Repurposing cultural heritage:
Design proposal for the Olympic Rowing stadium in Helsinki

Jenna Hukkinen
Degree project in Architecture
Lund University

LUND
UNIVERSITY

Course:	AAHM01: Degree Project in Architecture, LTH
Year:	2024
Title of thesis:	Repurposing cultural heritage: Design proposal for the Olympic Rowing stadium in Helsinki
Author:	Jenna Hukkinen
Thesis examinator:	Ingela Pålsson Skarin
Thesis supervisor:	Thomas Hellquist

Abstract

A network of functionalist buildings and stadiums was originally designed for the 1940 Olympic games in Helsinki. Among these structures was the Rowing Stadium, which hosted the kayaking competition in 1952 after the games were postponed due to World War II. (Malmberg et al., 2017) Today, this once-vibrant building stands empty and has been prohibited to use since the end of 2021 due to significant structural issues. (Cremin, 2022a) Furthermore, both rowing and kayaking events are held only irregularly in Helsinki, making the stadium inactive in its original intended use. This structural decay and lack of activity present an opportunity and a necessity for redevelopment.

By diving into the history and current condition of the building and its physical surroundings, and by utilizing B. Feilden's theoretical model to assess its value, this study aims to establish principles for potential redevelopment.

The goal of this thesis is to explore the potential for extending the lifespan of a modern heritage building that has outlived its initial purpose and transforming it into a culturally relevant space. Redevelopment could not only benefit the historical building, but also positively impact its surrounding environment and people. The design proposal seeks a balance between preserving historical worth while accommodating present-day necessities in the adaptive reuse of the Olympic Rowing Stadium in Helsinki.

Table of contents

Introduction

Since the prohibition of use of the Rowing Stadium in 2021 the surrounding site has been used as an outdoor summer wine bar, not including the stadium as originally intended. The building needs overall renovation and restoration for any future use. The building is protected in the current detailed plan. The city as an owner of the property is aware of its values and is in an effort to seek ways to conserve the building through finding a new owner and therefore also a potential new use. This thesis focuses on the process of value assessment instead of general restoration theory.

The aim of this study is to create a solution for the reuse of the Rowing Stadium that will continue the lifetime of the building and positively impact the area of Taka-Töölö as it is today.

Figure 1. The Rowing Stadium with the newly completed extension. Source: Saarinen, 1952

Why adaptive reuse?

Heritage structures not only provide shelter but also encapsulate the distinctive cultural and historical traits that shape communities. Prolonging their operational lifespan creates various advantages, benefiting not only the structure itself but also its environment, fostering economic and social development. (Foster, 2020)

Introducing a new function is not a new strategy, but a natural way of taking care of the built environment. It has been done throughout architectural history as a whole. (Tuppurainen & Karvinen-Jussilainen, 1984)

Research question

How can we prolong the life of a modern heritage building that no longer serves its original function?

How can adaptive reuse preserve historical worth and cultural value while accommodating present-day and changed needs?

Methods

The design proposal is a result of understanding the Rowing Stadium and its surroundings. This was based on studying their history and current status. The definition of the building's values was made by using a theoretic model by architect B. Feilden. Together with the knowledge of history, current status and the building's value, the study proposes a design that adapts the building to current and evolved needs.

Historical background

Olympic Games

Following Finland's independence and the subsequent civil war in the following year the groundwork for societal needs, industrial development, and the establishment of new residential areas could commence. (Malmberg et al., 2017) It was in this period that functionalism, a modern architectural approach from central Europe, could emerge intersected with ideas rooted in traditional classicism. Architects who had been trained in classicism during the 1920s experienced a breakthrough alongside the introduction of new architectural concepts in the early 1930s. The architecture for the 1940s Olympic Games showcased and exemplified some of these innovative functionalist ideas, reflecting the aspirations of the newly-formed nation. The architectural legacy of the Helsinki Olympic Games encompasses a meticulously preserved collection of Olympic structures, notable even on an international scale. (Malmberg et al., 2017).

Initially intended for Tokyo, the 1940 Olympic Games were instead awarded to Helsinki in 1938 after Tokyo withdrew. This decision prompted the construction of various sports facilities, commercial and service buildings, including housing for both athletes and the general public. However, with the outbreak of World War II in the spring of 1940, the Games were canceled, only to be rescheduled and hosted in Helsinki in 1952. Consequently, the projects initiated in the 1930s could be completed during this period. Different architects were tasked with creating distinct sports venues for what would become the smallest Olympic city ever. (Malmberg et al., 2017).

Figure 2. The Olympic Games were finally organized in 1952.
Source: von Bonin (1952)

These stadium structures, unified by their minimalist design and materiality, adhered to similar principles: exposed concrete structures and white-painted facades. While international sports standards governed the designs, emphasis was also placed on versatility, evident in their enduring suitability for both large-scale public events and day-to-day leisure activities. These distinct white sports edifices, situated within park settings across the city, represented some of Finland's earliest competition venues designed to meet global standards of the time while catering to the local populace. (Malmberg et al., 2017).

Figure 3. The main Olympic Stadium.
Source: Sky-Foto Möller (c. 1970-79)

The main stadium, the Olympic Stadium, designed by Yrjö Lindegren and Toivo Jäntti was completed in 1940. It anchors Eläintarha sports park in the Töölö district alongside with the closely situated Swimming Stadium (by Jorma Järvi, construction initiated in 1938 but finalized in 1952). Within their vicinity lies the Sports Hall (by Aarne Hytönen and Risto-Veikko Luukkonen). It was completed in 1935, but expanded with a second multi-purpose hall finished in 1950. Other significant venues include the contributions by Hilding Ekelund: the Rowing Stadium with an adjoining administration building and boathouse and the Velodrome (completed in 1941) located in Käpylä near the Olympic and Games Village. The Ruskeasuo Riding Hall (by Martti Välikangas, 1940) is positioned on the edge of the city's Central Park, while the Automobile Palace in Kamppi district (by student Helge Lundström, 1938) was designated for Olympic visitors' vehicles (Malmberg et al., 2017).

Notably, the construction of these structures began in 1939 for the Olympics but were first utilized in 1952, rendering them architecturally and culturally historically significant, thus warranting their preservation and protection (Cremin, 2022b).

Figure 4. The Sports Hall. Source: HKM (c. 1938)

Figure 5. The Tennis Palace. Source: HKM (c. 1938-39)

Figure 6. The Olympic swimming stadium.
Source: Veljekset Karhumäki, 1952

Today many of the buildings are still used for sports purposes, but few serve only the type of sport the building hosted during the Olympics. For example, the swimming stadium which no longer hosts international competitions, serves the general public as a popular outdoor swimming pool in the summer months. (City of Helsinki, 2023)

Since the Olympic games most of the buildings have undergone several renovations. The perhaps most famous of the buildings, the Olympic stadium, underwent a large renovation before the 1994 world championships in athletics. Before the renovation the stadium had partly been restricted for use due to the poor condition of the building's concrete structure. Other parts, such as those under the cantilevering canopy only required reinforcements, and thus some parts of the original structure remain the rest of the concrete structures were largely remade. In preparation for the 2005 world championships in athletics the building received a new canopy above the eastern side, which was purposely designed to be a complement to the original building, represent the current time and stand out from the original structure. The Olympic stadium tower has also famously been renovated several times, its exposed location has required frequent renovation. (Makkonen, 2012, 88-89).

Figure 7. Spectators at the Velodrome. Source: Sundström, 1950

The Velodrome by Hilding Ekelund is an open cycling stadium built in Helsinki 1938-1940. The building is in its functionalist design and reinforced concrete a sister building to Ekelund's Rowing Stadium. The Velodrome consists of a grandstand building with about 2000 covered seats and a cycle track surrounding an inner grass area. (Makkonen, 2012, 92-93).

Like other Olympic buildings, the Velodrome has been expanded to a wider variety of sport use than the one during the Olympics. The Velodrome quickly became too small for international level competitions, and today e.g. American football, lacrosse and land hockey is played on the lawn in the middle of the race track. (City of Helsinki, 2023)

Like the Rowing Stadium, a thorough renovation of the Velodrome was carried out in 1996-2000, in which the grandstand building and the bicycle track were renovated and an artificial turf field was constructed to replace the lawn in the middle of the structure (City of Helsinki, 2023). In the renovation, special attention was paid to ensuring that the cultural-historical value of the building would not be distorted (Makkonen, 2012, 93).

Figure 8. Hilding Ekelund. Source: MFA, n.d.

Figure 9. The Velodrome by Hilding Ekelund. Source: Havas, n.d.

Architect Hilding Ekelund

Hilding Ekelund began his career in Nordic classicism in the 1920s and 30s. He was at the forefront of functionalism's breakthrough and contributed decisive contributions to post-war architecture. In addition to his uninterrupted architectural creation, he was a critic, polemicist, enlightener and teacher of architecture.(Helander, 1997)

While he refined the works from previous architectural ideals, he was one of the first Finnish architects to turn to functionalism in the late 1920s. During his period within functionalism, his architecture consisted largely of planning churches and proposals for 1930s housing construction. He participated in the development of wooden functionalism in Finland such as summer camps for children and summer cottages. (Helander, 1997)

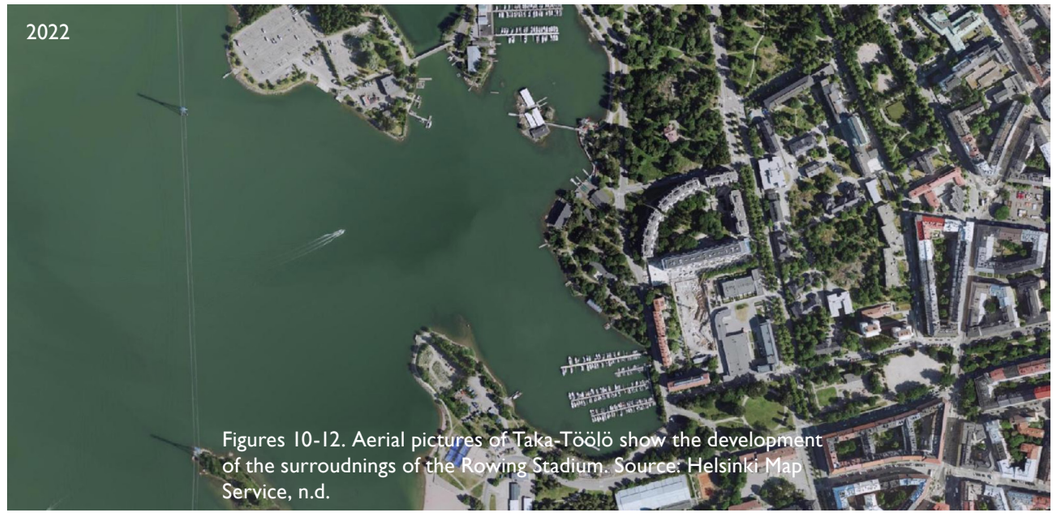
Towards the end of the 1930s, further works were realized that count among the central works of Finnish white functionalism: Ekelund's share in the series of Olympic buildings in Helsinki. The actual sports arenas, the the Rowing Stadium (1939-1940) and the Velodrome, with their carefully calculated shape and sports tracks, in a way belonged to the ideal mission of functionalism. Both the Rowing stadium and Velodrome have the same form principle and expression: airy stands and roof structures in concrete, designed with engineer Arvo Lippa. (Helander, 1997) Additionally, he designed the Olympic Village in Käpylä together with Martti Välikanka. Among Ekelund's other main projects are Kunsthalle Helsinki (Taidehalli) created together with Jarl Eklund, Töölö Church, Luther Church and the Finnish Embassy in Moscow. (Helander, 1997)

Development of the surrounding district

The Taka-Töölö district in Helsinki embodies the gradual evolution of urban planning principles, particularly Functionalism. Initially, the area adhered to the Jugendstil-like local district plan proposed by Lars Sonck and Gustaf Nyström in 1906, initiated through a town-planning competition in 1898 (Malmberg et al., 2017). During this phase, Töölö accommodated a diverse population, comprising bourgeois villas and workers' barracks, predominantly constructed as wooden buildings. The larger villas were prominently situated along the Humallahti coast in the west (Liski et al., 2018).

Subsequent developments following 1906 focused on expanding the area, enhancing its spaciousness, and integrating green spaces. In the 1916 change of the local detailed plan, architect Bertel Jung restructured the building blocks to create larger yard blocks by integrating smaller ones. This modification introduced green areas, such as playgrounds and sports fields along Topeliuksenkatu and the coastline. The green space, encompassing parks and plantings, expanded from 8.6 ha in the previous plan to 24 ha in the updated version (Liski et al., 2018).

The pivotal phase in modifying Töölö's local detailed plan occurred in the mid-1930s, coinciding with the rise of Functionalism in Finnish architecture. Detailed plans aligned with functionalistic principles gradually opened up the housing blocks. Notably, plans related to the Olympics held significant prominence during this period (Liski et al., 2018).



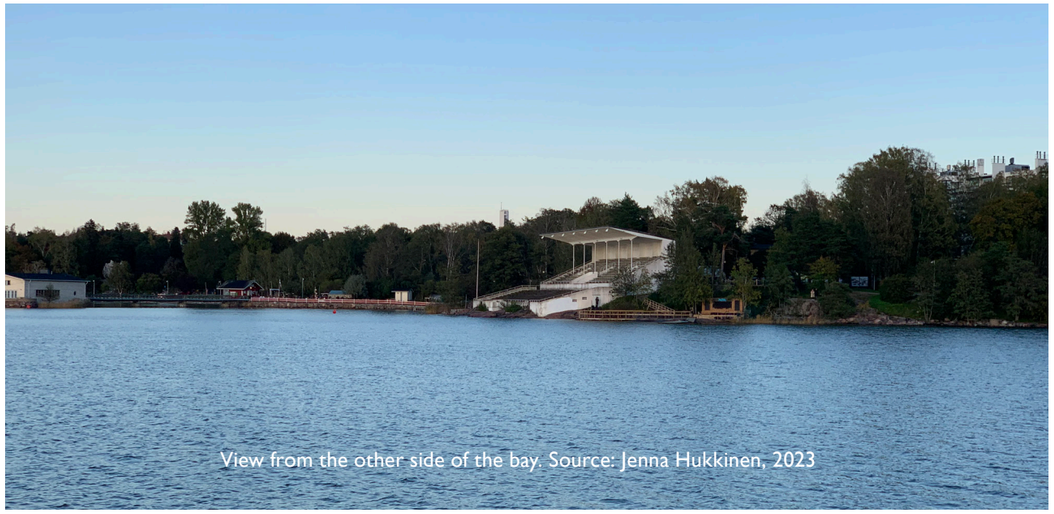
Figures 10-12. Aerial pictures of Taka-Töölö show the development of the surroudnings of the Rowing Stadium. Source: Helsinki Map Service, n.d.

The building today

The Rowing Stadium is located in Taka-Töölö district within the inner-city area of Helsinki. The building is enclosed by a fence and has a restricted visibility. It can mostly be seen from the ocean due to shielding vegetation.

It's assigned a nationally culturally significant built environment by the National Board of Antiquities (Museovirasto) (Liski et al. 2018) and has a sr-1 regulation in the detail plan. This is evaluated as a "building of architectural and cultural heritage value. The building shall not be demolished, nor shall any repairs or alterations be made thereto which would detract from the architectural or cultural heritage value or style of the building, its facades, roofs or interiors. If such measures have previously been carried out in the building, efforts should be made in connection with the repair or alteration work to restore the building in a way that is well suited to the style of the building." (Kantola, 1999)

The Rowing Stadium is owned by the city of Helsinki and rented within the city by the Culture and Leisure sector of the city of Helsinki. The building was planned to undergo a major refurbishment in 2024 but due to the estimated large costs, the Culture and Leisure sector is proposing that the building would be moved from their domain. They don't want to put more budget money on refurbishing it. (Cremin, 2022b) Now the city is investigating the option to sell the building and finding it a future purpose. (Cremin, 2022a)



View from the other side of the bay. Source: Jenna Hukkinen, 2023

Temporary constructions used by the summer wine bar.
Source: Jenna Hukkinen, 2023

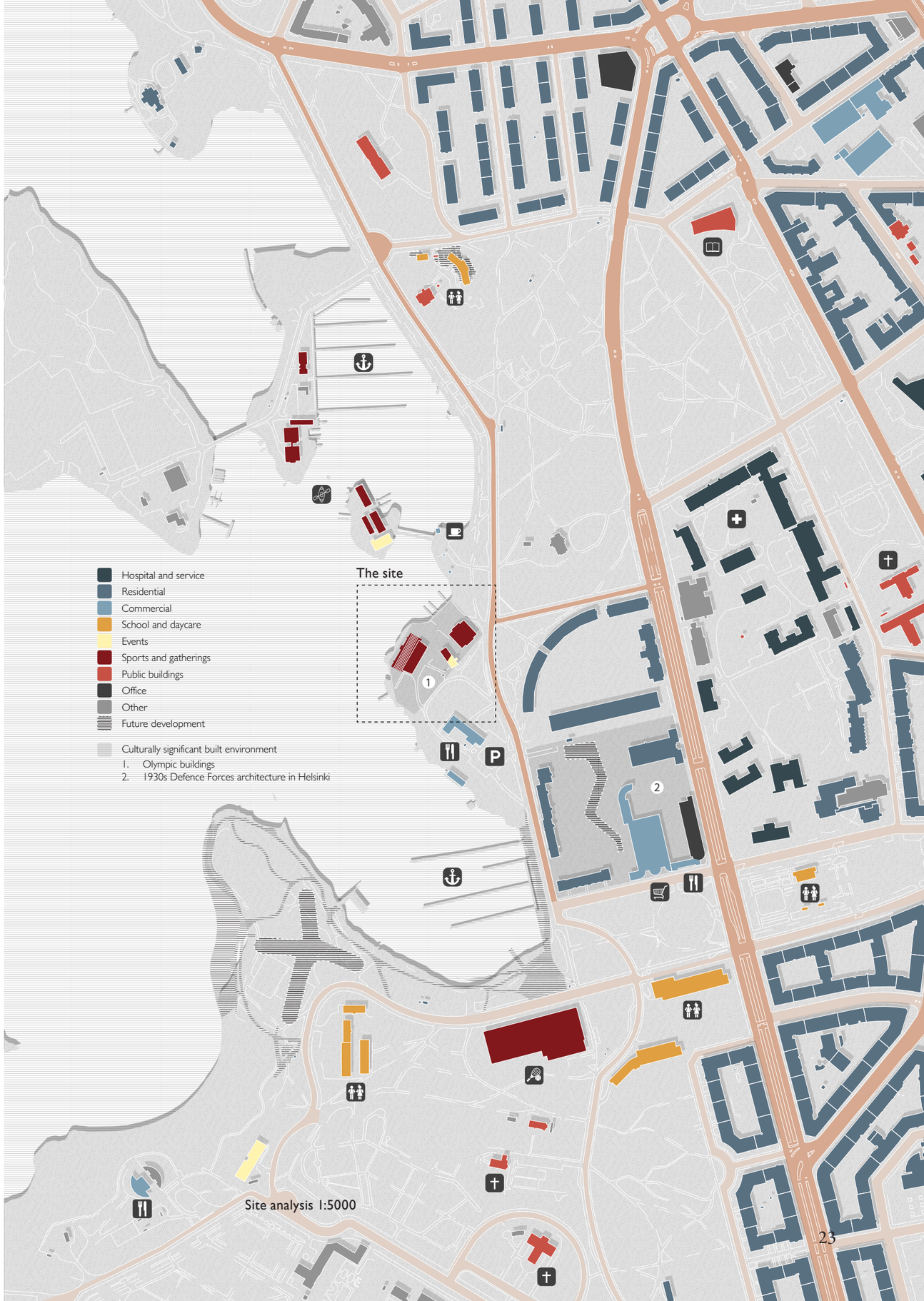
The building stands empty when not used in summer.
Source: Jenna Hukkinen, 2023

Map of Helsinki 1:100000

Site analysis

The Taka-Töölö district is unique in its character due to its large height differences. It's bordered by water to the east and west (Töölönlahti bay to the east and Seurasaarenselkä to the west) and rises from sea level to 21,3 meters at its highest. (Liski et al., 2018)

The urban fabric is dominated by the main roads running between northern Helsinki and the southern central area, such as Mannerheimintie, Mechelininkatu-Nordenskiöldinkatu, Runeberginkatu, Topeliuksenkatu and Linnankoskenkatu. Among these are also the slightly quieter Merikannontie, which runs along the western waterfront and park areas and passes the Rowing Stadium. (Liski et al., 2018)



Site analysis 1:5000

The built environment is mainly made up of the country's most coherent area of 1930s apartment blocks. The typology of residential buildings and blocks varies from closed multi-storey building blocks and large perimeter blocks, to green, functionalist open blocks of three-storey apartment buildings. Characteristic for Taka-Töölö are the institutional environments, such as hospitals and the Taivallahti car company area. Public buildings include a church, schools, the National Insurance Institution, a library, a tram depot and the Kisahalli exhibition hall. The sports buildings in the area are the Rowing Stadium and the canoe and kayak club's buildings, which are characteristic of the Taka-Töölö area and are located in a park environment. On the eastern edge of the Taka-Töölö district lies the Olympic Stadium and the Olympic swimming stadium. (Liski et al., 2018)

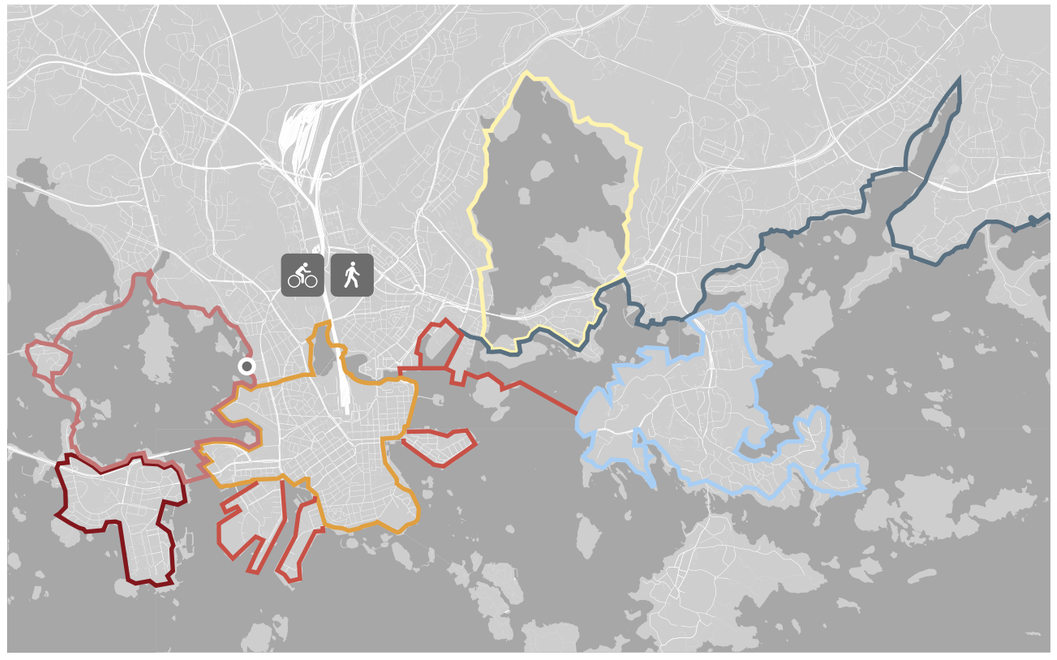
The Taka-Töölö area of residential buildings, the Rowing Stadium and Kisahalli, and the former barracks area of the Taivallahti car company represent a nationally culturally significant built environment, a title assigned by the National Board of Antiquities (Museovirasto). (Liski et al., 2018)

Future developments include a new hotel and spa, a residential building by Stephen Holl, and a daycare in the north-east edge of Sibelius park.

The Taka-Töölö district is characterized by large park areas, which are linked to systematically designed green spaces, such as the Sibelius Park and Topelius Park in the western part, the Hesperia esplanade in the southern part and the park area of Töölönlahti bay in the east. (Liski et al., 2018) In the south of Töölö in between the coastal pedestrian route and the built urban fabric is Hietaniemi cemetery, that links the pedestrian route from north to south by a pedestrian path.

The Rowing Stadium is located along a popular coastal bike and pedestrial route that forms a continuous loop around Seurasaari bay. The route is connected to a larger network of coastal routes. The bicycle route that passes the Rowing Stadium is one of the bike routs into the city center. Therefore there are a lot of commuters passing the building.

Transportation connections and walking distances around the Rowing Stadium 1:6000



Coastal pedestrian and bike road network in Helsinki 1:100000

Figure 13. People washing carpets in the Kaivopuisto park in Helsinki. Source: von Bonin, 1982

A cultural relationship with water and sauna

Finland, also known as “The land of a Thousand Lakes”, has a special relationship with its waterfront. With approximately 188 000 lakes and surrounding sea in two directions, water is present in everyday life and has affected cultural practices greatly.

The lakes and sea are used at all times of the year for recreational purposes, and provide spaces for relaxation. For urban dwellers, the city’s shoreline provides an important refuge in summer months. Helsinki has a long coast and the water creates a significant character to the city.

There are multiple spots for accessing the sea in Helsinki. Docks originally intended for washing carpets, called “Mattolaituri” docks, are popular spots for swimmers. In Töölö, these are unfortunately in bad condition and not well maintained.

In Helsinki’s most recent City Plan from 2016 (approved in 2018), the city’s seafront is highlighted as a special theme. The vision states: “In 2050, Helsinki’s seaside areas form an active part of the city and can be easily reached by city residents. The city’s seaside areas will be developed as functionally versatile

“Mattolaituri” docks

1. Taivallahti
2. Humallahti
3. Munkkiniemi
4. Lauttasaari
5. Merisatama
6. Katajanokka
7. Tervasaari
8. Sörnäisten rantatie

Outdoor swimming pools

1. Allas Sea Pool
2. Swimming stadium
3. Kumpula outdoor swimming pool

Outdoor swimming possibilities in Helsinki 1:100000

places offering opportunities for recreation, entrepreneurship and housing throughout the year.” The vision further highlights preservation of architectural heritage in proximity to the seafront, increased accessibility to the shoreline for inhabitants and visitors and the importance of the seafront for the purposes of tourism (The City of Helsinki, 2013, 55-62).

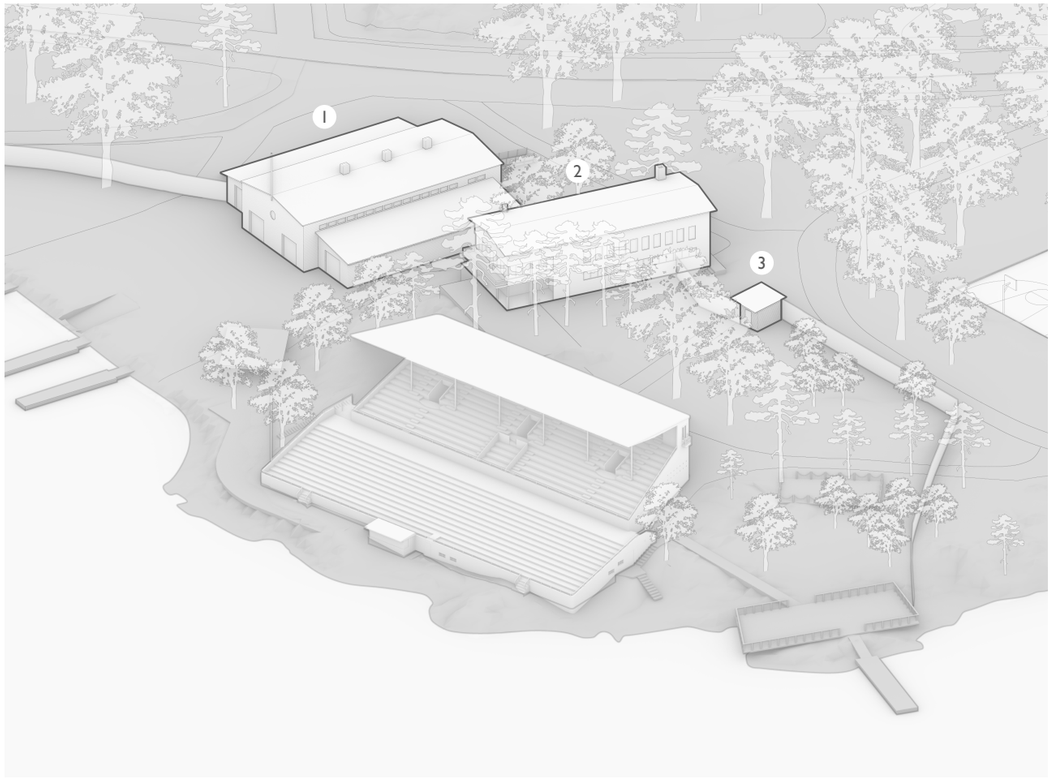
In a similar manner, the sauna plays an important role in Finnish culture. It has been viewed as an almost sacred space with multiple functions, such as maintaining cleanliness, celebration, a ritual for achieving an inner peace and a place where children used to be born. The special significance of the sauna can further be seen in Finnish songs, stories and mythology. (UNRIC, 2020)

Today, it is estimated that approximately 90% of Finns use the sauna every week. The Finnish sauna culture has been officially recognized and was added to UNESCO’s Representative List of the Intangible Cultural Heritage of Humanity in 2020. The list includes practices, knowledge and know-how, often transmitted through rituals or oral tradition, and aims to raise awareness and thereby protect cultural heritage. (UNRIC, 2020)

Visibility

The building is largely shielded by vegetation, but is mostly visible from two directions. Firstly from the popular Café Regatta often visited by tourists and secondly from a recreational path on the other side of the Taivallahti bay. From here, the building clearly defines the Taka-Töölö landscape. The cityscape can be seen as gradually densening from the sports and recreational use of islands and natural shoreline, towards busyer urban fabric with multiple-story residential buildings and hospital areas.

Images: Jenna Hukkinen, 2023



Immediate surroundings

When designing the Rowing Stadium architect Hilding Ekelund also designed a boathouse and a building for competition management, hereby called the administration building. The ground floor of the administration building has concrete training pools for rowing and canoeing and a shower room. The training pools are the only ones in the capital city area. On the second floor, in addition to the meeting rooms, there is a caretaker's quarters. (Högström, 1996) Today the second floor meeting rooms are rented out for events. The original boathouse was damaged in a fire in 1995 (Högström, 1996) and was rebuilt to continue to house rowing clubs which it still does today. Both of the original supporting buildings have gabled roofs and horizontally boarded wooden facades representing wooden functionalism. The kiosk was built in 1997 and reflects the other buildings in style. (Konsultointi KAREG Oy, 1997)

The boat house. Source: Jenna Hukkinen, 2023

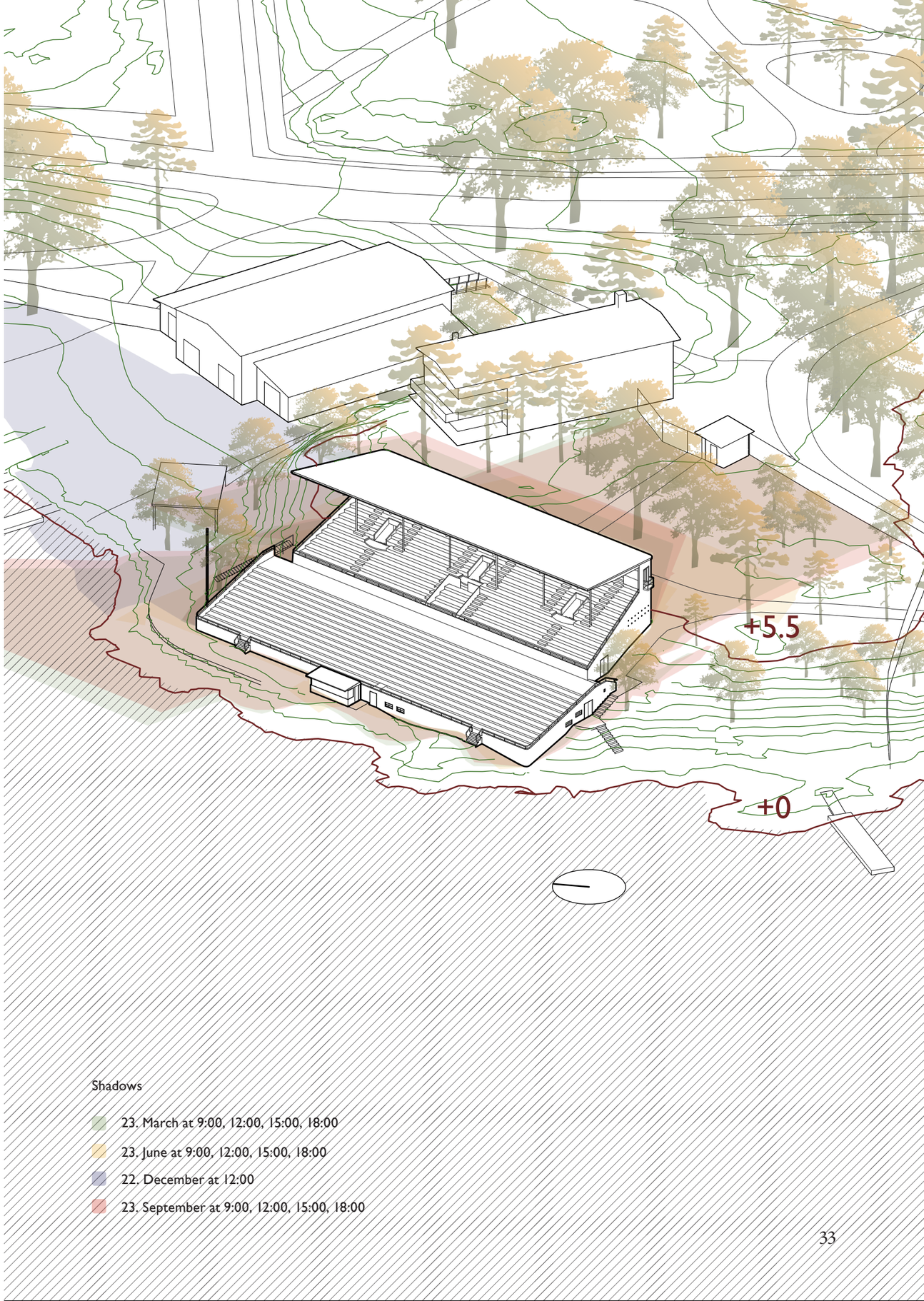
The Administration building. Source: Jenna Hukkinen, 2023

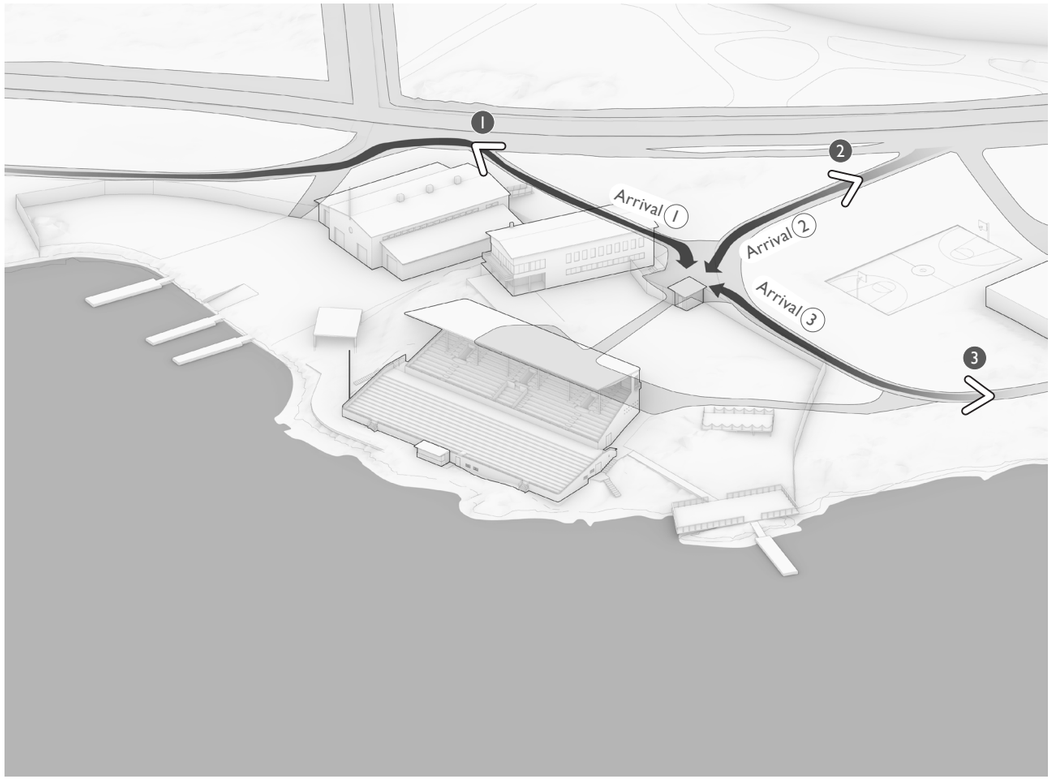
The kiosk. Source: Jenna Hukkinen, 2023

Source: Jenna Hukkinen, 2023

Physical characteristics

The Rowing Stadium is located in a park protected by the district plan. There is a large height difference. The ground rises from sea level to +5.5 meters where the building entrance is. The building is located on the edge of the landscape and opens up towards the sea. It looks over north-west and experiences a strong sunset.

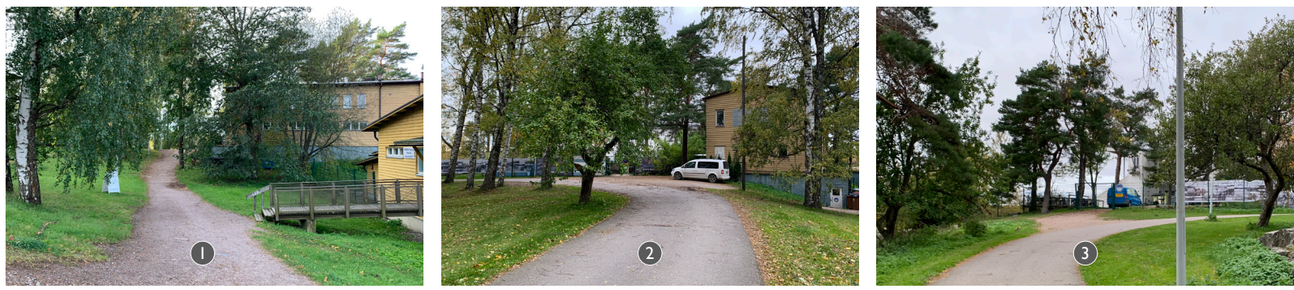




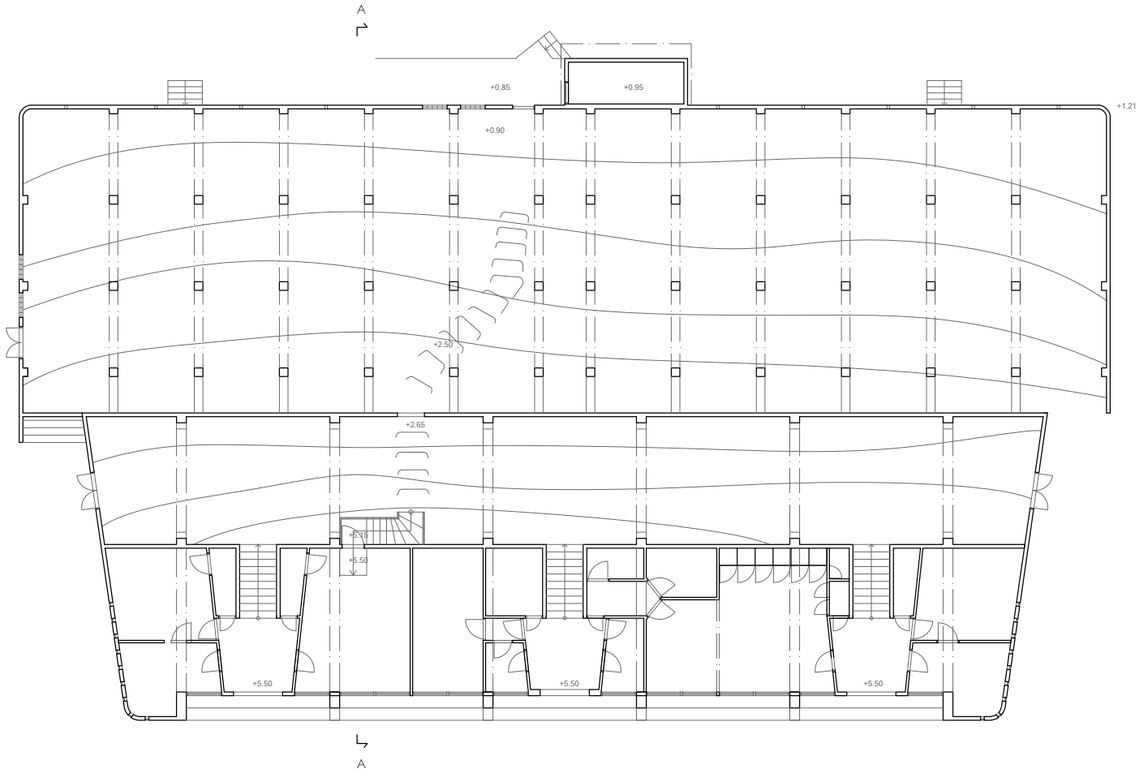
Approaching the building

The entrance to the Rowing Stadium can be accessed from three roads, two pedestrian routes and one for cars. Firstly, the building is accessed from the north of the pedestrian route, where the Regatta Café and the Sibelius park are. These spots are popular among tourists. Secondly, the building is accessed from the Merikannontie road. This is the only access for cars. Thirdly, the building is accessed from the south of the pedestrian route, which connects to the nearest tram station and the city center.

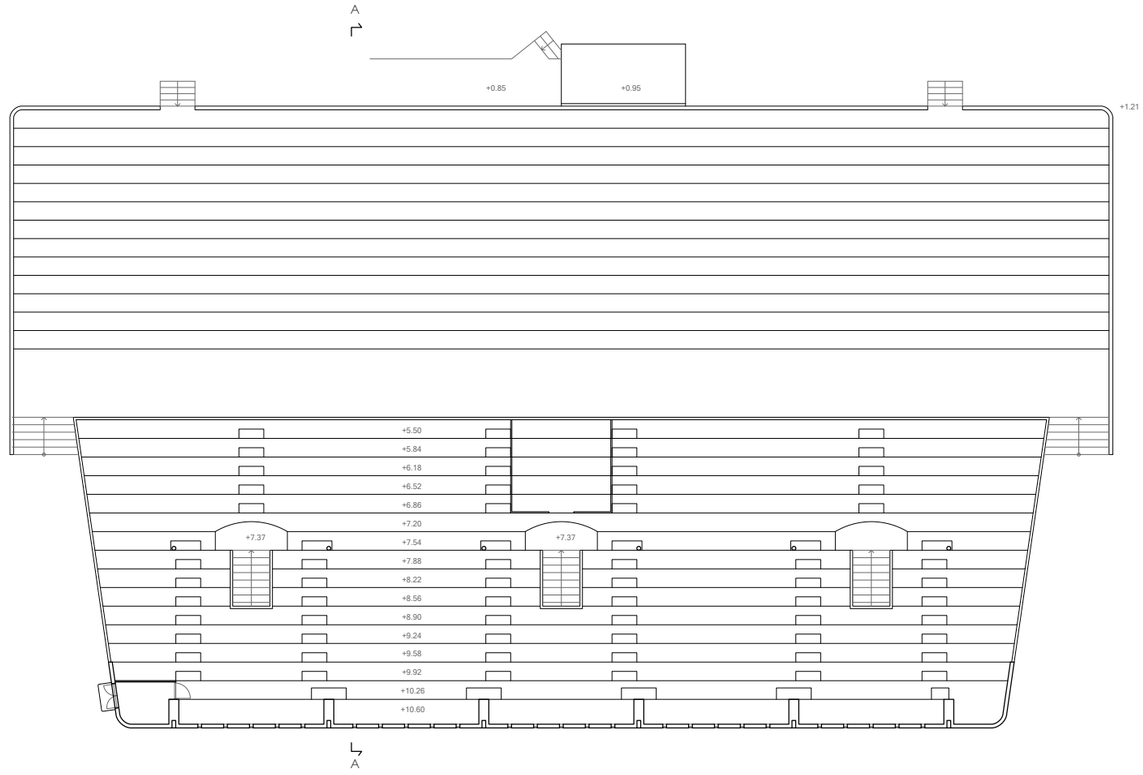
Images of the arrival to the gate of the stadium. The three arrival routes are pictured in the images above. The upper view is facing away from the stadium, and the lower view is facing towards the the stadium. Source: Jenna Hukkinen, 2023



Three images showing one view from each arrival route. The first (1) shows the arrival from the cafe in the north, which passes the boat house an administration building. The second (2) shows the car route from the Merikannontie road to the stadium. The third (3) access passes a seaside restaurant on its way through the park, before the corner of the Rowing Stadium appears. This is the most appealing view of the stadium. The route continues past the corner to the main gate. At the corner there is a service access road. Image source: Jenna Hukkinen, 2023



Plan 1 1:250



Plan 2 1:250

Current status

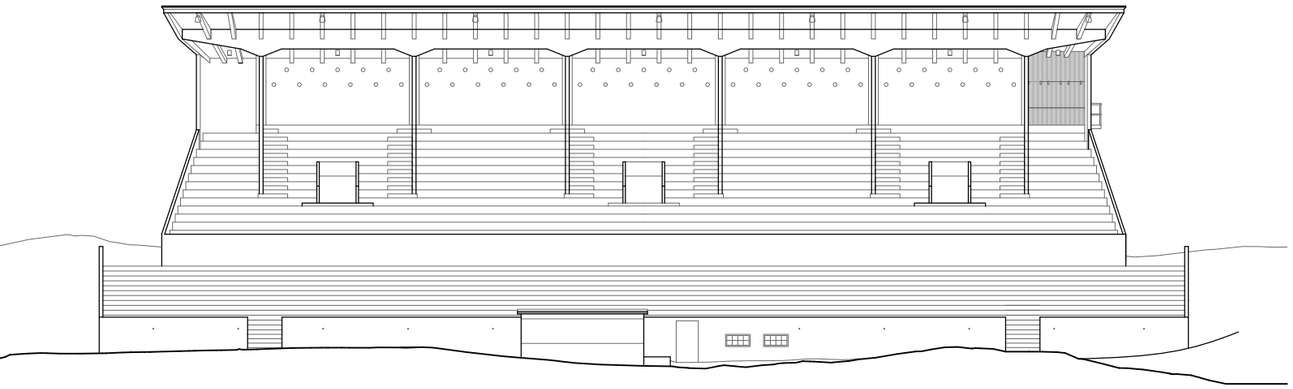
The main stand was founded on a cliff and constructed of reinforced concrete, with three entrance staircases from the courtyard side. Support for the grandstand was provided by transverse perimeter beams, pillars, and concrete-armored steps. The main stadium had covered seating for 1000 people. The covering canopy formed of reinforced concrete beams was supported by six iron pillars. The roof, covered with cement asbestos sheets, ensured waterproofing. The engineer of the project was Alpo Lippa. (Högström, 1996)

The main stand was formed as a symmetrical trapezoid with angled concrete exterior walls that opened towards the sea and therefore gradually widened the stairs. The corners of the exterior walls were rounded with a 500mm radius. The angled walls were repeated in the interior by the three entrances.

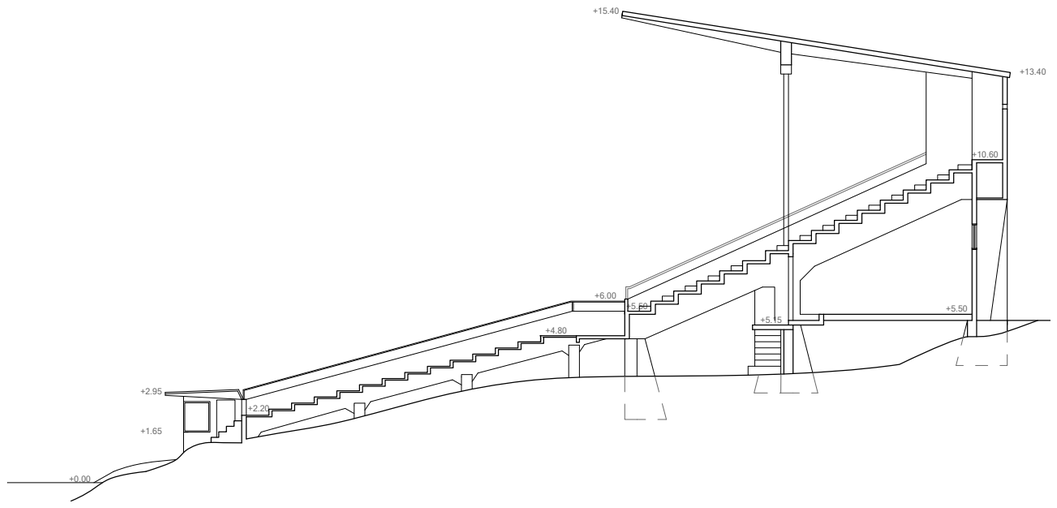
The concrete walls were left in a moulded pattern without plastering and were painted white. Below the main grandstand, in unheated rooms with brick partitioning walls, facilities were allocated for newspapers, telegraphs, officials, etc. Due to budget constraints, the initially planned toilets for the grandstand were omitted. (Högström, 1996)

A wooden booth for radio, announcements, and referees were designed for the back wall in connection to a balcony in the south-west gable. The booth was a smaller and more simple version of the initially larger plans for the booths. (Högström, 1996)

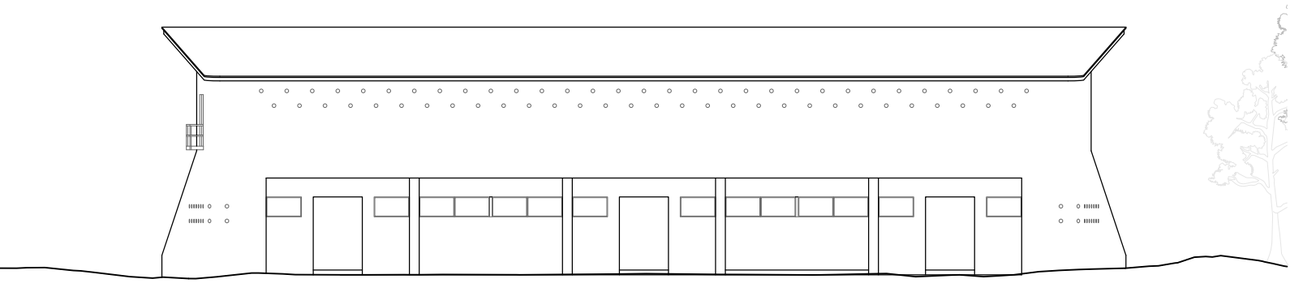
The grandstand was extended by Ekelund for the 1940's Olympic Games with an unroofed stand in wood, which was built in front of the main grandstand on the beach side. (Högström, 1996) However, the stand was replaced in 1950 by a concrete structured extension by architect Pauli Salomaa. (Mölsä, 2022b) The support structure of the original wooden stand was reused as the underlayment of the new stand. (Högström, 1996) A concrete judge's booth was added to the end of the structure closest to the water with two stairs and openings on each side of the booth for access from the water to the stand. (Mölsä, 2022b) The free height underneath the stand was 190 cm at lowest for movement underneath. The surface of the cliff foundation was extracted to form stair-like levels. The movement between the extension and the main stand was enabled by the addition of a door opening and stairs. (Högström, 1996)



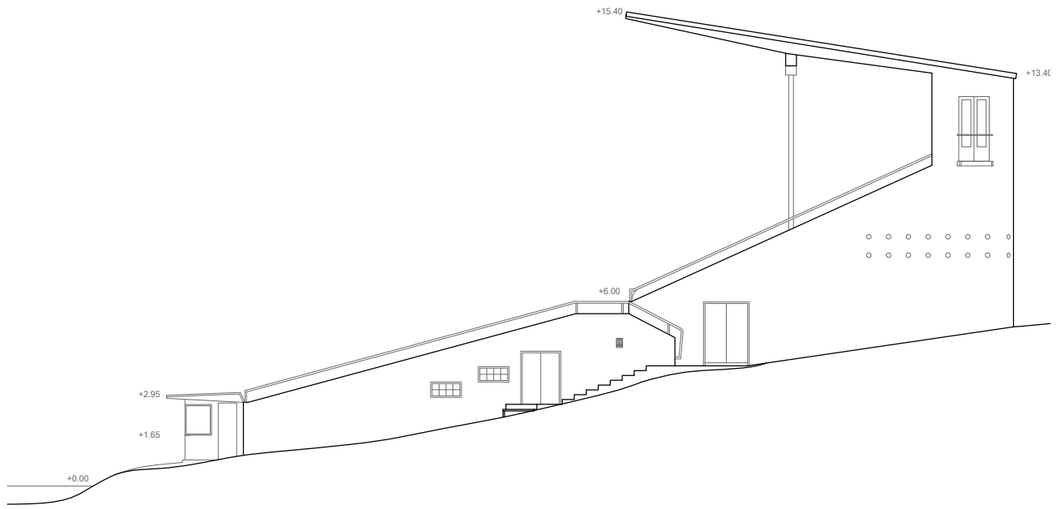
North-West facade 1 1:250



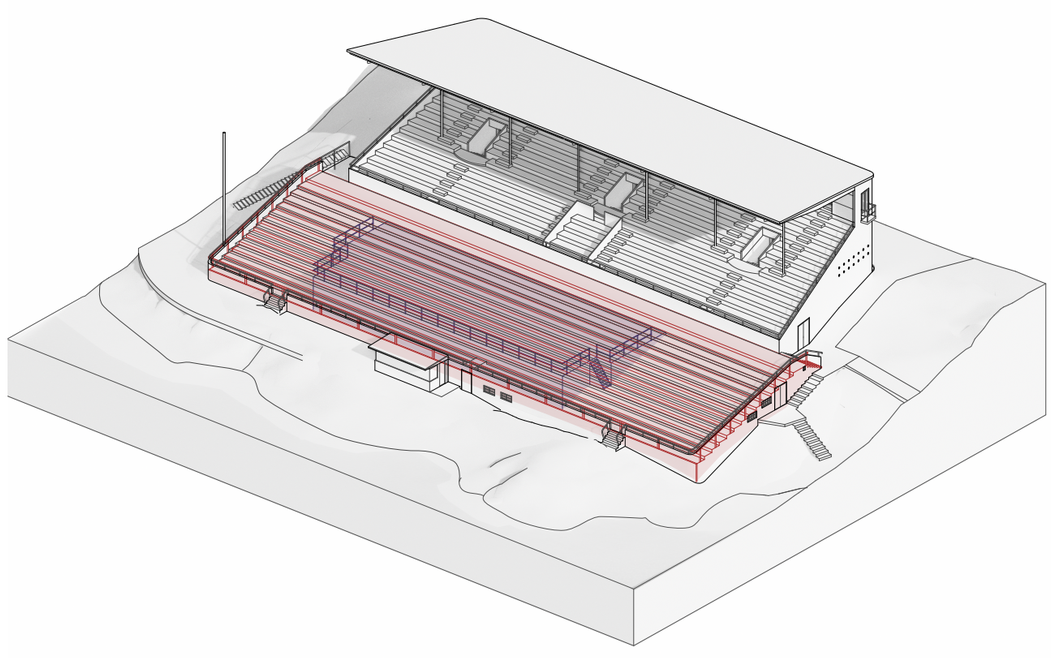
Section A-A 1:200

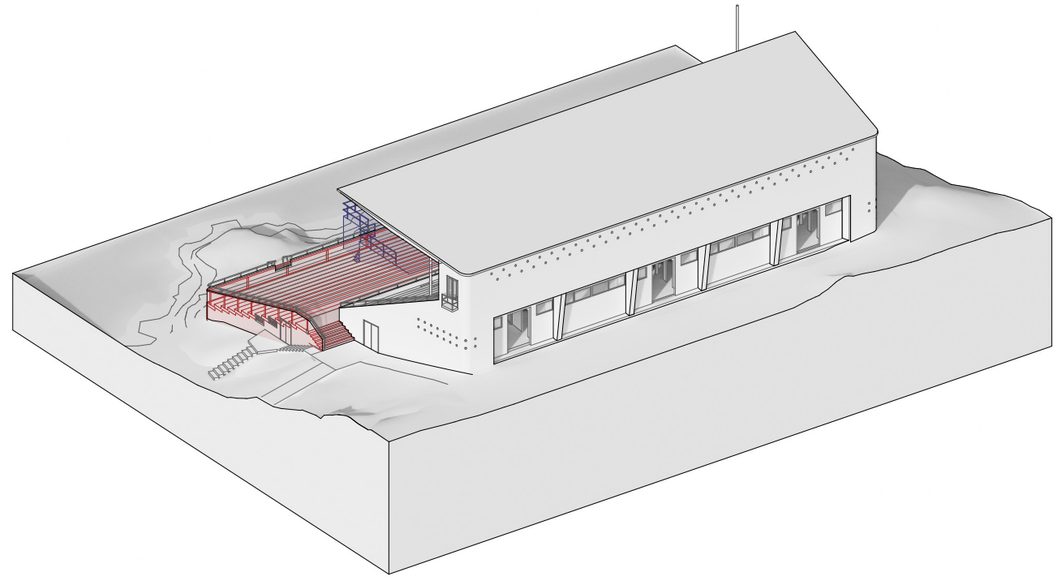


South-East facade 1:250



South-West facade 1:200





Temporary theater stage used between the 1970s and 1990s
Original uncovered stand by architect Hilding Ekelund

The building through the years

The building was in its final stages of construction in 1940. The use of the building was minimal during the war, however, the Department of Defence used the cluster of buildings during the end of the war. It was after the war that the second round of construction could begin for the preparation of the postponed Olympic Games in 1952, with work concerning the environment, including constructing the stone wall along the water. Now the reconstruction of the uncovered stand extendion began while additional temporary radio station boots were added to the back wall of the main stand. These booths no longer remain. Kayak storage was created under the main stand and possibly also the doors on the gables. (Högström, 1996)

The rowing course was established to be too exposed to wind, which was why it was only used for kayaking competitions in the 1952 Olympic Games. (Liski et al., 2018) Even after the Olympics, the Rowing Stadium failed to be used actively for competitions, although it has hosted occasional competitive events. The primary use remains on the training and recreational activities associated with rowing and canoeing.

In addition to this, cultural events were reportedly organized from 1961 e.g. singing sessions, spiritual hymn evenings and a midsummer celebration. (Tilastotoimisto, 1966) In 1971 the cultural use was extended when a wooden stage structure by Olavi Niemelä was built on top of the concrete grandstand extension. (Högström, 1996) The stage still existed in the late 1900s as it was used for sing-along events. (Liski et al., 2018)

The Helsinki kayak club has been renting the stadium facilities since 1993. They have stored their canoes in the lower part of the space under the main stadium stairs. Since the estimated bad condition of the building in 2021, they have had to end their contract. (Cremin, 2022b)

Since the summer of 2022 the site has been used as an outdoor summer wine bar, not including the actual stadium building due to its condition, but constructing temporary structures for their needs.

After the Olympic games, the use of the stadium was limited but estimated to 19 000 number of users during the 1900's. (Mölsä, 2022b)

Source: Jenna Hukkinen, 2024

Previous renovations and current condition

The latest and biggest renovation of the grandstand was done between 1996 and 1998 (Mölsä, 2022b), while before that, only a smaller-scale renovation was done in the 70s. Then, the bituminous roof of the main stand was replaced and the guttering and downpipes were replaced, while concrete gutters were installed to carry rainwater. The main stand and the extension were sandblasted and plastic-coated. The plastic coating caused bubbling and contributed to the deterioration of the concrete structures. The plinths, originally tarred, were also covered by plastic coating. (Högström, 1996)

In the 90's, VTT created a condition survey that revealed inadequate load-carrying capacity of the concrete. The outer and partition walls of the structures, the step slab platforms on top of the perimeter beams and pillars and joists were considered badly damaged. (Mölsä, 2022b) Due to the concrete of the canopy having poor tensile strength, a lot of the repair work was focused on its structures. To address its damage, a mesh made of acid-resistant steel was attached to the lower surface of the canopy to create a joint beam, which was casted with special concrete. (Mölsä, 2022a) Additionally, the load-bearing structures of the canopy and other parts of

Source: Jenna Hukkinen, 2024

the building were strengthened by coating with shotcrete. (Mölsä, 2022a) During the 1990s, the steel components had prominently surfaced, undergoing rusting, du to the effects of the harsh maritime climate. To address this, the damaged concrete of the beams and pillars in the framework of the stand was chipped away and wet sandblasted. The primary steel elements underwent a thorough cleaning process using steel brushes to remove rust, avoiding excessive sandblasting that would potentially have harmed the old concrete. Furthermore, additional steel reinforcements were added into the structures. (Mölsä, 2022a).

The recent condition survey prepared by Ramboll was commissioned by the City of Helsinki due to entrepreneurs having interest in the building. (Mölsä, 2022b) The building was planned to be in restaurant- and cultural use in the summer of 2022 but was announced prohibited to use after the completion of the condition survey in the end of 2021. (Cremin, 2022b)

The problems were revealed to be structural; down to the reinforcement and the concrete. The visibility of the rusty reinforcement within the concrete is hidden by the shotcrete layer. A substantial portion of the reinforcement within the structures is located in the carbonated region, therefore steel

corrosion damage are common in the building. The evaluation of the concrete structures, including the taking of drill samples, revealed consistently low tensile strengths in the concrete. (Mölsä, 2022b) The tensile strengths of the concrete of the roof tile were once again estimated not sufficient enough. There's a risk even for bigger pieces to fall down. (Cremin, 2022b) The survey shows that the shotcrete has partially detached from the concrete and can fall into the stands when they break. (Mölsä, 2022b)

The visible damages include large cracks in the walls of the grandstand and in the side of the uncovered stand. This is the most visible damage of the building. (Mölsä, 2022b) Accordning to the condition survey, the building needs a major refurbishment before it can be in use again. (Cremin, 2022b) If the repair work would start and exceed as the repair in the 1990's, the construction work would be finalized in a couple of years. (Mölsä, 2022b)

The condition survey has been questioned by Kari Avellan who worked with planning and supervising the strengthening of the structures in its renovation in the 1990's. According to him, the structure would already have collapsed during its lifetime if the risk is apparent today, and he does not detect any formal changes of the construction or the canopy, such as bending. He accuses the evaluators for lacking knowledge about old concrete structures. (Cremin, 2022a)

The current condition survey has evaluated the falling pieces from the roof structure dangerous, but according to Avellan, the falling pieces aren't shotcrete as suspected, but the 5mm decaying plaster on top of it. He believes it could simply be treated by removing with pressure air and replacing the painted surface. (Cremin, 2022a) Avellan questions Ramboll's evaluation that the concrete structure of the canopy is insufficient, since it was treated in the previous renovation due to the same issues. (Mölsä, 2022a)

Figure 14. Cracks on the side of the stadium extension. Source: Mölsä, 2022

Figure 15. There are a lot of cracks in the walls of the stadium. Source: Myller, 2022

Value assessment

The value assessment has been made according to B. Feilden's model for valuating cultural heritage buildings with one addition from Axel Unnerbäck's value model in order to cover the whole building's values. The value assessment is meant to assist in methodically establishing overarching priorities when deciding potential interventions. It serves as an initial step in defining the objectives of a project involving cultural heritage. (Feilden, 2003) The main headings of the value model are emotional values, cultural values and use values, that all include several subheadings that adress different values to consider:

Emotional values
wonder; identity; continuity; spiritual and symbolic value

Cultural values
documentary; historic; archaeological; age and scarcity; aesthetic and symbolic; architectural; townscape, landscape and ecological; technological and scientific

Use values
functional; economic; social; educational; political and ethnic

(Feilden, 2003)

In this study, the values are presented in order of significance and subheadings that are evaluated not relevant for the Rowing Stadium have been left out.

Cultural value

Documentary value
The Rowing Stadium documents the Olympic Games that were held in 1952. The Olympic stadiums placed around Helsinki create from an international perspective a well-preserved totality of Olympic buildings. (Malmberg et al., 2017)

Architectural value
The white plaster walls and rounded corners of the building, together with the small round windows aof the main stand all represent the architectural historical value of the buildings. These white functionalistic buildings were only built during a specific time in history.

Beyond its connection to its architectural style, the main building appears light in its overall characteristic partially due to the reinforced concrete that allows the canopy to be very thin. The six structural columns are narrow and connect to the cross beam of the visor in a delicate manner.

The Rowing Stadium main stand that remains as the original building from 1939 designed by Hilding Ekelund can be regarded as the primary character-defining part of the whole building. Although built during the unique architectural era of the 1950's, the uncovered stand has had a secondary character in relation to the main stand and has been redone in the beginning of the building's lifetime.

Townscape-, landscape- and ecological value
Apart from having townscape value by being a part of a larger network of Olympic buildings with similar language, the building's unique character makes it a landmark in its surroundings. Being located along one of Helsinki's busy

pedestrian- and bike routes along the coast, it has a potential to be strengthened as a landmark along the path if it was made more visible and active. The building is very sheilded today and can be seen only from specific distant directions (as mentioned in Visibility). Its townscape value is enhanced due to its significant functionalist surroundings of Taka-Töölö residential area. The building becomes an important part of the creation of the totality of its surroundings from the same time period.

Being seen from the other side of the Taivallahti bay, it defines the seascape of the Töölö coast. Although, it has potential to be seen from more angles from the city to more clearly define the area.

Historic value
Many buildings in Helsinki, especially in the Töölö district represent the same architectural style, but not many were built for the Olympic games, which adds to its historical rareness.

Technological- and scientific value
The structural reinforced concrete of the 1930's was constructed manually. The concrete ratio was evaluated on site and mixed during construction. Therefore, its strength depended on the experience of the engineer supervising the work (Mölsä, 2022a), making engineer Arvo Lippa a skillful engineer of his time.

Emotional value

Spiritual and symbolic value
The Rowing stadium was designed specifically for the Olympic games and together with the other Olympic buildings, they represent the newly independent country of Finland. In addition, the funcionalist symbolism represents health, sports and closeness to nature connected to healthiness. (Malmberg et al., 2017)

Identity value
The building is valuable as it radiates a unique identity in its surroundings where it stands out due to its shape, unique placement by the sea and its white functionalist facade.

Use value

Tradition value (from Unnerbäck's value model)
Rowing as a sport is not largely practiced in Finland in an international perspective, but it has a strong community. However, historically, rowing has been practiced as a practical transportation method as Finland is a country with a long coast and lots of islands and lakes.

Economic value
The decay of the building lowers its value in financial terms Its unique structure is in need of a wide restoration effort which is estimated to be costly. (Cremin, 2022b) In addition, the building has a low number of possible users due to rowing and kayaking not being profitable enough for the building as it is today.

However, its historical value and location, not to forget all other value points, raise its rareness and attractiveness, making it valuable for investors.

Functional value
The valuable formal uniqueness of the building simultaneously creates a limited possibility to adapt the building to a large number of functions without causing any changes to its current state. It's exposed to weather changes and decay as a non-heated stadium that faces towards the water.

Summary

Restoring the functionalist identity of the building is important for enhancing and continuing its historical and symbolic connection to the time of the Olympics and the freshly independent country and functionalist symbolism and form that in many ways represent Finnish values: health and closeness to nature. Therefore, there need to be efforts to restore the modernist architectural qualities.

Its position as a landmark in its surroundings is valuable and is to be supported and enhanced. The building used to be more visible from the city but has become hidden due to the growth of surrounding vegetation. Additionally, the vegetation is located too close to the building and creates a risk for the building and should therefore be decreased. (Högström, 1996) This will both ensure a longer lifetime for the building and add to its value as a landscape-defining building and a landmark in its surroundings. The stadium is located along one of Helsinki's larger network of pedestrian- and bike routes along the coast but lacks the character of being a central point along this route. Enhancing the building's role as a landmark along the route and supporting this by creating a function that brings people together will enhance townscape value.

The building has economic challenges due to the low versatility of its current form and low number of users being primarily for rowing and kayaking use. The unique structure is in need of a wide restoration effort. A new function can enhance economic value and support the possibility of renovation.

There's a limitation in the possibility to adapt the building to a large number of functions due to being exposed to weather changes and decay, and being designed specifically for water sports. However, the simple interiors create some possibility for adaptation. By implementing a wider function and requiring an active effort for maintenance the building's functional value can be enhanced. Through working consciously with the building's location close to the sea and designing to support a wider use of the water, it's possible to add to the functional value while enhancing its cultural and historical value as a building historically used for water sports.

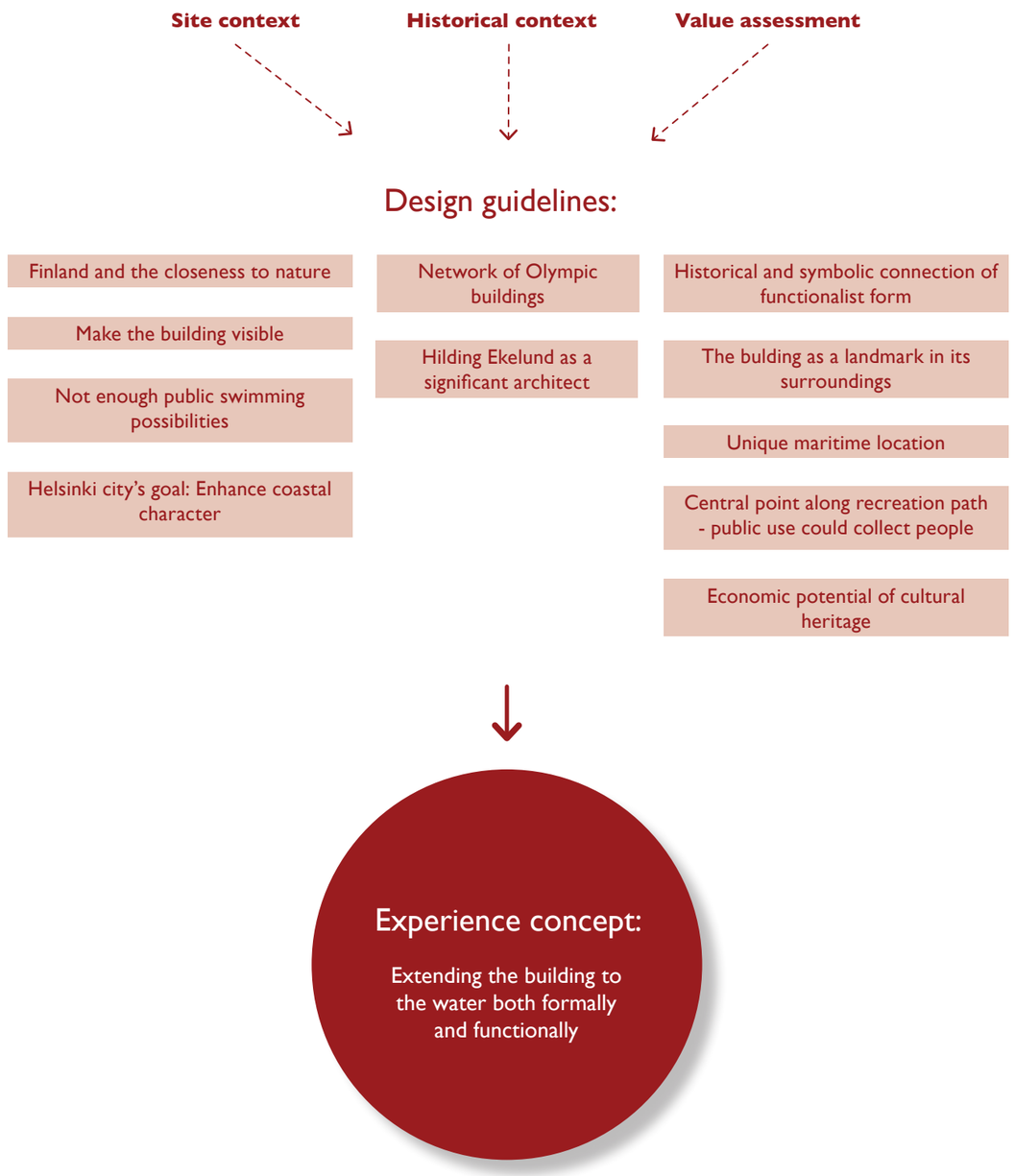
Design proposal

Design concept and approach

The design proposal is a result of a combination of learning from the current state and historical context of the building and its surroundings. Additionally, an assessment of the values was made for a complete overview of the building and its current situation.

The points presented in past chapters has formed an appropriate overlapping experience concept: extending the building and its surroundings towards the water both formally and functionally.

The approach has been to do the least possible intervention to the exterior appearance of the main stadium. The original exterior walls wrap the redone interior spaces.



Program

The design of the outdoor swimming facility aims to create a vibrant and welcoming space that caters to the diverse needs of the community.

The project transforms the site into an open and lively otdoor year-round swimming facility that serves the community with an added swimming pool and docks with saunas and a café that serves the users and the public. The facility will be a hub for recreational activities, fitness, and social interactions, promoting a healthy and active lifestyle. In addition to the swimming dock, the project adds a boat dock for temporary for public use. There is space for a rowing boat rental that encourages the public to practice the sport and continue the historical function of the building.

The architectural design emphasizes not only functionality but also connects to the history of the site, creating a natural addition that extends the lifetime of the Rowing Stadium.

Natural outdoor swimming pool facility

Functional Requirements

Main Pool Area
- 25 meter swimming pool
- Shallow area for children and beginners
- 50 meter sea water swimming pool

Supporting spaces
- Changing rooms with showers, lockers and saunas
- Toilets: two for each changing room, two for public use
- Outdoor sauna
    - Changing rooms with showers and lockers
- Cafe with outdoor seating
    - Staff room
    - Storage
    - Two toilets (one accessible)
- Meeting space for swimming education and community use
- Boat dock for temporary berths and a rowing boat rental

Recreational Spaces
- Sunbathing areas and seating along shoreline and on top of decks for relaxation

Fitness and Wellness
- Outdoor fitness equipment on the courtyard

Architectural considerations

Integration with context
- Materials chosen to respect the functionalist heritage of the site
- Creating a connection with the surrounding seascape by designing the additions to adapt to the natural landscape

Sustainable Design
- Pool heated by renewable ocean thermal energy
- Naturally filtered pool

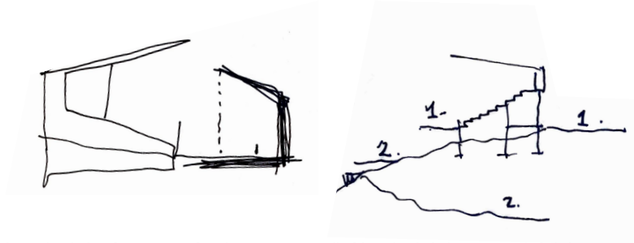
Accessibility
- Inclusive design for people with disabilities

Identity
- Architecture that reflects the cultural heritage of the site that together with contemporary features create a totality of buildings with a unique identity

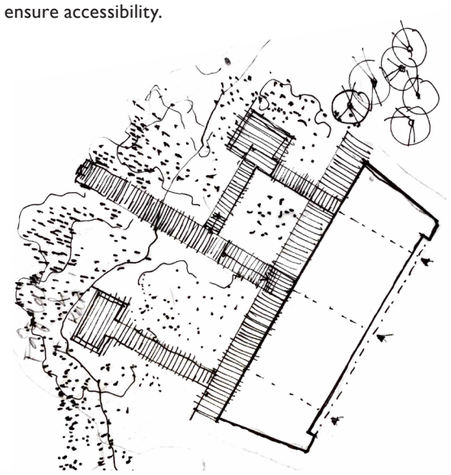
Design process

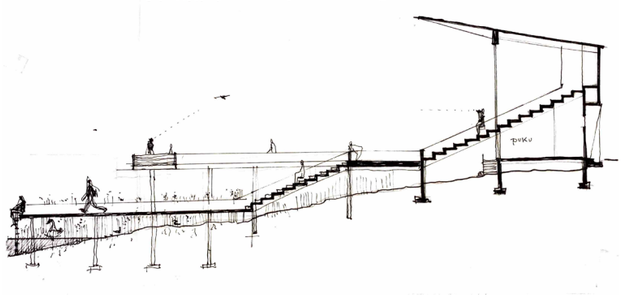
The design process included a lot of sketching on paper and experimenting in 3D digital models. When considering potential adapted use of the building I initially considered culture use. Specifically a theater was studied, due to the building shape being suitable for spectating. This function was popular in the past. Due to technical restrictions and exposure to wind, I landed in the function of swimming that is more durable to the weather and suits the maritime environment. I had a wish to offer swimming possibilities for the public and considered replacing the original uncovered stand extension with docks on different levels that could serve the public as places to hang out while having the opportunity to go swimming. However, as this use was completely public, I wanted to further develop the function to be profitable for an investor. Creating a heated pool with changing rooms inside the Rowing Stadium could offer this.

When working with the site and its height differences I studied the building in section. Instead of working with the original extension that I evaluated to have a secondary character for the buidling, the replacing new structure created possibilities to make the building more accessible.

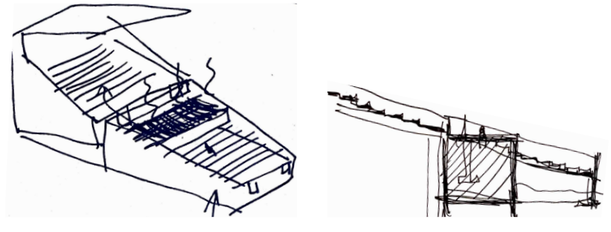


I studied the function of a theater stage (left), which I discovered didn't fit the site. It was important for me already in the beginning to work with the different height levels on the site (right). I wanted to work with the waterline (2) and with creating a level (1) that alligned with the courtyard. access, to ensure accessibility.

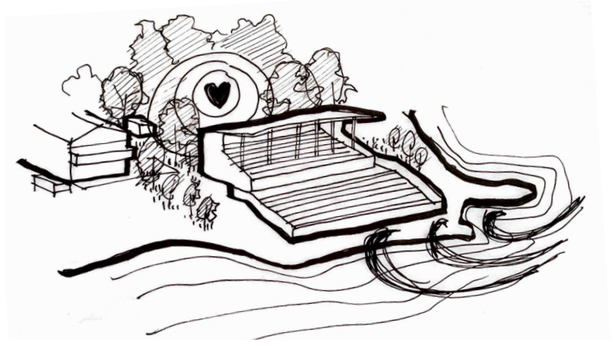




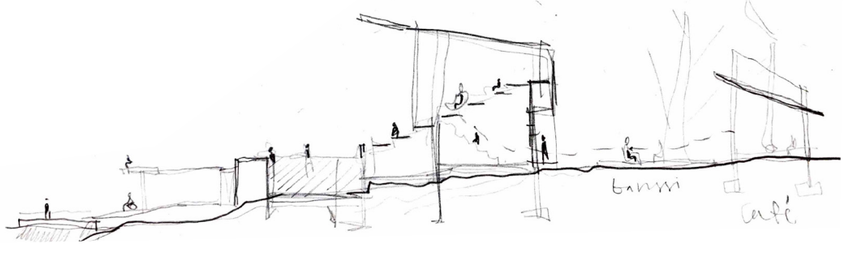
I studied removing the current uncovered stand to create public docks and spots to hang out, whith a possibility for birdwatching. This didn't meet my wish to create a function that had economic reasoning for an investor.



Keeping the current uncovered stand extension and adding a swimming pool would have meant a large transformation without necessarily adding enough value in the function. There was still an excessive amount of stairs in relation to the big intervention.



The atmosphere by the front of the building, the courtyard, is green and leafy, while the seaside of the is rough and prone to wind.



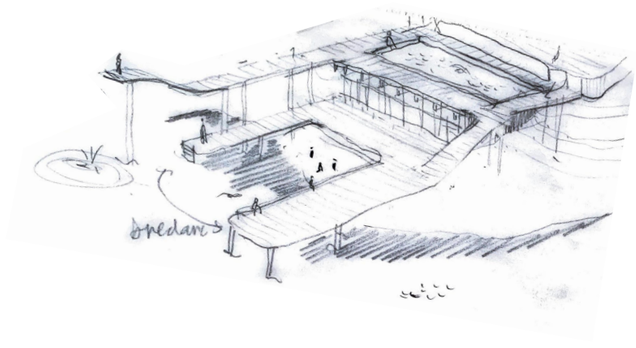
A swimming function incorporated the site in its totality with an added sea water pool in front of the stadium. Public function by the water and a café by the courtyard would activate the site from wherever you approached the building and would utilize both of the environmental characters.

I studied the character of the site. The atmosphere by the entrance of the building, the courtyard, was sheltered, green and leafy. The atmosphere on the seaside of the building was bare and often rough and prone to wind. Using these characters and creating space to enjoy both of them was important.

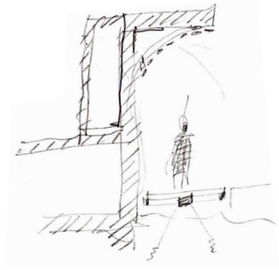
The design evolved from relating to the height differences on the site by having structures at different levels extend to the water, to creating only one platform with extending docks at sea level. The added heated swimming pool would be a part of a paid swimming area, while the activity by the sea could be a mix of public and private.

While the design was opening the waterline to the public, the new structure of the heated pool created a wall against the water. This was a necessary concequense of simplifying the height differences of the site. Raising the structure to be level with the lowest step of the original stand, enabled connecting the levels to the courtyard without a difference in height.

I studied the possibility to incorporate more function into the structure of the heated pool, but I discovered that there was an advantage in forming the new structure to have the same footprint as the current stand extension. This respected



Adding more function into the pool structure meant extending the building too far into the water.

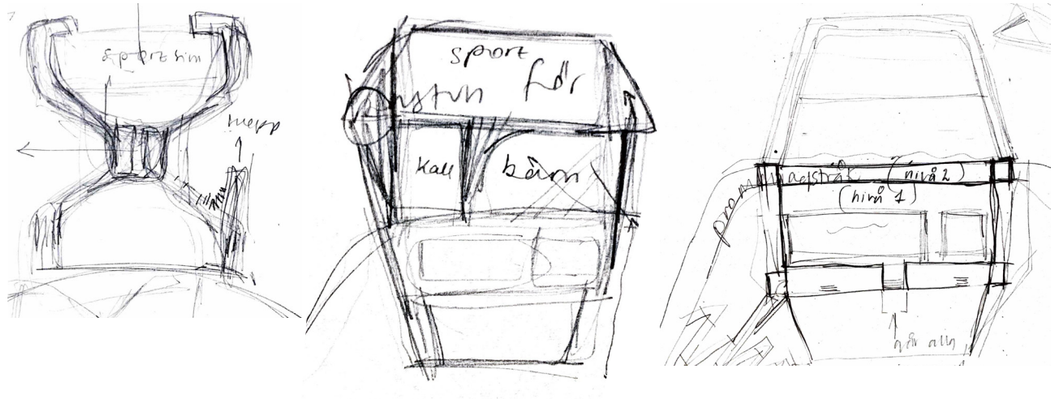


Could the platform of the swimming pool construction be extended for more space on top and at the same time become a canopy for the path underneath?

the current silhouette of the Rowing stadium and kept the beautiful nature of the waterline untouched. Adding more function to the structure, in addition to the pool, would have meant extending the structure over this waterline edge and creating a constructed meeting with the water. I considered this unnecessary. Following the forms of the nature and respecting the water and landscape was part of the initial concept.

However, while the footprint of the pool structure could not be extended, there was a need for more space on top. The swimmers had enough space for movement, but not enough for taking a break and sitting down, or for a flexibility in the space used by a possible swimming education. Therefore I studied adding a canopy, that would extend the space on top and at the same time serve the public underneath by creating shelter.

In a wish for the public to easily access the seawater pool, I discovered the advantage of a pedestrian path along the coastline. The path would both enhance the visibility of the Rowing Stadium and therefore its importance in people's everyday life, while creating easy access to the sea for the public. In order to work with the natural characters of the site, I considered it necessary to accept the often windy maritime environment in the design of the path and not work against

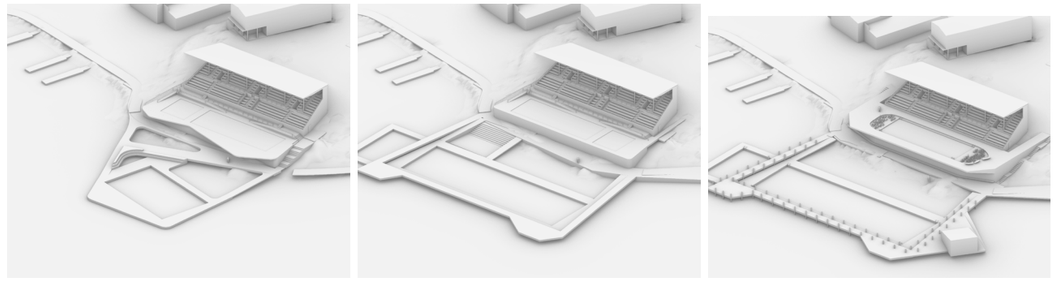


I studied different designs of the docks. I was inspired by harbour baths, but evaluated that the site of the Rowing Stadium was very different from the harbour baths' and therefore needed a different design approach.

it. Instead of choosing wooden decks for the long pedestrian pathway, I chose durable metal, that left nature untouched underneath and was durable against temporary rise of sea water or rough sea weather. Out of respect for the beautiful coastline, the pathway and docks would make way for the bumpy and rocky landscape.

From the value assessment I found, that swimming as a sport would be a suitable form of swimming for the site, due to the historical use of the site. Sports use would also be popular for biking commuters passing the building, the different aged residents in the area and for schools around. The 25 meter pool enabled keeping the structure moderate in size while being suitable for competitions. A future hotel and spa, which is planned on the other side of the bay, will offer the city another form of swimming.

I wanted to create docks in the sea for public use. I started by studying sea water swimming, and found inspiring examples of harbour baths in Copenhagen. After sketching and testing ideas inspired by these examples, I realized that they didn't fit the site or the Rowing Stadium. The baths are mostly built to activate a plain harbour dock. They are formed to both optimize the use of the plain site and the form of it. Therefore the designs have varying heights and amount of functions and

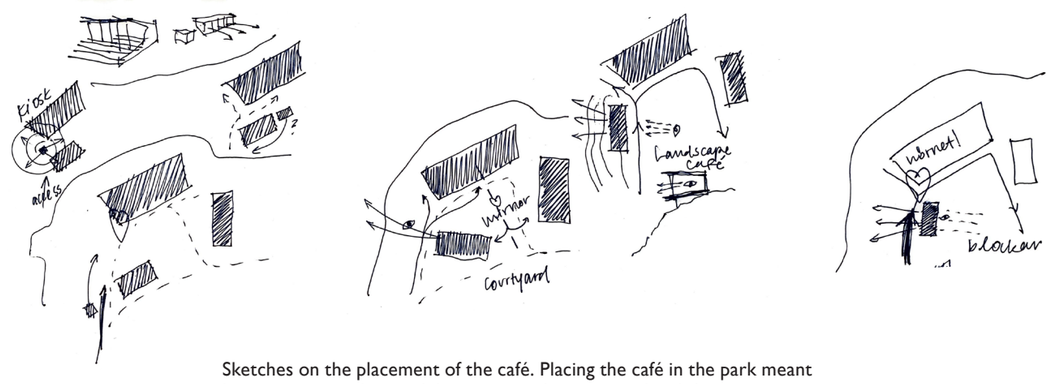


Testing in 3D model. Lowering the swimming pool platform resulted in the need for unnecessary ramps or stairs. Raising the level to the courtyard simplified the totality, while raising the wall towards the water.

become active areas of play, which suits the plain sites perfectly. However, when relating to a building with historical heritage, other design parameters are at play. I didn't find it suitable to activate the site of the Rowing Stadium in the same way. The site had active nature and naturally beautiful height differences in the landscape. The water was in close contact with the Rowing Stadium, that has great historical value. Minimizing intervening in the forms along the water by designing in a less dictating way was more suitable.

Creating a 50 meter pool in the sea made it possible to extend the sports use. Surrounding the pool with docks made it possible to extend the freedom of swimming possibilities for the users, while creating places for people to hang out. Keeping the form of the docks more simple gave justice to the silhouette of the historic Rowing Stadium totality, while creating possibilities for different uses, without dictating it.

Skethes of approaching the building. I discovered that the most visible and flattering view of the Rowing Stadium when approaching was the south-west corner.

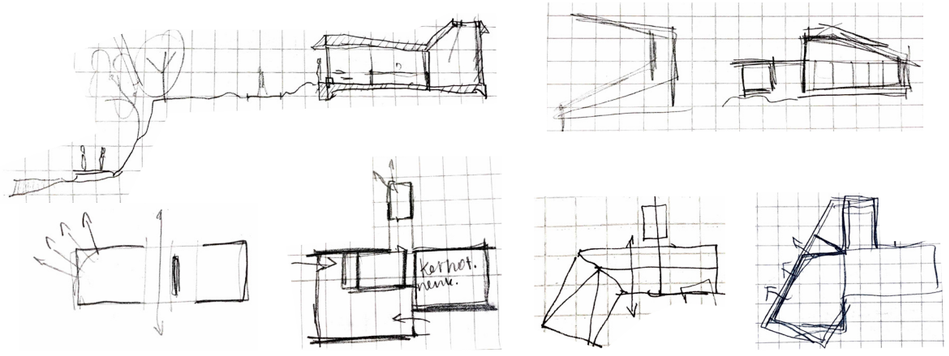


Sketches on the placement of the café. Placing the café in the park meant larger year-round use, while activating the courtyard and the main entrance of the Rowing Stadium.

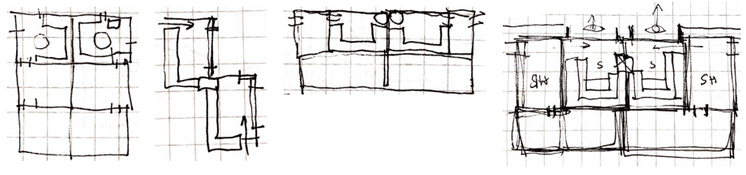
It was clear that there was a need for a café to broaden the use of the site. A café would serve not only the swimmers but also the public. The site is located along a recreational pedestrian and bike route and could serve well as a stop along the route. An indoor café would have a broader use than the neighboring café Regatta, that mainly has places outside.

The placement of the cafe required a lot of sketching. All movement and use of the swimming facility could not be applied to the sea side of the Rowing Stadium. The site is prone to wind and varying sea climate, and it was clear that the seaside is most usable for the swimming function. Therefore a year-round cafe would be best suited placed farther away from the ocean.

As I opened a coastal walkway along the edge of the pool extension, I could have had a possibility to offer more function along it, for example the café. However, this walkway was only suitable for pedestrians walking along the pedestrian routes. People using public transportation, bikes and cars were only able to access the building from its main entrance, the courtyard. Therefore it was important not to leave the courtyard and the actual entrance of the swimming facility neglected. This proved to be the suitable spot for the café.



The café had to relate to the Rowing Stadium both in form and function. I studied the flow of the café to create a natural movement both inside and outside. I ended up shifting the gable of the café to have it as close as possiblle to the Rowing Stadium, while not blocking the view of it when approaching.



The sauna was studied through its connection to the outside view. The movement inside the building was also studied. The flows between showers, saunas and outside swimming had to be natural.

When studying the ways of approaching the Rowing Stadium, I discovered that the most visible and flattering view of the Rowing Stadium when approaching was the south-west corner. I could enhance it by making it a main access point and placing the café in relation to it.

The form of the café was therefore not to block this view of the Rowing Stadium. At the same time, the café needed to be closely connected to the functions of the site: the boat docks, the public swimming area and the entrance of the Rowing Stadium for visitors to be able to buy access to the facility.

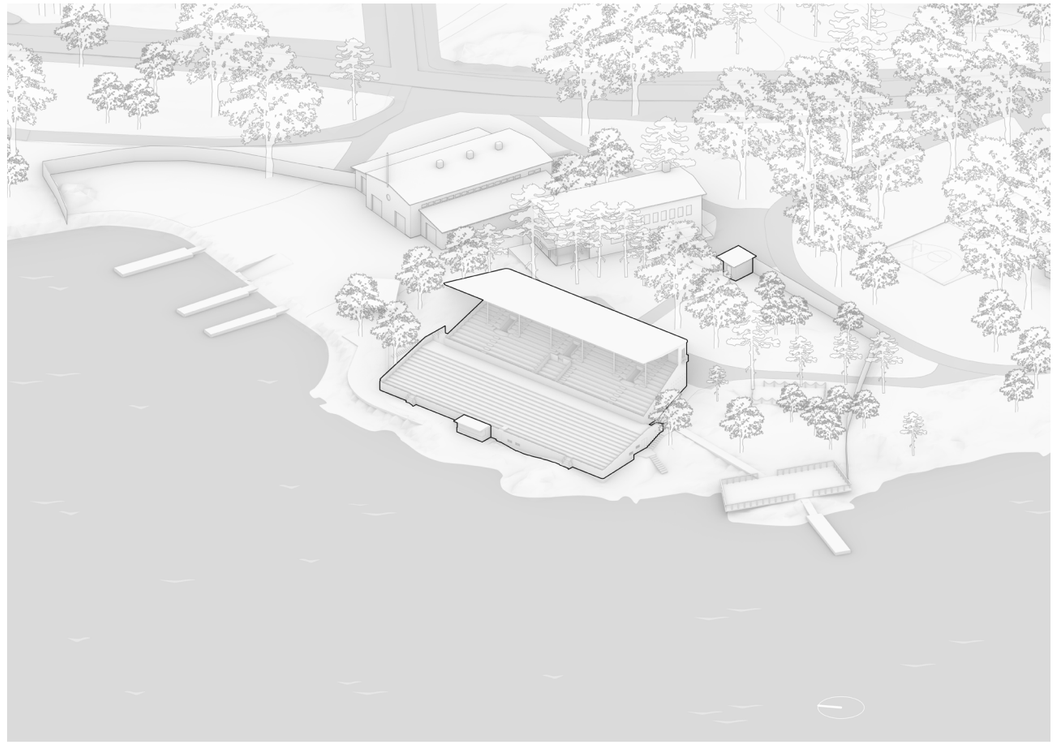
Therefore, the design process for the café included keeping the movement within and outside the building natural. It was important to add the kiosk in relation to the café in a natural way. The building was to relate to the directions of the surrounding buildings and create an enjoyable view of the water.

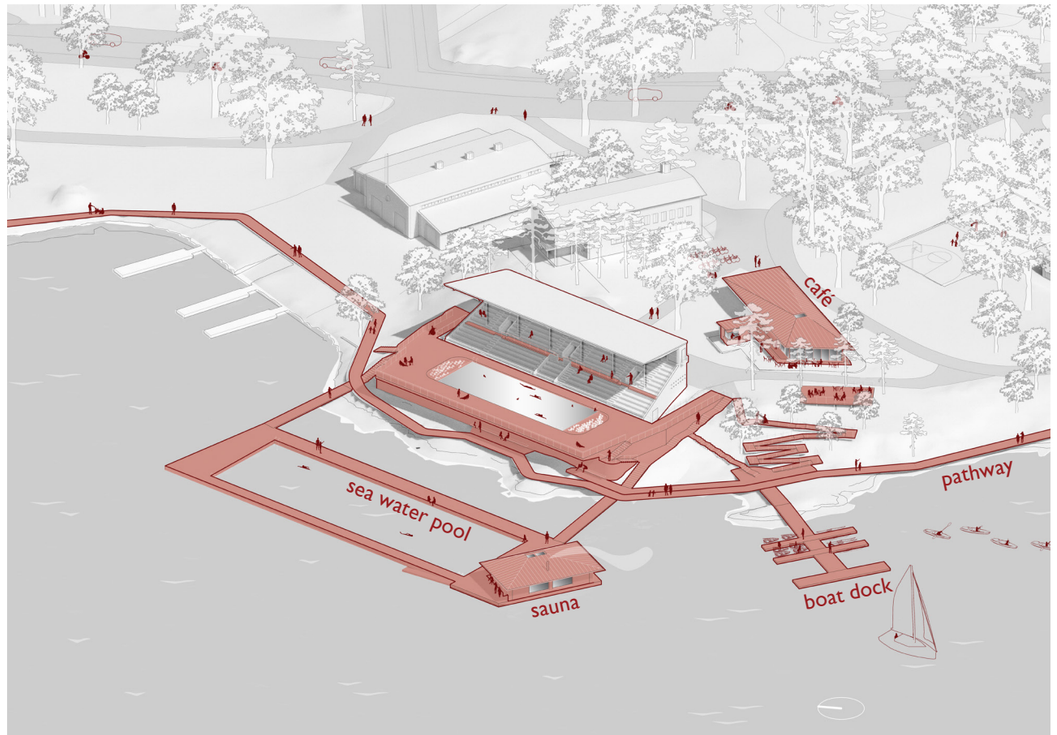
The placement of the sauna naturally became on the dock in front of the Rowing Stadium. Using the sauna involves swimming in the ocean. Quite quickly I discovered how shifting the sauna towards the horizon could both offer great views from it, while creating wind shelter for the swimmers around it.

Transformation

The design proposal reintroduces the building as a landmark in its surroundings and as a gravitational node not only for passers-by but also for the city as a whole. This has been done by providing a sauna and water experience, which is rooted in the culture of the country. The pool extension structure replaces the current uncovered stand. The adaptation enganges and nurtures the original building by creating economic reasoning for renovation.

The design proposal activates the sloped site in its totality. The sea water pool, sauna and boat docks are located by the the water at 0 meters above sea level. The public pedestrian pathway is activating the coastline at 1 m a.s.l. The pool structure extension is connecting to the lowest step of the original stadium stand at 5,5 m a.s.l. In addition to this, the pavillion-like café and the entrance of the swimming facilities is activating the courtyard at the same height.

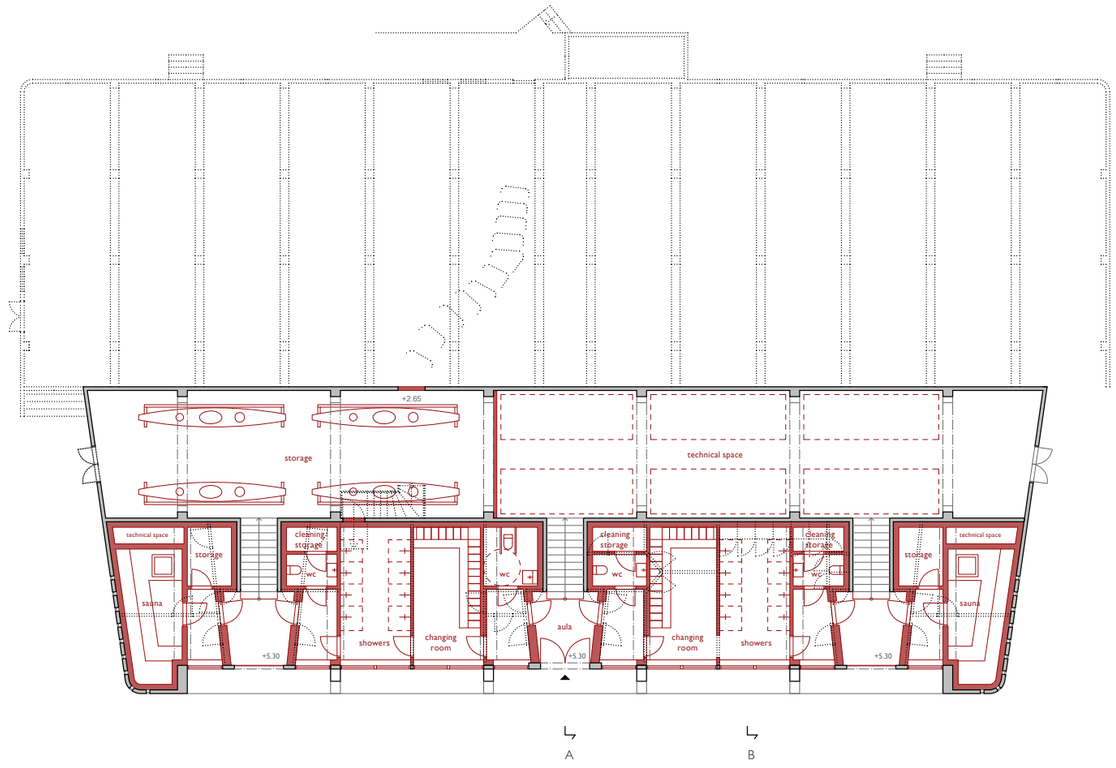




View from the sea water pool overlooking the front of the stadium with the pool extension and coastal pathway in front. The proposed cafe peeks from the courtyard behind the stadium.

Axonometric diagram of the building in its surroundings. The proposal activates the sloped site in its totality: the water at +0m, coastline at +1m and courtyard at +5,5 m.

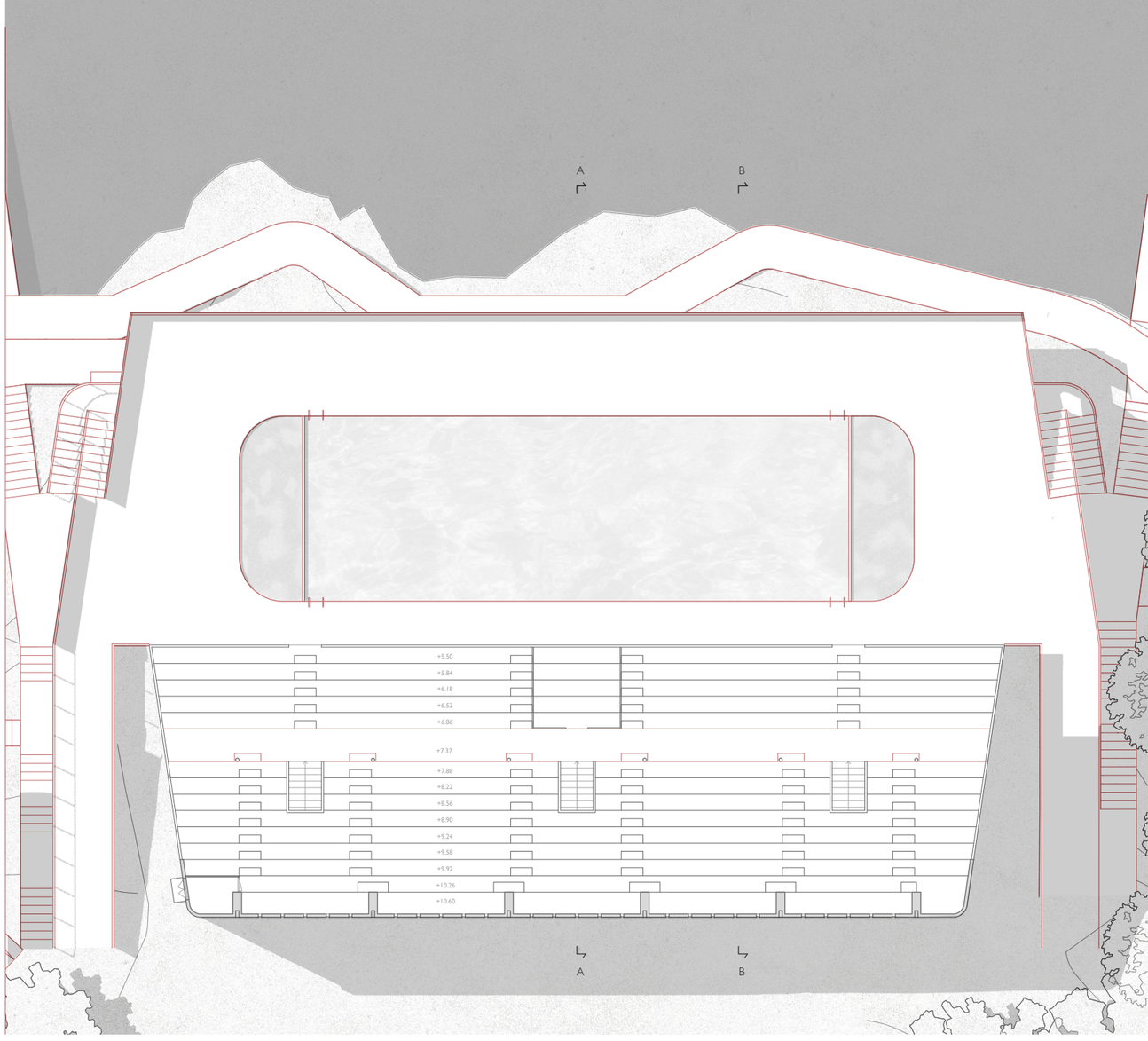
Site plan 1:500



Plan 1 1:250

The main entrance of the building is the middle opening. The main entrance is accessed by the public and by the customers going swimming. Swimmers access changing rooms to the left and right from the main entrance. These are mirrored in their layout. The two other entrances are closed off with added single sheet glass walls that provide privacy for swimmers moving between changing rooms, saunas and the front of the stand and swimming pool.

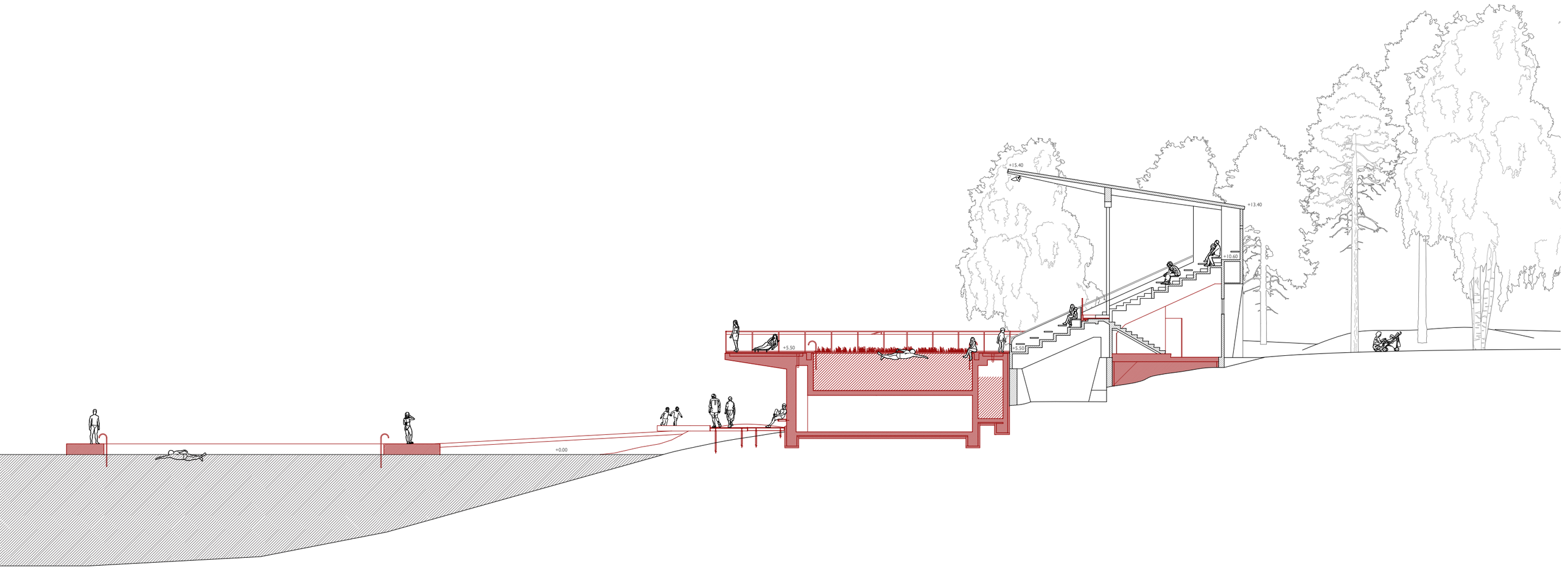
The interior spaces are insulated internally and the space by the stairs remain non-heated with natural air-flow.



Plan 2 1:250

The 25 meter swimming pool is complemented with hydrobotanic regeneration ponds that are a part of the natural filtration process. Not only do they filtrate the water, but they also add an element of greenery by the pool area. The natural filtration removes the need for chlorine and enhances a pond-like swimming experience.

Two openings have been made on either side of the stadium's front railing. They are aligned with the stairs to the changing rooms and provide direct access to the swimming pool. The platform of the swimming pool is on the same level as the courtyard, making it accessible.



Section A-A 1:200

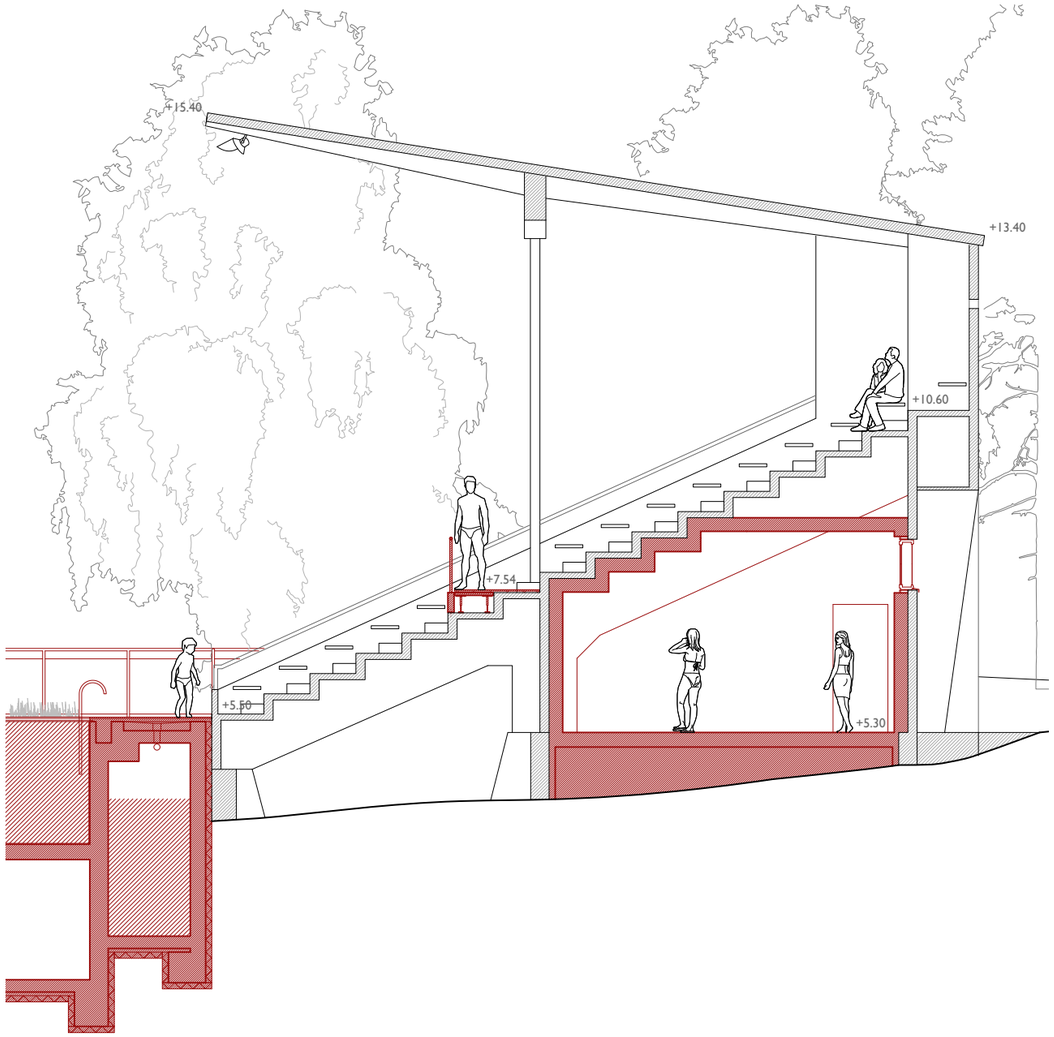
The swimming pool construction extends towards the sea by a canopy. This extension is a formal connection to the canopy of the main stand, while serving both swimmers above and the public underneath. It does this by creating more surface for the swimmers on top of the platform, and a roof for the passers-by sitting on the benches underneath by the water.

The pool extension and its canopy also enhances the division of public and private. There is a visible difference that idicates where non-paying customers can move.

The lower space under the stand of the original stadium is intended both for technical equipment for both poolwater heating and filtration. The other side is intended for storage.

While the filtration of the poolwater relies on natural remedies, the energy for heating is managed by ocean thermal energy. The energy source is optimal to appropriate due to the building's closeness to the water and the vast surface of the surrounding seabed. However, this requires pre-placed buoyes by the dock to prevent damage by anchors.

The extension enables swimming possibilities with a view. The wooden deck cladding on the concrete structure adds comfort for the users.



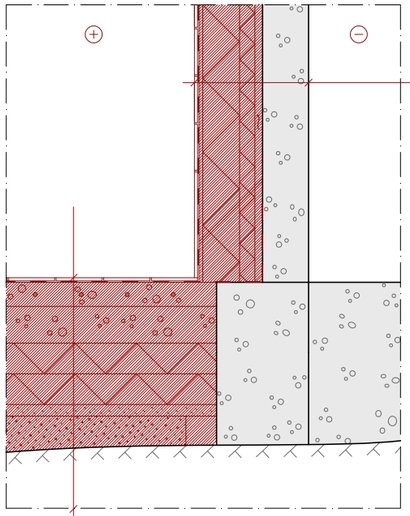
Section B-B 1:100

The adaptations to the original main stand include both functional changes and adaptation of the construction. Due to the new use, the originally non-heated stadium needs to be isolated internally to heat the spaces without changing the building's external appearance. The interior walls of the design proposal are masonry, which correspond to the original interior walls of the stadium that were also structurally brick.

The interior spaces of the stadium consist of two sets of changing rooms. The character of these rooms relate both to the history of the building and its new function. The building is intended for sports. The walls and floors are tile for easy cleaning and maintenance. The terracotta red is a nod to modernistic architecture, while the add of color and the vertical tile adds to the contemporary identity of the adapted building.

The materiality of the changing rooms reflect the historical atmosphere of the building, while adding modern functionality and comfort.

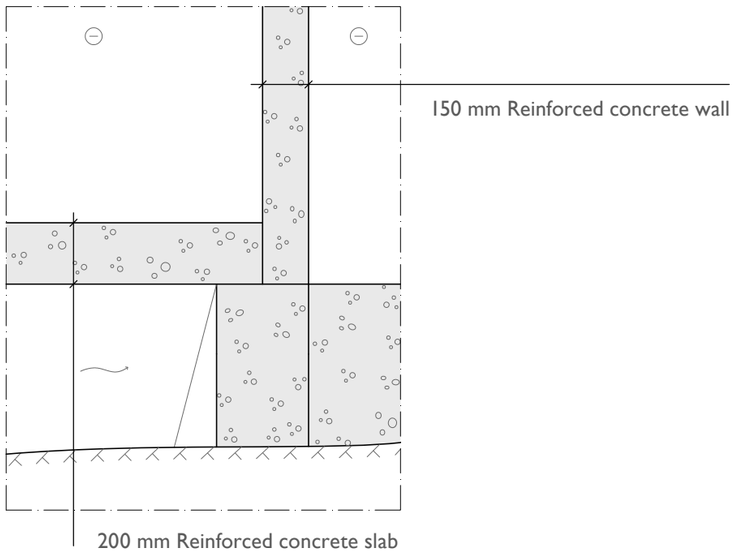
Proposal



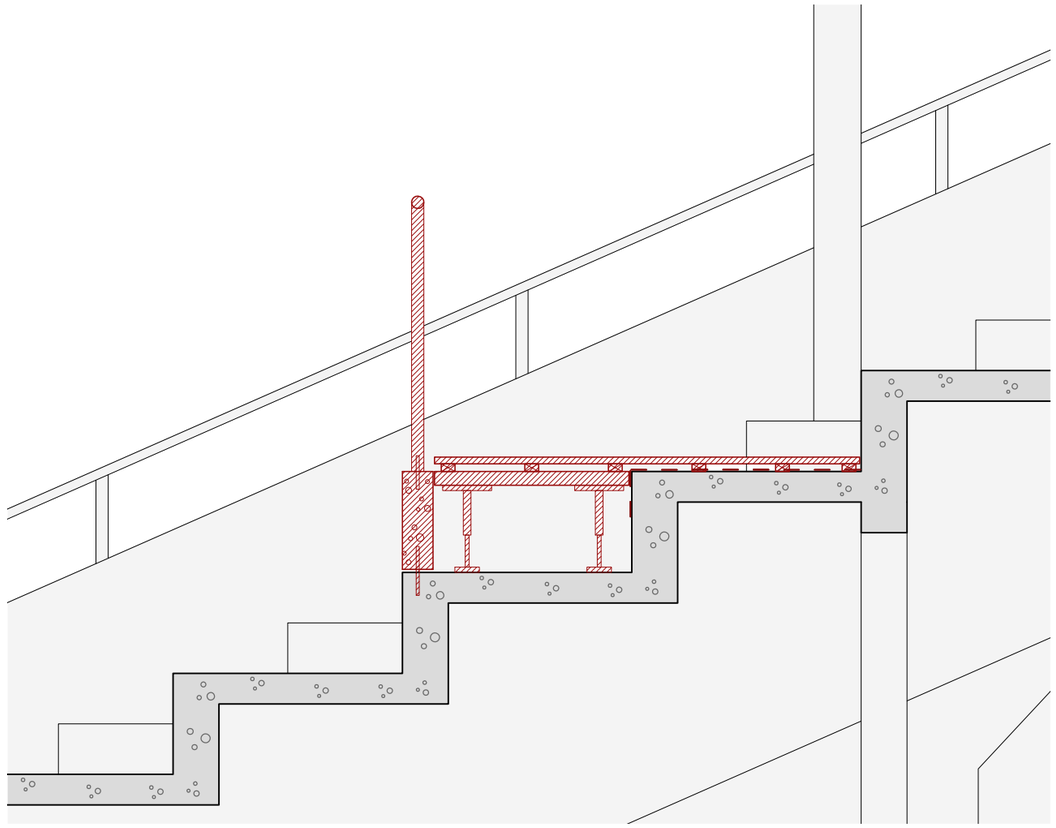
Wall surface, tiling
0,2 mm Water proofing membrane
12 mm Building board
120 mm Thermal insulation, XPS foam board, Wood framing
50 mm Wind barrier, Mineral wool
150 mm Reinforced concrete wall (original)

Floor surface, tiling
0,2 mm Vapour barrier
120 mm Reinforced concrete slab
Rubber-bitumen membrane band
Fiber cloth
200 mm Perimeter insulation
20 mm Leveling sand
Drainage layer
Foundation bed

Original



Exterior wall and foundation connection of the Rowing Stadium
Detailed section 1:20



Stand extension
Detailed section 1:20

To prevent raising the floor height, the originally ventilated slab is redone as a ground slab. The floor is complimented with floor-heating.

The part of the open-air stand of the stadium that is accessed from the interior spaces is widened to create easier movement along the stand. The structure is reversible for minimal intervention on the exterior. The structure is wooden with stainless steel feet. The added railing is founded on a concrete plinth that connects to the stand. The floor surface is cladded with wooden boards for comfort just like on the pool extension.

Renovation of concrete

Concrete is a durable building material that has the capacity to achieve a high service life. However, the steel reinforcement used in concrete to give the structures better durability in tension and bending (Ahlberg and Löfgren, 2022, 82) is also more sensitive to environmental impacts and can start to rust over time if measures are not taken.

Concrete structures can often be renovated, thus extending the life of the building. Restoration of concrete buildings usually starts with the identification of damage such as has been done in the 2021 condition survey made for the Rowing Stadium. Damage can be, for example, steel reinforcement corrosion, cracking due to temperature and moisture movements, faulty design, lime casting, chemical reactions such as salt water or sulphate attack, or accidental damage. Most of the damage that occurs is due to external influences, with moisture and frost penetration into structures being the most common cause of damage. The following phase for the Rowing Stadium would be to create an assessment of the choice of action depending on the damage. (Hassanzadeh, 2014, 4-5).

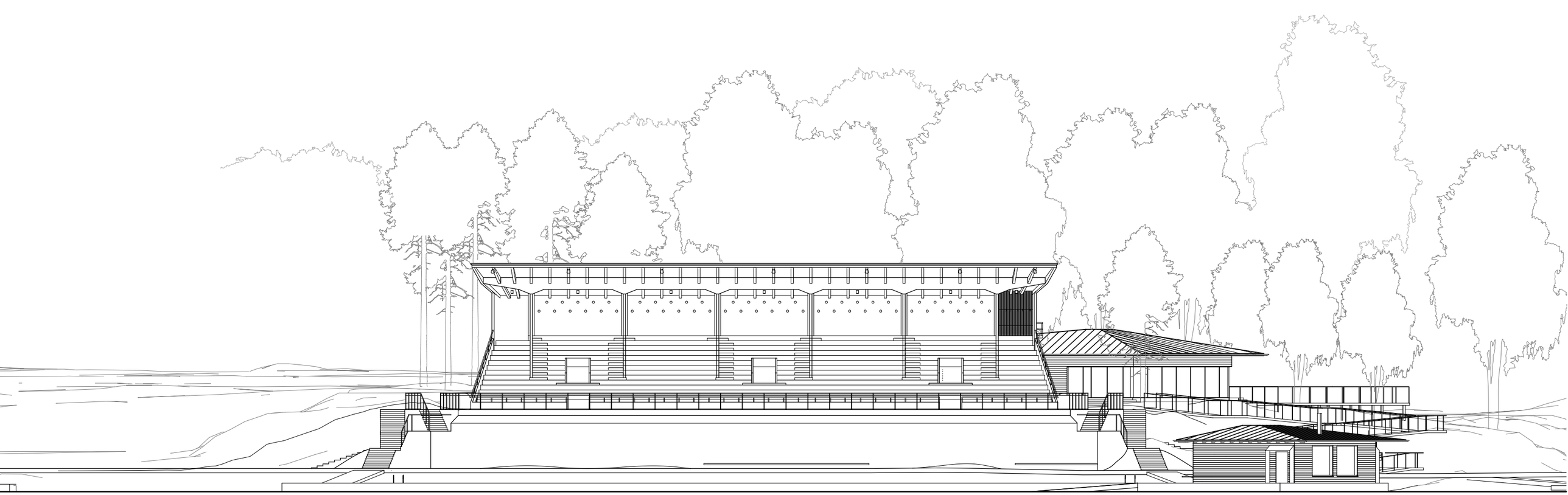
When renovating culturally valuable buildings, it is important that the repair method and scope are evaluated and planned to ensure that as much of the building's original structure as possible is preserved and that the intervention is not greater than necessary. It can be perceived as problematic to restore or reinforce concrete structures as there can be visual differences between the existing and new concrete surface and new plaster can change the original expression. (Ahlberg and Löfgren, 2022, 16-17)

The most common method when repairing concrete decay is to remove damaged sections of concrete by water jetting and pour new concrete or use shotcrete. The new concrete surface is then surface treated to increase its lifespan. In repairs of this type, it is crucial that the new concrete is compatible with the existing one to avoid further damage. In some cases, concrete that is already carbonized down to the steel reinforcement is instead coated by applying a membrane on top of the concrete, which can reduce the moisture content to acceptable levels. However, there is a lot of uncertainty about the procedure and the longevity of repairs carried out in this way. Other methods for treating different types of concrete damage also exist but are less widely used. (Hassanzadeh, 2014, 25-28)

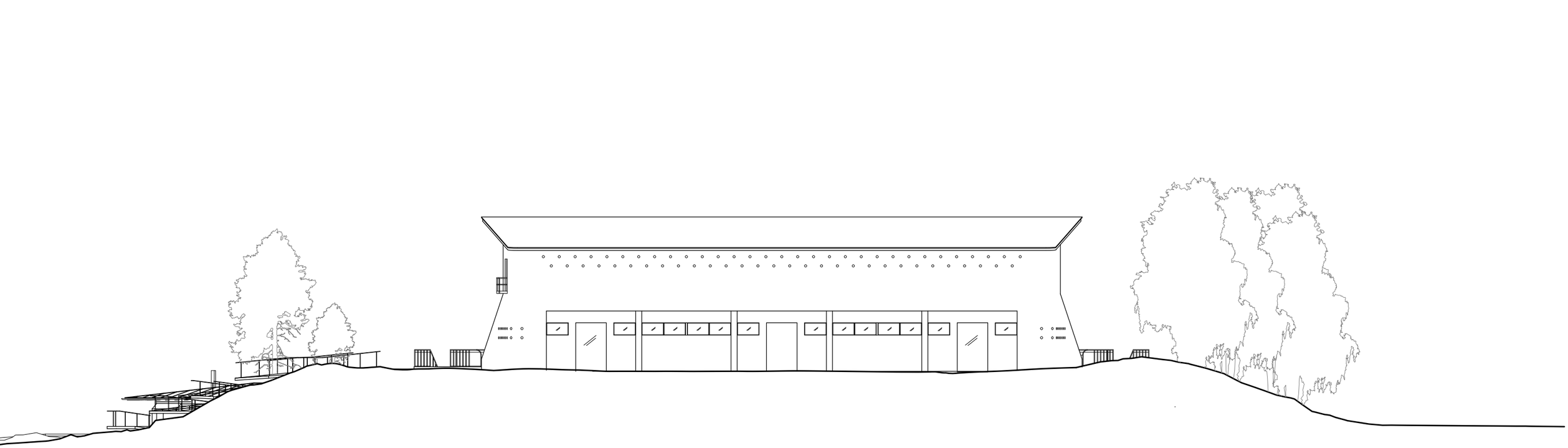
In some adaptive reuse projects, structures may need to be reinforced to meet the requirements of the new use when, for example, changes to load bearing structures are made to meet the needs of the new use. (Hassanzadeh, 2014, 37)

When reinforced concrete was established in the early 1930s it had to be manually spread into its shape. It was not until the 1950s that the concrete vibrator was invented. Early concrete structures from the 1930s are made of concrete that doesn't meet today's standards, where the constituents of concrete were mainly measured in density and water content, and often contain weak sections. The Rowing Stadium is an example of an early concrete structure from this period, which has aged poorly in its exposed location by the sea and whose load-bearing capacity has probably deteriorated. (Mölsä, 2022a) The increased understanding of concrete properties and weather phenomena has led to several renewals of regulatory requirements. In connection with restoration, structures can be reinforced to meet the stricter requirements. (Hassanzadeh, 2014, 37)

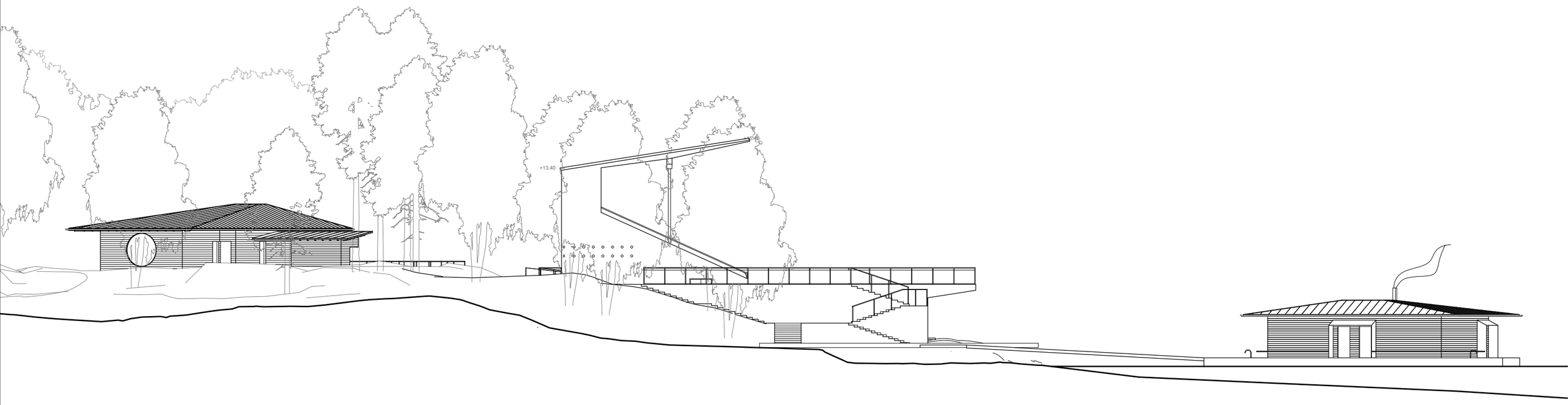
Repair methods are individual according to the damages of the specific biuilding. The repair method for the Rowing Stadium needs to be assessed by expert professionals with knowledge in historical 1930s concrete. Additionally, an evaluation would be needed for observing the possible changes in load-bearing capacity due to the implementation of a new use.



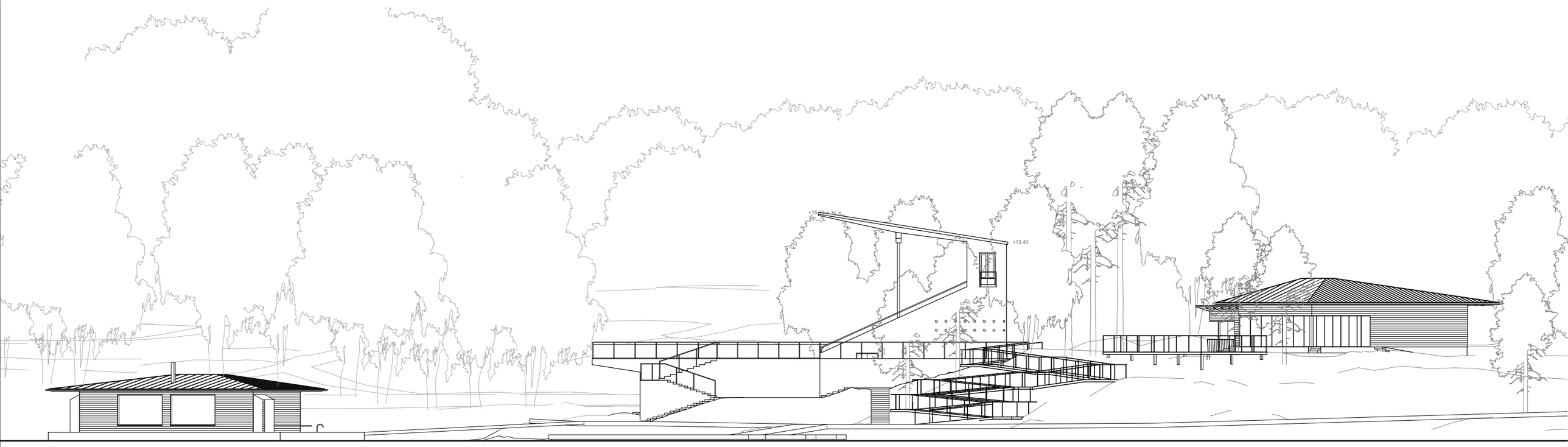
Facade north-west 1:250



Facade south-east 1:250



North-east facade 1:250



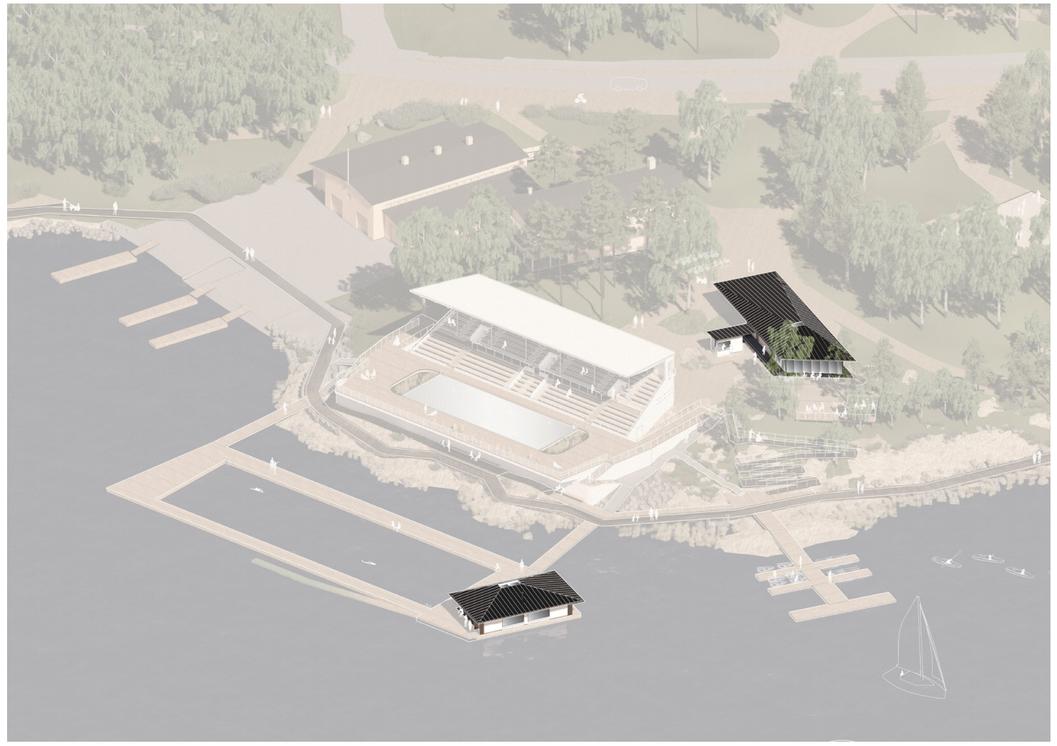
South-west facade 1:250

New construction

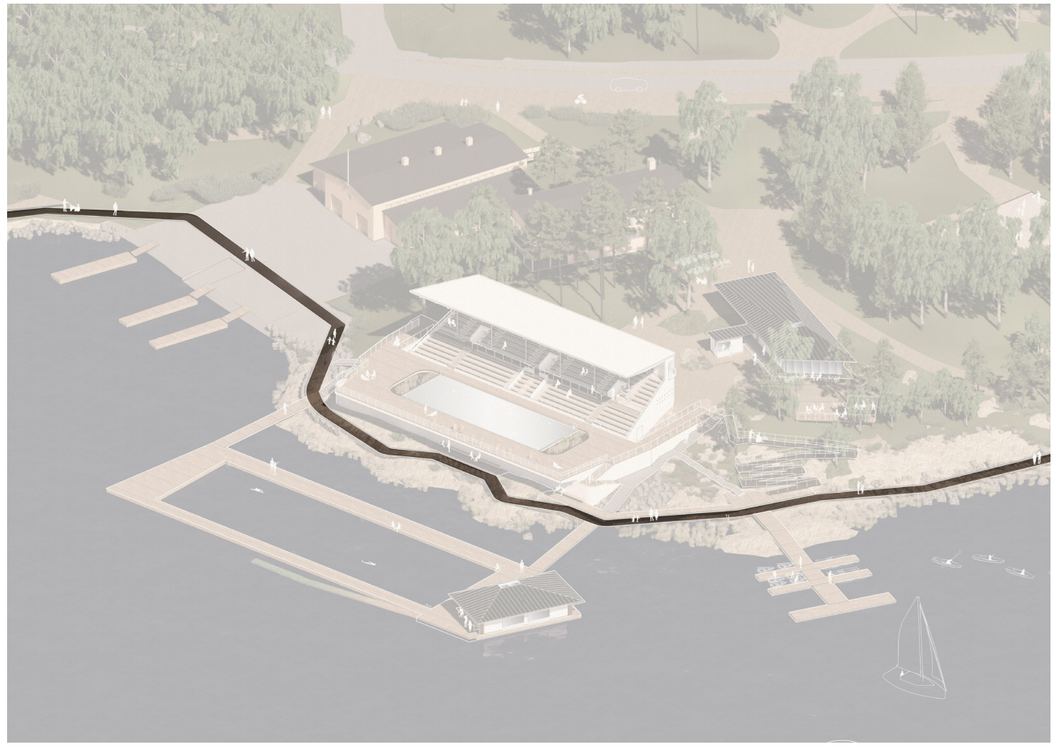
The original building and its additions will not cover all the function needed and therefore I explore complementary buildings that expand the potential use of the site.

Both the café and sauna are wooden structured with wooden white painted horizontal cladding to reflect the functionalist history of the original building and its surroundings. The roofs are slender and extend towards the water. The skylights add natural light and create partition and direction to the spaces.

A public coastal pathway runs along the waterline of the bay, passing the Rowing Stadium. It connects the different parts of the swimming complex, both with each other and with the rest of the surroundings.

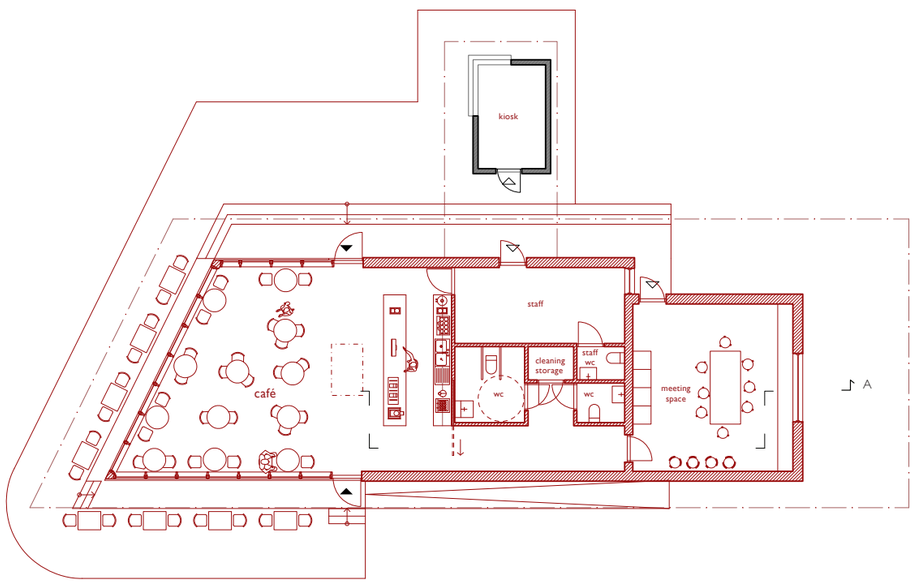


New proposed building construction consist of a café and a sauna.

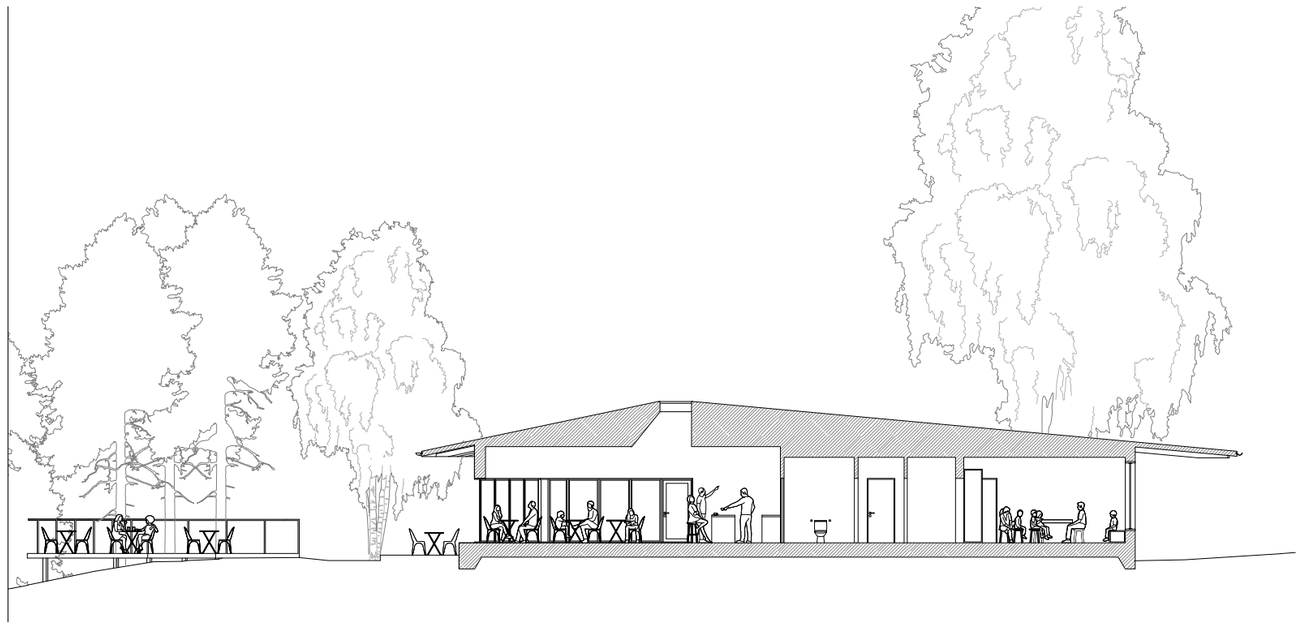


A proposed coastal pathway runs along the waterline.

The current secondary access, the service path, is enhanced in the design proposal. It allows a favorable view of the Rowing Stadium when approaching the building.



Café plan 1:200

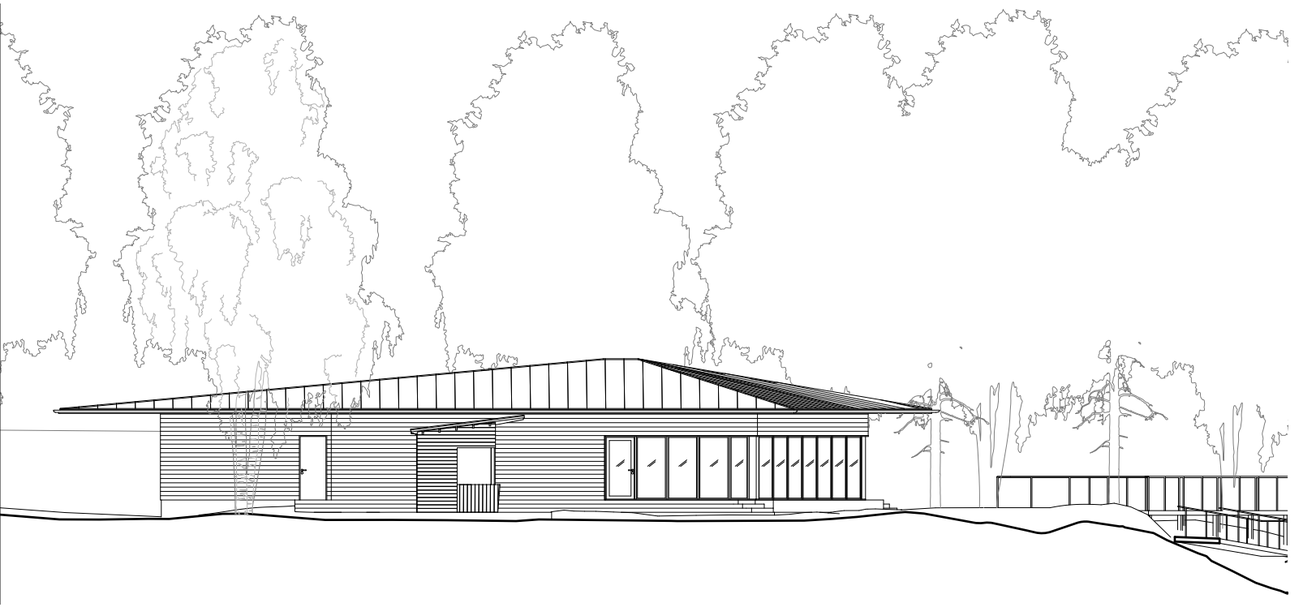


Café section A-A 1:200

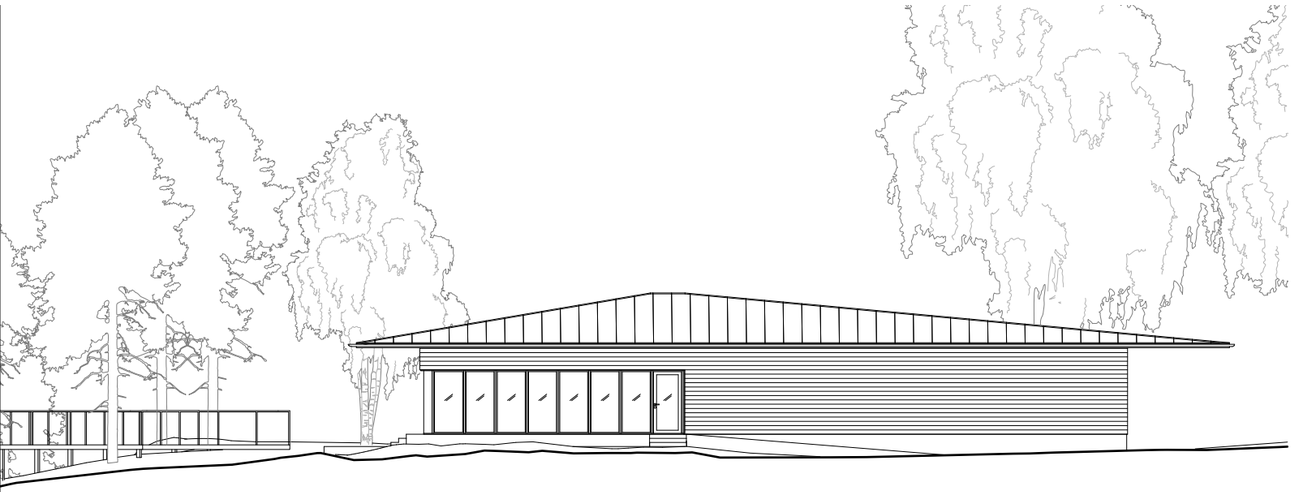
The café serves the swimming function and the public by being located not only close to the Rowing Stadium, but also in the surrounding park and coast environment on Taka-Töölö. The cafe is opening up towards the sea by the shifting gable and the glazed wall. Outdoor seating is available around the building and on the terrace by the sea. The kiosk from 1997 is reused and moved from its original location to connect to the new café for a natural movement between the buildings.

The café can be divided into three parts according to function. Firstly, the café area used by the public. Secondly, secondary spaces in the middle of the building with staff room, storage and toilets. The connection between the staff room and kiosk is a part of the surrounding terrace and is covered for comfortable access. Thirdly, the function in the north-east part of the building is a meeting space for community use. It can be accessed from the café or from a separate entrance behind the kiosk. Outside café opening hours it's accessed from the separate entrance. A sliding door isolates the café and toilets, making the toilets accessible for the meeting space outside opening hours.

The interiors of the café have natural wooden surfaces. The skylight adds athmosphere and an extra source of natural light.



North-west facade 1:200

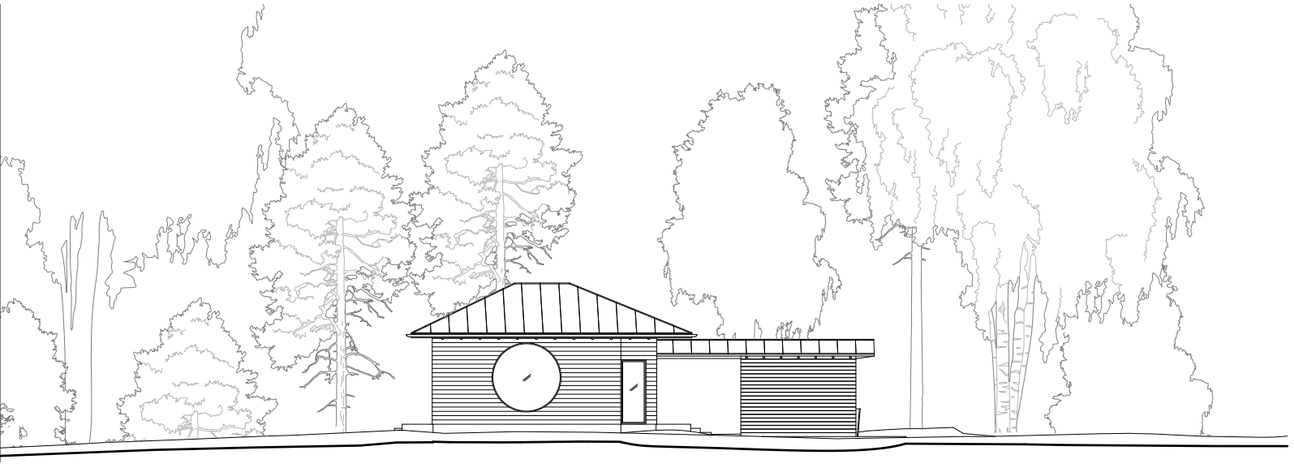


South-east facade 1:200

Preserving and incorporating the kiosk ensures easy customer flow in the area for quicker purchases. It can be used for tickets to the swimming and sauna facilities or for a quick stop for ice cream on a summer boat trip.

The kiosk available on the site today is integrated in the design proposal. It's location is changed from next to the administration building to between the café and the stadium. The roof of the kiosk is redone to unify it with the café.

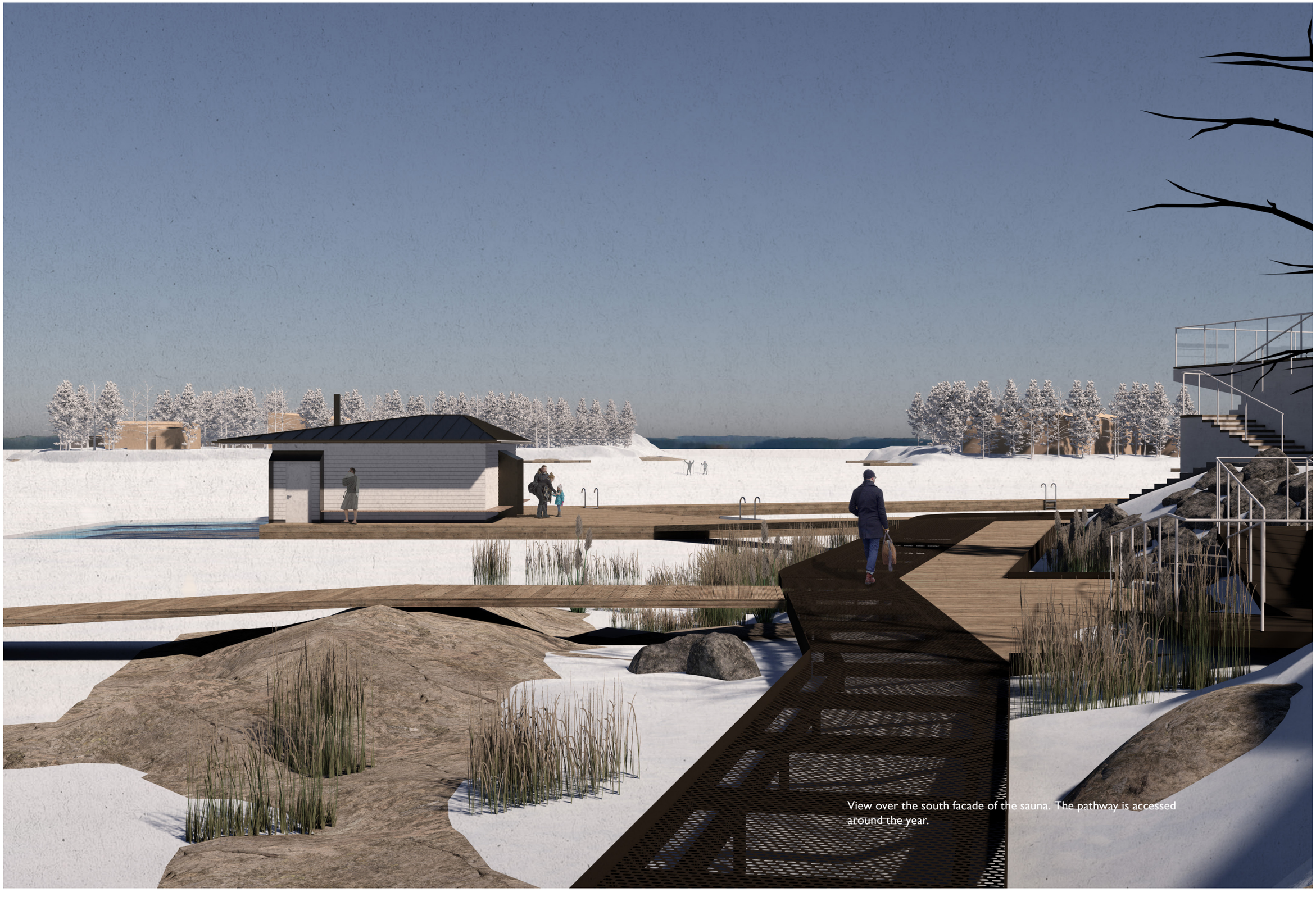
South-west facade 1:200



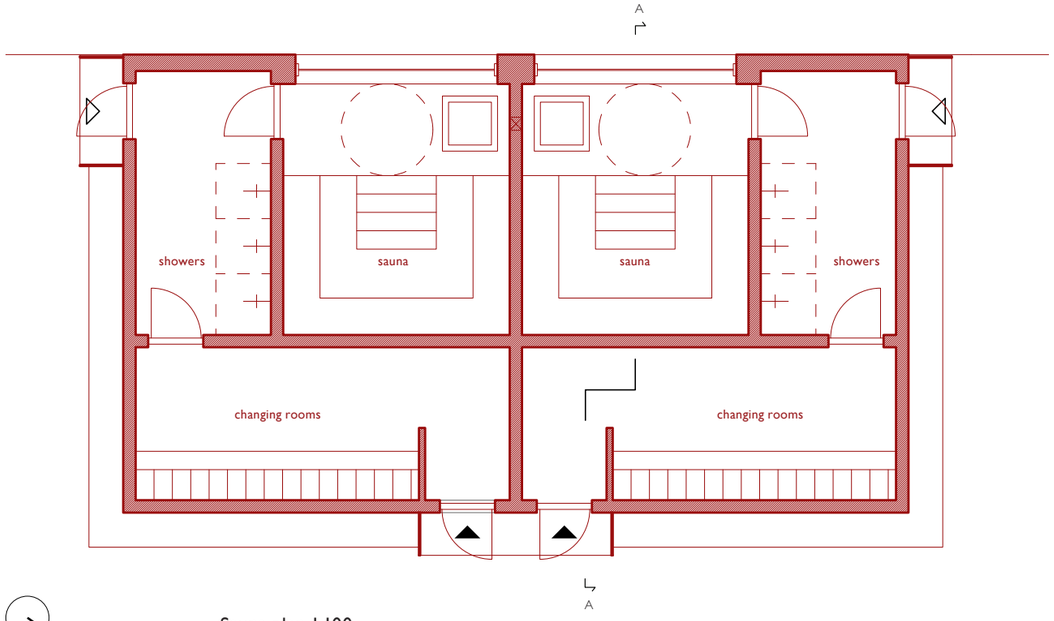
North-east facade 1:200

A circular window on the gable of the meeting space adds to the building's own identity while reflecting the round shapes and windows of the Rowing Stadium.

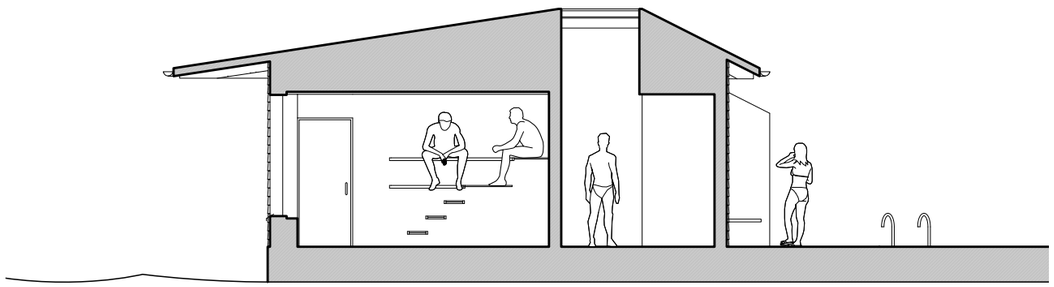
View from Merikannontie street. The round window of the meeting space adds to the unique identity of the project while connecting to shapes of the original Rowing Stadium.



View over the south facade of the sauna. The pathway is accessed around the year.



Sauna plan 1:100



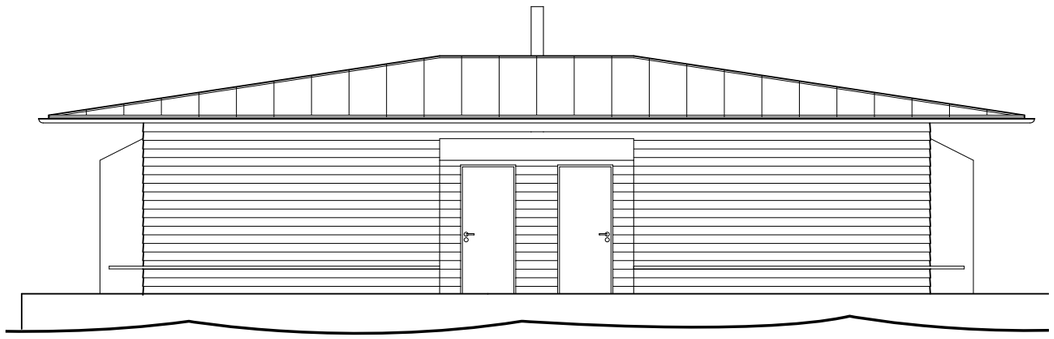
Sauna section A-A 1:100

The sauna window provides a scenic view over the open water.

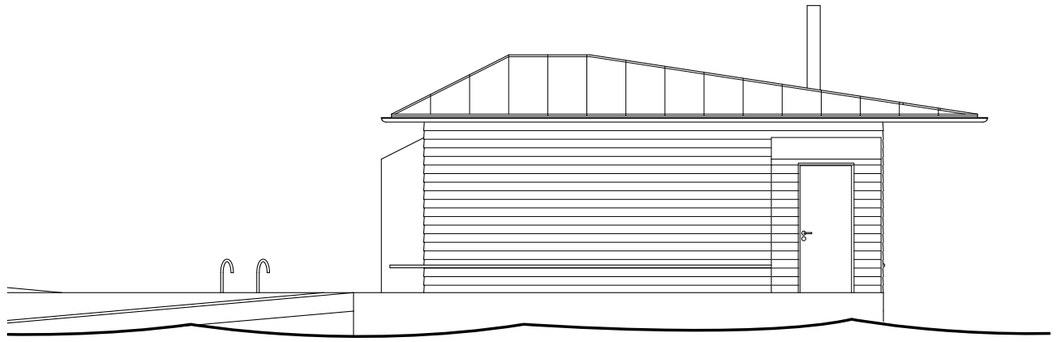
The Sauna is located on top of the dock, shifted in its direction in relation to the Rowing Stadium for the sauna to face the best view over the sea. The entrances have steel frames for privacy and wind shield.

The skylight by the changing rooms introduce natural light where windows would disturb privacy in the otherwise public surroundings. The sides of the building catch different sunlight and the building offers seating on benches that run along the facades. This allows swimmers to take a break and enjoy the view at all hours.

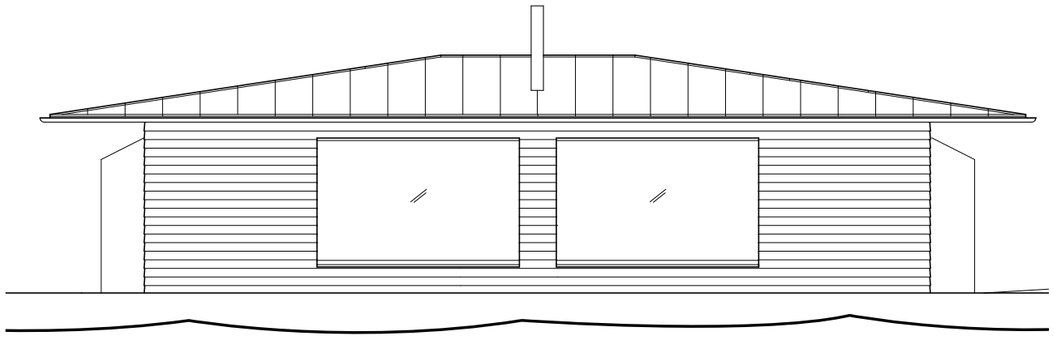
During winter, a part of the seawater pool remains unfrozen, allowing for public winter bathing, while the sauna remains accessible to customers.



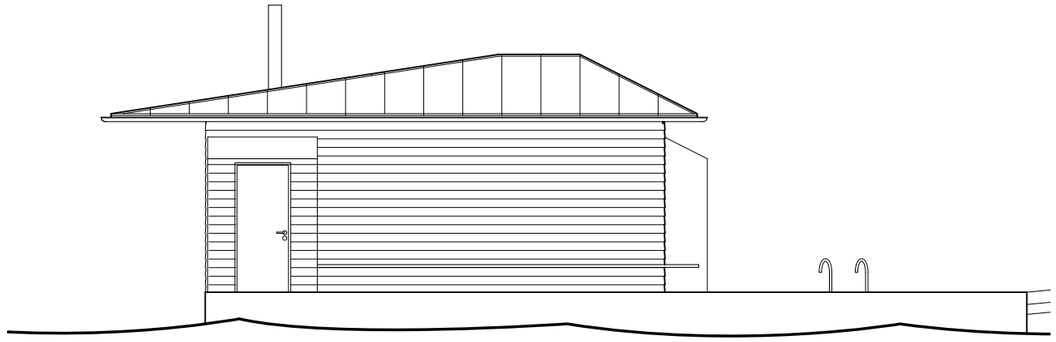
North-east facade 1:100



North-west facade 1:100



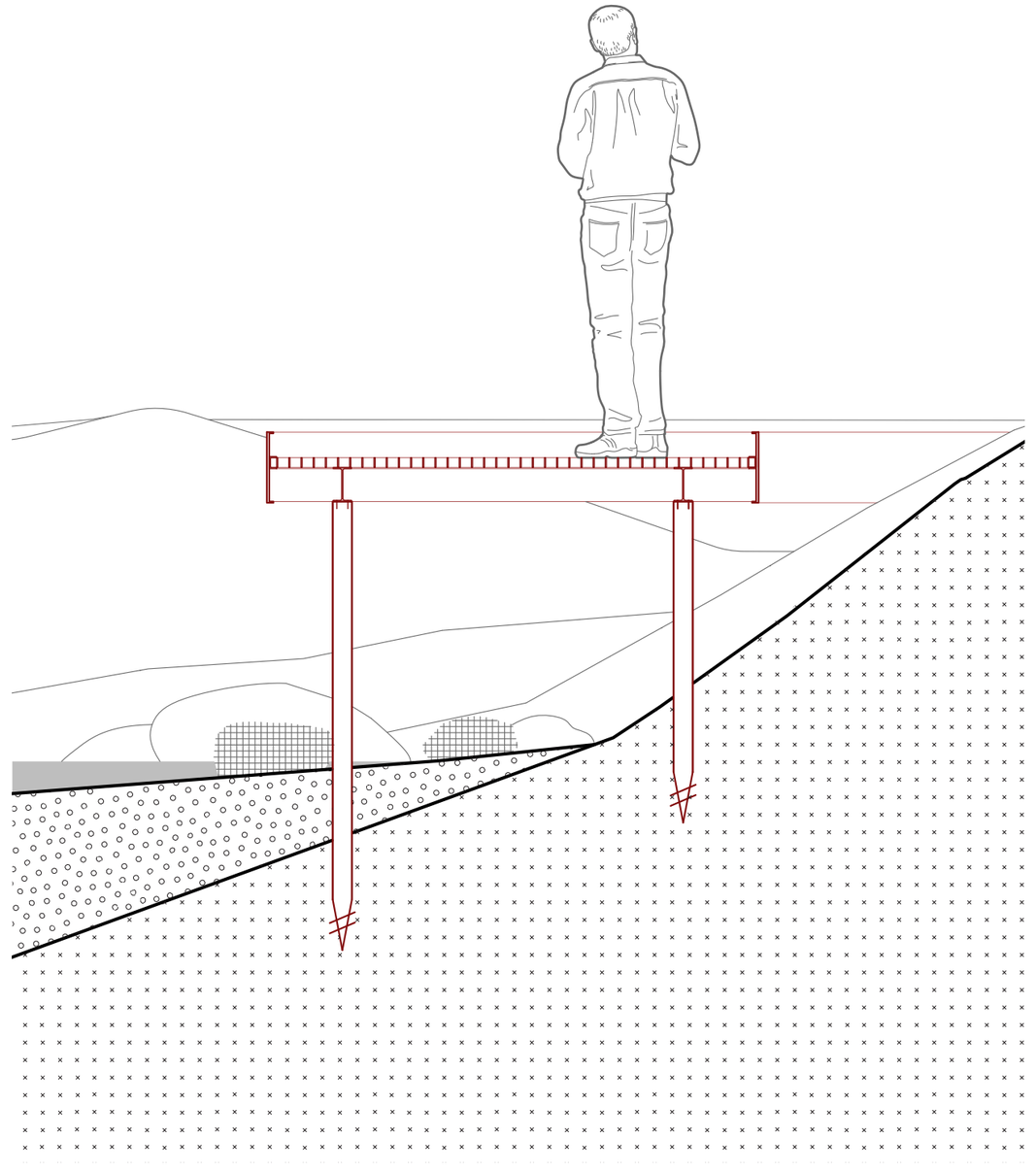
South-west facade 1:100



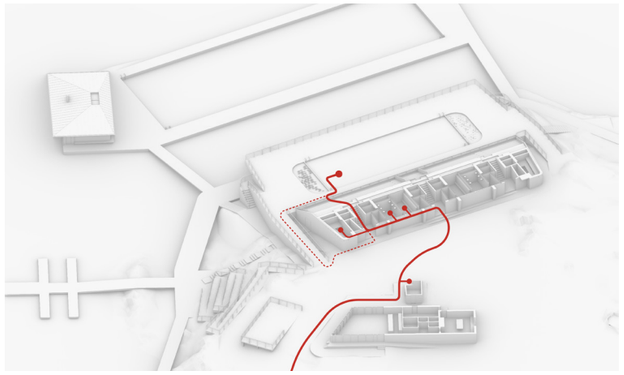
South-east facade 1:100

View from under the canopy of the extension. The steel pathway meanders in the landscape.

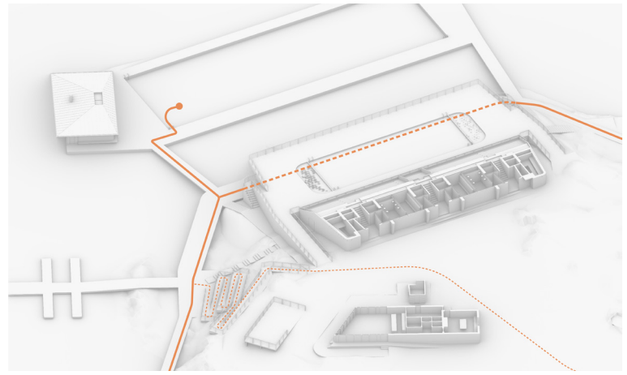
The concept for the pathway is its low impact on the landscape and respect of the surrounding nature. The steel pathway has a metal grid walking surface that allows the sea to pass through if the weather is rough. The structure is supported by helical stands due to their small surface-area against the underlying nature. The steel pathway is powder coated dark brown to blend into the landscape and be harmonous with the wooden materiality of the surrounding additions.



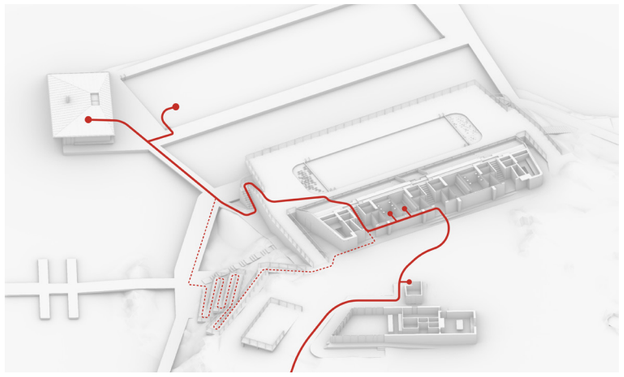
Pathway section 1:50



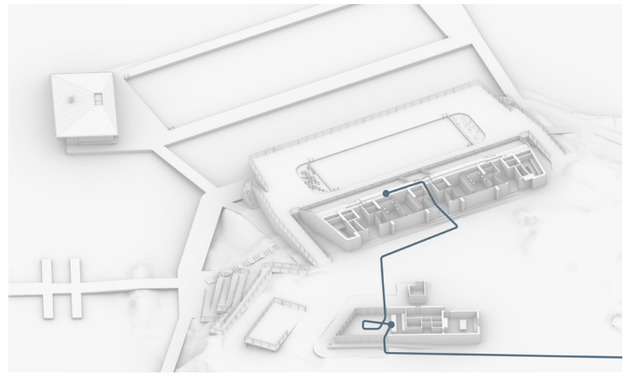
Paying customer using heated pool.



Non-paying customer using the seawater pool.



Paying customer using the seawater pool and sauna.



Café customer.

The four diagrams show the general movements on site. Red lines represent paying customers that use the kiosk or café to purchase the entrance ticket before using showers, swimming pools and saunas. Orange lines represent non-paying customers using the public sea water pool. The blue line represents café customers that can access the stands of the stadium. Dashed lines represent alternative accessible routes.

The distribution of public and private space was studied resulting in an aim to create the Rowing Stadium complex into a transparent and open facility. The area provides swimming possibilities in the sea for everyone, while still being economically feasible. The decisions of how accessible the different parts of the facility are to the public would be discussed with the entrepreneur involved.

Reflection

The initial aim of this thesis was to balance between preserving historical worth and accommodating present-day and changed needs in the adaptive reuse of the Rowing Stadium. The most significant design desicion made during the process of this study was to redo the concrete stand extension to make room for the new function. Despite losing a part of the building's historical worth by removing the structure used in the 1952 Olympics, the proposal aims to positively impact the bad condition it is in today. The author of the value assessment, B. Feilden states: *"Interventions practically always involve some loss of a 'value' in cultural property but are justified in order to preserve the objects for the future."* (Feilden, 2003)

The end result of the thesis creates a conversation around the degree of preservation and new development. This thesis allowed me to reflect on the methods of adaptive reuse. It is easy to modernize and relate to built environment by contrasting it, but in the case of the Rowing Stadium this would have conflicted too much with the values of the historical heritage. The words of Dutch architect N.J. Habraken inspired me in the beginning of the design process:

"Respond to those before you:
When you find structure, inhabit it;
when you find type, play with it;
when you find patterns; seek to continue them. (...)
Forget self-expression: It is a delusion.
Whatever you do will be recognized by others as your expression;
don't give it a thought
Do what the field needs". (Habraken 1994)

While I take large design decisions in changing the function of the building and removing historical structure, I'm also careful in my design method. I aim not to let the main focus be form or adding my own personal expression and touch. I follow in the footsteps of the modernist building and justify my actions according to what I learn from it and its site.

Using a value assessment model in this study for analyzing the building has been informative. To view a building not only through its visible qualities, but observing it through what makes it valuable in untouchable aspects broadens the understanding of the building. This helps motivate or reject ideas in a design process.

The feild of adaptive reuse of modern heritage is broad and there's a lot of available theory. To further develop this study and to establish a stronger foundation for the project, a deeper dive into restoration theory could have enriched the guidelines of the thesis process. However, it was a concious decision to leave space for design and value assessment.

In the potential future development of the design proposal, attention could be directed towards the division of public and private. Making the complex more private could perhaps protect the building against decay caused by vandalism, as is seen causing some damage today. However, I felt it was important to keep the ocean accessible for everyone.

The new function and construction proposed in this thesis does not remove the need for future renovation. The structure of the proposal is still concrete and the building is immensely vulnerable in its location in the windy maritime environment of slightly salty sea water, not to mention the dramatically changing seasons of the Finnish climate. However, the design proposes a function and therefore a possibility for an investor, which would ensure the motivation and finances for future maintenance. The value of a cultural heritage building is a strong motivation for the city to maintain its condition. However, as seen in the Rowing Stadium today, it is not necessarily enough if the building doesn't have a clear function or future vision.

Through the design process I've understood the challenge of adapting a building with a specific form for a new program. Although architectural projects aim to respond to a functional need in the present, there is no guarantee that it will remain relevant later. For example, 85 years later, the Rowing Stadium is decaying and not in use. In this thesis I aim to create a use that I view will serve the community for a long time. However, this longevity can not be guaranteed as in no architectural projects. For future projects I will focus on designing with a larger amout of flexibility and a tolerance for potential future changes. This would ease the work of the architect making smaller or larger adaptations to my designs.

References

Ahlberg, S. och Löfgren, E. (2022). Betong: material, konstruktion, åtgärder, skador, arkitektur, historia. https://gupea.ub.gu.se/handle/2077/74051 (Accessed 2024-01-02)

Cremin, R. (2022a) “Helsinki aikoo myydä romahtamisvaarassa olevan Soutustadionin – rakennusta korjannut insinööri: ‘Kantavissa rakenteissa ei ole mitään vikaa’”. Yle, 2 November. https://yle.fi/a/74-20002756 (Accessed 2023-10-06)

Cremin, R. (2022b) Kukaan ei huomannut, että olympialaisiin rakennettu soutukatsomo on sortumispisteessä: “Olemme ajatelleet rappausten vain lohkeilleen”. Yle, 6 September. https://yle.fi/a/3-12606128 (Accessed 2023-10-06)

Feilden, B. (2003) Conservation of Historic Buildings. 3rd Edition. Routledge.

Foster, G. (2020) Circular economy strategies for adaptive reuse of cultural heritage buildings to reduce environmental impacts. (Accessed 2024-01-06)

Habraken, N. J. (1994). Cultivating the Field: About an Attitude When Making Architecture. Places, Vol. 9, Issue 1. https://escholarship.org/uc/item/70d0q4ff. (Accessed 2024-02-07)

Hassanzadeh, M. (2014). Reparation av betongkonstruktioner: Skador och reparationsmetoder från 1970-talet och framåt. Reparationsbehov, forskningsbehov, effektivitet - Bidrag till projekt Bygginnovationen. (Rapport TVBM-3176). Avd Byggnadsmaterial, Lunds tekniska högskola. https://lucris.lub.lu.se/ws/portalfiles/portal/4082088/4254395.pdf (Accessed 2024-01-02).

Helander, V. (1997) Hilding Ekelund in the vanguard of Finnish architecture. In Tuomi, T., Paatero, K. & Rauske, E. (ed.) Hilding Ekelund (1893-1984): arkkitehti = arkitekt = architect. Museum of Finnish Architecture, p. 8-47.

Högström, H. (1996) Soutustadion - Rakennushistoriallinen selvitys ja inventointi. Helsingin kaupungin Liikuntavirasto. https://www.kyppi.fi/palveluikkuna/raportti/read/asp/hae_liite.aspx?id=107324&ttyyppi=pdf&kansio_id=91 (Accessed 2023-11-19)

Kantola, Eero (1999) Asemakaavan muutos. Architectural drawing. Helsingin kaupungin kaupunkisuunnitteluvirasto kaavoitusosasto.

Konsultointi KAREG Oy (1997) Soutustadion kioski. Architectural drawing. Lupapiste. (Accessed 2023-10-12)

Liski, M. et al. (2018) Helsingin Taka-Töölön kaupunginosan ominaispiirteiden selvitys. Helsingin kaupunki Kaupunkiympäristön toimiala et al. (Accessed 2023-10-03)

Makkonen, L. (2012). Modernismia Helsingissä. https://www.hel.fi/hel2/ksv/julkaisut/kirjat/ModHKI_fi.pdf (Accessed 2024-01-02).

Malmberg, J. et al. (2017) Do.co,mo.mo_ : Suomi : kohdevalikoima = Do.co,mo.mo_ : Finland : register selection. Helsinki: Docomomo Suomi Finland ry.

Mölsä, S. (2022a). Helsingin Soutustadionin katsomo-osan lippa kestää vielä toiset 25 vuotta – ”Siinä ei ole mitään vikaa”.Rakennuslehti. 3.3.2022. https://www.rakennuslehti.fi/2022/03/helsingin-soutustadionin-katsomo-osan-lippa-kestaa-viela-toiset-25-vuotta-siina-ei-ole-mitaan-vikaa/# (Accessed 2024-01-08).

Mölsä, S. (2022b) “Mahdollinen sortumavaara – Soutustadion on asetettu käyttökieltoon”. Rakennuslehti 25 January. https://www.rakennuslehti.fi/2022/01/soutustadion-saattaa-olla-sortumisvaarassa-olympialaisten-monumentti-on-asetettu-kayttokieltoon/ (Accessed 2024-10-06)

The City of Helsinki. (2013). Helsinki City Plan - Vision 2050. https://www.hel.fi/hel2/ksv/julkaisut/yos_2013-23_en.pdf (Accessed 2024-01-06).

The City of Helsinki. (2023). Velodromi. https://www.myhelsinki.fi/fi/n%C3%A4e-ja-koe/aktiviteetit/velodromi (Accessed 2023-12-30).

Tuppurainen, Y. & Karvinen-Jussilainen, A. (1984) Vanha rakennus, uusi käyttö. Hki: Suomen kaupunkiliitto.

Tilastotoimisto (1966) Kertomus Helsingin kaupungin kunnallishallinnosta vuonna 1963 Jälkimmäinen osa. Helsingin kaupunginarkisto: http://yksa.fi/100211/141570702343400 / (Accessed 2023-10-04)

UNRIC United Nations Regional Information Centre for Western Europe. (2020). Finnish Sauna added to UNESCO's Cultural Heritage List. https://unric.org/en/finnish-sauna-added-to-unescos-cultural-heritage-list/ (Accessed 2024-01-06).

VisitFinland. (2024). The relaxation routine all Finns know – cottage, sauna, lakes. https://www.visitfinland.com/en/articles/the-relaxation-routine-all-finns-know/ (Accessed 2024-01-06)

Images

Havas, H. (n.d.) The Velodrome by Hilding Ekelund. Available at: https://mfa.finna.fi/Search/Results?lookfor=velodromi&type=AllFields (Accessed 2024-01-10)

Helsinki Map Service (n.d.) Aerial pictures of Taka-Töölö show the development of the surroundings of the Rowing Stadium. Available at: https://kartta.hel.fi/ (Accessed 2023-10-18)

HKM (c. 1938) The Sports Hall. Available at: https://helsinginkaupunginmuseo.finna.fi/Record/hkm.39EF1EAB-9C34-4FFE-BE32-9BF41F3CF330 (Accessed 2024-01-10)

HKM (c. 1938 -1939) The Tennis Palace. Available at: https://hkm.finna.fi/Record/hkm.D82820FC-0CB0-408E-985C-8BCCB6D1B3D0 (Accessed 2024-01-11)

MFA (n.d.) Hilding Ekelund. Available at: https://www.mfa.fi/kokoelmat/arkkitehdit/hilding-ekelund/ (Accessed 2024-01-10)

Myller, M (2022) There are a lot of cracks in the walls of the stadium. Available at: https://yle.fi/a/3-12606128 (Accessed 2023-10-06)

Mölsä, S. (2022) Cracks on the side of the stadium extension. Available at: https://www.rakennuslehti.fi/2022/01/soutustadion-saattaa-olla-sortumisvaarassa-olympialaisten-monumentti-on-asetettu-kayttokieltoon/ (Accessed 2024-01-04)

Saarinen, U. (1952) The Rowing Stadium with the newly completed extension. Available at: https://finna.fi/Record/museovirasto.367B71FE66F1ADA6FC631186EDD0D43C (Accessed 2023-10-03)

Sky-Foto Möller (c. 1970-79) The main olympic stadium. Available at: https://hkm.finna.fi/Record/hkm.0401A697-4091-41B9-A4FE-BBF2D3266697 (Accessed 2024-01-10)

Sundström, H. (1950) Spectators at the Velodrome. Available at: https://www.helsinkikuvia.fi/search/details/?image_id=hkm.735C3206-96D9-4373-B647-738A5568197A (Accessed 2024-01-10)

Veljekset Karhumäki (1952) The Olympic swimming stadium. Available at: https://www.helsinkikuvia.fi/search/details/?image_id=hkm.AA13BF26-41FB-4A39-9CCE-296B89AF5B65 (Accessed 2024-01-10)

von Bonin, V. (1952) The Olympic Games were finally organized in 1952. (1952) Available at: https://www.finna.fi/Record/hkm.080376AA-C40A-4770-A594-E4FF1ED757C2 (Accessed 2024-01-10)

von Bonin, V. (1982) People washing carpets in the Kaivopuisto park in Helsinki. Available at: https://www.finna.fi/Record/hkm.78FCC353-B5D2-47D4-93A5-B6560FC80CF1 (Accessed 2024-01-10)

Jenna Hukkinen
Degree project in Architecture
Lund University