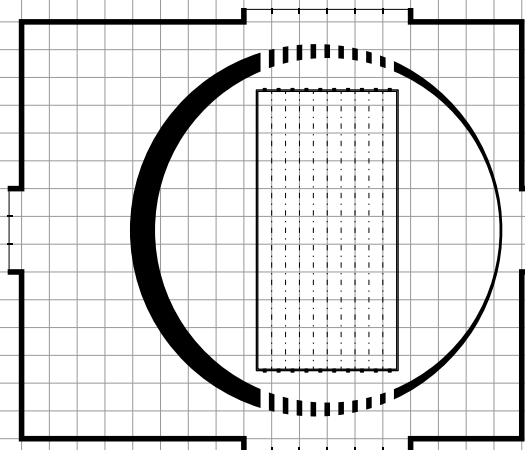




The local

Design informed by local materials and place

Marcus Aldefelt

Master thesis 2025
Chalmers School of Architecture
Department of Architecture & Civil Engineering
Examiner: Mikael Ekegren
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The local
Design informed by local materials and place

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"Architecture is always faced with the challenge of developing a whole out of innumerable details, out of various functions and forms, materials and dimensions."

- Peter Zumthor

Quote. 001

Abstract

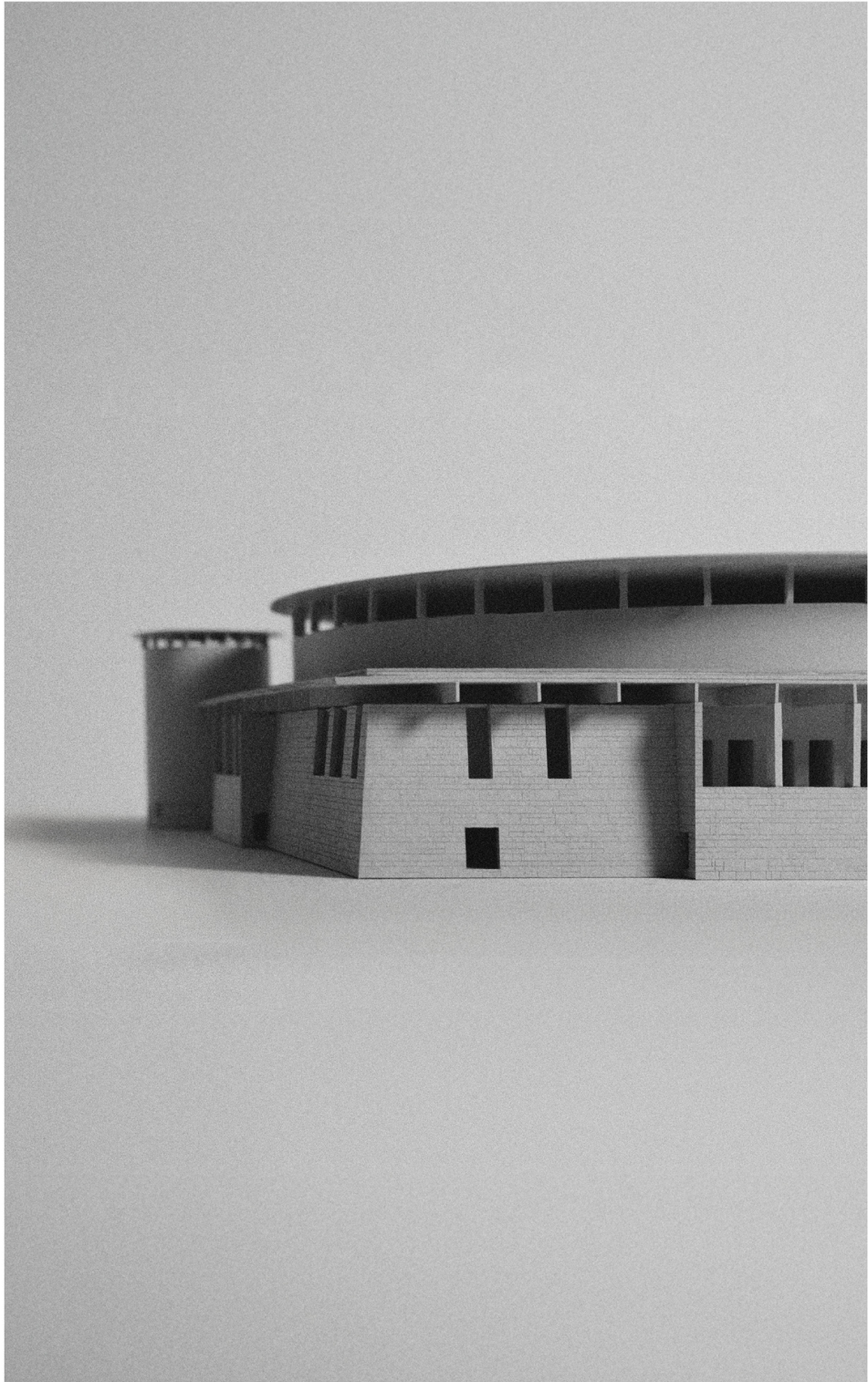
In a globalised world, where most things we interact with are international in one way or another, from companies and brands to architecture and design, finding what's specific and local gets increasingly harder. The sense of place and its identity are gradually getting diluted in this context. In contrast to this fluid world physical materials can be seen as absolute with their characteristics strongly linked to its origin. The materials used when creating spaces are essential, together with form they make up the cornerstones of what we experience. Building on the notion that materials can express a connection to its context, an understanding of an area's resources and what role they have played and how they have been used before could provide a framework for designing in the future, allowing additions to set side by side with its context, contributing to the local character.

The question explored in this thesis is how a design proposal for a swimminghall in the region of Jämtland can be informed by local materials.

The project consists of three parts; theoretical studies, context analysis and design iterations. By exploring the potential use of local materials, in relation to the concept of identity, combined with theories of critical regionalism, this thesis aims to synthesize these elements into a design that builds upon its material context in a contemporary way without turning to historical imitation. Highlighting the importance of the characteristic and influential buildings in the urban fabric. How a few buildings of strong character can act as the carrier of local identity, thereby helping people to navigate and feel closeness to the surroundings, strengthen the sense of place.

The Project is situated in Östersund, on the waterfront of Storsjön. The city was in need of a new swimming facility, after the old one was condemned beyond renovation. At the same time Storsjöstrand was being transformed from an industrial area within the city to an urban district. Through the public program of a swimminghall, the project aims to serve as a node and magnet, activating the new area by inviting and drawing the public to the waterfront.

Keywords: Material, Local, Identity, Swimming facility, Critical regionalism



"There is a lot said and written about architecture, and there is a lot of building. However, I rarely see a new building that inspires me, and I know of very few buildings that I would really like to be in. Perhaps then, we should spend more time thinking about what is truly important to us, what we like and what we want."

- Raphael Zuber

Quote. 002

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Introduction

Purpose & Aim

This thesis aims to shine light on the potential of local materials and how they can strengthen the sense of place. Everything today is international, brands, companies, clothes and music all of which are connected online, changing rapidly and at our fingertips at all time. In contrast to this we find our built surroundings, which we experience in person and isn't as easily changed. Therefore emphasising the importance of the design and its materials is essential if the end result is to be of high quality, ensuring a continuity of the urban character and sense of place.

This master's thesis aims to investigate the possibilities of using local materials in a public swimming facility, situated in Östersund. Highlight the importance of the characteristic and influential buildings in the urban fabric. How a few buildings of strong character can act as the carrier of local identity, thereby help people to navigate and feel closeness to the surroundings, strengthen the sense of place.

Thesis question

How can local materials inform the design of a new swimming hall, located in the region of Jämtland?

Methods

The thesis is being carried out through primarily two approaches, research for design and research by design methodology. The initial phase; research for design consists mainly of background research and theoretical literature studies, paired with case studies. Followed by the research by design, containing methods such as iterations of drawings, renderings, 3D-models and text, paired with continuous evaluations to ensure that the end goal is reached.

Delimitations

The work is of this thesis aims to investigate the role and potential of using specific materials with the goal of building upon a local identity, rather than focusing on traditional buidling methods or shapes.

This thesis works with investigating how one can work with a material palette informed by its position and context in a public building. Within the chosen region, Östersund is located, in need for a new swimming hall and the specific program is therefore based on this need.

The project takes future urban planning of the area into consideration, at the same time as it questions it, the project could be seen as an alternative of whats planned and what could be done on the site instead.

Additionally, it presents only one design proposal for the specific material context and does not aim to present a universal approach for all new buildings within said region.

Reading instructions

The master's thesis is divided into four sections: The introduction sets out the theoretical framework and method. The background presents the discourse, program and context. Reflecting on local materials potential and their characteristics.As well as theoretical background and case studies. The main material presents the design proposal. Lastly, the Epilogue conclude and reflects upon the work, the findings and implications of the study.

Terminology

Research for design: A literary research of theory and history, and a critical analysis of reference projects.

Research by design: An iterative design process, where the architectural material is being evaluated against the aim and purpose.

Critical regionalism: It aims to find a middle ground between the pros of modernism and being true to local contexts

Identity: The characteristics and attributes that characterise a specific location or structure

Material realism: an alternative term deriving from Bengt Romares term nationarealism referring to the style "National romanticism"

Globalized architecture: It can be described as a type of architecture without identity

Distinctiveness: That something becomes recognizable

Stabilitas loci: Continuity and stability of a place character

Genius loci: The atmosphere or spirit of a place

Background

Discourse

In the tracks of the industrialization, modernization and centralization of countries, the sense of place(genius loci) and identity within architecture has gradually been forgotten. (Kjeldsen et al., 2012) In the society of today buildings are constructed without a real sense of place, many of them are a simple result of economy and mass produced elements awkwardly assembled. Buildings of the same scale, character, style and construction can be found from Kiruna to Malmö. Diluting the identity of communities, resulting in a placelessness.

The term placelessness is described by Frampton as the neglecting of a place's unique features, for example to flatten an site with terrain, making it universal in its character for the sake of efficiency, a gesture which contributes to a condition of total placelessness. (Frampton, 1983)

Preserving culturally significant buildings is fundamental for society today, giving us a framework of our history and our place in it. helping us understand our place in history. Studying a place's history can help to inform our additions to the urban fabric in a way that connects it to its context. When doing this it is essential to regularly evaluate the context and its historical elements, as the world evolves so does a place built character, these evaluations can guide us in shaping the future.

The base of this project is an investigation and evaluation of local materials and the importance of a the few cultural and public buildings in the urban context. According to the idea that even if they are few in numbers they hold importance for a place identity.

This is done by analysing and examining the origin and production of local materials and how they can be utilized in a building with the program of a swimming hall. Focusing primarily on the slates from Offerdal, limestone and glazed bricks from Brunflo. Contextualised and potentially improved by a critical approach of how contemporary architecture can be informed by local materials and thereby become a part of our cultural heritage and commemorate its surroundings.

Juhani Pallasmaa and Peter Zumthor states that the attitude of architectural design has shifted from commemorating its surroundings to a more egocentric and selfish mindset, and that the genius loci to some degree has been lost, due to this. (Davey, 2010)

According to all of this, there can be argued that there is a lack of connection to the places around us within the building industry today. By investigating the possible use of local materials, revealing built patterns, then combining the knowledge within a new building, it could provide a work method. Where the history of a place, together with materials of the region and an understanding of the program provides a framework and work method which both can cultivate and develop a place's and its cultural heritage.



Fig. 001 Hallings foto (1955) Byggen i Östersund

"I want to understand everything, explain everything and build great buildings"

- Raphael Zuber
Quote. 003



Location

Growth and expansion

Östersund is a city which ever since it founding at 1786 has been a slow growing city. As an example, from 1904 to 1924 the city grew with 7463 inhabitants, on average 373 persons per year (Björklund et. al, 1986), and during the last 20 years has the expansion growth been around 275-350 inhabitants per year. (Östersunds kommun, 2024)The growth is expected to continue in a similar manner, 2020 was it one out of 24 regions which had an increasing population out of the 73 in sweden. (Östersund 2040 Översiktsplan, 2014) In a slowly changing context it's easy to forget or not see the changes taking place around us. Therefore it's also easy for cultural and historical values to get lost over time, without us even noticing before it's too late. (Kjell,1984)

According to the municipality of Östersund plans for the city until 2040 is to continue the expansion and growth in numbers. The plan expresses the need for densification within the city and that it could be one of the tools for the city to expand and grow. However it's also pointed out that buildings important for the local identity must be safeguarded and kept separate from the dwelling mass (Östersund 2040 Översiktsplan, 2014).

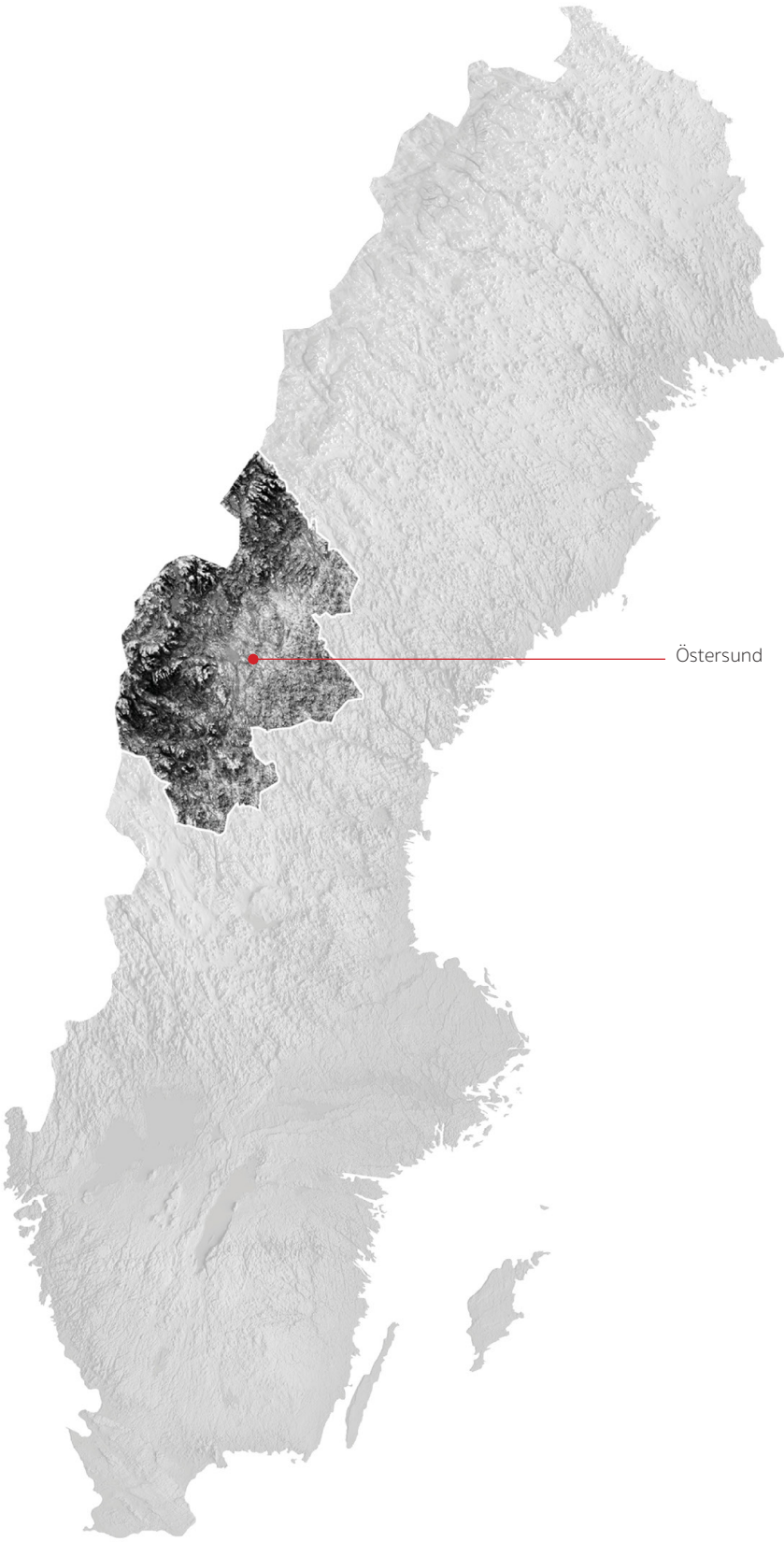
It is pointed out in the report the importance of considering a place's identity and respecting it when new developments are planned, this is said about the smaller communities around the city, however should it not also be the case within the city?

A place identity

The local identity of Scandinavian architecture to some degree has been lost, and that's partly due to the universality of architecture and fashion today, which is closely connected to the technological advancements, pushing us all towards a certain style or essence no matter of your location or background. (Kjeldsen et al., 2012)

When the proposals of Gustav III square in the centre of Östersund was published, it sparked a debate of the city's development. It became a platform for discussions of how a city like Östersund should expand. The proposal was criticised in the local newspapers due to its lack of understanding its context on numerous levels. The scale wasn't in relation to its surrounding buildings, the design and form language didn't have any connotations to the rest of the urban fabric or the region, and it didn't show an understanding of the everyday life in the city as it is today. (SVT, 2024)

According to Kennneth Frampton was the early 1900's different in the sense that the local identity of a place still could inform the shape and the development of the urban fabric. (Frampton, 1983) A time when many of the culturally important and influential buildings were constructed in Östersund. Lampugnani asks us "what should architecture look like, if it's based on the tradition of quality and quality of tradition?", as a new modernity which doesn't look back at history through nostalgia but rather adapts itself to the 21th century. (Spiegel, 1993)



Program

Swimming & public health

Swimming shows signs of being one of the best forms of exercise there is, with increased strengthening, reduced inflammation, and boosted heart, lung, and improved mental health. It is also a sport with the advantage of being accessible to all types of people and ages. (Austin, 2024)

It's an important knowledge and lifesaving ability, however today there are approximately 400 cases of drowning in Sweden each year which are reported, around one fourth of these people do not survive. According to Svenska Livräddningssällskapet are one out of five incapable of swimming 200m, and there has been a shift to increasing numbers regarding people's capability to swim. (Svenska Livräddningssällskapet, 2023)

Skolverket presented 2022 new numbers regarding the swim capability in Sweden, for kids between 11-12 years old. The numbers show that 7% of the kids do not live up to the requirements of swimming 200m, which is an increase of 2% since 2014. (Skolverket, 2022)

Existing swimming facilities

Swimming facilities in the municipality of Östersund, which the local swimming club ÄGIR also uses for their members.

01. Brunflobadet

1 pool of 25 meter
1 pool of 16 meter

02. Litsbadet

1 pool of 16 meter

Local interests

The local swimming club Ägir are today hosting activities in five different swimming facilities in and around Östersund (Ägir, 2024). The local swimming club Ägir's manager Dennis Wikström has been interviewed by the radio P4-Jämtland, where he expresses how the swimming sport has been neglected for the winning of an adventure swimming pool. The club would instead like to see that the politicians and the city would invest in a proper swimming arena of national standard, which is lacking in the north of Sweden. They would like to see an investment in the sport, swimming knowledge and public health through swimming. (P4 Jämtland, 2023)

Niklas Eliasson, the chairman of the local diving club, Jämtdykarna. Describes the situation from the club's perspective in an radio interview at P4 Jämtland. Eliasson points out that the club has been without access to a deeper pool since the old swimming facility on Rådhusgatan closed down 1987. The club has wished for a deeper pool of at least 3,5m now when a new swim hall will be built, however there has been no response from the politicians. The other pools in the region are too shallow to practise diving today. If they had access to facilities supporting their needs they could increase their activities and educate divers, however Eliasson points out that the club could go under if they don't get access to this type of facilities. (P4 Jämtland, 2023)

03. Sollidenbadet

1 pool of 12 meter

04. Storsjöbadet (to be closed)

1 pool of 50 meter (outside)
1 pool of 25 meter
Adventure pool

05. Östebergsbadet

1 pool of 16 meter



Theory and built references

The theoretical background consists of two blocks, first a literature based investigation of the subject of interest and discussions touching upon ideas deemed relevant for the work. Secondly an exploration and analysis of references comes in, selected and evaluated due to their relevance for the design project in different ways. Searching for well executed and inspirational solutions, focusing on certain aspects in each case. Aiming for a design proposal influenced by both theoretical ideas as well as realised projects, where ideas have been tested and thereby can be evaluated.



"In order to execute, it is first necessary to conceive... It is this product of the mind, this process of creation, that constitutes architecture and which can consequently be defined as the art of designing and bringing to perfection any building whatsoever"

- Étienne-Louis Boullée

Quote. 004

Place and belonging

Critical regionalism

Architecture is ever changing, styles and movements come and go and have done so over the centuries, if now only quicker than before. Regionalism and Critical regionalism are two ways of approaching architecture. Regionalism is rooted in years of development of the local vernacular practice. Originates from the local conditions of a place, its climate, materials available and culture. Critical regionalism shares many of these influences, however the difference between the two is critical regionalism's open minded approach to external sources of inspiration, finding new solutions and utilising the advantages of modern technology while staying true to its local context. (RTF, 2022)

Paul Ricoeur is quoted by Kenneth Frampton in the text Towards a critical Regionalism: Six Points for an Architecture of Resistance - "The phenomenon of universalization, while being an advancement of mankind, at the same time constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong." (Frampton, 1983)

The chase of optimizations within the field of technology have led the building industry to a universal condition of which all modern buildings are being measured against. Limiting the freedom and possibilities of the work to a minimum.

If architecture should have a chance to be sustained in the reality of today it must assume a role of critical practice, equally distance itself from the ideas of enlightenment's ever evolving progress as well as the unrealistic idea of returning to a preindustrial past. In the sense of removing yourself from both the pure optimization of technology advancements as well as being careful of not falling into nostalgic ideas of historicism and superficial decorations. It is only then that a culture of strong identity-giving design can exist in correlation to the modern building techniques. (Frampton, 1983)

Genius loci

The romans coined the term Genius loci, referring to the spirit of a place, which Christian Norberg Schulz discusses and the importance of one of man's most basic needs, to experience his life as meaningful. A place is a very concrete part of a person's life, the person's identity depends largely on the degree to which she feels like she belongs to a place. To create existential spaces can be described as the purpose of architecture, and Schulz describes it as its when man lives in a place where he can orient himself in the environment then he can experience it as meaningful. (Norberg Schulz, 1980)

The essence of a place is the features giving it and us our identity, only if we manage to understand these places on our own, then we might be able to play a part in a creative way of contributing to its history. A place is not static and its structures are never fixed in one state. As a rule these sites are ever changing, sometimes fast and other times slow, this doesn't always mean that the genius loci itself changes or gets lost. An area keeps its identity during long stretches of time, a stabilitas loci is a key condition for human life. (Norberg Schulz, 1980)

According to Schulz its needed to work with qualitative methods and not only abstract and scientific methods if an understanding of the phenomenological aspect of architecture is to be developed. This is needed to solve problems and gain understanding. (Norberg Schulz, 1980)

Schulz points out that in today's society we are giving the "the tools" a very large importance, even more than the importance we put in our life world. The term "the tools" refers to abstractions within scientific working methods of gathering data and numbers, in contrast to the world of our everyday life which does not consist of these terms but rather concrete phenomenons like materials, for example stone, bricks and wood, living things like people, plants and animals. And just as important is the seasons and the weather changes it brings to our days and nights. These are the elements which make up our everyday life, and an understanding of these is important for the work of a good architect. (Norberg Schulz, 1980)

Local identity

Eberle & Aicher points out that an intense sensation becomes present when we are faced with foreign terrain or unfamiliar contexts, which initiates a will to orient one- self. One tries its best to comprehend a place and its structures, activities and atmospheres. It's only if we manage to do this successfully, we can feel a sense of relaxation, freedom and connection to a place. (Eberle & Aicher, 2018) Every urban context has however been built up over generations, a process full of conflicts between wants and needs of that specific place and its people, according to Riitta Nikula. So when an architect designs something new in the urban area he is required to be in control over the two completely different aspects of a project if he wants it to become a part of the whole. The new building stands as a testament of the designers understanding of history as well as the level of understanding of modern techniques and materials. (Davey, 2010)

Peter Zumthor and Juhani Pallasmaa, two examples of architects which have been working with critical regionalism points out in their conversation captured in the book New nordic - architecture & identity, the importance and the inspiration they find in Alvar Aalto's work, as a front figure of movement. They emphasise this is due to his ability to combine the international style with the Finnish traditions, keeping his designs modern while being deeply rooted in the Finnish identity. (Kjeldsen et al., 2012)

The local identity, culture and its traditions are important and we can't afford not to recognize this when we build new buildings. The additions should aim to support and reveal what's already there, not ignore and turn away from its context. What is identity then? It could be described as distinctiveness, meaning that something is recognizable, has character and is different from something else. It can create a place which you can feel and relate to. (Kjeldsen et al., 2012)

It's easy to forget the importance of things, especially in a world of nowness, where nothing lasts longer than three months before something new comes. As an architect you have to show respect to the surroundings, it's easy to get stuck in the making of your own identity. The profession demands a sense of responsibility, everything is a part of a larger picture, connected both to history and the future. (Kjeldsen et al., 2012)

If we want to work with the local and its identity, then we have to practise ourselves to see the specific qualities in the ordinary, learn how to work with it, translate it and use it. The task of the architect is to redefine and reconsider a place and what's already there, then through an intervention a good architect should be able to make its lesser neighbours look better. If that is to be done a certain degree of perpetuation of the sense of a place is needed. (Kjeldsen et al., 2012)

Reinterpretation

Translation

Benjamin Walter writes in the “task of the translator” that the potential of translation of a work can be found if you read inbetween the lines. The higher the quality of the original work is, the more it remains translatable even if the translation only references back to the original momentray. (Walter, 1992)

Walter describes the relationship between a translation and the original in the a similar manner as a tangent meeting a circle lightly at only one point, then continues its path straight into infinity, in the same way does a translation touch very lightly upon the original. Thereafter continuing on its own course in the same manner as the tangents path into the infinity. According to this metaphor It seems satisfactory to argue that the original and translation are very different from one another. The degree of translatability could be seen as a key quality of a specific work, it means according to Walter that a specific part of the original could be read in the translation. (Walter, 1992)

Shape grammar

The method of shape grammar according to Lambe and Dongre is an analytical tool which through analysing the existing architectural style, its materials and elements can act as a base for generating new designs. To utilise this tool a deeper understanding of its surrounding context is necessary for this design approach since its based on its contextuality. The existing architectural styles and their elements and materials are analysed and evaluated to sort out the distinct characteristics, to be utilised in further development, which would be the base for creating a continuous and harmonious environment of both old and new buildings. (Lambe and Dongre, 2019)

Combining the method of shape grammar with an extensive research of the place's history and development merged with Benjamin Walters principle of translation, these methods aim to push the design proposal forward while still keeping it connected with its context.

Material and form

Stereotomic and tectonic

Gottfried Semper was an architect and theorist during the eighteen hundreds, he described buildings according to four elements of architecture, a sort of classification system. (Schwartz, 2017) The elements are called, the hearth, the earthwork, the roof and the enclosing membrane. These were according to him the core concepts of architecture, form and construction are also described by Kenneth Frampton and his principles of solid construction and filigree construction. Semper described the same matter as stereotomic and tectonic. The solid construction and the stereotomic could both be described as a homogenous construction, based upon a craft and materials originating from the earth. In contrast to filigree construction and the tectonic which refers to a light framework made out of parts, according to Semper, its origin comes from the textile arts and crafts such as weaving, knitting and braiding. (Hatz, 2006)

The terms stereotomic and tectonic which Semper brought to light 1851, are still today relevant however the world have changed and building methods with it. The toolbox of the architect has increased and technology now offers solutions which have not been available before. So the terms are still relevant but on a more conceptual level today, what does a space express in relation to its materials and how is it experienced. it might be true of the construction or not due to technical innovations. (Hatz, 2006)

The focus on local materials in this study means materials of the earth, primarily stone and brick. Therefore by following the materials own logic the project is taking on a stereotomic character.

National romanticism & material realism

Material realism is an alternative description of the building style often referred to as national romanticism. Since they are generally not talking about nationalistic features nor romantic once. However the essence of these buildings are according to Björn Linn a clear example of working with blocks and volumes in a stereotomic manner and a strong emphasis on the materials colors, textures and structure. Linn built this statement upon the work of previous theorists like August Brunius, Bertil Palms and Bengt Romare. Which also explored a renaming of the style due to its misleading name, the terms they explored were national realism, environmentally bound primitivism and colorism and cubism. (Linn, 1967)

Many of the public and characteristic buildings of Östersund are of the style national romanticism, examples of these buildings are the city hall, the great church and the Alberhshallen. (Kjell, 1984) Or rather material realism according to Linn, and stereotomic according to semper.

Working with a local material palette in this case consisting of limestone, schist/slate and brick, in a context where the most prolific buildings are of the national romantic character. The two factors in combination invites for a building design based on material realism, stereotomic and true to its materials.

References

No project is exactly similar to another, by investigating a series of case studies the aim was to find and point out the qualities of said projects. Allowing us to isolate different qualities and solutions, building a library of good examples which then contributes to inform the new and final design in relation to its own specific set of constraints and possibilities.

Artistic references

- 01. - Laretta Vinciarelli
- 02. - Étienne-Louis Boullée

Built references

- 01. - Østre Porsgrunn kirke
- 02. - 20 social housing
- 03. - Iragna town hall
- 04. - Therme Vals

Local references

- 01. - Tullkammaren
- 02. - Handelsbanken
- 03. - Telehuset
- 04. - Ahlbergshallen
- 05. - Rådhuset
- 06. - Stora kyrkan



Fig. 002 Evert Pettersson (1989) Brytning av kalksten

"Architecture does not happen. It is a result of will, disciplinary knowledge, skills and persistent work. However, to identify interest and potential it is necessary to study architectural examples. Our discipline becomes wiser for each year; we build upon the knowledge and experience of others. To study architectural work, not in order to copy, but in order to understand the possibilities within a certain scope of problems, is not only worthwhile, but necessary."

- Beate Hølmebakk
Quote. 005

Artistic references

- 01. Laurotta Vinciarelli
- 02. Étienne-Louis Boullée

The bold work of Étienne-Louis Boullée and Laurotta Vinciarelli's explorations of architecture visualize and manage to bridge the imaginary with the physical world, provoking emotions and sparking ideas of what could be. Boullée's grand and dreamlike illustrations inspire a sense of monumentality and importance through form. Vinciarelli, on the other hand, focuses on the relationship between architecture and water. Creating calm spaces through a combination of diffuse lights, mirror-like water in contrast to clear shapes of architecture. Both envision spaces that are imaginative and challenging, a source of inspiration even if the design project does not intend to replicate these exalted spaces.

In an article of Architectural Design by Joseph Becker from 2024, Étienne-Louis Boullée architecture is described as pioneering, experimental and visionary for its time. In Boullée's essay "Architecture: Essai sur l'art" from 1968, he writes that the art of architecture lay more in the conceptualising, the imagining, of its potential rather than in its construction. (Becker, 2024)

George Ranalli describes Vinciarelli as an architect, theorist and artist who never committed to one style or followed one ideology but rather drew inspiration on the entire field of architecture's historical pursuit of space. Portraying spaces which challenge our minds and sense of depth. At the same time modern and yet ancient in character. Placing her in the fine company of theorists like Étienne-Louis Boullée and John Hejduk. (Ojeda, 2015)

Both Boullée and Vinciarelli's free and explorative works remain timeless sources of inspiration, encouraging explorations of light, space, and form with imagination and sensitivity, pushing boundaries.

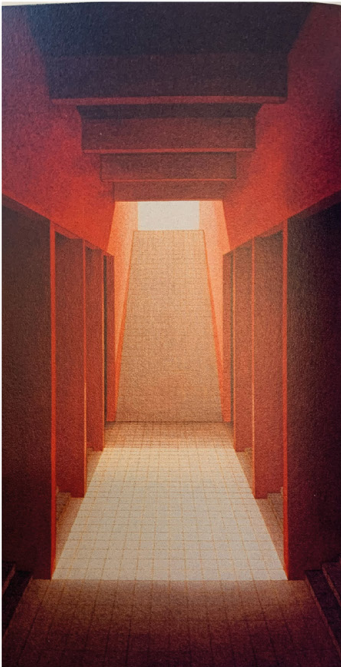


Fig. 003 Vinciarelli, L. (1990). Red Room



Fig. 004 Vinciarelli, L. (1989). Steps

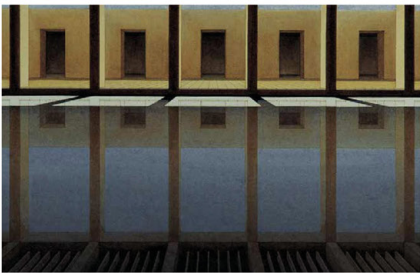


Fig. 005 Vinciarelli, L. (1993). Per l'aria IV

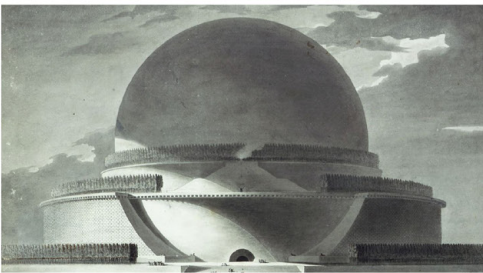


Fig. 006 Boullée E. L. (1784). Cenotaph of Newton

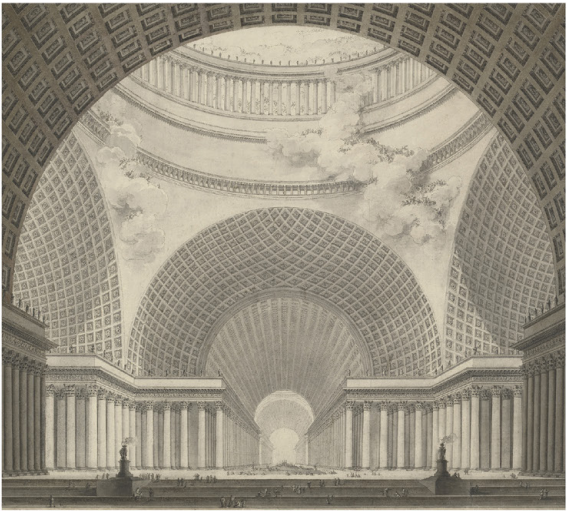


Fig. 007 Boullée E. L. (1780). Metropolitan Church

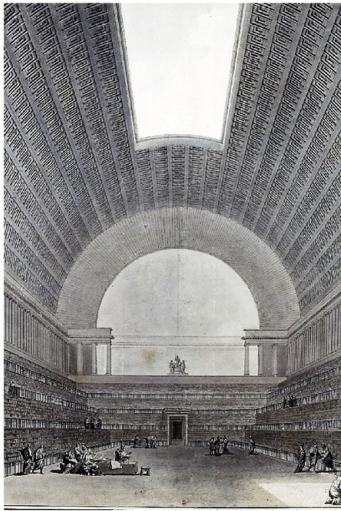


Fig. 008 Boullée E. L. (1785). Etienne Louis Boullée Nationalbibliothek

Built references

- 01. Therme Vals
- 02. Wadden sea center
- 03. Iragna town hall
- 04. Østre Porsgrunn kirke
- 05. 20 social housing

These five projects illustrate how contemporary architecture can root itself in local context through materiality and craft, while allowing itself to be shaped freely. From Iragna’s granite-cladded town hall to the stone walls of Therme Vals, the thatched roofs and walls of the Wadden Sea Center, the porcelain-cladded Østre Porsgrunn Church, and the solid stone walls by Perraudin, each project reveals a careful balance between tradition and innovation. They show how architecture can become an extension of its context, building upon local materials and traditions through the lens of new forms and needs, creating new buildings that feel align with their surroundings rather than imposed upon them.

These projects stand out for their thoughtful sourcing of materials and methods they have been used. Utilizing modern solutions and building techniques to ensure a qualitative buildings which live up to modern standards while incorporating familiar materials to establish a continuation of the context. Ranging from Peter Zumthor’s well thought out use of prefabricated modules and elements in Therme Vals, to Dorte Mandrup redefinition and development of the traditional reed roof techniques at Denmark’s Wadden Sea center. While Perraudin’s stone housing project pushed the limits of traditional crafts maintaining a low-cost, high-performance architecture by relying on thick local stone walls, and Espen Surnevik who reimagined an industrial legacy of porcelain into a sacred church. Lastly Iragna’s town hall, which seamlessly connects building and landscape through its use of granite in the facade and paving. Each project highlights how local materials, when handled with respect and precision, can address modern demands while contributing to the local heritage.

These projects showcase the strength, possibilities and potential of working with a local material driven methodology, and how well the outcome can be when its well executed. Its inspiring how working with local materials and crafts can enhance and create more meaningful spaces. A material honesty, combined with innovation based on tradition can ensure a sense of belonging.



Fig. 009 Fabrice Fouillet (2019). Therme Vals



Fig. 010 Adam Mørk (n.d). Wadden Sea Centre in Denmark



Fig. 011 Jeff Kaplon(2012). Town hall, Iragna



Fig. 012 Adam Mørk (n.d). Wadden Sea Centre in Denmark



Fig. 013 Rasmus Norlander (n.d). Porsgrunn kirke



Fig. 016 Jeff Kaplon (2012). Town hall, Iragna



Fig. 014 Rasmus Norlander (n.d). Porsgrunn kirke

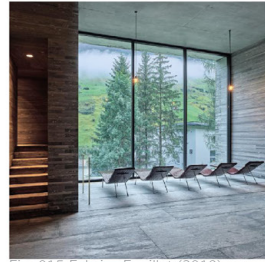


Fig. 015 Fabrice Fouillet (2019). Therme Vals



Fig. 017 Damien Aspe (2020). 20 logements sociaux

Local references

A few local reference projects have been selected and presented due to their status of local importance and historical value, all located within the city of Östersund. Exemplifying the city's use of mineral materials from the region, as a contrast to the vast woodlands dominating the regional landscape. Buildings characterized by material realism, sculpted in a stereotomic and robust way, true to their material palette, constructed in a manner so that the materials characteristics is shown. These are a few of the buildings which characterise the city and some of its built qualities. Qualities which the design project has aimed to build upon in a contemporary manner.

Östersund is one of the few cities in Sweden which hasn't lost all of its history and character to the demolition hysteria of the 60's and 70's. Demolitions did however take place and the north blocks of the city have been replaced with new productions. The city still has a lot of its historical character left allowing for connections to be made through new developments to its history and character. (Kjell, 1984)

Map of local reference projects

- 01. Tullkammaren
- 02. Handelsbanken
- 03. Telehuset
- 04. Ahlbergshallen
- 05. Gamla badhuset
- 06. Rådhuset
- 07. Biblioteket
- 08. Stora kyrkan



Local references

- 01. Rådhuset Fig.019
- 02. Östersunds bibliotek Fig.021
- 03. Telehuset Fig.025
- 04. Gamla badhuset Fig.018
- 05. Stora kyrkan Fig.020
- 06. Handelsbanken Fig.022
- 07. Tullkammaren Fig.023
- 08. Ahlbergshallen Fig.024

The collection of buildings presented range from the historic Tullkammaren to the modern extension of Östersunds bibliotek, presenting a rich architectural narrative of buildings from different periods yet of a character robust and true to its material. Each building contributes uniquely to the character and urban fabric of Östersund. Buildings like the Rådhuset and Ahlbergshallen embody the spirit of local materials and craftsmanship, built by the local limestone and the locally produced bricks. All strongly characteristic buildings acting as visual and cultural landmarks, cornerstones of the urban fabric. Whether they adhere to or deliberately break the urban grid, these projects show a respect for the city's context, scale and topography.

These projects were conceived with an emphasis on robustness, civic pride as an architectural expression. Common across all projects is the sensitive use of local materials, stone, brick, and limestone in varying degree, rooting them firmly within their environment. Buildings, such as the Rådhuset and Stora kyrkan, have transitioned from large ambitious civic projects to icons, showcasing how thoughtful architecture can age and become a key piece of the context it once tried to be a part of.

These projects reveal the timeless value of designing with material honesty and programmatic clarity. Their strong and specific character gives them relevance as key pieces in the urban fabric worth maintaining over the years. They demonstrate how architecture, when thoughtfully conceived, becomes a living part of a city's identity, shaping, respecting, and elevating its surroundings for generations.



Fig. 018 Wiktor Lundberg (n.d) Badhuset



Fig. 020 Wiktor Lundberg (n.d) Stora Kyrkan



Fig. 022 Wiktor Lundberg(1930) Vy från Stortorget, Handelsbanken



Fig. 024 Hallings foto (1959) Ahlbergshallen



Fig. 019 Bengt Wellert (2000) Rådhusplan



Fig. 021 Sven Wallin (1958) Östersunds bibliotek



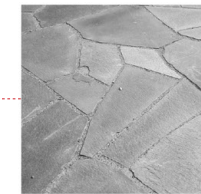
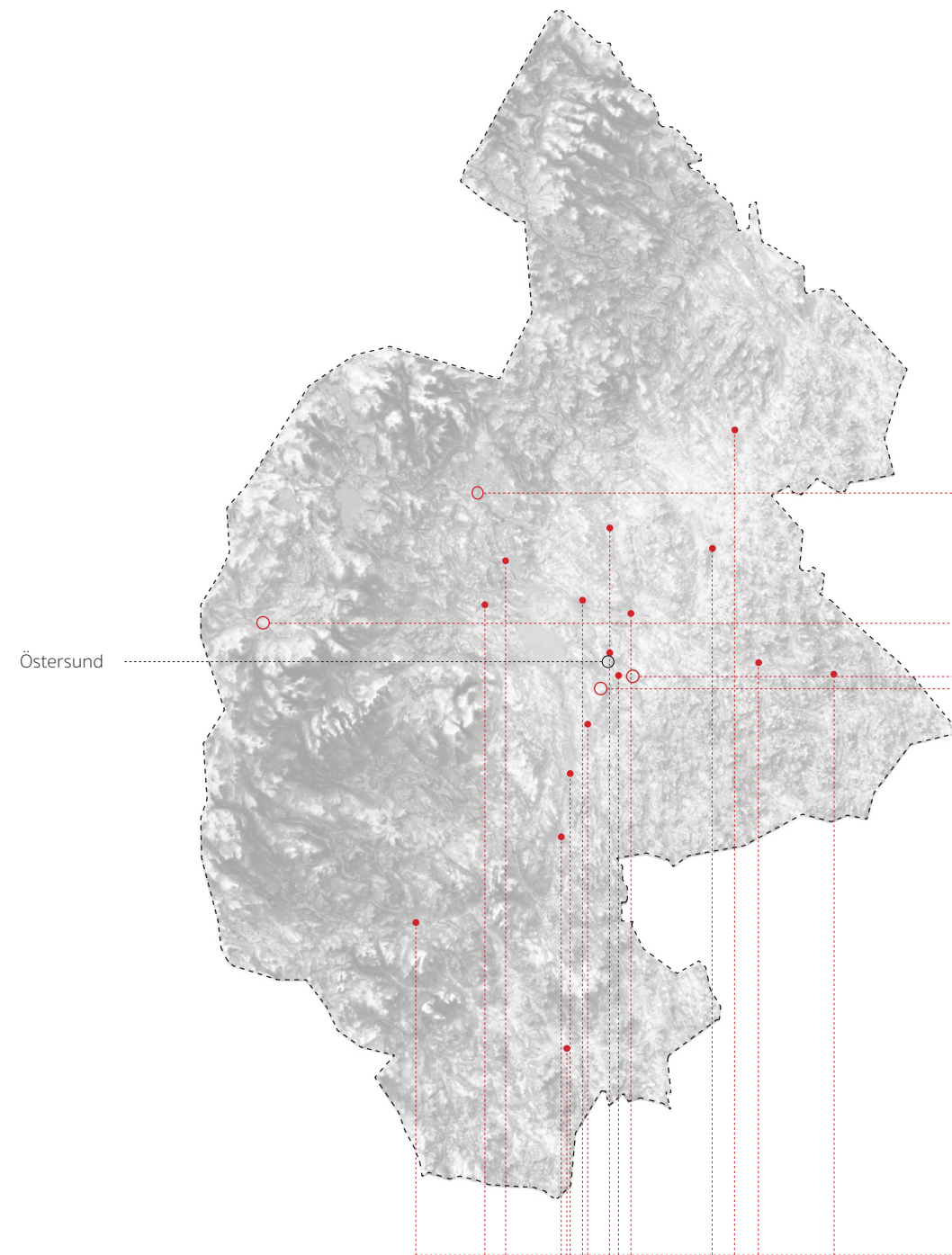
Fig. 023 Adolf Arvidsson (n.d) Grupporträtt, Tullkammaren



Fig. 025 A, Svensson och G, Rolin (1970) Post och telehuset



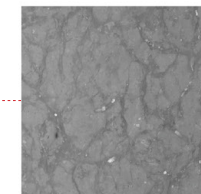
Local materials in the region



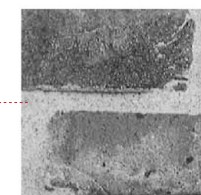
"Offerdals skiffer"
Material: slate
Location: Offerdal
Production status: active



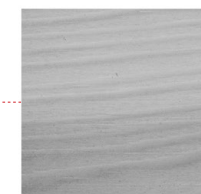
"Handöls täljsten"
Material: soapstone
Location: Handöl
Production status: inactive



"Jämtländsk kalksten"
Material: limestone
Location: Brunflo
Production status: active



"Vålbacken tegel"
Material: brick
Location: Brunflo
Production status: active



"Furu"
Material: pine & fir
Location: 16 different sawmill
Production status: active



Mapped materials

Local materials that have been used in the built environment of Östersund, which also is visible to the naked eye was mapped during a site visit to investigate the relevance and historical use of said materials. Highlighting their presence and the potential of building upon this building heritage.

Jämtland limestones

Variations of limestone can be found in structures scattered around the city of Östersund. Along the water front it has been used for building up a quay, stretching from north of the city to the south. Within in the city the stone can be found in a large variation of structures, both old and new, within foundations, facade cladding, flooring, walls and landscaping.

The stone has been minted for a long period of time around Brunflo, just south of Östersund, and still is today. In this area there are different types of limestone, both red, black and grey. The red limestone is fine in its texture and has marks of small round fossils. The grey one shifts between light fields and darker spots. Lastly the black version which has a shimmery character, similar to the one of slate, otherwise dark grey and black in colour with small marks of white calcite.

The stone has been minted in the area since around the early middle ages(900 years ago), with archaeological traces suggesting that the production then cooled off until the 17th century. Today there are three quarries in use in the area around Östersund and Brunflo, where all of the types of limestone are extracted. The stones are sensitive to acidity like all types of limestone, however the local limestone of this region is of good quality due to its homogeneity. (Friberg & Sundnér, Riksantikvarieämbetet, 1996)

Offerdal slates

The slate in the region has not been minted as long as the limestone has, therefore its less presence in the urban space. However its still commonly found throughout the city in a range of projects covering flooring, facade cladding and detailing, as well as paving of the large square of Östersund.

The slate comes primarily from Rönnefors and Finnsäter in the municipality of Offerdal. The slates which can be extracted come out in pieces a few centimeters thick, and can then later be adjusted to specific dimensions. (Friberg & Sundnér, Riksantikvarieämbetet, 1996) It's a type of slate which has parts of quartz and glimmer, these minerals give the slates a slightly textured finish with a light grey colour with shimmering undertones of light green, purple, yellow and blue, which comes through especially when it's exposed to water. It is applicable in both exterior and interior use thanks to its resistance of wear. (Willebrand, 2014)

Vålbacken bricks

The majority of large historical buildings from Östersund are primarily constructed of bricks with visible bricks in the facade. The expansion of the city during the 1800's utilized the local access of bricks, contributed to the expansion of the production. Resulting in a northern city built upon its own local bricks.

Bricks was locally produced in Marieby on the other side of the lake from Östersund between the years 1899-1999, due to the reason that one of the deepest clay deposits in the north of Europe could be found here, reaching depths of 24 meters. The clay had great properties for brick making and at the time was amongst the most qualitative clay deposits in sweden. The production increased over the century, at the same time as the production shifted over from load bearing bricks to facade bricks to the glazed ones produced today. When the production of glazed bricks first started in the late 80's was it the first of its kind in sweden. (Staverfelt, 1994)

Stone

The local limestone quarried in the area around Brunflo is commonly found throughout the city of Östersund. The collage presents examples of how the stone is integrated into the everyday architecture of Östersund.

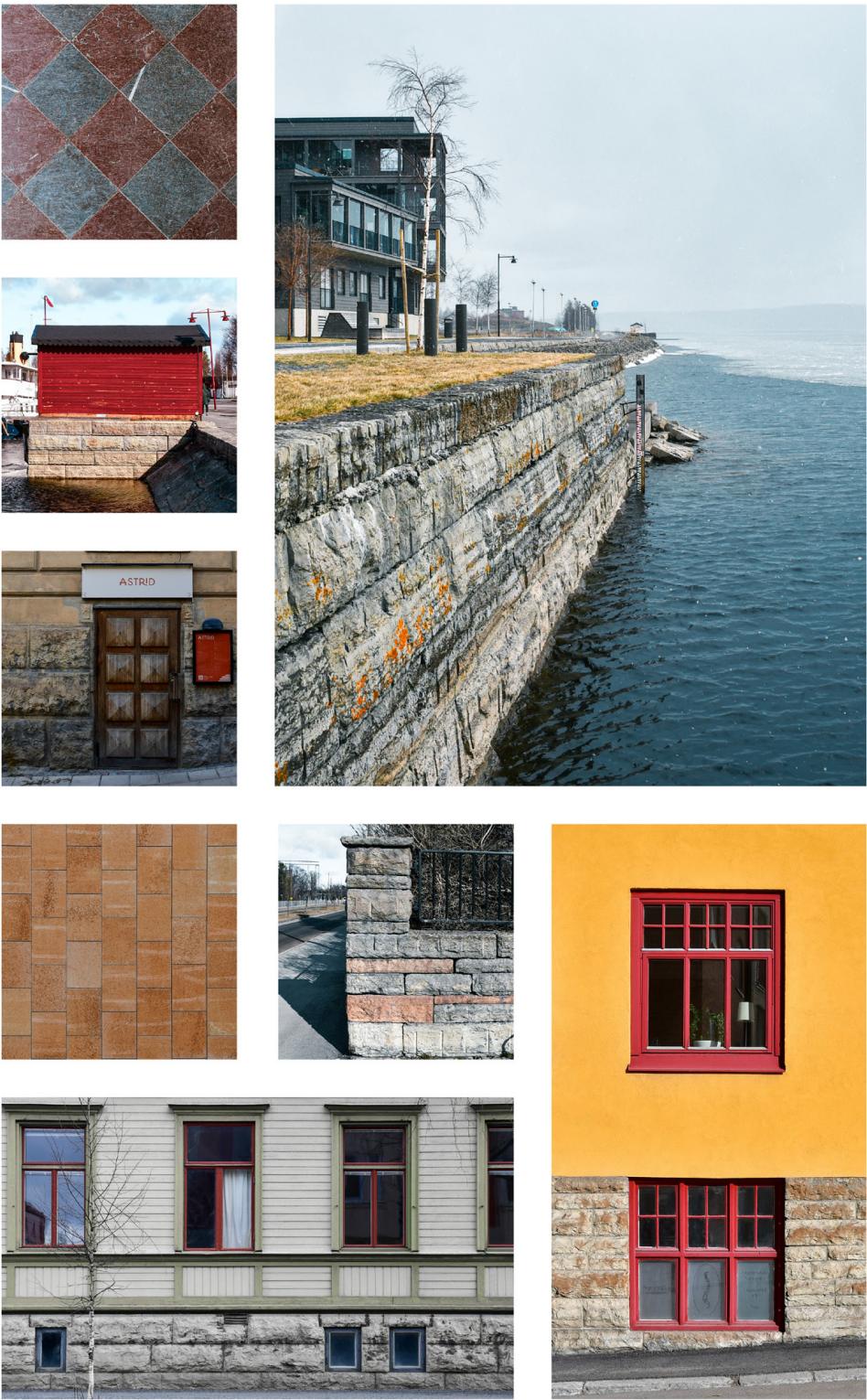
Design concept

The heavy characteristics of stone forms the conceptual foundation for the design, a building that is robust and massive, built on the idea of stacking and carving spaces out of a solid blocks. It creates a resilient body that expresses weight. Building upon the character of the local references and at the same time drawing on the reasoning of Semper and Linn, the design language begins with volumes based on program, from which space is subtracted internally from.

The diversity of the local limestone offer an opportunity to work with variations of both color and finish, without departing from the core material palette.

Building upon the existing use of stone in the city, the design proposal reinterprets these elements. The many stone foundations found throughout Östersund are exaggerated and reimagined in the design, stretching upwards and draw inspiration from the quay running through the city, which is gently slanted away from the water. This characteristic is brought into the facade design, which features two set of patterns to differentiate between the buildings orthogonal and curved elements.

Large stone paving slabs used in the landscape design connect the quay and surrounding public spaces to the building itself, reinforcing the continuation of material throughout the area.



Examples of limestone in Östersund

Stone & construction

Stone as any type of material can be handled and used in numerous ways. Depending on the type of stone and the method of its extraction, different purposes and building techniques are suited, and vice versa. This thesis does not aim to present or showcase a complete library of techniques, but rather to provide an overview of those associated with the material. However, the way stone has been used in construction has shifted over the centuries, from being primarily used in massive walls as a load bearing element of structures, to serving as an aesthetic cladding in modern buildings.

01. "Massive stone wall"

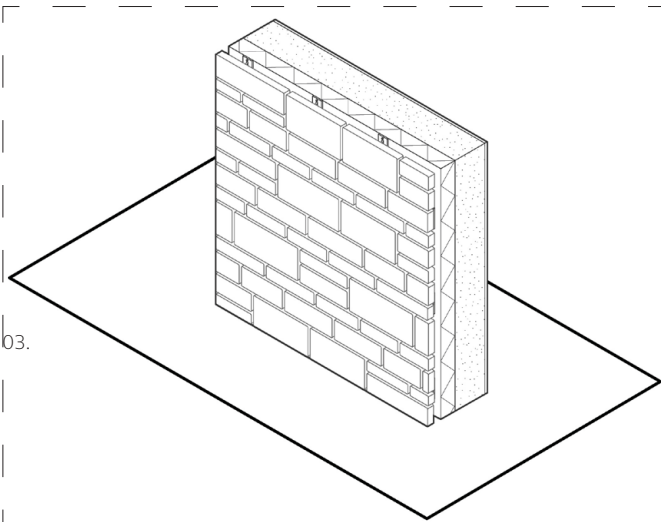
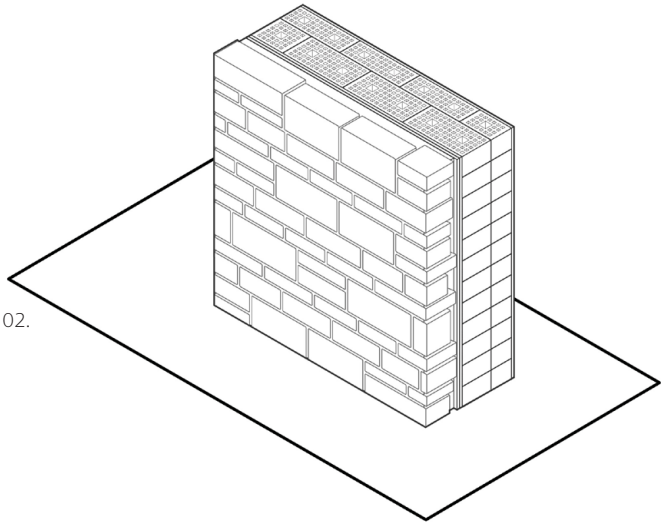
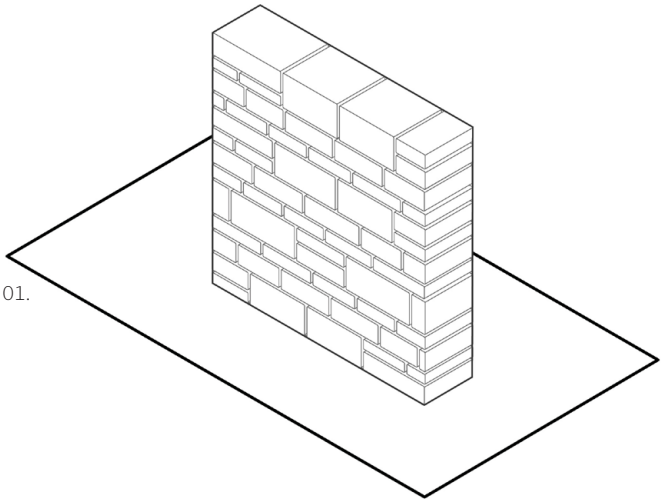
Historically, building with stone has been synonymous with massive structures. Traditionally, this involved either large stones that required little mortar, or smaller blocks assembled with larger amounts of mortar. When no additional cladding is applied, these methods showcase the stone on both the interior and exterior.

02. "Hybrid"

A hybrid technique builds on the same principle as the massive stone wall; however, the amount of stone is reduced to one-third and replaced with hollow bricks. This approach offers a sleek interior while maintaining the external expression and utilizing the stone in an efficient way.

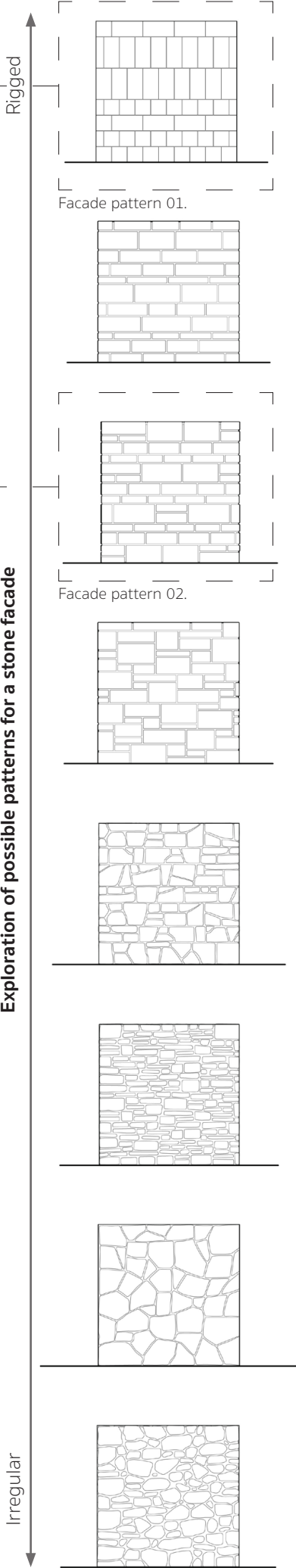
03. "Cladding"

Lastly, there is a technique in which stone is used as cladding, requiring only one-tenth of the material per square meter compared to a massive wall. This method combines the strengths of modern construction techniques with the external expression of the material.



Chosen method of construction

Exploration of possible patterns for a stone facade



Design explorations

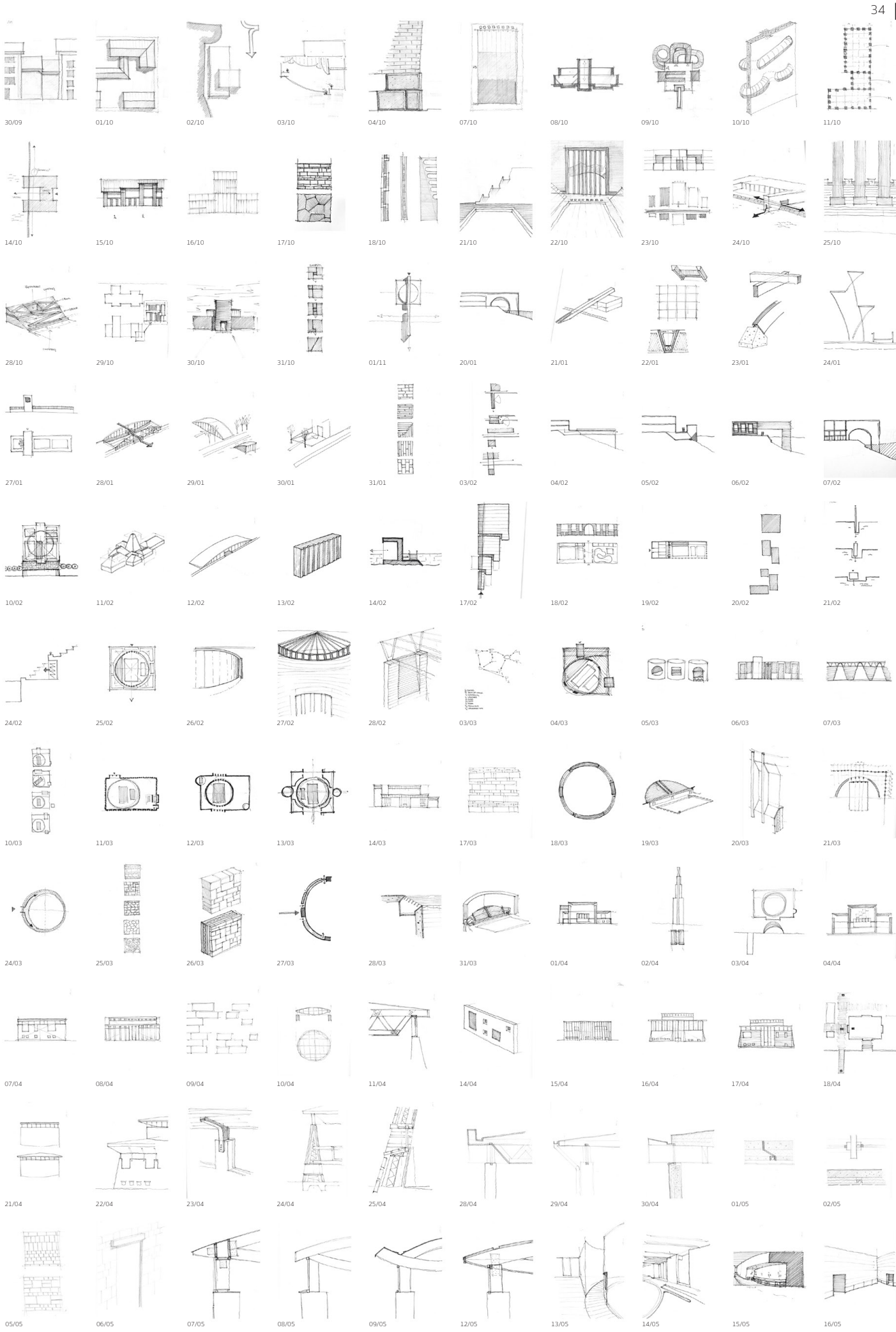
One sketch a day

The sketch series is a result of dedicating 5 minutes a day to small sketches, throughout the process of this investigation and I plan on doing so during the rest of the project as well. Getting ideas on paper for my own sake. To quote Mikkel Frost, the shortest distance between your mind and something other people can see goes through your hand and the pen. (Louisiana Channel. 2021)

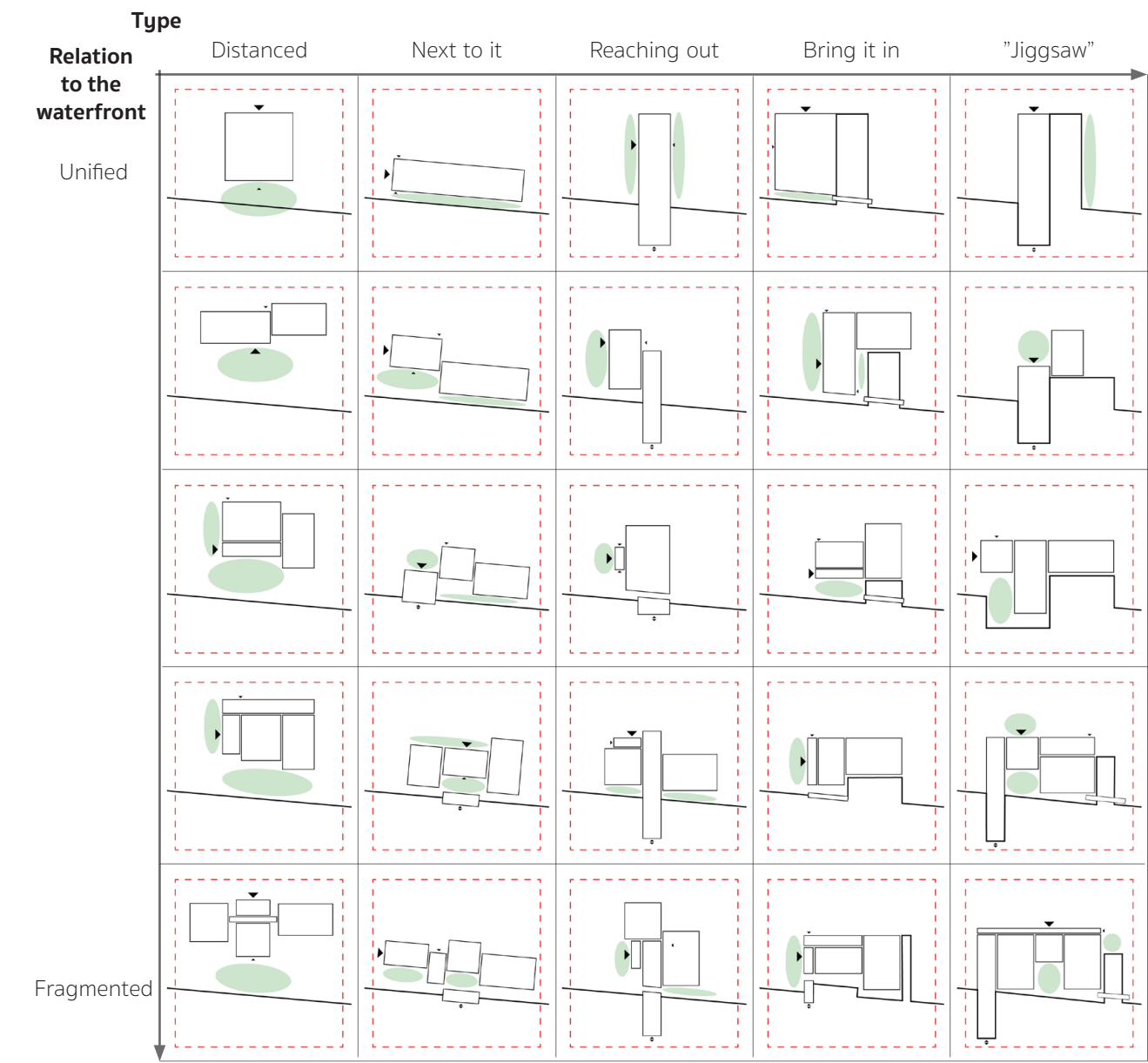
Design iterations

A complex program on a complex site has required numerous design iterations, made out of different aspects, slowly working all of them together into one proposal. The dimensions required by the swimming program have been one of the key factors shaping the building throughout its iterative design process. The buildings size and internal organization have been developed through an inside-out design method, positioning the 50-meter pool at the center and allowing the building to grow outward from it. The dimensions of the pool and the width of its lanes (2.5 meters) established a 5x5 meter grid, which influences the placement of spatial elements and the positioning of openings.

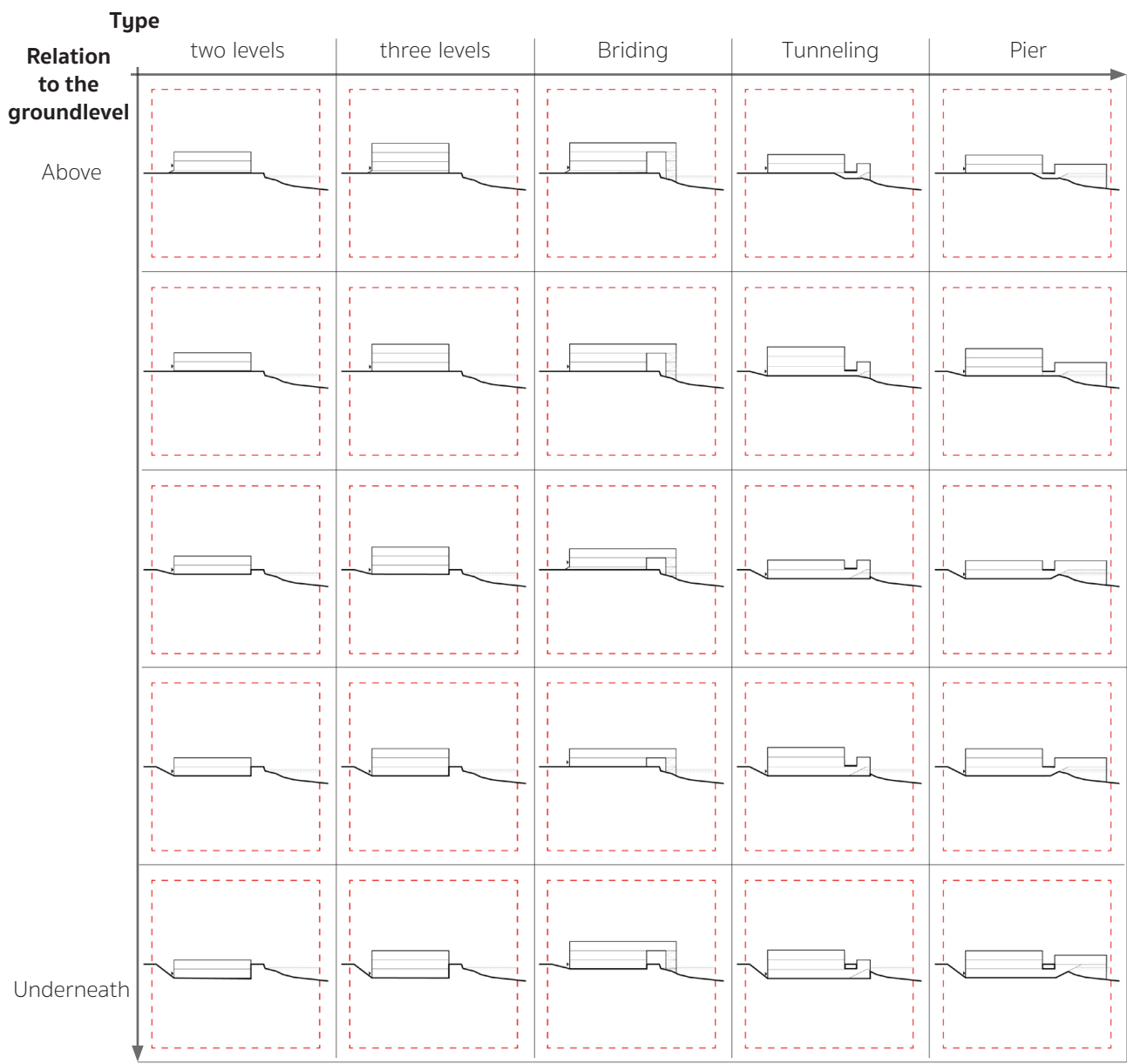
The organization of the plan and its orientation on the site have been thoroughly investigated in relation to several factors, including the connection to the lake, the relationship to surrounding buildings, public space, views, and sunlight. As an urban swimming facility located by the waterfront, with people frequently passing by, there is a risk that visitors could easily be exposed to public view. By elevating the pool area above ground level, bathers retain views of the lake and mountains while experiencing an increased privacy. This approach also minimizes the buildings footprint, allowing it to become an integrated part of the urban fabric, rather than being placed on the outskirts where larger open areas are typically available.



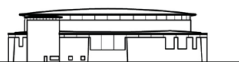
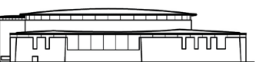
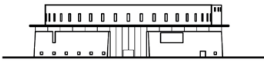
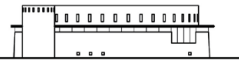
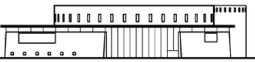
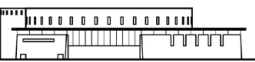
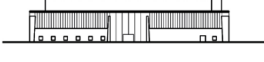
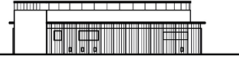
Sketch matrix 01.
Plan & relation to water



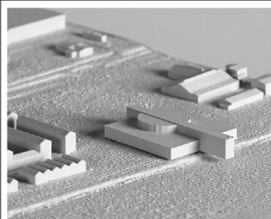
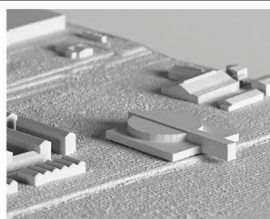
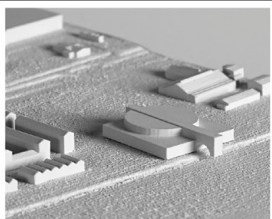
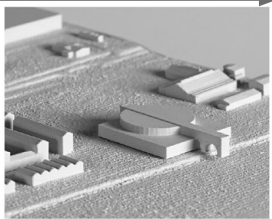
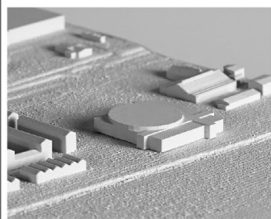
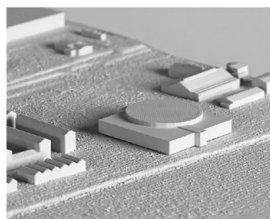
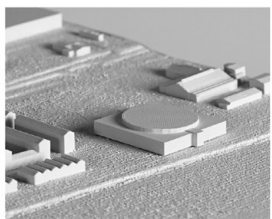
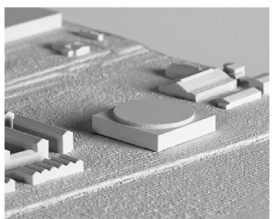
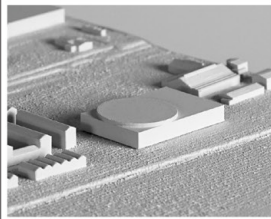
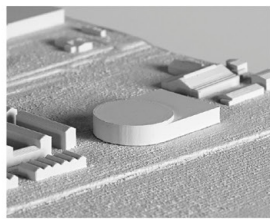
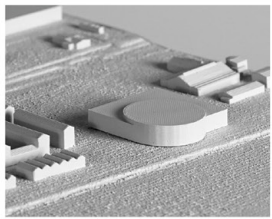
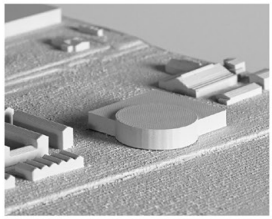
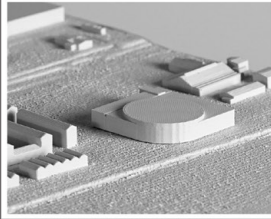
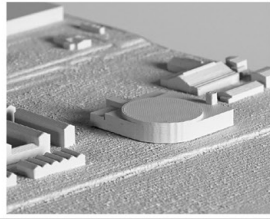
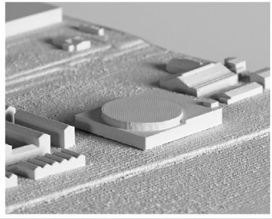
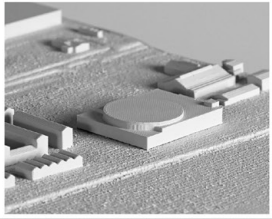
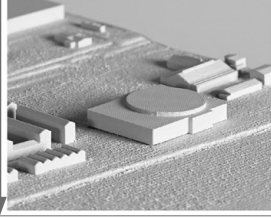
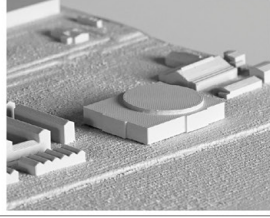
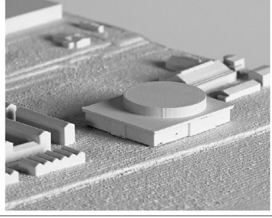
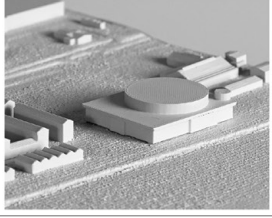
Sketch matrix 02.
Section & relation to water



Sketch matrix 03.
Facade studies

Orientation	North	South	West	East
				
				
				
				
				

Sketch matrix 04.
Volume studies

Evolution	Initial			Final
Initial				
				
				
				
Final				

Design proposal

Sprung from the ground, robust and stereotomic volumes of limestone express a sense of weight, with spaces carved out from within. Windows and doors are placed deep within the walls, casting distinctive shadows that emphasize the building's stereotomic character. The design embodies the contrast between the solid mass of the structure and the fluidity of the water, expressing both heaviness and lightness simultaneously.

By introducing a public building with the same dignity and character as those in the city center, it serves as both a statement and a landmark for the new area. It reflects the city's ambitions while also connecting the new development to Östersund's broader history and identity.

The building opens towards the southwest to enhance the view and strengthen the connection to the surrounding greenery, Storsjön and the mountains, unlike the facade facing the railway, which is more enclosed. The design carefully considers how the building's form and relationship to public space can establish a connection to the lake. In front of the entrance, the public space extends from the bus stops to the entrance and continues out into the lake with the addition of a pier. Meanwhile, the restaurant steps outward toward the water, aligning with the roofline to create a pause along the waterfront between the building and the lake. Large stone slabs used in the landscape design connect the quay and surrounding public spaces to the building itself, reinforcing a continuity of materials throughout the area.



"I live now. Whatever I do must be contemporary. This is my response to everyday life today"

- Peter Zumthor
Quote. 006

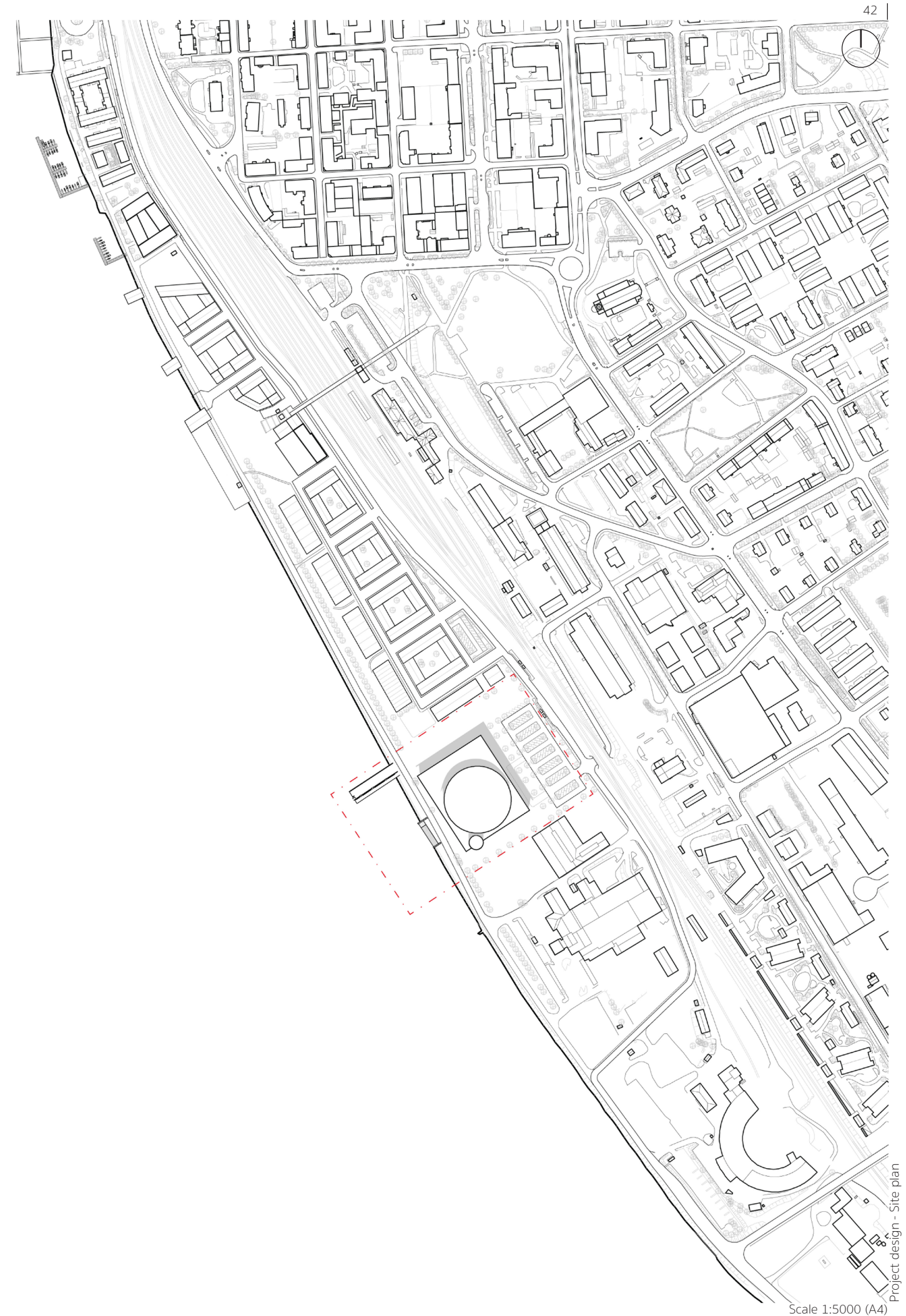
The site

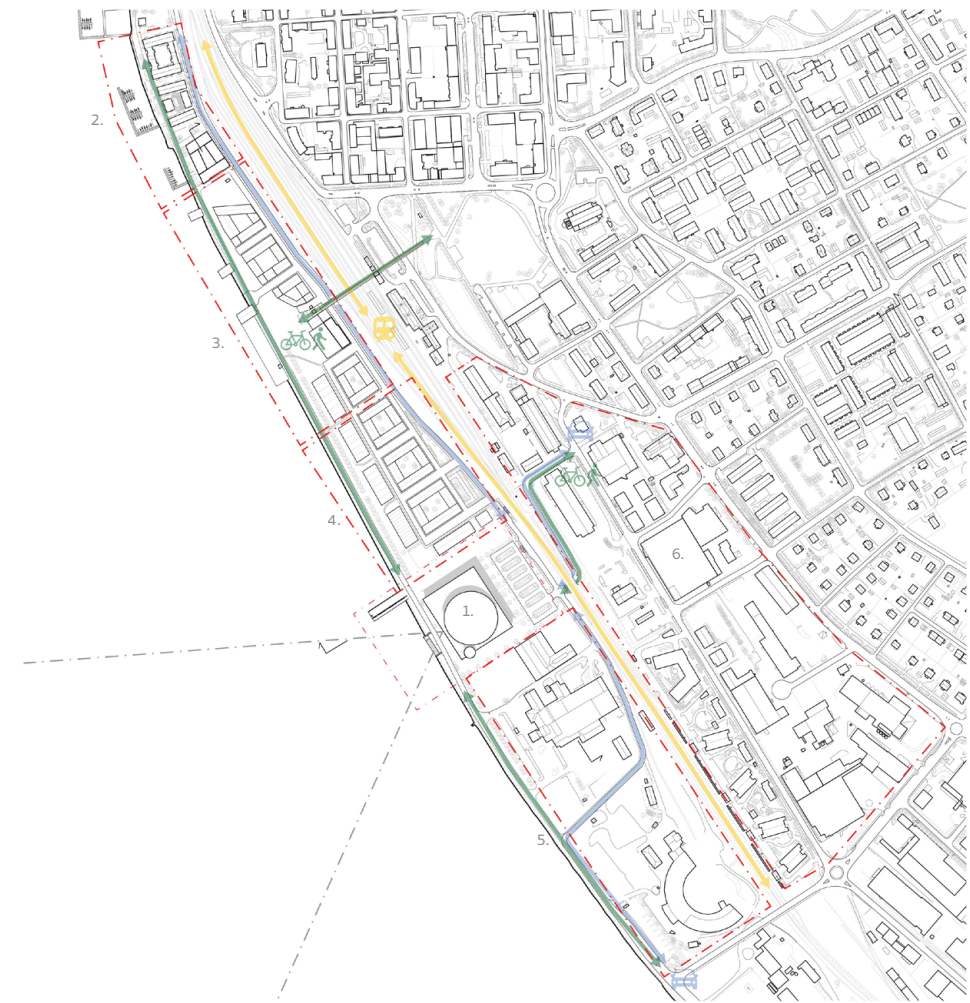
This design proposal suggests a relocation for the city's new swimming facility closer to the city center, in contrast to the old one. This move would make the facility more accessible by walking, biking, and public transportation such as buses and trains. The proposed site is located in an area historically occupied by industry. However, similar to other European cities, these centrally located industrial areas are undergoing transformation and redevelopment.

Situated on the edge of the waterfront, well connected to the city center, and offering direct access to the lake with views toward the mountains (Oviksfjällen), the site is an attractive location that the public would benefit from gaining access to.

An analysis of the terrain from east to west and north to south reveals that the area is currently relatively flat and exists in a kind of urban vacuum, positioned between old industrial buildings and a combination of both new and planned housing blocks to the north. The east to west section also highlights the city's sloping topography, sloping towards the water.

The proposed swimming hall would be located between the planned residential blocks to the north and the repurposed industrial buildings, now serving as workspaces, to the south. It would serve as a link between the different programs found along this part of the waterfront, becoming a point of attraction for the general public. The facility would invite and draw people down to the water, generating a flow of people and activity in an area that might otherwise be absent in a newly developed area mainly composed of housing.

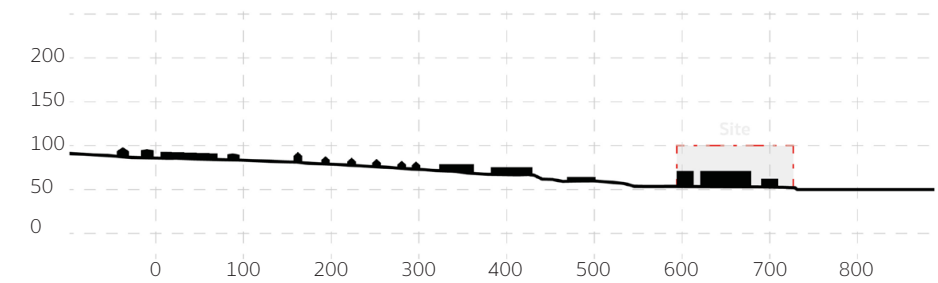




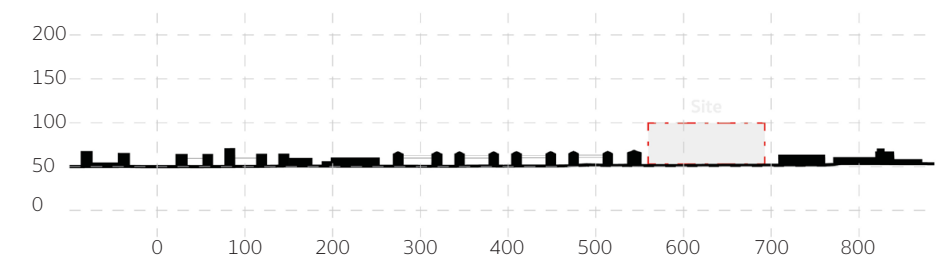
- 1: Project site
- 2: Newly buildt blocks
- 3: Planned expansion

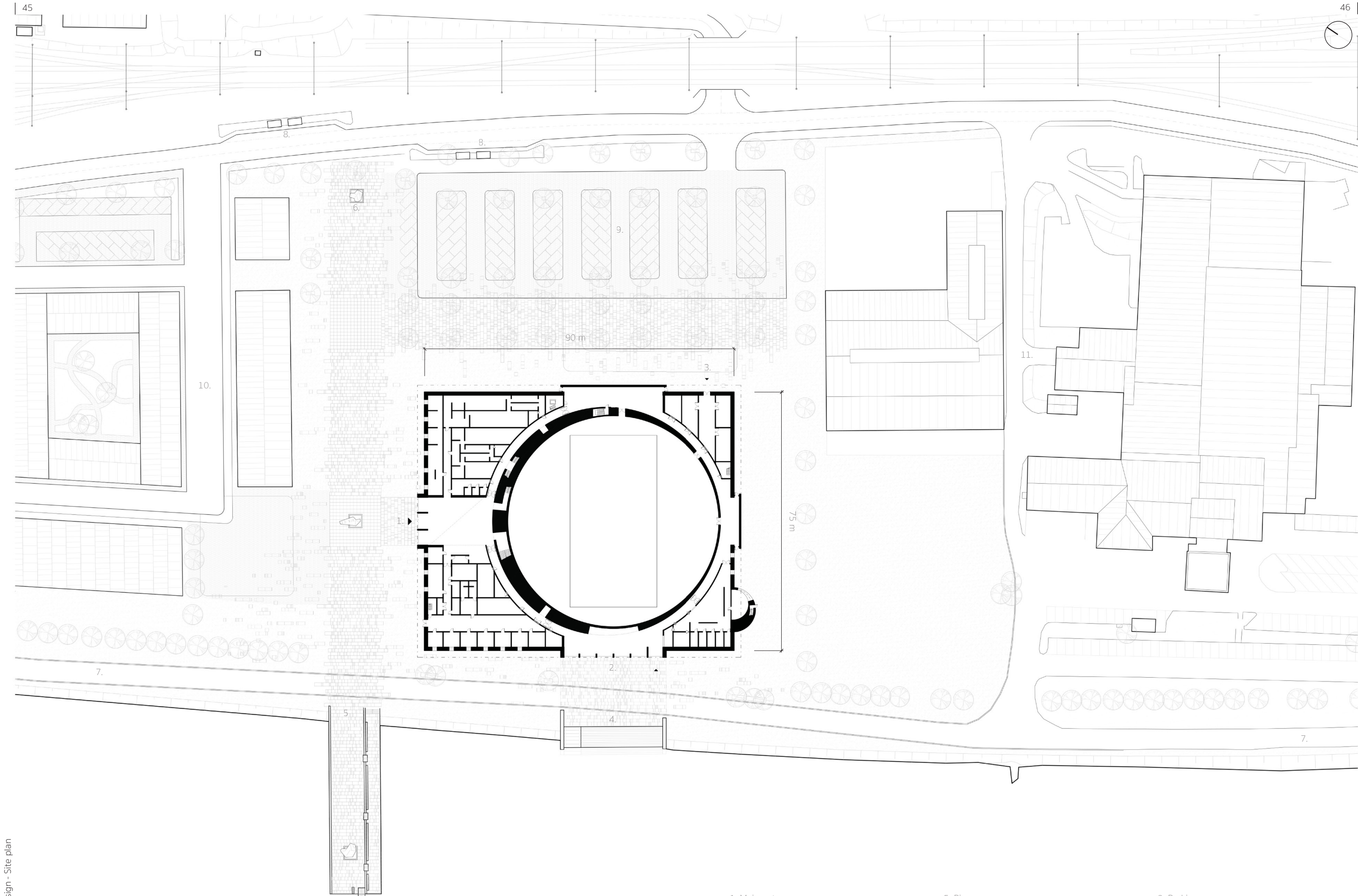
- 4: Speculated continuation of expansion
- 5: Repurposed old industry
- 6: Light industry, planned repurposing

East to west



North to south





1: Main entrance
2: Restaurant
3: Delivery
4: Water connection

5: Pier
6: Series of stone blocks
7: Bike & walk path
8: Bus stop

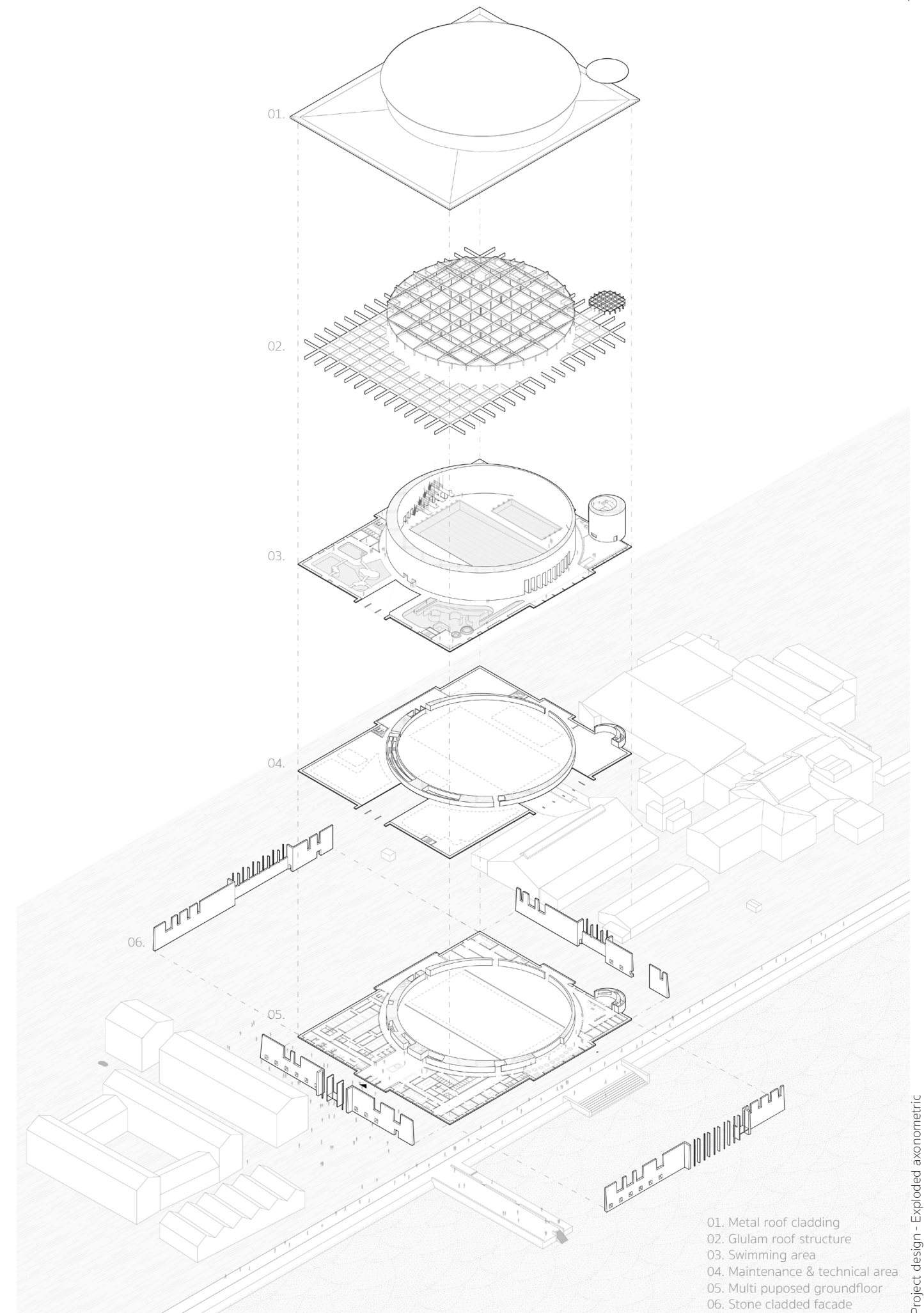
9: Parking
10: New development
11: Old industry buildings

The building

Characterized by its combination of clear geometrical shapes and materiality, the building features walls clad in local limestone and "detached roofs" that rest on top of these heavy structures. A distinct separation between these two elements is emphasized by a continuous band of windows, allowing light to enter from above. The rectangle (the external wall enclosing the building) and the circle (the internal wall containing the 50-meter pool) organize the spatial sequences within. This division creates two distinct zones, inside the circle lies an arena for swimming as sport and exercise, clear and absolute in character. While the space between the outer wall and the circle houses a recreational bath, a free and playful area that adapts and shifts in response to the changing relation between circle and rectangle.

The limestone clad both the orthogonal and circular shapes, establishing coherence and continuity throughout the building, from its exterior to the core. However, the stone patterning differs between the two, reinforcing the distinction between the two elements.

From a distance, the cylinder appears as massive as the lower walls, while it announces itself by protruding through the roof. As one approaches the building, the difference in stone patterns becomes evident, further distinguishing the two elements. Upon entering the building the cylinder is revealed, coming down through the whole building and shaping the surrounding spaces, it is present throughout the whole building. Moving through the building, one passes into and through the stone walls via deep openings and thresholds, making the transitions between spaces an impactful part of the experience. As one moves through the building the massive volumes are perceived differently depending on one's position and orientation in relation to them.



Program & area

Groundfloor total inc. cirulation: 6850 m²

Entré	420 m²	Ventilation & Water management	1040 m²
1 - Wind lobby	10 m²	1 - Surge tank	150 m²
1 - Lobby	270 m²	1 - Water treatment	150 m²
1 - Reception	15 m²	1 - Storage and workshop	100 m²
1 - Backoffice	20 m²	1 - Maintenance and repair	100 m²
15 - WC	75 m²	1 - Water sample taking	20 m²
1 - Shop	30 m²	1 - Inspection passage	320 m²
1 - Shop storage	10 m²	1 - Mechanical room (HVAC)	620 m²
1 - Cleaning storage	14 m²	Changing room (570spots)	560 m²
Administration	300 m²	143 - Changing places	250 m²
3 - Office	60 m²	42 - Showers	66 m²
1 - Staff break room	42 m²	2 - Sauna	22 m²
1 - Staff changing room	46 m²	8 - WC	34 m²
5 - Storage	82 m²	2- Shoe lockers	22 m²
5 - WC	25 m²	Flexible changing room	50 m²
1 - Tech	10 m²	1 - Lobby with lockers	27 m²
1 - Conference	35 m²	3 - Personal stalls	18 m²
Back of house	240 m²	1 - WC	5 m²
1 - Delivery	76 m²	Restaurant	583 m²
1 - Cleaning storage	31 m²	1 - Dinning area	245 m²
1 - Recycling room	41 m²	1 - Kitchen	280 m²
1 - Chemical storage	50 m²	3 - WC	20 m²
1 - Laundry	42 m²	1 - Staff break room	38 m²
		Gym	130 m²

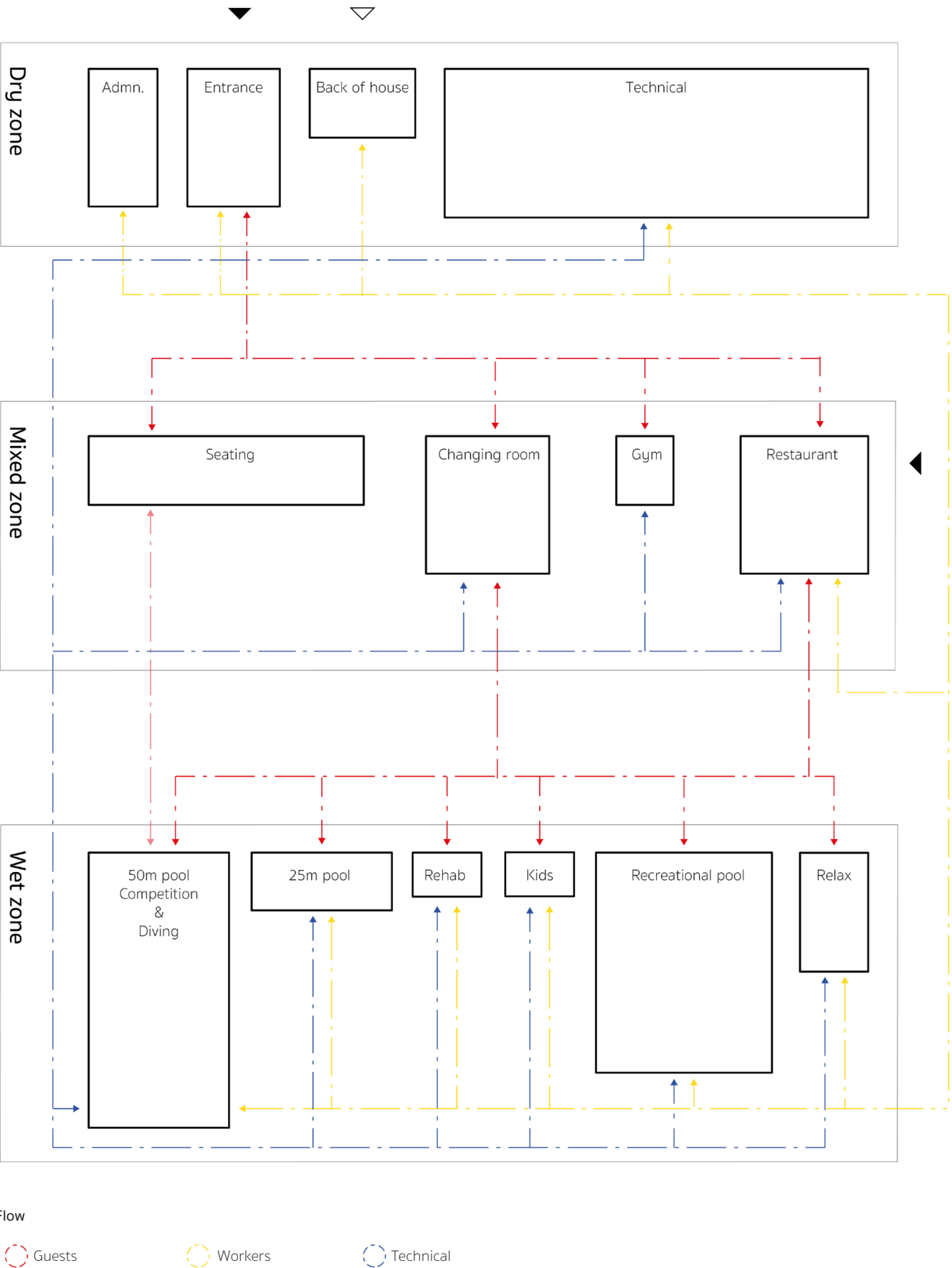
Technical floor total inc. cirulation: 6300 m²

1 - Inspection passage	1230 m²
1 - Maintenance and repair	340 m²
1 - Storage and workshop	100 m²
1 - Mechanical room (HVAC)	340 m²

Swmming area total inc. cirulation: 6450 m²

1 - Pool 25 x 50 m	1 250 m²	1 - Relax	270 m²
1 - Pool 10 x 25 m (adjustable depth)	250 m²	2 - Bleachers (≈1180 ppl)	625 m²
1 - Pool 12 x 6 m (kids)	72 m²	1 - Kiosk	20 m²
1 - Pool 12x 6 m (Rehabilitation)	72 m²	1 - Seating area	170 m²
1 - Recreational	1250 m²	5 - WC	25 m²
		1 - Life guard office	22 m²
		1 - Storage	22 m²
		2 - Cleaning storage	16 m²

Total area	total inc. cirulation: 19600 m²
Footprint	6850 m²



Flow
Guests Workers Technical

Groundfloor

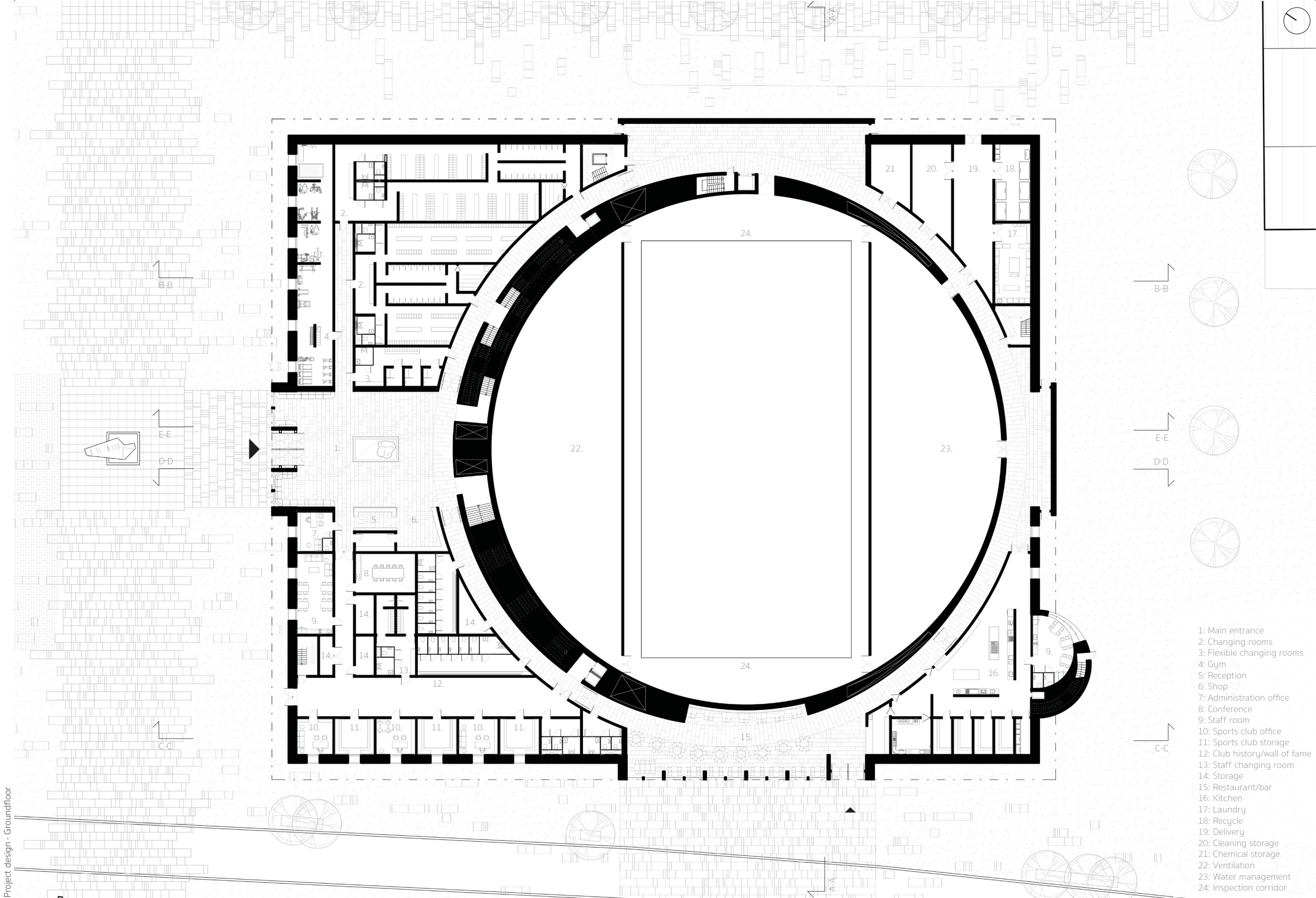
As you approach the building, you first find yourself standing on stone paving similar to the one used along the quay, extending outwards from the main entrance and the restaurant. In this way, the material palette of the city flows from the quay into the area surrounding the building and finally into the building itself, cohesively tying everything together.

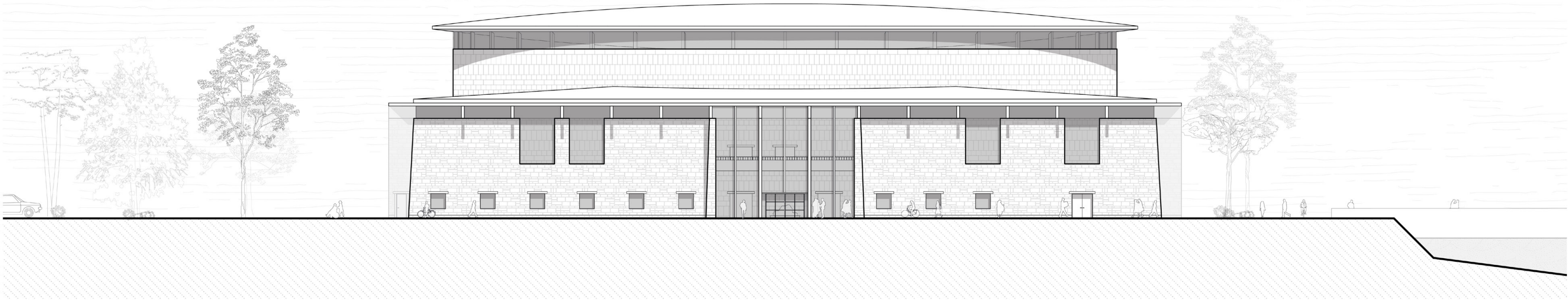
The restaurant, located on the southwest side facing the water, is centered on the new connection to the lake, making it easily accessible and creating a pause along the waterfront between two key points of interest. It is designed to be inviting not only for guest of the swimming hall but also for the general public and visitors simply enjoying the area.

Upon entering through the main entrance, visitors are welcomed into a spacious lobby centered around a block of limestone set in a shallow pool, tying together the interior with the three similar blocks placed outside the building. The curved wall of the cylinder forms the backdrop of the space, which opens up toward the swimming area above. The familiar smell and sound of a swimming hall are immediate. Looking up on the ceiling which is covered in shimmering reflections cast by the water in the pools above.

The process of changing into swimwear guides visitors through a spatial sequence that transitions from dry to wet zones. This sequence ends in the curved gallery between the cylinder and the changing rooms, where two paths leads to the pools above.



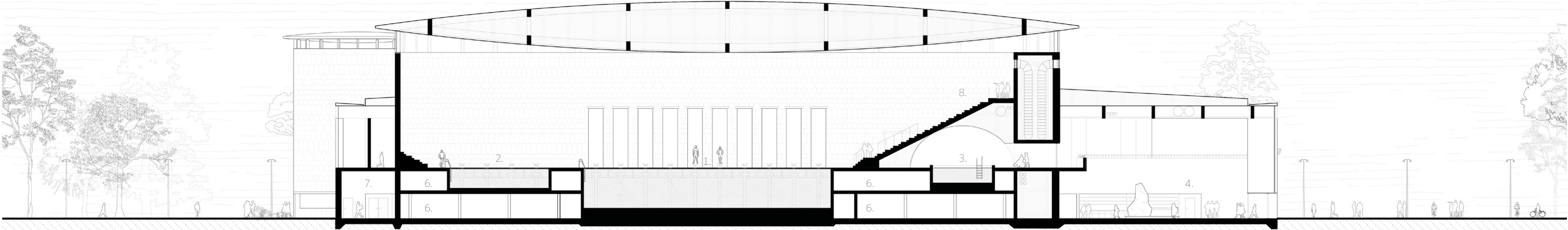




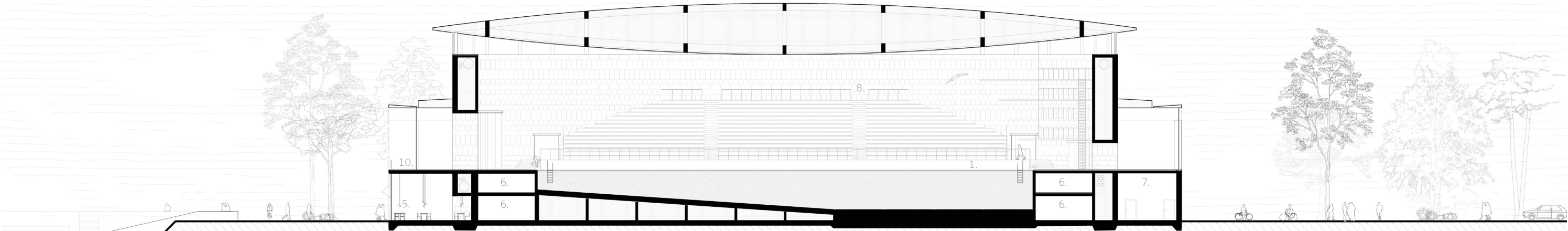
North elevation



South elevation



Section D-D



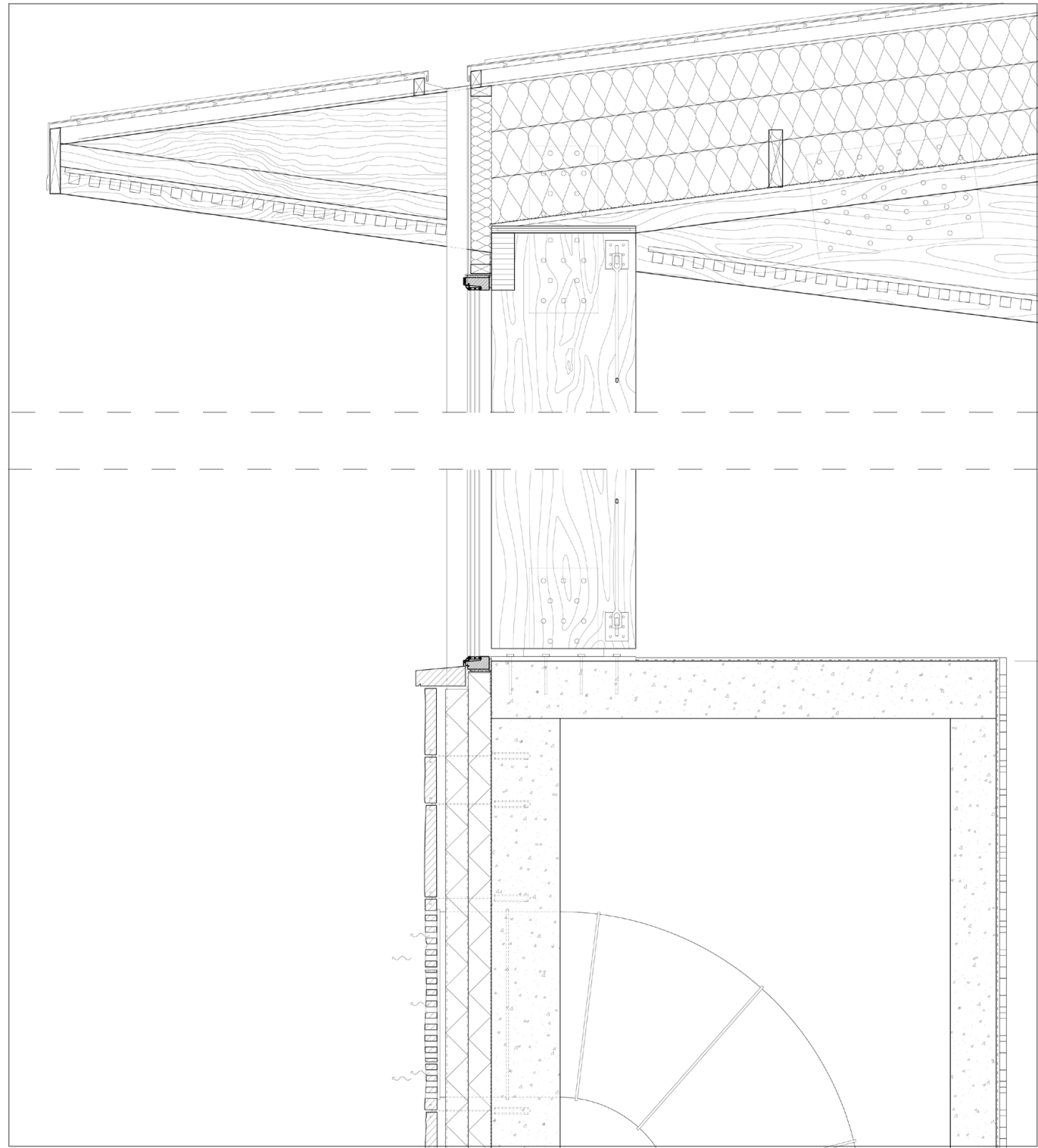
Section A-A

Scale 1:400 (A3)

- | | | |
|----------------------------|-------------------------|------------------|
| 1: 50m pool & diving board | 4: Main entrance | 7: Back of house |
| 2: 25 m pool | 5: Restaurant | 8: Bleacher |
| 3: Rehabilitation pool | 6: Technical/inspection | 10: Terrace |

Project design - Section

Project design - Section



Detail - 01.



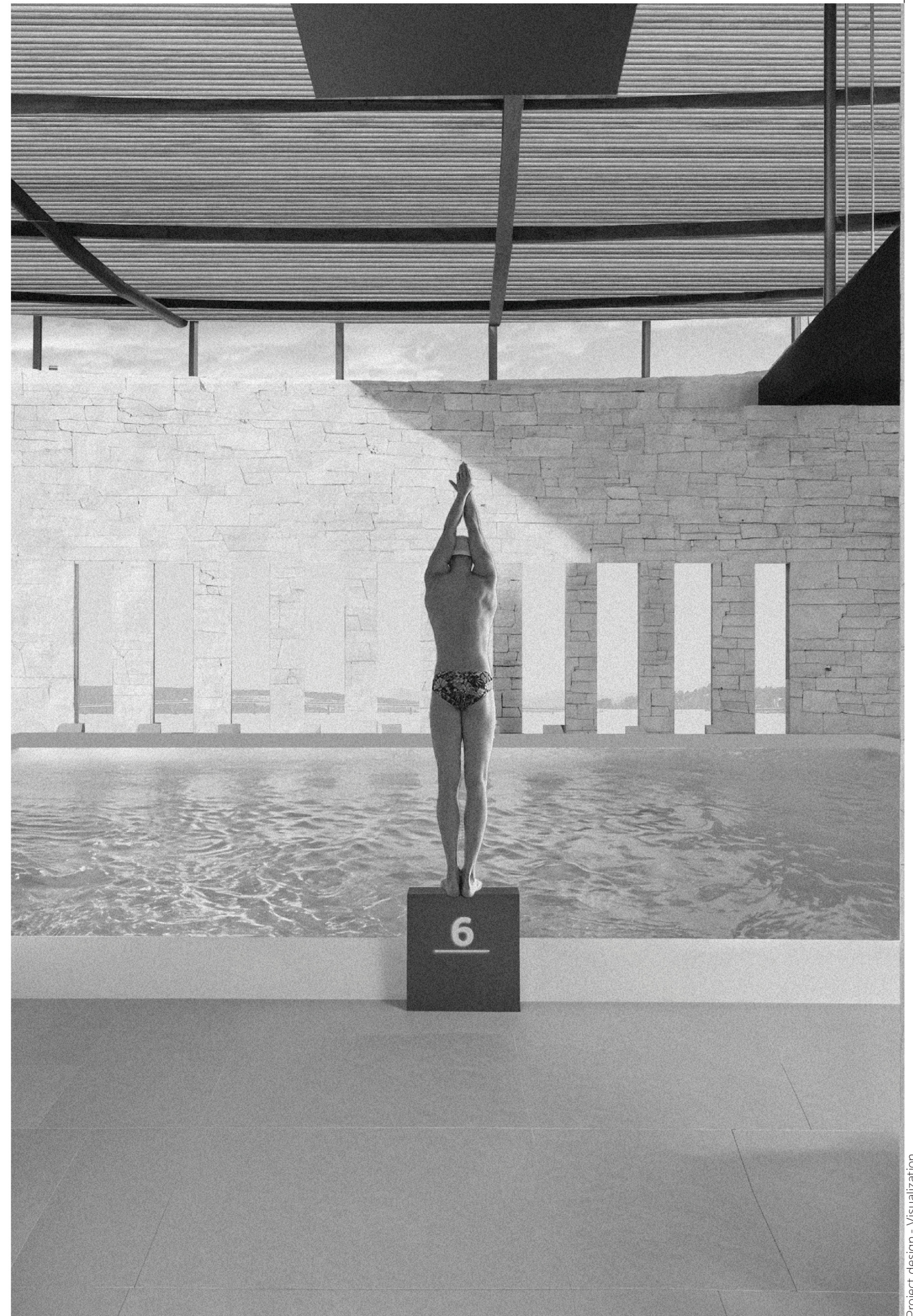
Swimming area

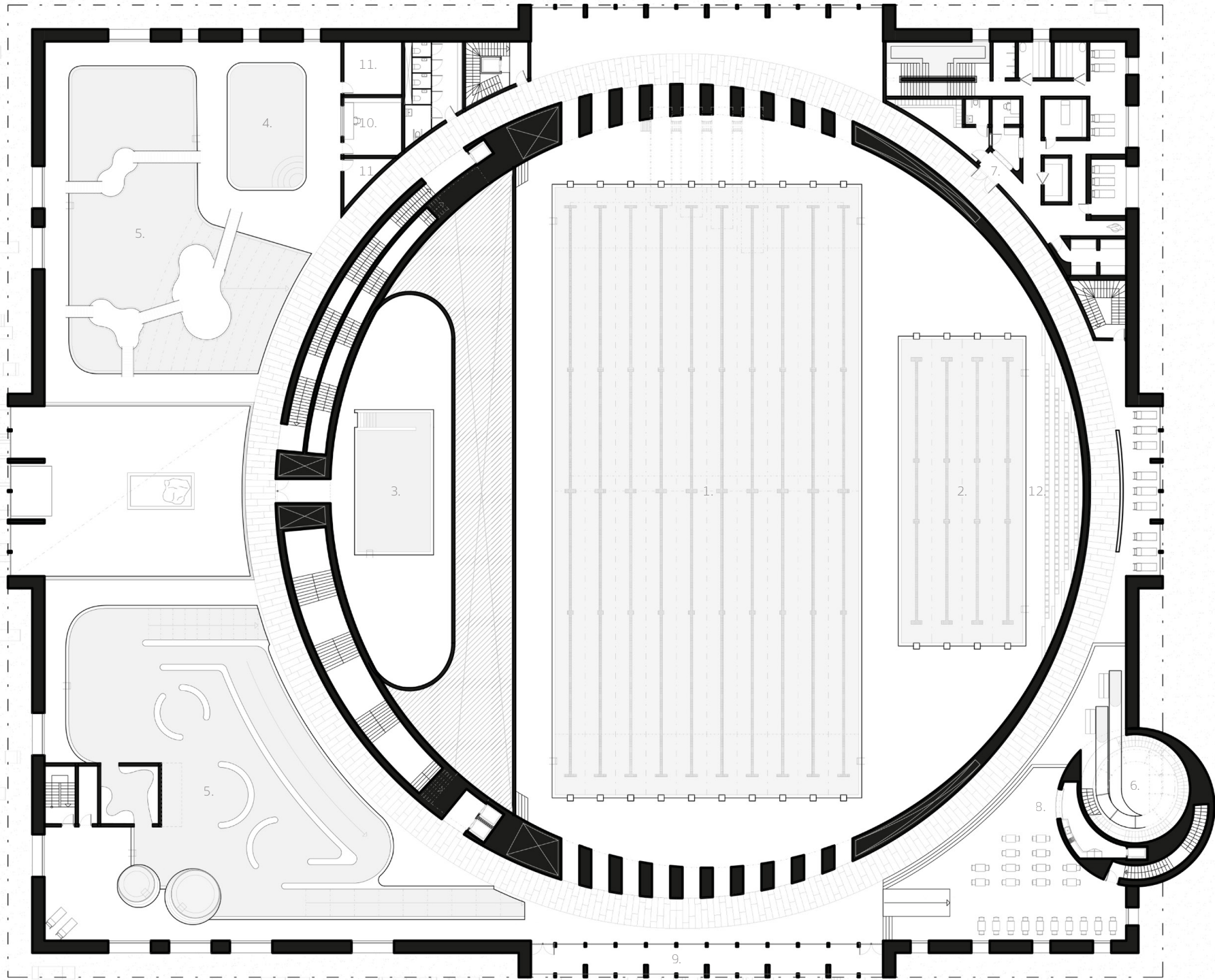
As a swimmer, you make your way into the swimming area. Depending on the purpose of your visit, you either move around the rotunda where the recreational swimming area is located or enter directly into the rotunda itself. The recreational zone invites guests to explore the various spaces formed by the changing distances between the outer wall and the rotunda, offering a playful and varied experience.

Alternatively, you may head into the rotunda, where the 50 meter and 25 meter pools, as well as the diving boards are located. The space rises dramatically, forming an immense volume defined by its perfect circular shape and curved ceiling. At its center lies the 50 meter pool, with ten starting blocks on each side, framed by portals in the cylindrical wall. These openings establish a visual and spatial connection between the focused, concentrated world of competitive swimming and the landscape beyond.

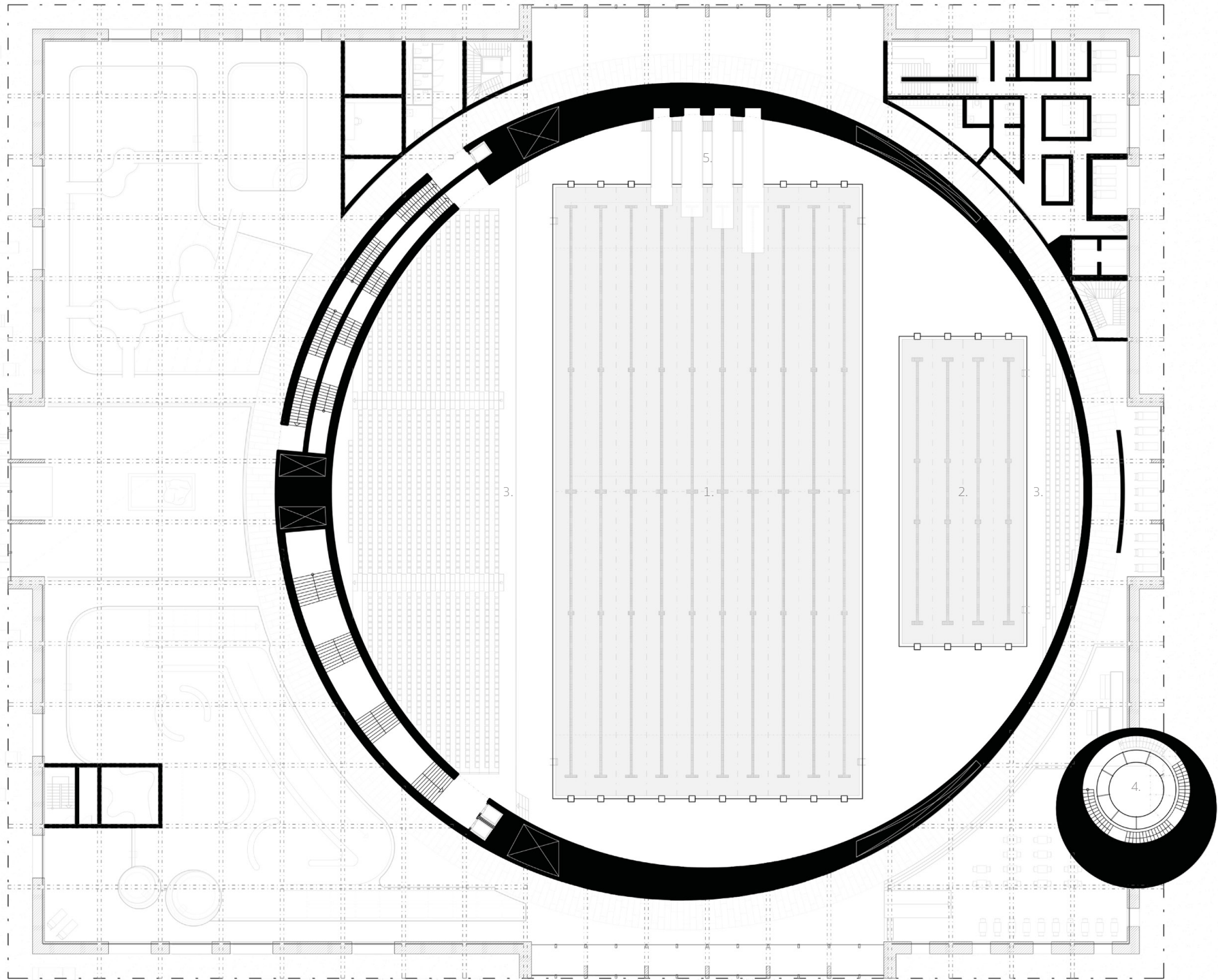
The rehabilitation pool is situated near the stairs and elevator, offering the privacy of an enclosed setting. This allows users to rehabilitate in a calm environment, free from the sense of being observed.

Spectators access the swimming arena bleachers through one of three entry points connected to the main entrance. Via the elevators, the large staircase or the smaller staircase. This movement from open public space, through enclosed passages and into the focused realm of sport highlights the spatial transition and enhances the significance of the spatial experience. Once inside, visitors can access the bleachers from the front, allowing them to choose their preferred spot, allowing free circulation throughout the seating area while maintaining easy access to restrooms and the restaurant downstairs.

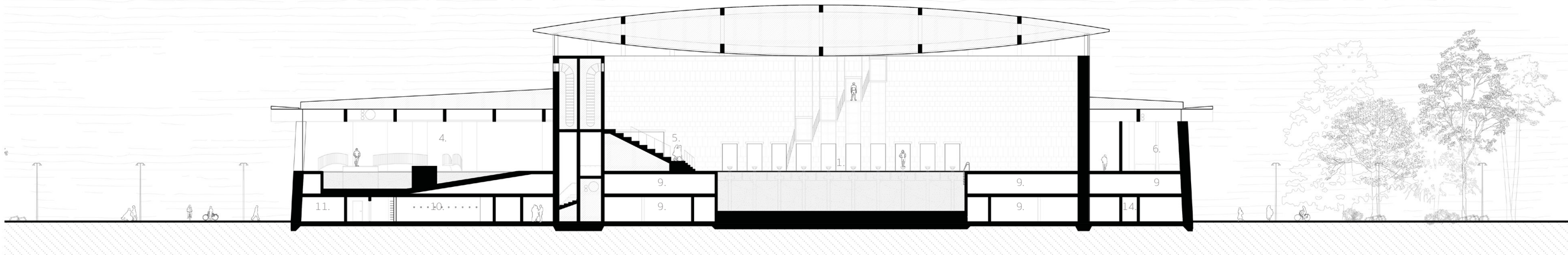




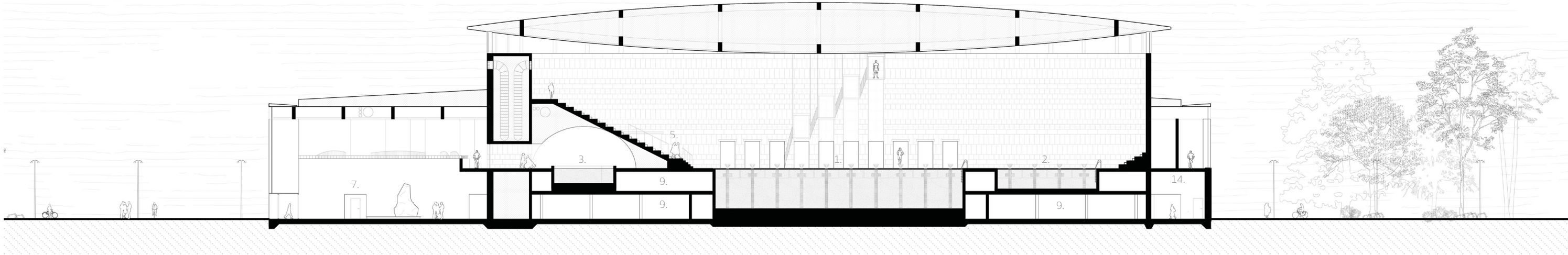
- 1: 50m pool
- 2: 25m pool
- 3: Rehabilitation pool
- 4: Kids pool
- 5: Recreational pool area
- 6: Water slides
- 7: Relaxation
- 8: Kiosk
- 9: Terrace
- 10: Lifeguard office
- 11: Storage
- 12: Bleacher



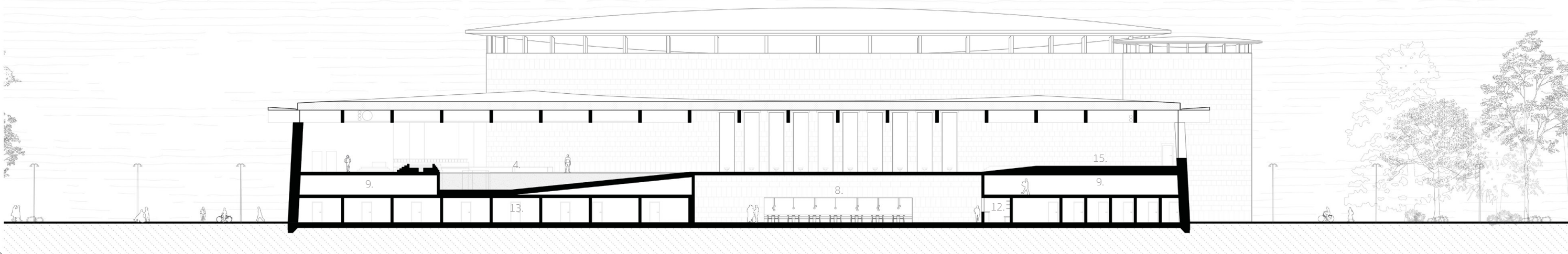
- 1: 50m pool
- 2: 25m pool
- 3: Bleachers
- 4: Water slides
- 5: Diving boards



Section B-B

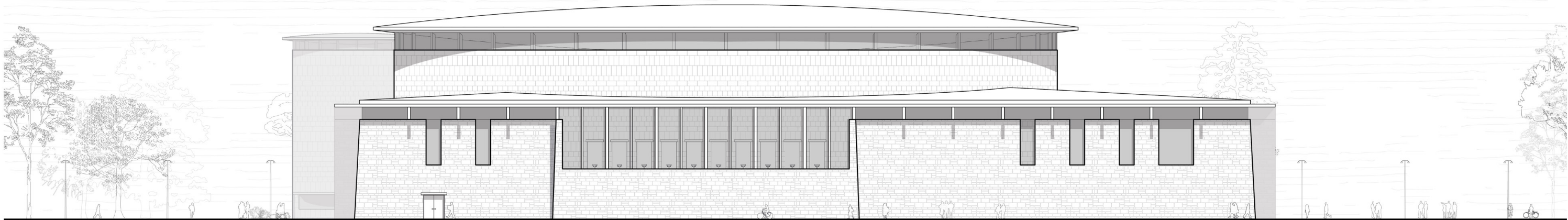


Section E-E

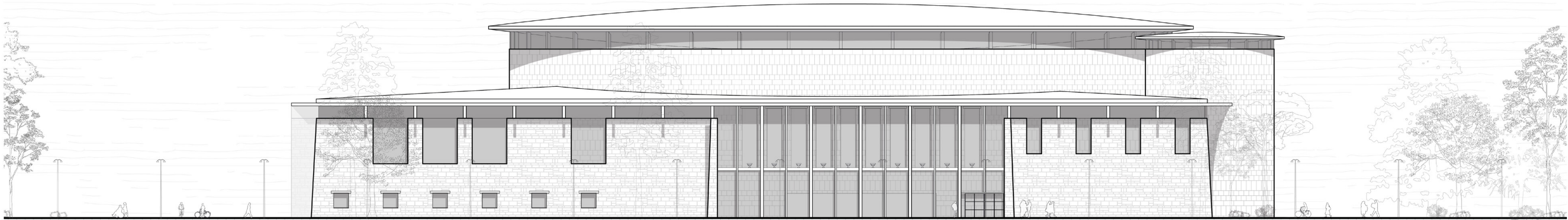


Section C-C

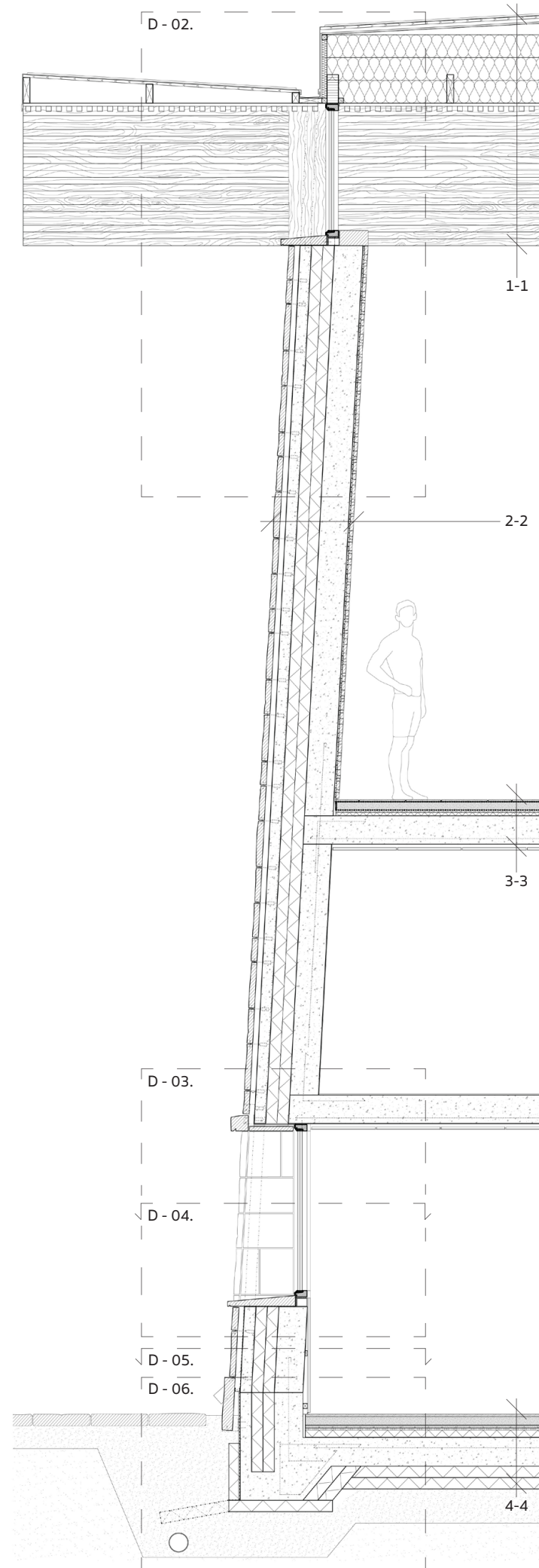
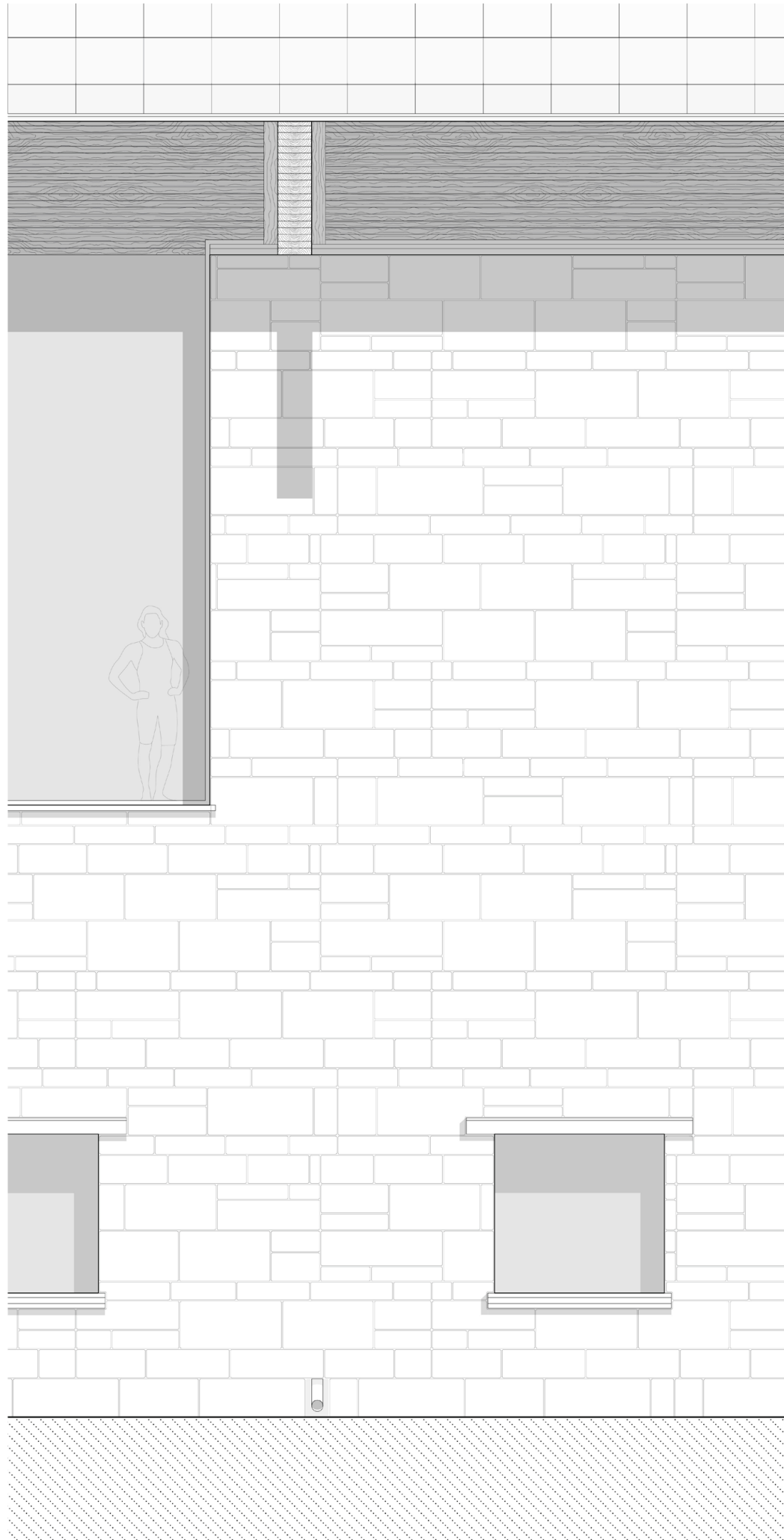
- | | | | | |
|----------------------------|----------------------|-------------------------|--------------------|----------------------|
| 1: 50m pool & diving board | 4: Recreational pool | 7: Main entrance | 10: Changing rooms | 13: Office & storage |
| 2: 25 m pool | 5: Bleachers | 8: Restaurant | 11: Gym | 14: Back of house |
| 3: Rehabilitation pool | 6: Relaxation | 9: Technical/inspection | 12: Kitchen/bar | 15: Kiosk |



East elevation



West elevation



1-1 Roof

Sheet metal roof	10
Tar paper	
Tounged grooved timber	22
Air gap	45
Wind protection membrane	
Masonite	13
Beams 1:30/isolation	100
Beams/isolation	250
Battens	27
Perforated wooden panels	45
Gluelam beams	1250

2-2 Wall

Jämtländsk limestone	50
Airgap	50
Concrete	100
Isolation	200
Concrete	250
Mortar/Water protection membrane	15
Jämtländsk limestone	30

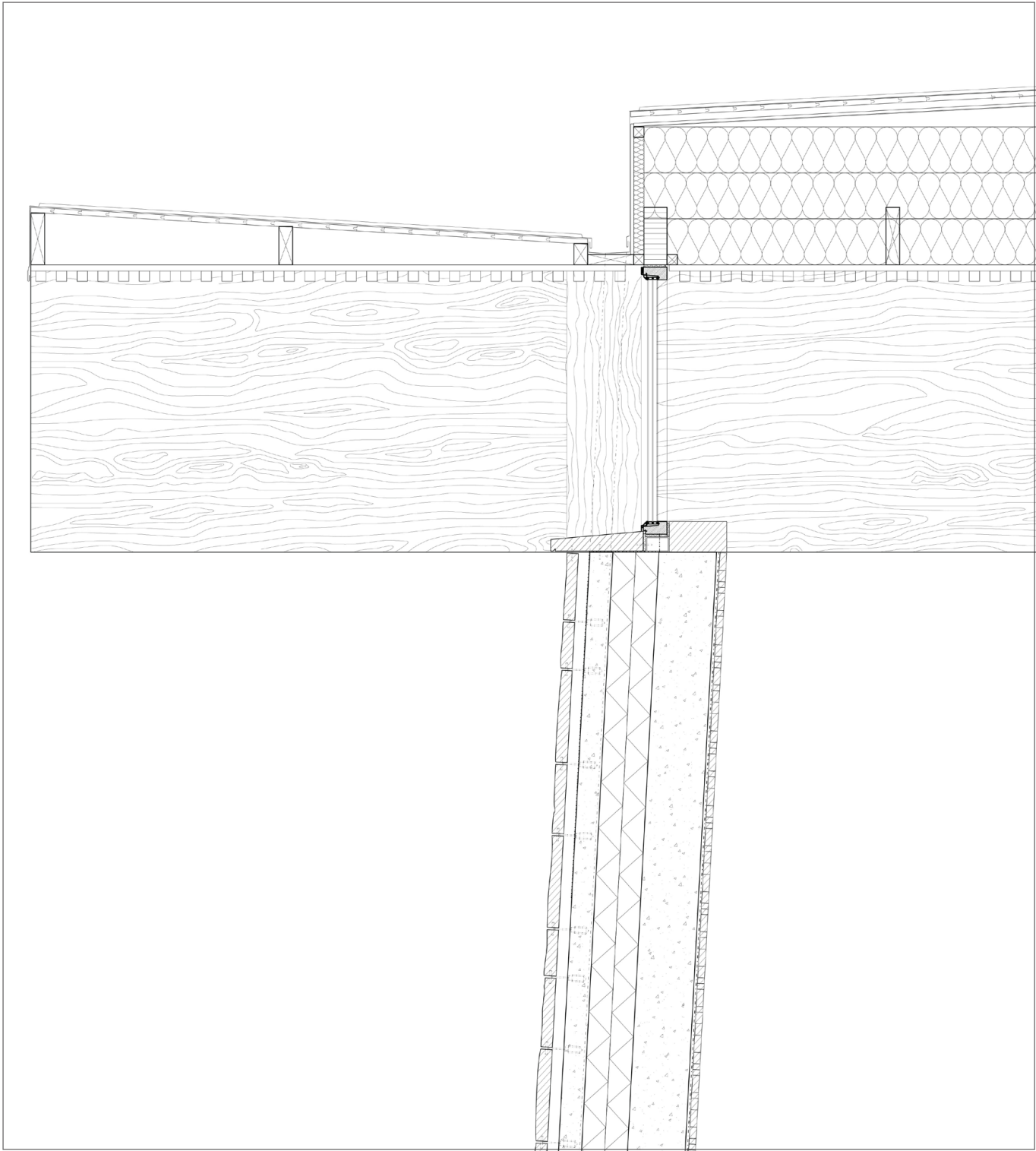
3-3 Floor

Jämtländsk slate	20
Mortar/water protection membrane	10
Screed	70
Water protection membrane	
Isolation	50
Concrete	250
Ceiling	50

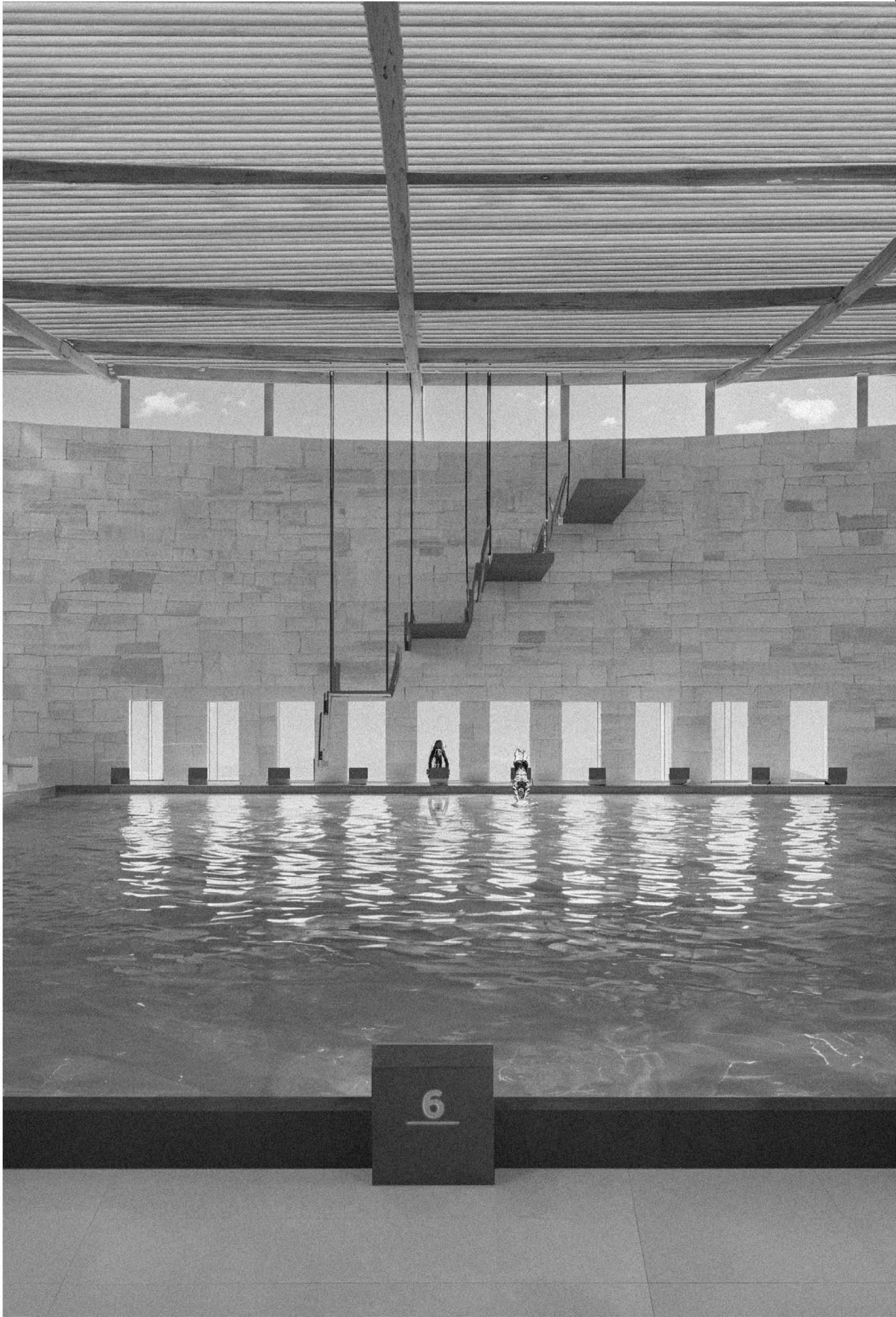
4-4 Foundation

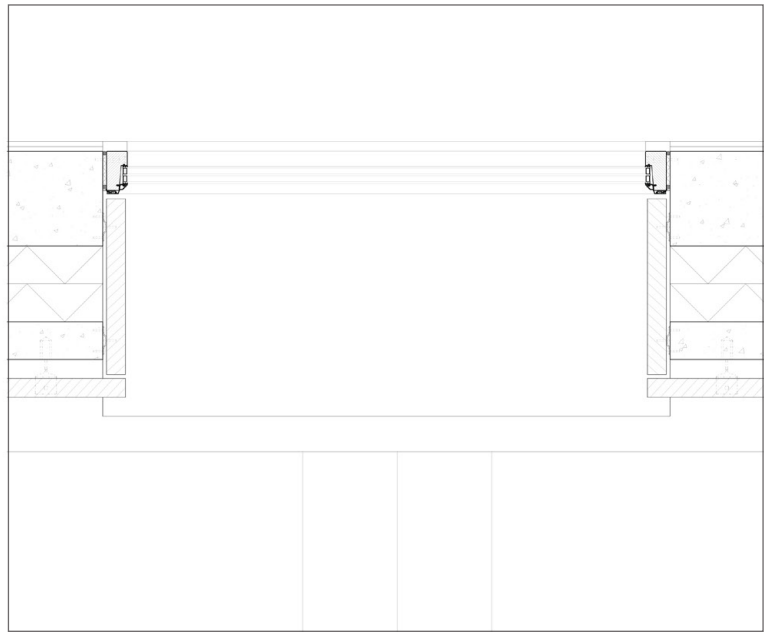
Jämtländsk limestone	20
Mortar	10
Screed	70
Floor heating	20
Isolation	60
Water protection membrane	
Concrete	250
Isolation	200
Macadam	

- D - 01. Circular roof
- D - 02. Rectangular roof
- D - 03. Window
- D - 04. Window, horizontal
- D - 05. Wall, horizontal
- D - 06. Foundation

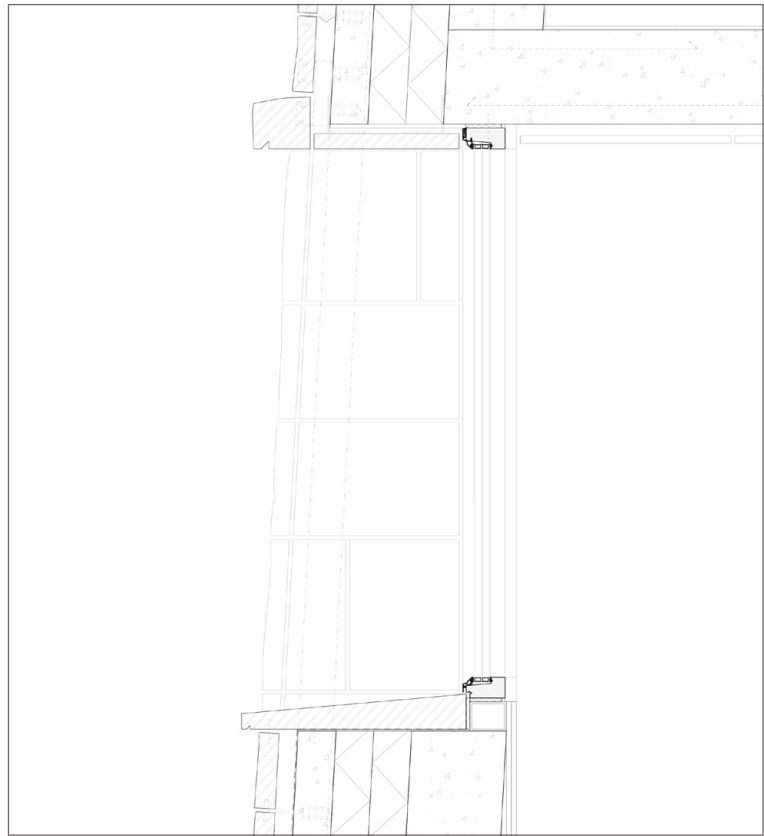


Detail - 02.

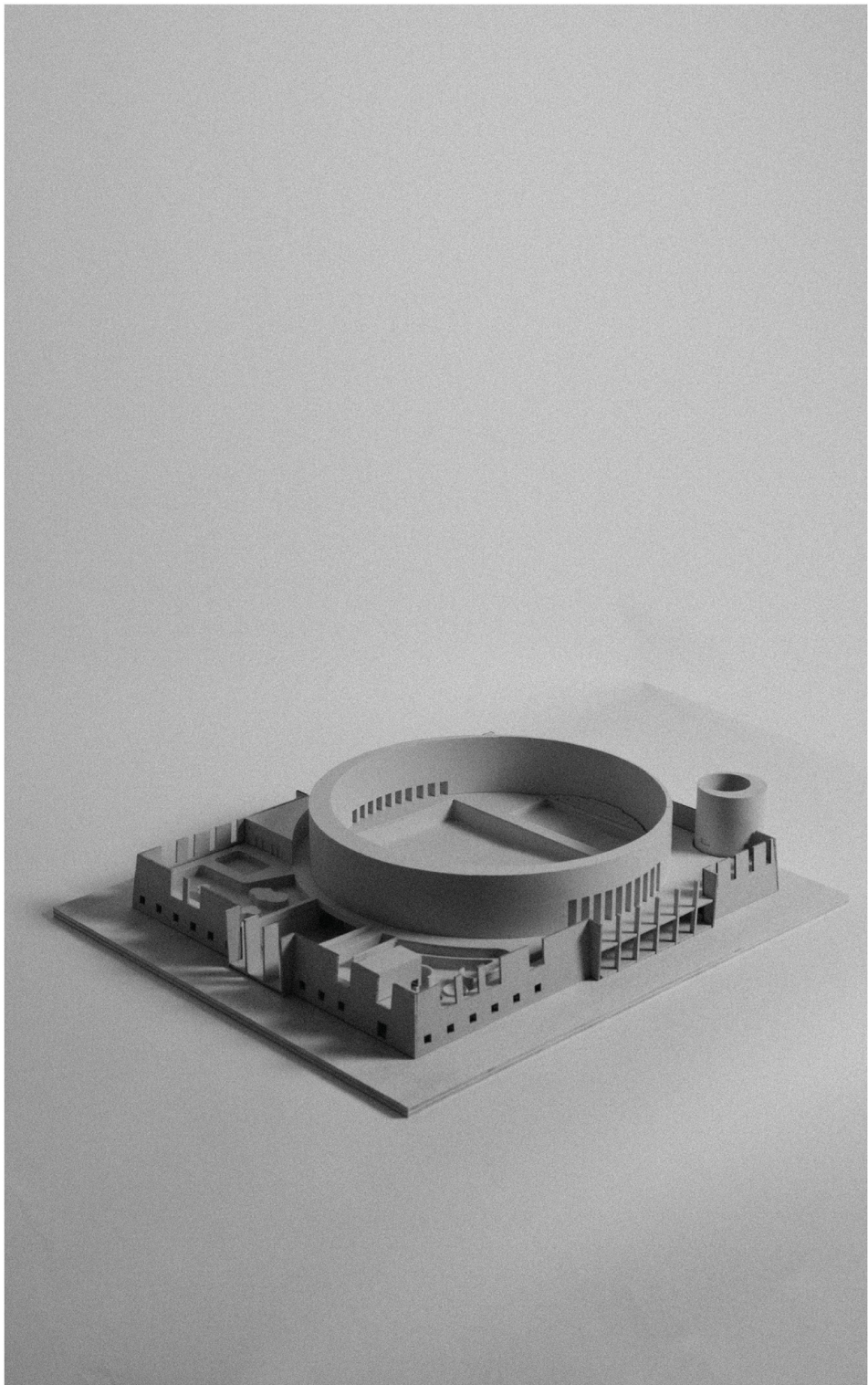


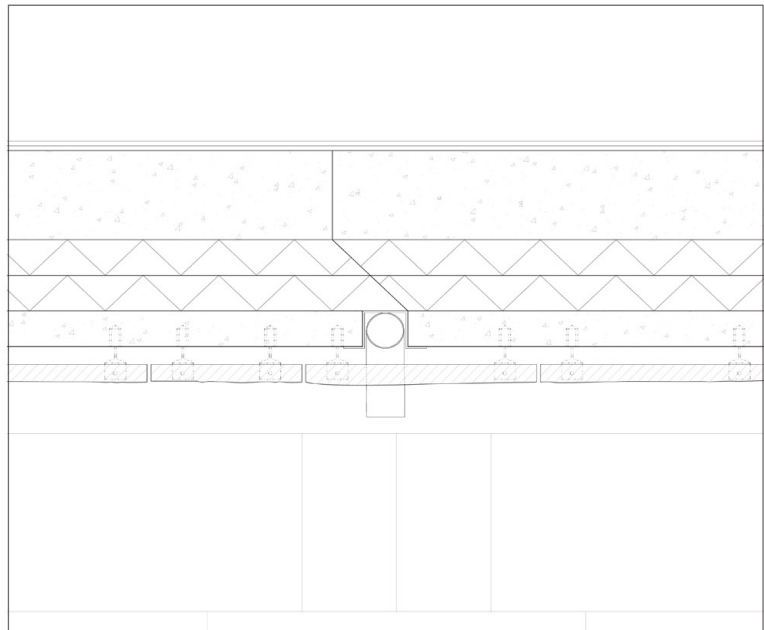


Detail - 04.

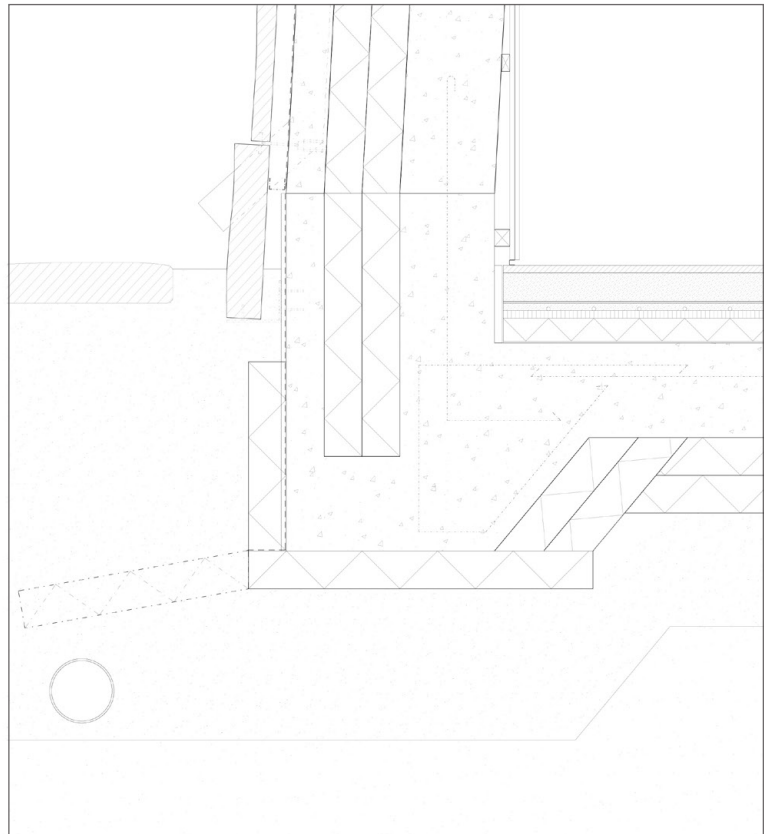


Detail - 03.





Detail - 05.



Detail - 06.



Discussion

The starting point of this thesis has been to explore the potential of using local materials in new design projects and the cultural significance they carry in relation to their origin. Arguing that new buildings integrate to their built context more harmoniously by focusing on locally sourced materials and respecting the existing material palette of a place, rather than focusing on familiar forms and shapes.

Today's society is international in character, with global influences shaping fashion, design, music, and art, subjects that now travel the world in minutes and influence both individuals and the work they produce. As a result, the distinctive local character is gradually diluted, with people across the globe sharing the same references and operating from a common design toolbox. This leads to the homogenization of our built environment, representing a loss for both local communities and visitors, who are deprived of the opportunity to experience the unique essence of a place.

The research in this thesis has shown that defining local identity is complex. It is a concept which is both a tangible and intangible at the same time. Existing literature on the topic often discusses it in a broad sense, and it is challenging to apply to specific design projects without translation. However, one element with an undeniably local connection is material. All materials originate from specific places, and these origins inform their physical and cultural properties. By focusing on materials and their local provenance, this thesis and its design proposal seek to build upon local identity from that perspective.

Analysis of built reference projects illustrates how new architecture can adopt this material-first philosophy. By prioritizing a connection through material rather than form, new buildings can show respect for their context and become part of a greater whole, while still maintaining their own identity and allowing the design a freedom in relation to modern standards and program functions which is constantly evolving.

This approach to design demands thorough research and often the involvement of local expertise. In some places, local identity is easily distinguishable, while in others, it is more subtle. This can make the approach challenging when there is a lack of knowledge about the area and its history.

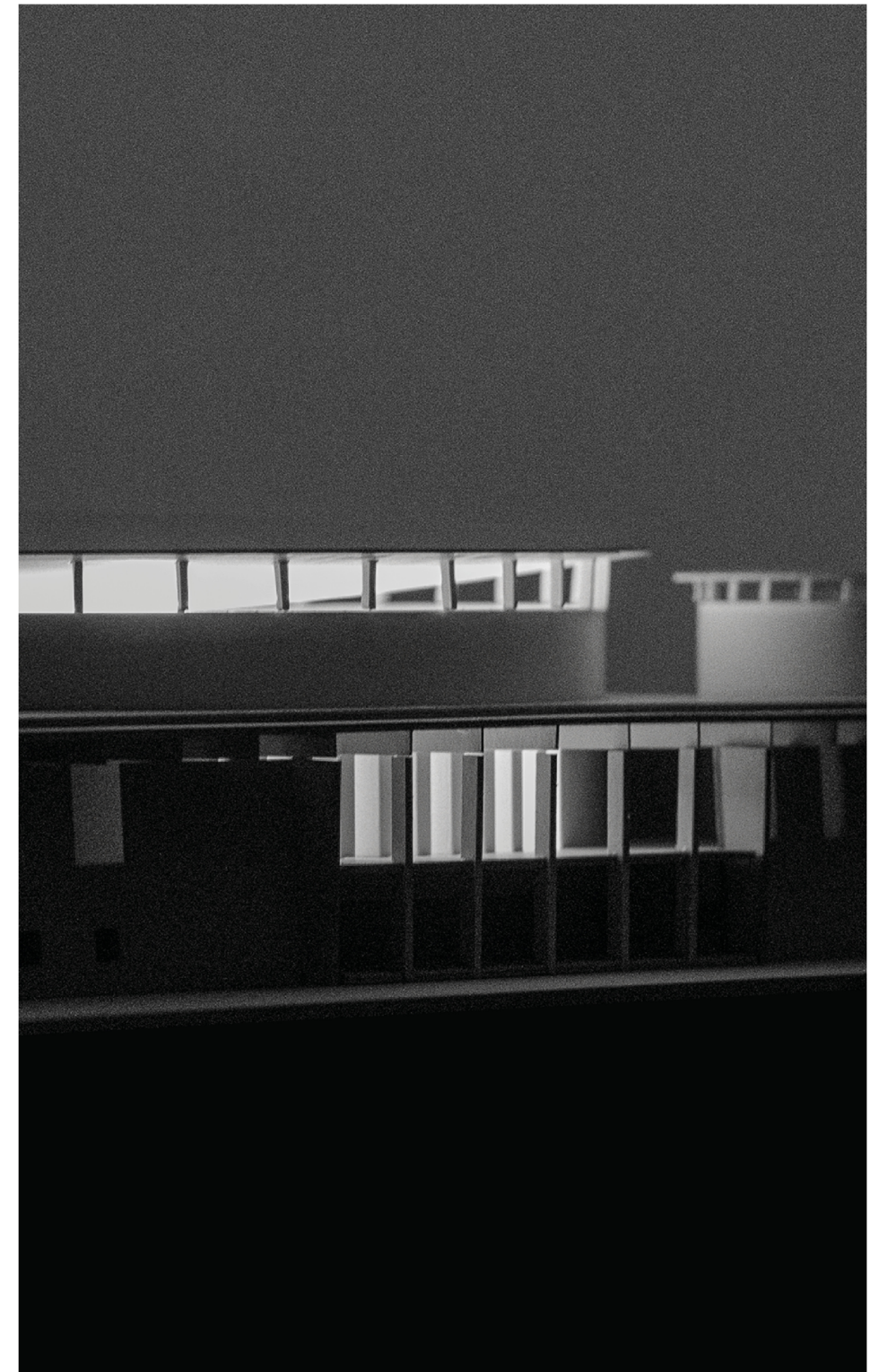
To ensure that this design proposal was rooted in as much local knowledge as possible, it was positioned in Östersund, Jämtland, a region where I have personal roots. The proposal is therefore informed not only by theoretical research but also by a deep, well-established understanding of the place. At the same time, this personal connection inevitably introduces a degree of subjectivity that may have influenced the study.

By reflecting critically on the project, its methodology and the design approach reveals that the early decision to explore this question and its theory through a large public building, specifically a swimming hall, slowed down the material-based investigation. The complexity of designing such a building within an urban context left limited time to fully explore and refine the building and its detailing.

As with all paper projects, there is a degree of uncertainty and openness to interpretation. It is only when a design is translated into physical form that it can be properly evaluated against its theoretical framework. As such, it remains difficult to assess whether the proposed design would serve as a successful example of the material-driven approach which this thesis is based upon, and whether it would represent a continuation of the built reference projects.

Reflecting on the broader significance of the thesis question, one final thought emerges. That in any new development, it is essential to research and deeply understand the context, its materials, and their historical applications. This knowledge allows the design to build upon the material qualities that have shaped local identity over time. If executed with care and intention, such an approach can result in designs that feel rooted in place, offering an authentic character that resonates with the local community.

In conclusion, I believe this thesis contributes to the discourse around materials within the architectural profession, a topic that is often overlooked in terms of its potential to create connections between buildings and place.



"- So how do you know when you're done?
- Well you tell me, how do you really know that you are done."

- Sigurd Lewerentz
Quote. 007

Bibliography

Literature

Austin, D. (2024). Swimming just might be the best exercise out there. Here's why. National geographic. <https://www.nationalgeographic.com/premium/article/is-swimming-the-ultimate-workout>

Becker, J. (2024). Exit Velocity: Einstein Tomb. Architectural Design - Volume 94, Issue 2: Lebbeus Woods: Exquisite Experiments, Early Years. <https://doi.org/10.1002/ad.3041>

Björklund, J et. al. (1986). Östersunds historia. Östersund: Jämtlands läns museum.

Davey, P. (2010). Architecture in context: Helin & Co. Birkhäuser.

Eberle, D., & Aicher, F. (2018). 9 x 9 – A Method of Design: From City to House Continued. Birkhäuser.

Frampton, K. (1983). Towards a Critical Regionalism: Six Points for an Architecture of Resistance. In H. Foster (Ed.), The Anti-aesthetic: Essays on postmodern culture (1st ed, pp. 16–29). Bay Press.

Gunnel Friberg, Barbro Sundnér. (1996) NATURSTEN I BYGGNADER. Riksantikvarieämbetet. ISBN 91 -7209-050-2

Hatz, E. (2006). Samtal om en bok. Arkitektur, p. 36-41.

Kjeldsen, K.; Schelde, J; Andersen, M. (2012) New Nordic: Architecture & Identity, Louisiana

Kjell, H. (1984). Östersunds centrum, hus med historia. Östersund: Jämtlands läns museum.

Lambe, N. R. & Dongre, A. R. (2017). A shape grammar approach to contextual design: A case study of the Pol houses of Ahmedabad, India. Environment and Planning B Urban Analytics and City Science, 46(5), 845–861. <https://doi.org/10.1177/2399808317734207>

Linn, B. (1967). Osvald Almqvist : en arkitekt och hans arbete. Stockholm: AB Byggmästarens Förlag

Norberg-Schulz, C. (1980) Genius Loci: Towards a Phenomenology of Architecture. New York : Rizzoli.

Ojeda O, R. (2015) Clear light: The architecture of Lauretta Vinciarelli. Oscar Riera Ojeda Publishers Limited.

Pentén, G, J et. al. (1986). Östersunds historia. Östersund: Jämtlands läns museum.

Spiegel, D. (1993). a-8c94d13-0002-0001-0000-000013683465. DER SPIEGEL, Hamburg, Germany. <https://www.spiegel.de/kultur/die-provokation-des-alltaeglichen-a-8c994d13-0002-0001-0000-000013683465>

Svenska Livräddningssällskapet. (2023). OMKOMNA VID DRUNKNINGS- OLYCKOR 2023 (n.d). Svenska Livräddningssällskapet. <https://svenskalivreddningssallsskapet.se/slscontent/uploads/2024/03/Arssrapport-sammanstallning-2023.pdf>

Schwartz, C. (2017). Introducing architectural tectonics, Abingdon: Routledge.

Walter, B. (1992). The Task of the Translator (Zorn, H, Trans.). London: Fontana Press. (Original work published 1923)

Webpages

Louisiana Channel. (2021). Many architects think as they draw. I don't do that [Video].YouTube. https://www.youtube.com/watch?v=XjCaQV_Uyzk

P4 Jämtland. (2023). Jämtdykarna vill ha djupdel i nya badhuset – annars kan klubben dö [Radio show]. <https://sverigesradio.se/artikel/jamt dykarna-vill-ha-djupdel-i-nya-badhuset-annars-kan-klubben-do>

P4 Jämtland. (2023). Simklubben Ägir: Slöseri att bygga äventyrsbad i Östersund [Radio show]. <https://sverigesradio.se/artikel/simklubben-agir-sloseri-att-bygga-aventyrsbad>

RTF. (2022). What is the difference between regionalism and critical regionalism? RTF | Rethinking The Future. <https://www.re-thinkingthefuture.com/architectural-community/a8886-what-is-the-difference-between-regionalism-and-critical-regionalism/>

Simklubben Ägir. (2024). Simklubben Ägir. <https://www.skagir.se/start/?ID=270106>

Staverfelt, A-C. (1994) Historien om ett tegelbruk. Tegel bolaget. <http://www.tegelbolaget.se/historik.html>

SVT. (2024). Busstorget Östersund. <https://www.svt.se/nyheter/om/busstorget-ostersund>

Skolverket. (2022). Simkunnighet i årskurs 6 (2022:16). Publisher Name. <https://www.skolverket.se/getFile?file=10534>
SVT. (2021). Storsjöbadet i Östersund rostar sönder – tidigare chefen: "Håller kanske tio år till". <https://www.svt.se/nyheter/lokalt/jamtland/storsjobadet-rostar-sonder-haller-kanske-10-ar-till>

Sweden, S. T. a. S. (2024). Arkitekt Lewerentz. SVT Play. <https://www.svtplay.se/video/KNwJoEb/arkitekt-lewerentz>

Willebrand, P. (2014). Offerdal i nordvästra Jämtland bryts den populära svenska Offerdalsskiffern som exporteras till hela världen och som får allt fler användningsområden. Sten. https://www.sten.se/wp-content/uploads/2019/05/STEN_1404-Offerdal.pdf

Östersunds kommun. (2024). Befolkningsutveckling. <https://www.ostersund.se/kommun-och-politik/kommunfakta/statistik/befolkningsutveckling.html>

Östersund Kommunstyrelsen (2023). Utredning om ny badhusanläggning i Östersunds kommun (§ 184, Dnr 00577-2021). Östersunds kommunstyrelsen. https://diariet.ostersund.se/download/document?filename=QmVzbHV0lEtTlDlwMjMtMDYtMDcgpAxDQgVXRyZWVuaW5nIG9tIG55IGJhZGh1c2FubORnZ25pbmcgaSDW-c3RlcnN1bmRzIGtvdW11bi5wZGY%3D&id=290629&session_id=BF-359D9959F3542D9F0FCD33BEA4A02969508E201B

Quotations

Quote. 001 - Zumthor, P. (2010). Thinking Architecture. Birkhäuser verlag GmbH, Basel.

Quote. 002 - Zuber, R. (2013). Toward space. Werk, Bauen und Wohnen, Zürich

Quote. 003 - Zuber, R. (2013). Toward space. Werk, Bauen und Wohnen, Zürich

Quote. 004 - Boullée, É. (1976). Architecture: Essay on Art [1968], Academy editions, London.

Quote. 005 - Hølmebakk, B. (2022). Professional awareness lecture [PowerPoint presentation]. TAP-studio, Oslo.

Quote. 006 - Zumthor, P. (2012). New Nordic: Architecture & Identity, Louisiana

Quote. 007 - Lewerentz, S. (2024). K special, Arkitekt Lewerentz [Documentary]. <https://www.svtplay.se/video/KNwJoEb/arkitekt-lewerentz>

Figures

Fig. 001 - Hallings foto (1955). JLM HLG25995 29 – BYGGNAD [Photograph]. Jämtli. <https://jlm.kulturhotell.se/objects/c60-242075/?sq=byggande&offset=58>

Fig. 002 - Evert Pettersson (1989). JLM 79X396 5 – HANTVERK [Photograph]. Jämtli. <https://jlm.kulturhotell.se/objects/c60-123373/?category%5B%5D=16&sq=Gusta%20sten&offset=26>

Fig. 003 - Vinciarelli, L. (1990). Red Room [Painting]. Retrieved from Clear light: the architecture of Lauretta Vinciarelli (p. 84). Copyright 2015 by Oscar Riera Ojeda Publishers Limited.

Fig. 004 - Vinciarelli, L. (1989). Steps [Painting]. Retrieved from Clear light: the architecture of Lauretta Vinciarelli (p. 67). Copyright 2015 by Oscar Riera Ojeda Publishers Limited.

Fig. 005 - Vinciarelli, L. (1993). Per Ilaria IV [Painting]. Retrieved from Clear light: the architecture of Lauretta Vinciarelli (p. 117). Copyright 2015 by Oscar Riera Ojeda Publishers Limited.

Fig. 006 - Boullée E. L (1784). Étienne-Louis Boullée, Cénotaphe de Newton - 02 - Élévation perspective [Painting]. Wikimedia commons. https://commons.wikimedia.org/wiki/Catégorie:Étienne-Louis_Boullée#/media/File:Étienne-Louis_Boullée,_Cénotaphe_de_Newton_-_02_-_Élévation_perspective.jpg/2

Fig. 007 - Boullée E. L (1780). Etienne-Louis Boullée, Perspective View of the Interior of a Metropolitan Church [Painting]. Wikimedia commons. https://commons.wikimedia.org/wiki/Catégorie:Étienne-Louis_Boullée#/media/File:Etienne-Louis_Boullée,_Perspective_View_of_the_Interior_of_a_Metropolitan_Church.jpg

Fig. 008 - Boullée E. L (1785). Étienne-Louis Boullée Nationalbibliothek [Painting]. Wikimedia commons. https://commons.wikimedia.org/wiki/Catégorie:Étienne-Louis_Boullée#/media/File:Étienne-Louis_Boullée_Nationalbibliothek.jpg

Fig. 009 - Fabrice Fouillet (2019). [Photograph]. Divisare. <https://divisare.com/projects/388269-peter-zumthor-morphosis-architects-thom-mayne-fabrice-fouillet-ther>

Fig. 010 - Adam Mørk (n.d). Wadden Sea Centre in Denmark [Photograph]. DAC. <https://www.archipanic.com/portfolio/irreplaceable-landscapes/>

Fig. 011 - Jeff Kaplon (2012). Town hall, Iragua[Photograph]. Subtilitas. <https://www.subtilitas.site/search/Raffaele+Cavadini>

Fig. 012 - Adam Mørk (n.d). [Photograph]. DAC. <https://dac.dk/viden/arkitektur/vadehavscentret-ribe/#gallery-2>

Fig. 013 - Rasmus Norlander (n.d). [Photograph]. DAC. <https://espensurnevik.no/Porsgrunn-kirke>

Fig. 014 - Rasmus Norlander (n.d). [Photograph]. DAC. <https://espensurnevik.no/Porsgrunn-kirke>

Fig. 015 - Fabrice Fouillet (2019). [Photograph]. Divisare. <https://divisare.com/projects/388269-peter-zumthor-morphosis-architects-thom-mayne-fabrice-fouillet-ther>

Fig. 016 - Jeff Kaplon (2012). Town hall, Iragua[Photograph]. Subtilitas. <https://www.subtilitas.site/search/Raffaele+Cavadini>

Fig. 017 - Damien Aspe (2020). [Photograph]. Subtilitas. <https://www.subtilitas.site/search/Perraudin>

Fig. 018 - Wiktor Lundberg (n.d). FGÖ 7427 – SANITET MM [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-17654/?sq=FGÖ%207427%20-%20SANITET%20MM&offset=0>

Fig. 019 - Bengt Weilert (2000). FGÖ 21319 – RÅDHUSET [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-27556/?sq=rådhuset&offset=18>

Fig. 020 - Wiktor Lundberg (n.d). FGÖ 10419 – KYRKOR [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-20533/?sq=FGÖ%2010419%20-%20KYRKOR&offset=0>

Fig. 021 - Sven Wallin (1958). FGÖ 3381 – BIBLIOTEK [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-13974/>

Fig. 022 - Wiktor Lundberg (1930). FGÖ 7362 – AFFÄRS OCH KONTORSBYGGNADER [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-19027/>

Fig. 023 - Adolf Arvidsson (n.d). JLM P20046 – GRUPPORTRÄTT [Photograph]. Jämtli. <https://jlm.kulturhotell.se/objects/c66-29099/?sq=tullhuset&offset=7>

Fig. 024 - Hallings foto (1959). JLM EJNEG1837 – DOKUMENTATION [Photograph]. Jämtli. <https://jlm.kulturhotell.se/objects/c60-104461/?sq=JLM%20EJNEG1837&offset=0>

Fig. 025 - A, Svensson och G, Rollin (1970). FGÖ 1621A118 – ÖSTERSUNDSMILJÖER 1970 [Photograph]. Gamla Östersund. <https://gamlaostersund.se/objects/c66-17495/?sq=telehus&offset=6>

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