; c) third floor

The architects decided to incorporate curved windows and skylights, allowing the natural light to illuminate the interior spaces. The structure of the building is characterised by the use of raw concrete, having the purpose of emphasising the simplicity of the design and the natural qualities of the site, as well as the relationship between the natural and built-up environment. This relationship is further enhanced with the use of additional exterior materials such as ribbed textures, bronze glass, and metallic finishes. The raw materials continue in the interior spaces, which feature finishes such as concrete structural elements, hand-made brick tiles, and timber panels. Additionally, the use of natural and tactile materials creates a sensory experience and strengthens the link between the indoors and outdoors (*Hayball*, 2023).

Fig. 49. *Alba Thermal Springs and Spa* interior: a) the main staircase; b) relaxation space

Outdoor design incorporates native landscape elements which have a connection to the indoors. The placement of each pool is carefully considered, taking into account the topography, views, planting, and micro-climate. This approach aims to create a bathing experience that is sensitive to the natural surroundings (*Hayball*, 2023).

Fig. 50. *Alba Thermal Springs and Spa* outdoor spaces

2.7.3. The Retreat at Blue Lagoon

Fig. 51. *The Retreat at Blue Lagoon* exterior

The Retreat at Blue Lagoon is a well-known landmark of Iceland, located in the Reykjanes UNESCO Global Geopark. The retreat was designed by *BASALT Architects* in 2018 as an extension of the main Blue Lagoon complex which resides on the remains of 755 year old lava flow. The purpose of the complex is focused on familiarising visitors with Iceland's traditional bathing practices (*BASALT Architects*, 2022).

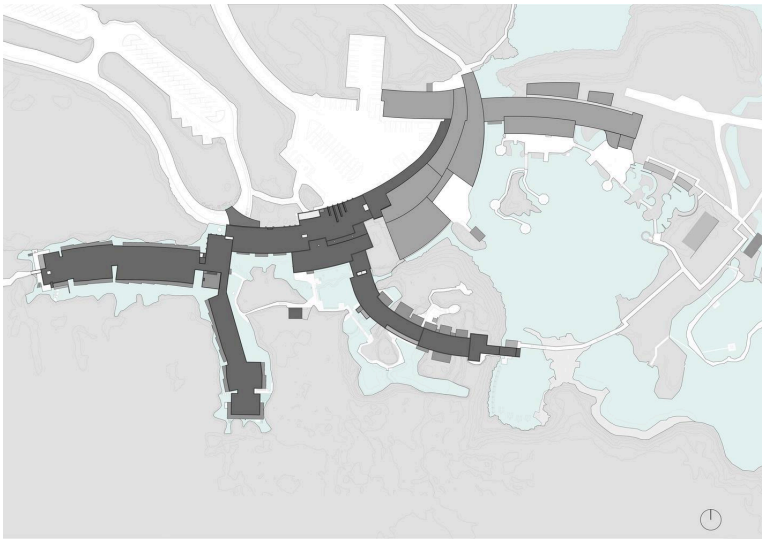

Fig. 52. *The Retreat at Blue Lagoon* site plan. The extension is marked in dark grey colour.

The design of the retreat was complicated, requiring an understanding of the unique natural environment and landscape. Therefore, the architects spend a significant amount of time studying the surroundings to understand the natural characteristics of the site. As a result, a detailed layout plan was created, expressed not by drawings and renderings, but brought into existence by laying it out directly on the site with the help of strings. This method allowed not only to represent actual spaces but to protect the environment and to adjust the layout after several new lava formations were discovered during the construction processes (*BASALT Architects*, 2022).

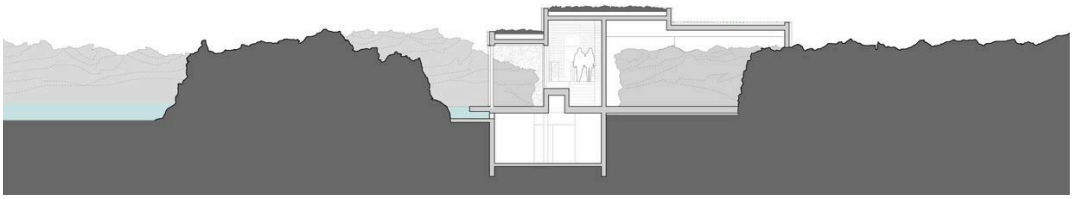

Fig. 53. T*he Retreat at Blue Lagoon* section

The retreat comprises the existing building, The Retreat Hotel, and The Retreat Spa. The spa building is attached to the existing building and features all necessary wellness facilities. The main level includes a gym, yoga room, various spa rooms, changing rooms, a library, and restaurants for visitors. The outdoor treatment areas and the lagoon can be accessed through several indoor spaces. On the other hand, the hotel is connected to the spa, having private suites. The private lagoons can be reached through the hotel as well (*BASALT Architects*, 2022).

Fig. 54. *The Retreat at Blue Lagoon* floor plan

The main construction material used is precast concrete, chosen to reduce the environmental impact during the construction by casting the elements offsite and assembling them on-site. Concrete was chosen for its aesthetic qualities as well. It varies in texture and colour in different spaces, ranging from light and textured to dark and smooth, harmonising the structure with the lava formations. Other interior and exterior elements, such as perforated facades and interior screens, are inspired by the patterns of lava and rocks, connecting the building to the surroundings. One of the elements enhancing this relationship is dark terrazzo floors made from local lava sand and stone (*BASALT Architects*, 2022).

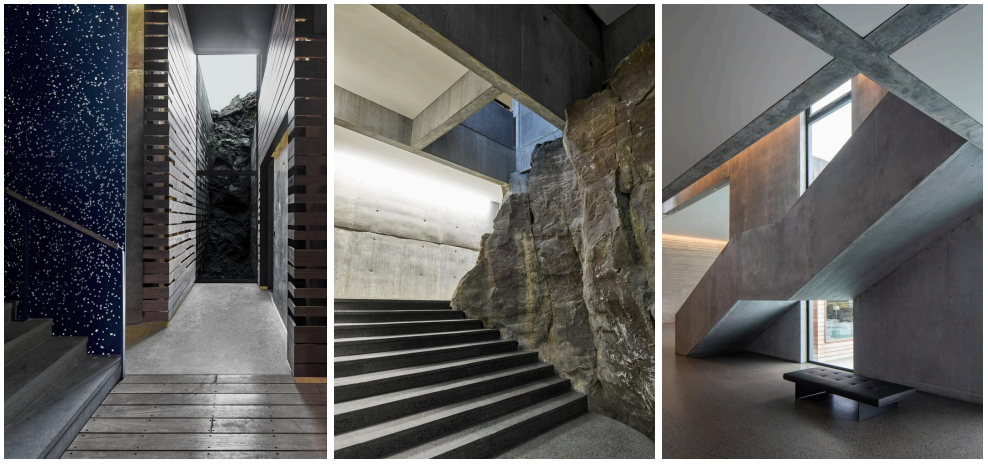

Fig. 55. *The Retreat at Blue Lagoon* interior

Wood textures provide a warm contrast to the rough concrete appearance, contributing to the comfort and inviting atmosphere. Natural lighting is preferred, while the artificial lighting is energising and relaxing (*BASALT Architects*, 2022).

Fig. 56. *The Retreat at Blue Lagoon* interior

2.7.4. *Strøm Spa Vieux-Québec*

Fig. 57. *Strøm Spa Vieux-Québec* exterior

The spa complex was designed by *LEMAYMICHAUD Architecture Design* and built on the bank of the St. Lawrence River in Québec, Canada, in 2018. The project draws inspiration from the maritime history of the harbour, which used to be situated on the site, as well as the river whose presence influenced the design decisions (*LEMAYMICHAUD Architecture Design,* 2019).

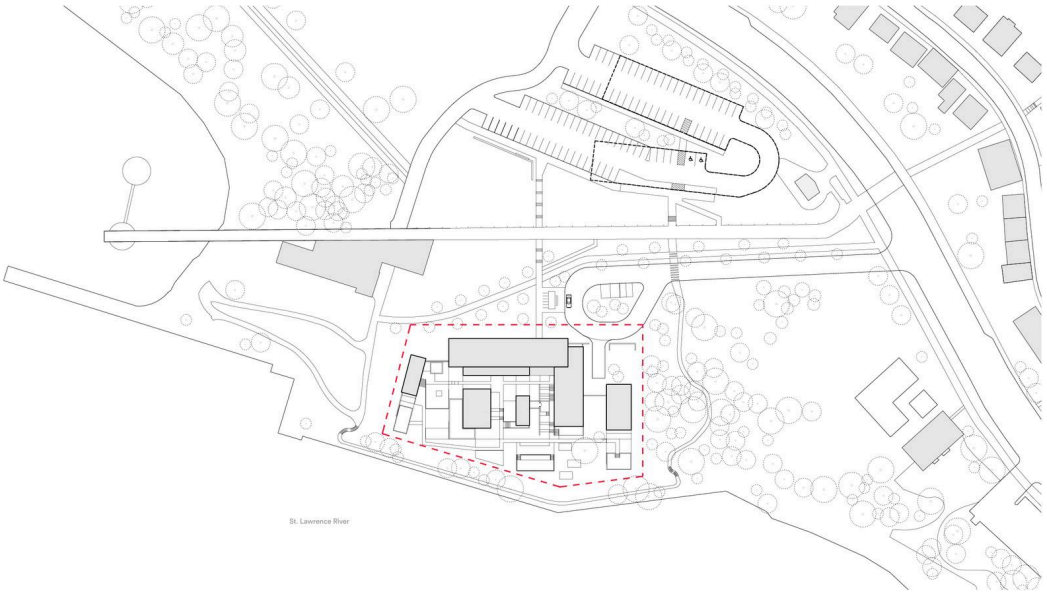

Fig. 58. *Strøm Spa Vieux-Québec* site plan

The site layout drew inspiration from the historical footprint of old harbour wharves that used to be placed along the shorefront. The volumes were placed in a rhythmic variation, creating spaces in a pattern reminiscent of the wharves. The strategic placement of the volumes also follows the natural slope, which descends towards the river (*LEMAYMICHAUD Architecture Design,* 2019).

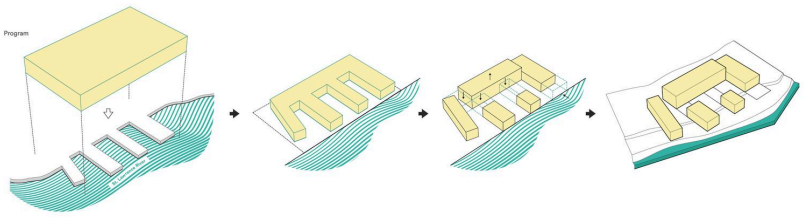

Fig. 59. *Strøm Spa Vieux-Québec* concept diagram

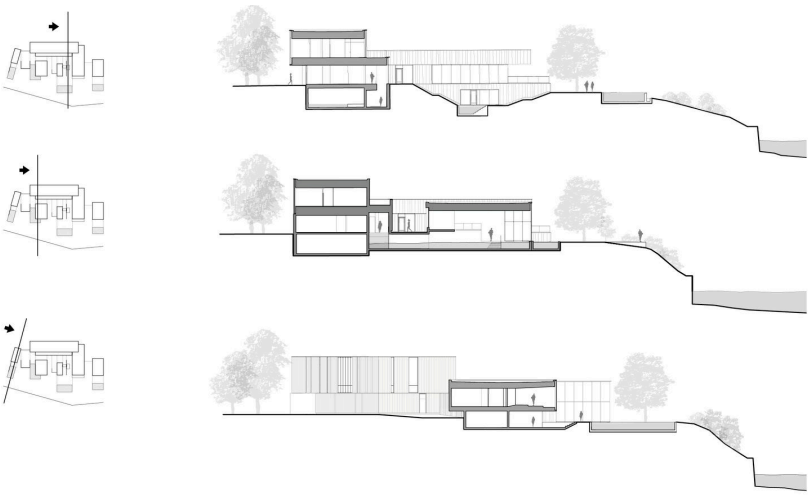

Fig. 60. *Strøm Spa Vieux-Québec* sections

The primary goal of the project was to maximise the views towards the waterfront. The site is divided perpendicular to the river, incorporating structures such as buildings, terraces, and basins. This division allows for the creation of different thermal zones, offering unique sensory experiences related to temperature variations, sun exposure, and other environmental factors. Recesses and protrusions contribute to a variety of perspectives and easier access (*LEMAYMICHAUD Architecture Design,* 2019).

Fig. 61. *Strøm Spa Vieux-Québec* exterior

The complex is divided into three different levels. The lower level is partially underground and is dedicated to water treatments, including various types of baths and saunas. The relaxation zones on this level have direct access to the outdoors. The ground floor is the main level, featuring additional spa rooms and baths. Other areas include changing rooms, relaxation zones, and a restaurant connected to the terrace. Finally, the top floor comprises private massage rooms with a terrace (*LEMAYMICHAUD Architecture Design,* 2019).

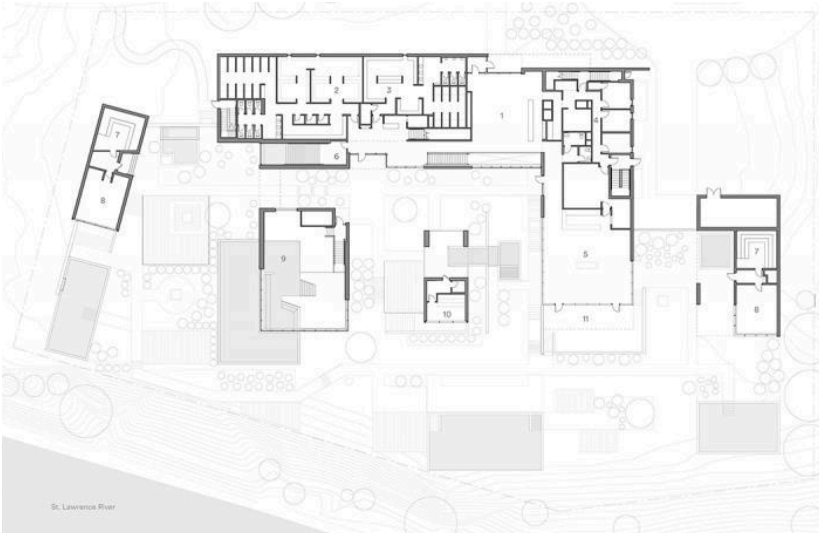

Fig. 62. *Strøm Spa Vieux-Québec* ground floor plan

The aim of the chosen materials was to capture the feeling of harbour landscapes and the maritime spirit of the site. These materials include concrete, greyish wood, black metal, and Corten steel, which represent the historical context. For the architects, it was important to connect the contemporary design with the industrial and maritime heritage of the location (*LEMAYMICHAUD Architecture Design,* 2019).

Fig. 63. *Strøm Spa Vieux-Québec* interior

2.7.5. Hedon Spa

Fig. 64. *Hedon Spa* exterior

The original neo-classical mud baths in Pärnu, Estonia, were completed in 1927 and have since become a landmark, situated by the sea and facing the city. The aim of the project was to transform the historic mud baths building into a modern spa. Designed by *Allianss Arhitektid OÜ* in 2014, the extension features an addition of a hotel and restaurant along the beach promenade (*Allianss Arhitektid OÜ,* 2015).

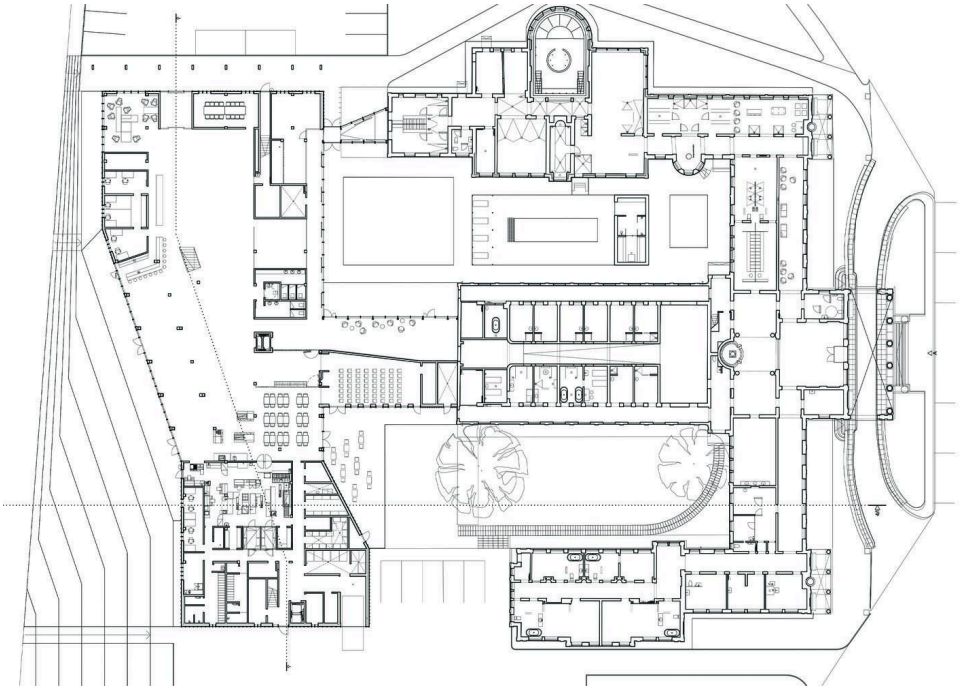

Fig. 65. *Hedon Spa* ground floor plan

The project intended to blend the existing historical structure with a contemporary extension, creating an unified block. The extension, designed in a modern style, aimed to enhance the surrounding park landscape and revitalise the adjacent area, contributing to the vitality to an area that was neglected or underutilised (*Allianss Arhitektid OÜ,* 2015).

Fig. 66. *Hedon Spa* section and elevation of the old building

The restoration of the historical mud baths building focused on preserving, restoring, and enhancing its significant spaces and details. New functions, including modern wellness services, have been incorporated into the historical spaces, creating a balance between old and new elements. The functions include day and quiet spas, pools, body treatment rooms, a health centre, and four hotel rooms.

The new building is connected to the old building but is visually separated from it by design choices, corresponding to the planning proposals from the 1930s. These proposals planned the further extension of the mud baths and creating courtyards. The three-floor compact extension features a restaurant, reception area, and conference room on the ground floor, and 68 hotel rooms on the first and second floors. The hotel rooms were designed to be spacious and include balconies (*Allianss Arhitektid OÜ,* 2015).

Fig. 67. a) The old mud baths' building; b) The contemporary extension of *Hedon Spa*

The extension features an open ground floor painted with dark colours and two private floors housing hotel rooms featuring light colours. This design choice contributes to the building's visual appeal and character. Covered balconies on the extension are designed to block sunlight during the summer. The balconies not only enhance the comfort but also contribute to reducing cooling costs and sustainability. This is also achieved with the vertical aluminium slats on the balconies, which provide privacy for the visitors and create a folded surface. On the other hand, the interior features preserved materials and other contemporary finishes such as concrete, light and dark-painted plaster, and wall panels (*Allianss Arhitektid OÜ,* 2015).

Fig. 68. a) Preserved mud baths' historical interior; b) Preserved mud baths' historical interior; c) Interior of the new *Hedon Spa* building

2.8. Conclusions of the research

To sum up, the research reveals that recreation and recreational architecture have undergone significant evolution over time, adapting to cultural contexts, societal needs, and the environment. Additionally, exploration of current recreational architecture reveals a broad variety, from purpose-built indoor and outdoor areas to adaptive reuse of existing structures, illustrating the diverse character of contemporary recreational spaces. Meanwhile, with their unique landscapes, the Baltic and North Sea and the Curonian Spit areas contribute to this evolution and diversity by offering settings for recreational activities. The emergence of new typologies, such as the discussed marine therapy centre, demonstrates the variety of recreational architecture and the ongoing innovations, reflecting a changing approach towards wellness and its facilities.

The analysed projects showcase a commitment to site-sensitive design, thoughtful plan arrangements, and a harmonious use of materials to create immersive wellness spaces. The analysis reveals several design principles related to the facility design, which should be taken into consideration during the design process:

a) The projects consider unique characteristics of the location and aim to seamlessly integrate the buildings and spaces into their natural and urban surroundings. This is achieved with the use of local features, such as landscape or historical context, which are respected and complemented rather than competed with.
b) The integration of surroundings and the building is not only visual. The strategic placement of the volumes, creation of panoramic views, and the connection of indoor and outdoor spaces enhance the well-being of visitors.
c) The layouts of the buildings correspond to the specific functions of the facilities. The buildings vary in functions, not only including wellness facilities such as spas, pools, or gyms but also adding accommodation and other recreational rooms, such as relaxation zones, conference rooms, libraries, and restaurants. The rooms are placed in a thoughtful way to promote relaxation and movement, making it a flexible and multifunctional facility.
d) A shared design principle across the discussed projects is the use of natural and tactile materials that create a seamless connection between indoor and outdoor spaces. The materials include wood, stone, metal, and concrete textures, creating an organic and inviting atmosphere and contributing to the aesthetic look of the building.
e) Interior and exterior details are carefully selected to enhance the character of the design and promote sustainability, comfort, and sensory experiences.

f) The harmony between the old and new is visible in several projects, maintaining the authenticity of the site. For example, *Lanserhof Sylt Health Resort* interprets the local architecture, creating a contemporary design, while *Hedon Spa* demonstrates this relationship through a subtle but thoughtful contrast between the historic and modern design.

3. Site analysis

3.1. The territory of the project

The plot is located in the Curonian Spit, in the city of Neringa, about 1,5 kilometres west from Nida centre. The plot is situated in natural surroundings between the central Baltic Sea beach of Nida and the regional road Nida-Smiltynė.

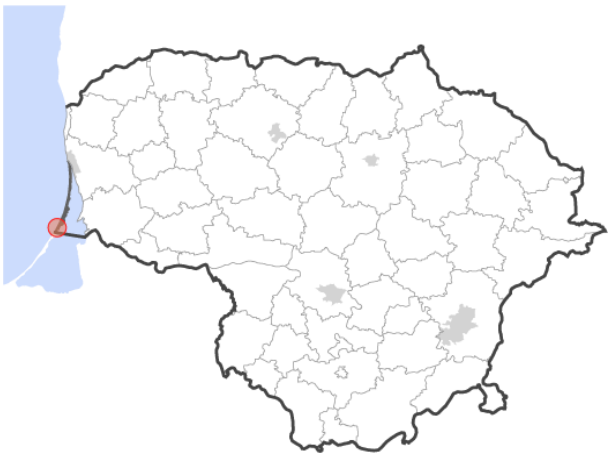

Fig. 69. Plot location in Lithuanian context

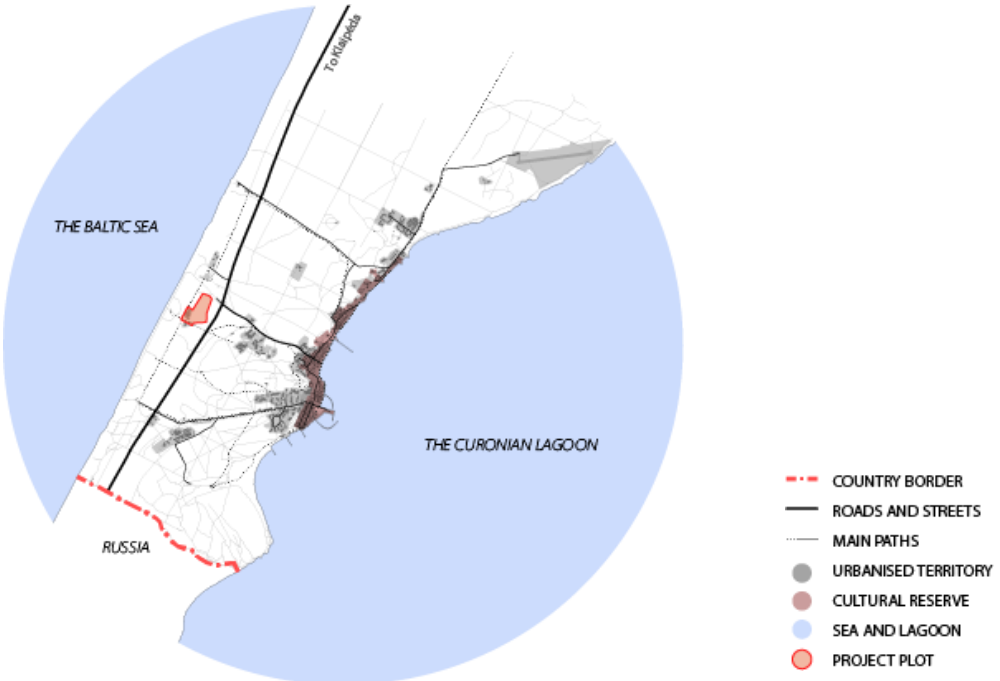

Fig. 70. Plot location in Nida context

The plot occupies about 6 hectares. The majority of the territory is not urbanised, except for the existing unfinished and abandoned building, which was built during the Soviet years and was supposed to house a canteen. Nowadays, it is used as an artist residence and exposition space named *Meno prieplauka*. The building does not have heritage protection status.

Fig. 71. *Meno prieplauka* abandoned building

Fig. 72. *Meno prieplauka* abandoned building

3.2. Zoning

According to the General Plan of Neringa (*Neringos savivaldybės teritorijos ir jos dalių bendrasis planas*, 2023), the site is surrounded by three different recreational zones. The site mostly borders and partly falls into forest parks of intensive and extensive use, having the priority of recreational development for tourism. Another close recreational zone is an equipped beach zone, having developed infrastructure for beach activities, including a rescue station, changing cabins, and pavilions for commercial activities.

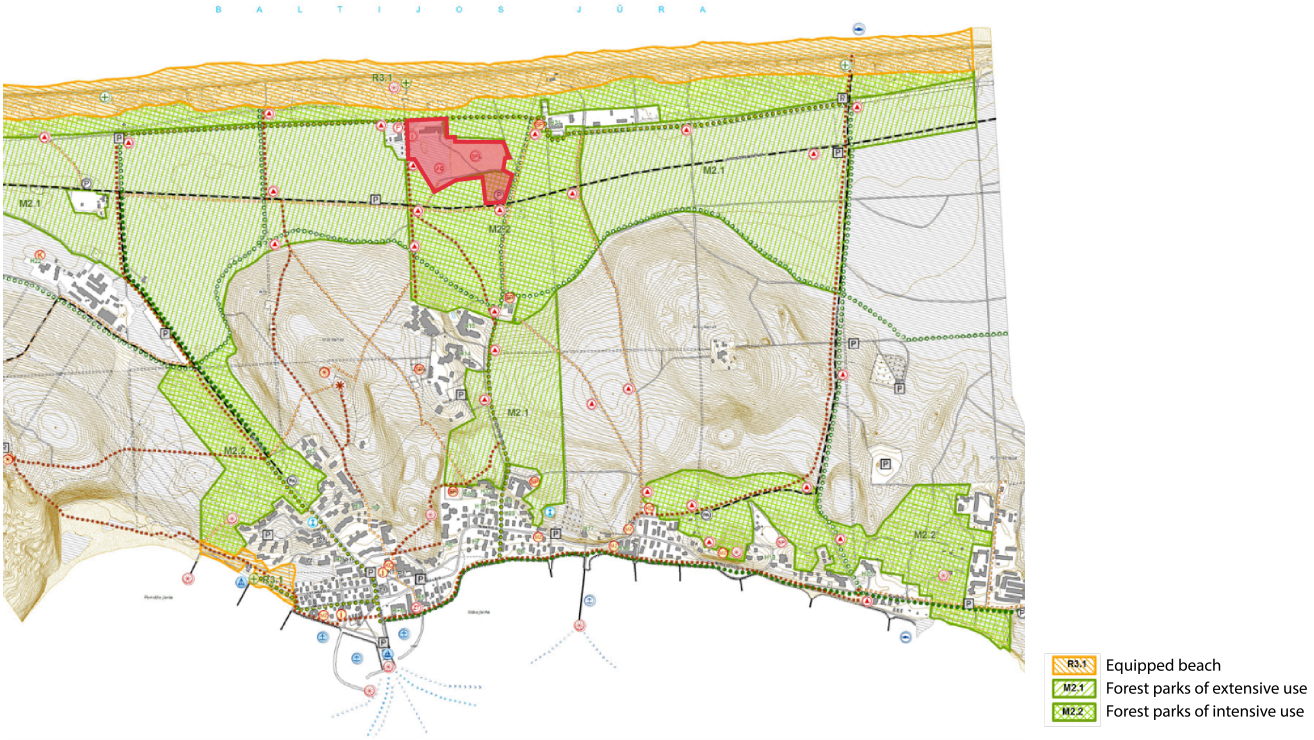

Fig. 73. *Neringos savivaldybės teritorijos ir jos dalių bendrasis planas. Nidos rekreacinė ir socialinė-ekonominė infrastruktūra.*

The general plan designates the plot as a functional zone for recreational use. The plot is further divided into a zone for the construction of long-term leisure buildings (A) and a zone for the construction of short-term leisure buildings (B). The detailed plan of the territory (*Nidos pagrindinio pajūrio aptarnavimo centro teritorijos bei jos artimos aplinkos detalusis planas*, 2014) suggests that the zone A for long-term buildings should be dedicated for the construction of the Marine Therapy Centre while the zone B for short-term buildings could be used for the development of sports fields, courts, and their infrastructure. Additionally, the built-up density in zone A should be 20 % and only 1 % in zone B. Finally, a part of the plot is dedicated to an engineering infrastructure zone where car parking lots and driveways could appear.

Other surrounding functional zones include a zone of objects for commercial purposes, which already has several commercial buildings established, including restaurant and commercial pavilions. This commercial zone is defined as the main service centre of Nida seaside. Both zones, commercial and recreational, are surrounded by recreational forest plots.

Fig. 74. Excerpt from *Neringos savivaldybės teritorijos ir jos dalių bendrasis planas. Nidos urbanistinė struktūra ir reglamentai*.

3.3. Protection status

The plot is a part of Curonian Spit National Park (Kuršių nerijos nacionalinis parkas), which has many natural and cultural values, including dunes, flora, fauna, old fishermen villages and homesteads.

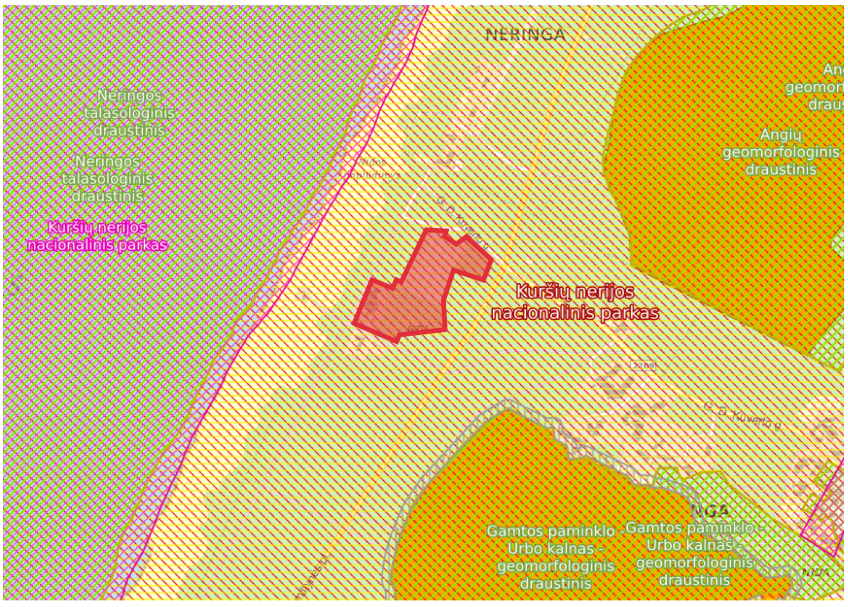

Fig. 75. Excerpt from *LR saugomų teritorijų valstybės kadastras*

3.4. Natural elements

3.4.1. Greenery

The site consists of natural elements - pine forest fully surrounds the site, occupying a majority of the plot and extending towards the dunes and the sea. Additionally, the zone B of the site is mainly an open area, having a large sand field and a meadow.

3.4.2. Terrain

Being located on the sea sand plain, the plot has a flat surface, except several small sand driftings which would not have any influence during the site development. The terrain changes outside the plot towards the sea, where the foredune ridge rises up to 12 metres above the sea level.

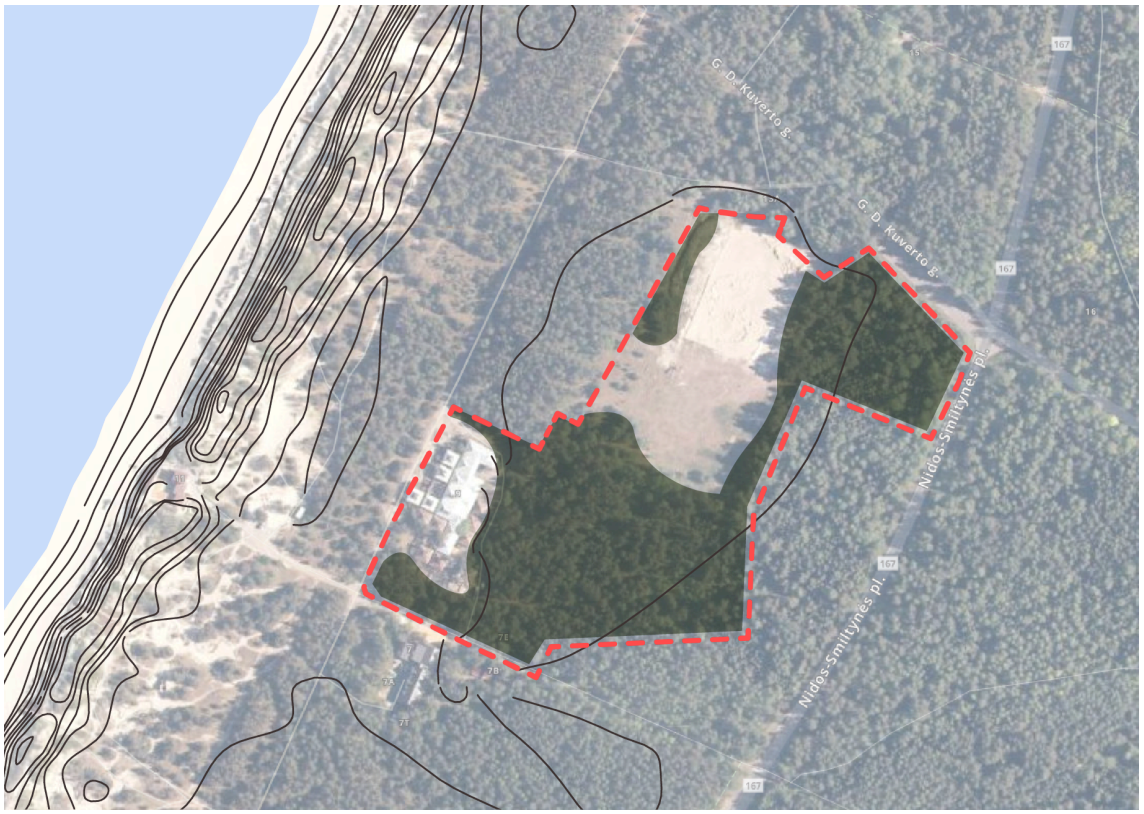

Fig. 76. Natural elements of the plot and the surroundings

3.5. Artificial elements

3.5.1. Transportation and connections

The plot borders the main road of Curonian Spit (Nida-Smiltynė). The site is connected to Nida by a D-category street (G. D. Kuverto Street), which has a bicycle path leading to Nida and the regional bicycle path.

The bicycle and pedestrian path is developed around the plot, with bicycle and pedestrian paths surrounding the site, connecting it to the beach paths. The main path on the southern side leads to the beach to the west and Nida and the Great Ridge to the east.

Fig. 77. Road and path connections

3.5.2. Communications and engineering

Although not developed on the plot, the communication networks, including electricity, water supply, and sewage, can be accessed and connected from the surroundings and the city's networks.

3.5.3. Surrounding built-up

Existing buildings are a part of the main service centre of Nida seaside. The commercial pavilions, representing the local architectural style, were demolished in January, 2024.

Fig. 78. a) Former pavilions; b) Restaurant building along the sea path

3.6. Photos of the site

The situation was analysed on the site to understand its character more, define existing urban and natural elements, and their condition, as well. The site has a seaside character, with sandy soil, pine trees, and beach services such as pavilions and summer cafes. Currently, the plot is covered by a forest, and only open areas are on the site of the stadium, the meadow, and around the abandoned building.

Fig. 79. *Meno prieplauka* abandoned building


Fig. 80. a) Main pedestrian path - view towards east;
b) Pedestrian and bicycle path on the western side


Fig. 81. a) Path leading to the beach; b) Meadow and forest - view towards east


Fig. 82. a) Stadium and forest - view towards north;
b) Stadium, meadow, and forest - view towards south-west

There is a paved parking lot, accessible from the main road and G. D. Kuverto street, and a paved pedestrian and bicycle path on the north of the plot, leading to the seaside. The parking lot is expected to be expanded to accommodate the visitors of the Marine Therapy Centre. The plot from the north can be entered through a clearing.

Fig. 83. a) Parking lot on the northern side of the plot; b) Path on the northern side

Fig. 84. Current entrance to the plot from the north

3.7. Conclusion of the site analysis

The site is perfect for the development of the Marine Therapy Centre due to its proximity to natural elements, such as the sea and pine forests, which contribute to the aesthetics of the site. Therefore, the building's architecture should complement the natural surroundings while taking advantage of the environment and integrating into it as well. Besides, the environmental aspects can help to fulfil its purpose as a wellness facility by providing visitors with a therapeutic and visually appealing experience.

On the other hand, the recreational use of the site requires creating a balance between human activity and a sensitive environment. Implementing sustainable design practices can reduce the threat of overdevelopment and preserve its natural integrity. This guarantees that the site keeps its attractiveness, defined by the pine forest and coastal scenery, while also meeting the demands of tourists and locals.

4. Project explanatory part

Fig. 85. Building visualisation

4.1. Project data

The project plot is located on Nidos-Smiltynės pl. in Nida. The plot is situated on the west coast of the Curonian Spit, next to the central beach of Nida. The surroundings include commercial buildings, which border the plot from the south. Further north, border guard facilities are located. The majority of the plot and its surroundings are occupied by pine forest, while the remaining areas consist of sand dunes and meadows. The plot itself does not have expressive terrain; however, the sand dunes obstruct the view of the sea.

The Marine Therapy Centre is designed on the plot. It is a wellness facility that includes spaces for marine and physical therapy, spa, and bathing purposes. The social functions of the building consist of a cafeteria, conference auditorium, work and relaxation indoor and outdoor spaces. Auxiliary functions include staff and technical rooms.

Project data:

Total plot area: 62287 m^2

Area of the plot for the recreational building: 32339 m^2

Total floor area: 3822 m^2

Total built-up area: 4436 m^2

Projected plot built-up density: 13,7 %

Projected plot built-up intensity: 0,06

4.2. Plan concept

Given that the object is designed within the distinctive natural environment, the inspiration for the architecture derives from natural motifs. One of the considered elements of the surroundings and functional purpose of the building is water, more precisely water bubbles forming sea foam. Although bubbles represent nature, they still have connection principles related to geometrical patterns. Therefore, their shapes are perfect for architectural expression, which is inseparable from geometry.

The shape of bubble formation influences the planar arrangement of the building. The larger bubbles represent the main functions, while smaller bubbles with other functions surround and complement the structure. The functions connect into one volume, having an organised and geometrical outline. As a result, the building acquires its shape by placing the main functions as the main volumes and connecting them with secondary spaces. The shape creates crevices which surround the trees and provide space for outdoor functions.

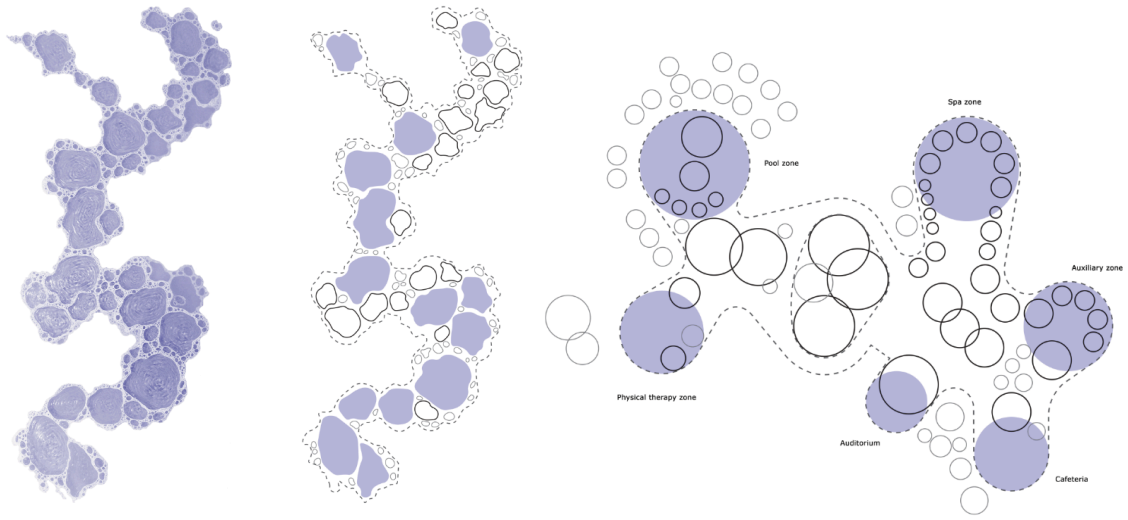

Fig. 86. Concept scheme of the building's geometry

4.3. Volumetric concept

For volumetric expression, frozen methane bubbles were chosen as a close motif to the water theme. These bubbles form when methane gas, produced by decaying organic matter, creates bubbles in freezing temperatures, forming natural sculptures. Therefore, the layers and curved shapes are transferred onto the shape of the building, dividing the volume into horizontal planes with low-profile dome roofs.

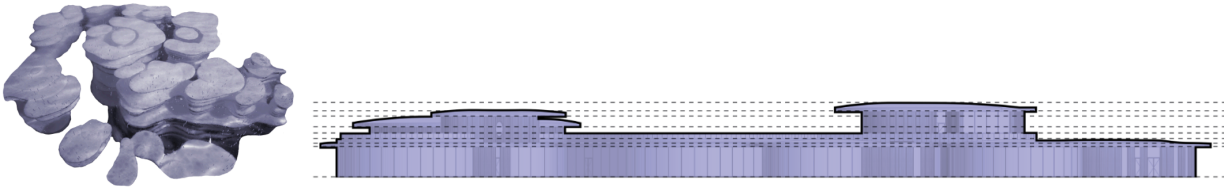

Fig. 87. Concept scheme of volumetric idea

4.4. Plot design solutions

Fig. 88. Plot plan

Suggestions for the plot zoning from the detailed plan were considered when designing. The plot is divided into three zones: marine therapy centre zone, sports field, and car parking.

Car parking is designed in the north side with a connection to G.D. Kuverto Street. The parking lot has 67 parking spaces, of which four are dedicated to the handicapped, and five spaces are for buses. The parking space is limited due to the forest covering the site.

The three-metre-wide main path from the parking lot is used by pedestrians, cyclists, and occasional service transport for reaching the building. Other paths connect the building with the forest and existing pedestrian paths from all sides, while the main entrance is approached from the south. The path structure of the plot is designed to have as minimal impact on the site as possible, connecting the building with the outdoor spaces. The paths are placed in free form, reminiscent of organic placement of dune paths.

Due to free space limitations, the outdoor functions surround the Marine Therapy Centre, following the contour of the building. Such spaces include outdoor pool and sunbathing zones, sports court, outdoor baths, terraces, and the tranquil inner courtyard. Further away from the building, there is an existing sandy football field. To expand the sports zone, new sports courts were added next to the field.

4.5. Plan design solutions

The first floor is dedicated to the main wellness and social functions and is divided into functional blocks, which are connected into one structure. The blocks comprise pool zone, physical therapy zone, spa zone, auditorium, cafeteria, and auxiliary zone.

The building is entered from the south side, where visitors come to the lobby, from which they can reach the reception, cloakroom, auditorium, cafeteria, and inner courtyard. The lobby is also connected to the visitors' and staff's corridors, changing rooms, and bathrooms.

After changing, the visitors have several options. One of them is the pool zone, which has the main swimming pool, extending outdoors, and a smaller and shallower jet pool. Other rooms include three types of saunas and showers. There is a space around the swimming pool for chaise longues. Additionally, the pool zone is inseparable from outdoors, which can be enjoyed by the visitors on warm days.

The physical therapy zone consists of a gym and a smaller room for group or private training. This room can be fully opened from one side to extend the gym and closed when needed. As it is in the pool zone, the gym has an extension outside. The multifunctional sports court can be used for various forms of training, such as yoga classes or sports games.

Spa zone is dedicated to marine therapy treatments. This zone has several rooms with private sea water and mud baths, as well as massage and therapy rooms which may be utilised for a variety of treatments, for example, salt therapy or aromatherapy. Also, there are four outdoor baths provided to enjoy the treatments outdoors.

The social zone consists of a cafeteria which is connected to the main premises and has the possibility to be adapted as a separate establishment. It has a panoramic view towards the forest and extends to the outdoor terrace. The stepped auditorium next to the cafeteria can accommodate conferences, and events, or can function as a relaxation space, having a direct view to the surroundings.

Auxiliary zone includes staff-only premises, having a separate entrance. It has a preparation room which can be used as storage for treatment products or work room, staff changing room with bathrooms, staff room with kitchen, and office rooms for administration. The zone also has technical and laundry facilities. The technical room has a separate entrance.

The heart of the building is the tranquil inner courtyard with pine trees inside. The courtyard increases the therapeutic value of the building by providing a natural shelter from the winds and distractions.

Fig. 89. First floor plan

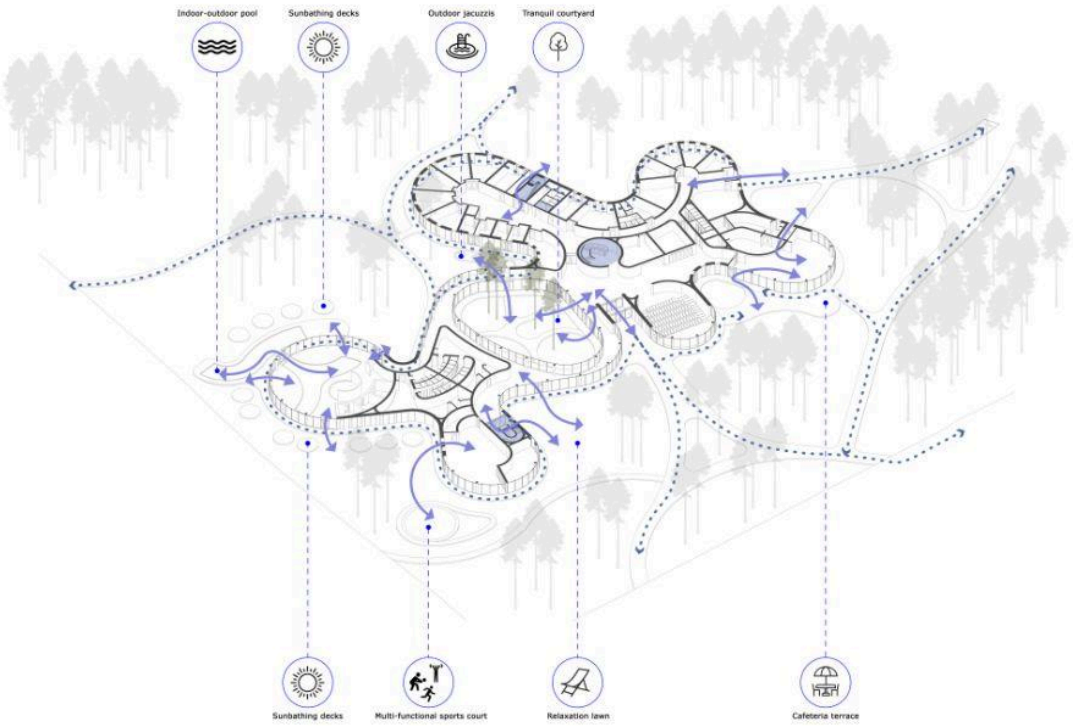

Fig. 90. First floor indoor-outdoor connections

The second floor has two separate volumes which are dedicated to social functions. The first and smallest volume can be used as a relaxation or therapy room, while the second volume has more functions. It includes the main relaxation space, with furniture for laying down or sitting, and a kitchenette for a home-like feel. Other rooms include a transformable working space, which can be adapted as a reading or educational space. The volumes are reached via the staircases, including the main staircase in the lobby. The spaces open up towards the scenic views of the surroundings. Additionally, the space extension to the two rooftop terraces and a connecting walkway increases the therapeutic value, creating space for sunbathing, enjoying the air, and observation.

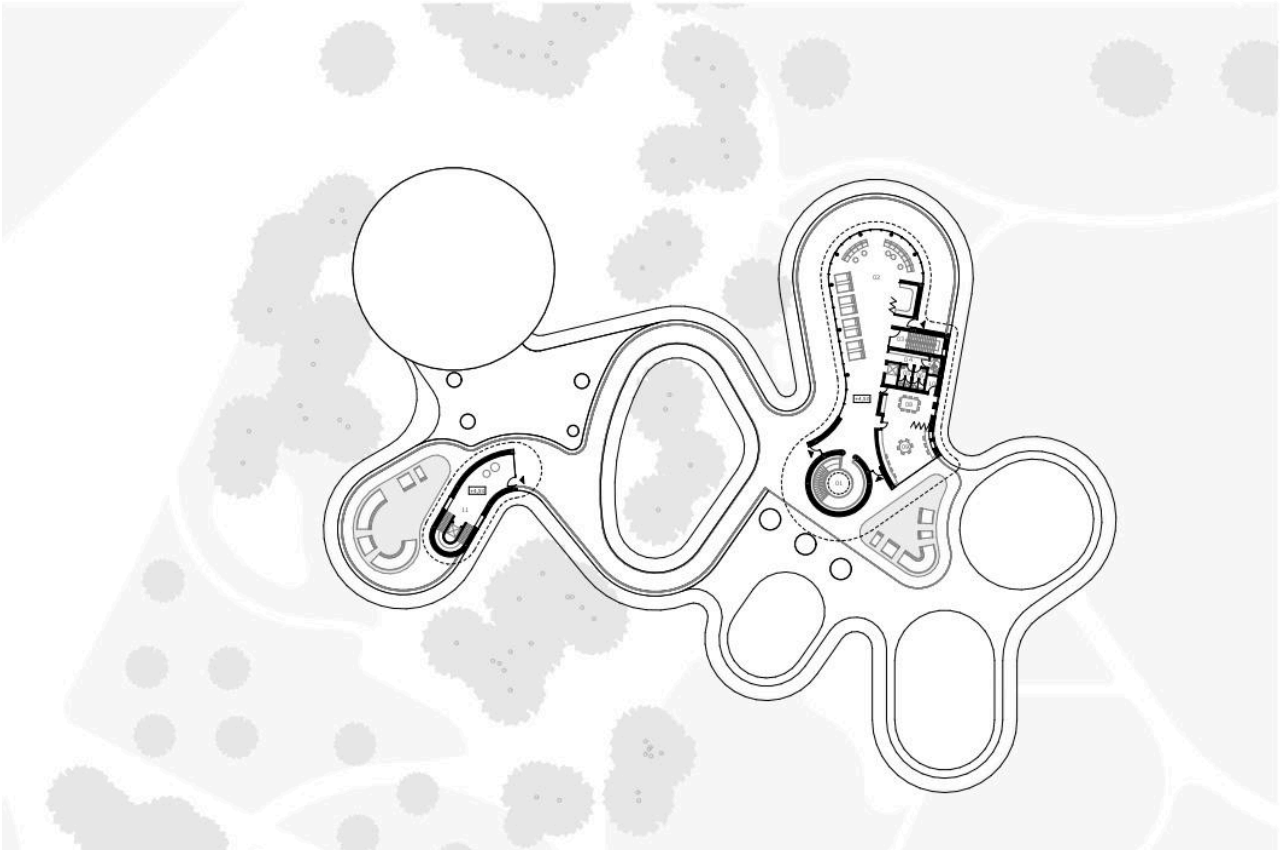

Fig. 91. Second floor plan

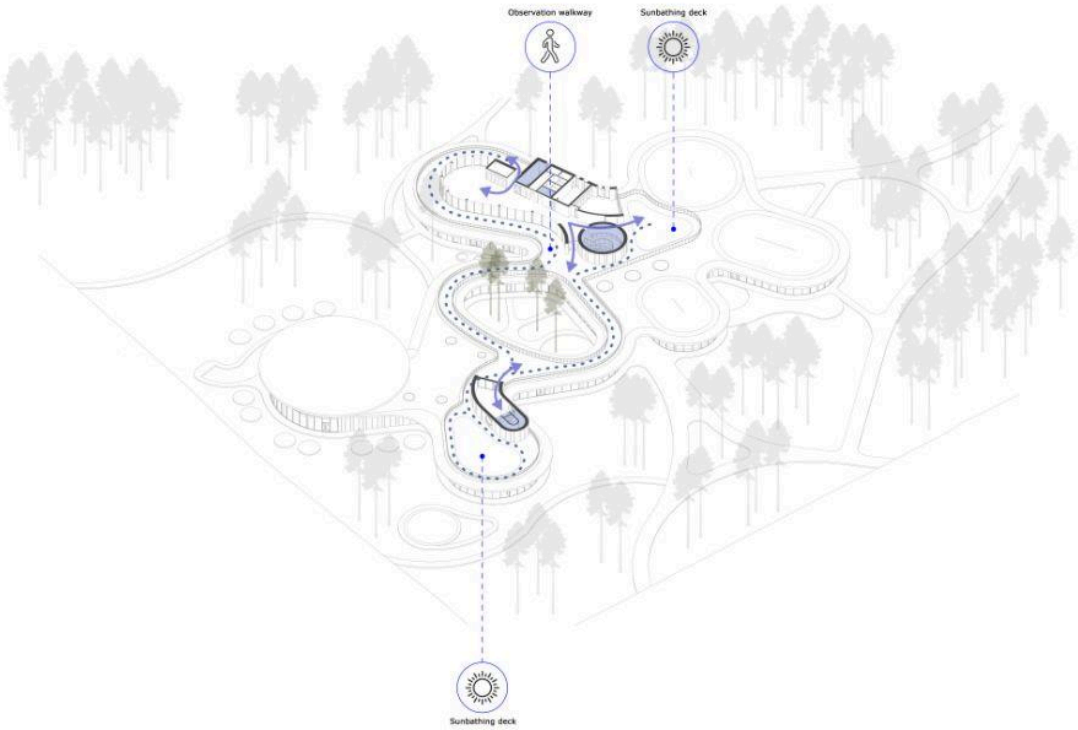

Fig. 92. Second floor indoor-outdoor connections

4.6. Construction solutions

Since the shape of the building is organic, several construction systems are applied. One of them is a common system of load-bearing walls, columns, beams, and cast-in-place concrete floors. These elements of construction are used in the majority of the building to create flexible forms along the curved walls and wall openings.

The most complex parts of the building are the ends of the volumes where the functions require open spaces, not interrupted by structural elements. These spaces include the pool and physical therapy zones, auditorium, cafeteria, and second-floor relaxation rooms. One of the solutions to eliminate supports in these spaces was suggested by *SANAA* for the construction of *Grace Farms*. The building features spaces where the roof construction was created with the placement of columns along the room perimeter, adding the steel beams on top which support custom long-span glue-laminated timber beams. The beams are strengthened with minimalist steel truss hardware.

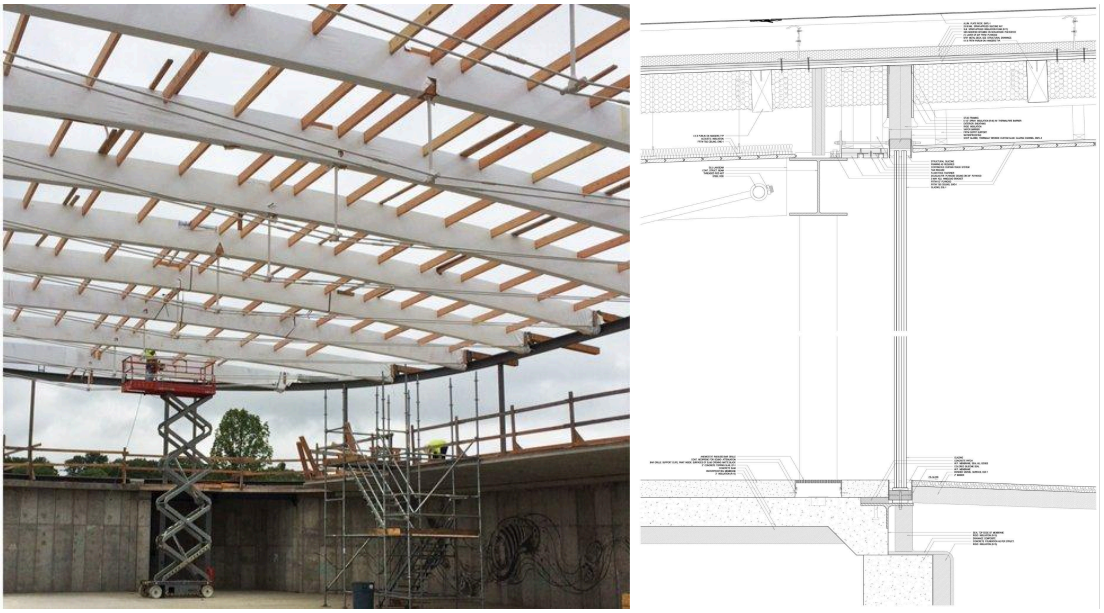

Fig. 93. a) Construction system; b) Detail of the construction of *Grace Farms*

The suggested structural roof system would not only create open spaces but also help shape the low-profile dome roofs.

4.7. Material solutions

The idea of the building's integration into the environment is implemented in the facade treatments. For the exterior wall cladding, various width flat and curved fibre cement panels with wood imitation are used. These panels were chosen for their durability, moisture and salt resistance, and low maintenance, making them ideal for the seaside environment. Additionally, the wood imitation adds aesthetic qualities, including blending the building into the pine tree forest and reflecting the wooden architecture of Curonian Spit. A series of full-height curtain walls, windows, and doors help to blend the building into its surroundings more by bringing natural light in and opening the spaces to the views.

Fig. 94. Outdoor pool zone visualisation

The facade composition features a rhythm of similar width curtain wall panels, windows, and doors, while wall panels are placed in a rather random pattern as a contrast to glass surfaces. Furthermore, the vertical lines of the facade mimic the verticality of the forest and create a contrast to the elongated horizontal planes of the volumes.

Fig. 95. West and east facades

The interior seeks further integration into the environment through glazing, natural materials, and a soft colour scheme. The materials include concrete walls and floors, wooden panelling, stone cladding, and wooden beams. The simplicity of the interior was chosen to enhance the therapeutic experience by eliminating visual clutter, implementing clean lines, and redirecting the view towards nature, allowing visitors to focus on relaxation.

Fig. 96. a) Pool visualisation; b) Lobby visualisation

Fig. 97. Tranquil inner courtyard visualisation

Fig. 98. Second floor relaxation room visualisation

4.8. Engineering solutions

a) **Insolation.** Due to the relatively low amount of sunshine hours in Lithuania, especially in winter, the building is strategically placed to maximise natural light intake. The longer facade faces the southern direction, having large glazings to enhance natural lighting and passive solar heating. Other building volumes are extended along the south-north axis to provide morning and evening sunshine for the eastern and western facades. Additionally, the inner courtyard acts as another source of light, resulting in an airy interior. The arrangement increases energy efficiency by lowering the demand for artificial heating and lighting in winter, while raising the comfort of the visitors. During the summer to avoid overheating, electrochromic glass windows can be used. The main purpose of electrochromic glass is to manage the daylight, glare and heat gain by controlling the tint level of the glass by applying electric voltage. Electrochromic windows can block up to 98% of the sunlight, reducing the demand for artificial cooling and saving energy and costs.

Fig. 99. Example of electrochromic glass window

b) **Water collection.** The sloped shapes, besides the aesthetic qualities, also allow the rainwater to gather. Water collection is achieved by the roof slopes, which guide precipitation towards collection spots, from where the water goes to the underground storage tanks. The demand on municipal water resources can be decreased by using the rainwater for landscaping or toilet flushing.

c) Communications. The building has full possibilities to connect to the city's networks, including electricity, gas, heating, water, and sewage. However, the building can integrate renewable energy technologies to improve sustainability and reduce dependency on the city. The installation of solar panels on the roof and geothermal heating pumps lowers the building's carbon footprint and enhances energy efficiency. These sustainable energy sources are reliable and can reduce the operational costs.

4.9. Accessibility and safety solutions

The building aims to accommodate various types of visitors, including children and the handicapped. Therefore, the building features single-level floors, thoughtful and predictable spaces. It has three staircases and two elevators to reach the second floor. The corridors are at least 1500 mm wide to ensure the undisrupted flow of people. For the handicapped, each bathroom block has a handicapped WC with an adequate space of 1500 mm for wheelchair turning. The doors are 1000 mm wide and open to the outside.

The Centre was designed with the consideration for fire safety. The building has two evacuation staircases, with a stair and door width of 1200 mm. The staircases also have a safe space of 850 x 1200 mm which does not block the evacuation path and door opening. The stair slope is smaller than 1:1, the rising does not exceed 22 cm, and the going is bigger than 25 cm. Other evacuations proceed through evacuation doors which are wider than 900 mm and open in the direction of evacuation. Fire trucks can approach the building via the path leading from the car parking to the building.

4.10. Building programme

First floor:

No.	Room	Area
01	Entrance	16,00
02	Lobby	253,42
03	Staircase	45,77
04	Reception	52,96
05	Cloakroom	43,08
06	WC	4,88
07	WC	11,44
08	WC	12,18
09	Auditorium	168,90
10	Corridor	478,06
11	Staircase	20,85
12	Men's changing room	129,53
13	Women's changing room	146,20
14	Pool	367,00
15	Pool showers	15,09
16	Steam sauna	14,32
17	Steam sauna	14,32
18	Sauna	13,97
19	Gym	172,79
20	Staff room	21,01
21	Group training room	59,99
22	Hall	183,70
23	Mud baths	52,58
24	Sea water bath	12,39
25	Sea water bath	12,39
26	Sea water bath	12,39
27	Sea water bath	12,39
28	Storage	4,50
29	Massage room	33,94
30	Massage room	33,93
31	Massage room	33,93
32	Massage room	33,94
33	Massage room	33,94
34	Therapy room	31,68
35	Hallway	10,80
36	Staircase	14,76
37	Hallway	9,12
38	WC	5,34
39	WC	5,34
40	WC	3,60
41	Therapy room	26,64
42	Storage	3,37
43	Staff corridor	90,38
44	Preparation	50,49
45	Staff dressing room	26,05
46	Staff WC	13,07
47	Staff shower	5,00
48	Staff shower	3,13
49	Staff room	50,23
50	Office	26,91
51	Office	25,87
52	Office	26,91
53	Laundry and storage	25,60
54	Technical room	83,19
55	Cafeteria	245,06
56	Cafeteria staff entrance	7,11
57	Cafeteria kitchen	54,43
58	Storage	8,55
		3 374,41 m²

Second floor:

No.	Room	Area
01	Staircase	16,25
02	Relaxation room	265,96
03	Staircase	5,48
04	Hallway	9,12
05	WC	5,34
06	WC	5,34
07	WC	3,60
08	Education room	28,40
09	Reading room	54,55
10	Storage	3,38
11	Relaxation room	49,83
		447,25 m²

Roof:

West sun terrace: 133,41 m^2

East sun terrace: 103,34 m^2

Walkway: 840,57 m^2

4.11. Conclusion of the project part

After analysing the research findings, it is clear that recreational architecture, coming in a range of typologies, is essential to human life. Recreational architecture contributes to improving the overall quality of life by providing indoor and outdoor spaces that promote health, well-being, and relaxation. The designed Marine Therapy Centre in Nida illustrates the importance of thoughtful architectural design in wellness recreational facilities:

a) The natural surroundings of the Curonian Spit, which consist of pine tree forests, sand dunes, and the sea coast, were taken into consideration when designing the Centre. The close relationship of marine and built-up environments is demonstrated in the design by incorporating natural elements and their forms into architecture - a connection with nature benefits the therapeutic purpose of the facility.

b) The unique form of a building, which emerges from the geometry of water bubbles, visually represents the marine environment with the help of fluid shapes. The organic design features help arrange spaces to improve circulation, natural lighting, and spatial functionality. As a result, visitors are invited to reconnect with nature through well-designed spaces which promote a sense of harmony with the maritime landscape - e.g. inner courtyard or rooftop decks.

c) The plot's zoning into distinct parts, such as the Centre zone, sports field, or car parking, helps maximise the use of space, allowing to create specific functions for everyone's needs, such as physical or social activities, relaxation, etc. Furthermore, a clear distinction of functional zoning in the building and adjacent areas allows for the use of available space efficiently and integration of the required functions of a wellness facility. Additionally, clear zoning improves the experience of visitors by creating an efficient flow and spaces dedicated to treatments, relaxation, or social activities.

d) In addition to wellness functions, the Centre has dedicated spaces for communal interactions. With the facilities such as the auditorium, cafeteria, or outdoor spaces, locals and guests can socialise or participate in community and health promotion. Moreover, a variety of functions can attract more visitors, benefiting the Centre's and the city's economy.

e) The therapeutic purpose of the building is achieved by incorporating organic materials, such as stone, concrete, or wood, and a soothing soft colour palette in the interior and facade design. The elements of the design create a connection with the surroundings, as well as a relaxing and peaceful atmosphere. Additionally, continuous glazing and skylights let natural light in, resulting in airy and bright interior spaces.

f) Accessibility and inclusivity are must-have design features in contemporary architecture to guarantee that all visitors can fully use all facilities. The layout of the building allows handicapped individuals and people with mobility issues to move obstacle-free through wide corridors and elevators, as well as access other rooms, such as bathrooms, designed with accessibility and safety measures.

g) Innovative features, such as water harvesting or solar panels, contribute to the building's sustainability and energy efficiency. By adding environmentally-friendly components, the Center lowers its operating expenses and carbon footprint, minimising environmental impact, and prioritising the health of visitors.

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