Author: Marcus Adeen
Examiner: Björn Gross
Supervisor: Catharina Dahl Palmér

Chalmers School of Architecture
Department of Architecture & Civil Engineering
2026

GIVE SPACE

Reimagining the sports hall as social infrastructure through concepts of third place and biophilic design

CHALMERS
UNIVERSITY OF TECHNOLOGY

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ABSTRACT

This thesis investigates how the conventional sports hall typology can be transformed into a form of hybrid infrastructure and a *third place*, supporting public life while acting as a bridge between the urban and the natural.

The project is situated north of Valhallagatan in Gothenburg, a site currently characterized by impervious surfaces that separate the ecological landscapes of Burgårdsparken and Mölndalsån. Building on a development proposal that introduces two new sports halls to the area, the thesis explores how these large-span structures can be integrated with smaller-scale public functions.

The research is conducted through a research-by-design methodology, combining site analysis, case studies, and iterative architectural design using drawings, digital modeling, and physical models. The design process is supported by theories regarding concepts of third place and biophilic design that are applied to inform spatial organization, materiality, and experiential qualities, strengthening the relationship between users, nature, and the city.

The resulting proposal presents a hybrid building that mediates between urban fabric and landscape while supporting a diverse range of activities throughout the day and year. By reimagining the sports hall as social infrastructure and a third place, the project aims to activate the site in a spatial and social manner, giving the area back to the city.

Keywords: *Sports hall, third place, biophilic design, hybrid infrastructure, social infrastructure*

CONTENTS

Valhalla Uppvärmningsarena / Ullevi serviceyta
Figure 01

INTRODUCTION

Figures presented in this thesis are produced by the author unless otherwise indicated

PURPOSE

The area north of Valhallagatan in Gothenburg is currently dominated by impervious surfaces, creating a physical separation between the ecological systems of Burgårdsparken to the west and Mölndalsån to the east. As the site becomes subject to redevelopment, Krook & Tjäder (2025) propose an approach in which two new sports halls are introduced to support the existing sports-oriented infrastructure in the area.

Building on this context, the thesis explores how two sports halls, defined by their large volumes and structural spans, can be integrated with smaller public functions within a coherent spatial system. Rather than functioning as a collection of separate rooms, the building is conceived as an integrated environment that supports public life throughout the day and year on a site that is currently characterized by limited social activity.

The thesis further investigates how principles of third place and biophilic design can inform the spatial organization, materiality, and experiential qualities of the building, increasing social interaction and strengthening the relationship between users and natural systems.

Through sectional and structural design strategies, the project examines how a hybrid public building can mediate between urban fabric and landscape while accommodating contrasting spatial scales. In doing so, the thesis addresses the challenge of transforming the typically mono-functional sports hall typology into public infrastructure that fosters social interaction and reconnects the site with its surrounding urban and ecological context.

RESEARCH QUESTIONS

How can the sports hall typology be translated into a multi-functional public building?

In what way can principles of third place and biophilic design influence the design of a public building?

METHOD

This thesis was primarly conducted as a research-by-design architectural investigation, where the development of the design proposal serves both as research and as the means of knowledge production. The project combined technical, spatial, and contextual analysis with iterative design exploration, using conventional drawings, 3D visualizations, and physical models as both investigative tools and presentation media. A theoretical background was established from literature with the purpose of developing an architectural approach to the project.

Literature studies
Reading of written works, ranging from books to scientific articles. This was done to establish a design framework through theory, to derive tools and strategies that was later applied in the project.

Site and Context Analysis

Mapping of the sites current conditions in terms of circulation, urban–landscape thresholds, ecological connections, paths, existing structures etc. with the purpose to identify opportunities and constraints in relation to the context.

Case studies

Investigation of hybrid public buildings, multi-functional sports halls, and examples of sectional and structural strategies enabling separate functions within the building.

Drawing & modeling

Iterative exploration through plans, sections, elevations, axonometrics, 3D modeling, and physical models. Spatial, structural, and material strategies where tested continuously throughout the proccess.

Synthesis and Presentation

Production of a coherent hybrid public building expressed through architectural drawings, structural diagrams, 3D visualizations, physical models, and a supporting booklet documenting the design process, theoretical framework, and technical investigations.

Process

With the pre-studies beginning in fall of 2025 and early 2026, the process began with an analysis of the site and its conditions, as well as a study of the competition brief and entrys regarding the development of the area. A project plan was constructed and areas of research needed was established.

The process continued further with development of a space program, further solidifying the projects direction. The site analysis was revisited with this in mind to establish a schematic division of the site along with the placement of the building. During this stage, a lot of sketching took place in plan, section, physical and digital modeling, resulting in an iterative process where the spatial and visual connections and flows where distilled.

DELIMITATIONS

This thesis is a theoretical and conceptual investigation into how a sports hall can function as a public hybrid building on the site chosen. The detailed zoning plan of the area has not been taken into account, and the project rather functions as an investigation of what alternative approach could be taken on site. The project does not take into consideration econonomic aspects or infrastructure needs of such an approach.

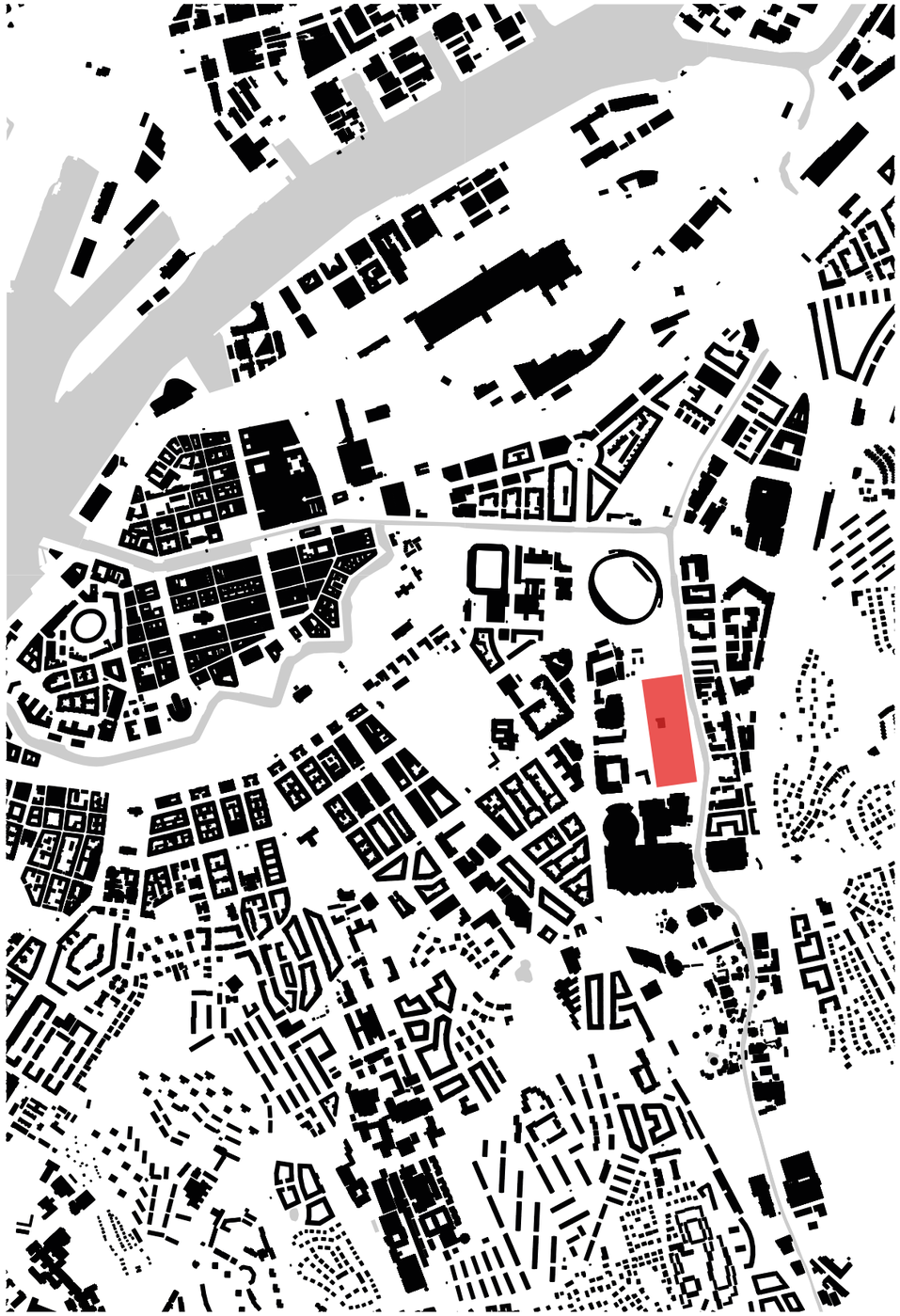

Figure-ground plan, project area marked in red
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BACKGROUND

The area between Ullevi arena and Valhallabadet has a long history of different functions, being the site for one of Gothenburgs early brickyards and the two landerier* Burgården and Katrinelund with its English garden, now Burgårdsparken.

Although in modern times the functions has been limited to a service area for Ullevi arena, parking lots and a football field, some traces of the past still remain in the northern part of Burgårdsparken, where the manor belonging to Stora Katrinelunds Landeri still stands. Other than that, the area is characterized by impervious areas and fencing, entirely disconnecting the ecosystems of Burgårdsparken and Mölndalsån. As a result of this barrier effect, the area is barely activated other than a skate park and is reportedly experienced unsafe after dark (Göteborgs Stad, 2023).

Today, the area is planned for development. In 2025, the city of Gothenburg held a competition, with the precondition of demolishing Valhallabadet and Scandinavium (Göteborgs Stad, 2025). In this plan, a new arena will be located north of Valhallagatan. Krook & Tjäder (n.d.) presented an alternative approach, renovating and extending the existing structures vertically, massively reducing the amount of new exploitation needed. In the proposal, the only need for new development north of Valhallgatan consisted of two full-size sports halls.

This thesis builds on this schematic proposal, developing the program to further reclaim the area for public use. The project investigates how the sport halls can be integrated with smaller public functions to create a hybrid building that activates the site, reconnects urban fabric with landscape, and provides citizens with spaces to experience nature, meet, and engage with each other and the area throughout the day and year.

* /Landeri/, plural /landerier/: a leasehold agricultural property on the donation land of the town, often with a manor house built on the plot.

THEORY

Hybrid architecture

In the cities of today, buildings are often designed to house a single primary function, resulting in structures and environments that are active only during limited periods of the day. This separation of functions across different buildings or urban zones can reduce opportunities for interaction and limit the social potential of urban space. Hybrid architecture as an approach looks to counter this condition by integrating multiple programs within a single building. By combining different uses, a hybrid building can support a wider range of activities and create environments that remain active throughout a longer period of the day.

The idea that architecture can influence social life through the combination of different activities can be traced back to the concept of the *social condenser*. Developed within Soviet Constructivist architecture in the early twentieth century, the term referred to buildings designed to encourage collective interaction through the deliberate mixing of everyday functions such as housing, recreation, and work. Through spatial organization, these projects aimed to reshape social relationships and promote new forms of collective life (Murawski, 2017).

In this thesis, the ideas of hybrid architecture and the social condenser are applied to the sport hall typology. Sport halls are typically mono-functional and inward-oriented buildings that are used primarily for organized activities and often remain inactive for large parts of the day. They are rarely integrated with surrounding urban life. By combining sports infrastructure with smaller civic programs such as study spaces, workshops, exhibition areas etc., the project explores how the sport hall can function as a hybrid structure. Through this integration, the building is imagined as a form of public infrastructure that supports social interaction, bridging different functions, and contributes to a more active and socially engaged urban environment (Della Spina, 2025).

Third place

The concept of “third place” was popularized by sociologist Ray Oldenburg in his 1989 book The Great Good Place. It is described as a neutral place outside home (first place) and work (second place) where people interact, gather, and build social connections (Oldenburg, 1997). These spaces, typically cafés, parks, and community centers, are typically characterized by accessibility, neutrality and a focus on conversation and social interaction.

Bosman & Dolley (2019) argues that these places play a critical role in fostering a sense of belonging, strengthening social capital, and supporting individual and community well-being. They act as a mediating space between individuals and a broader social environment, enabling everyday encounters that reduce social isolation and enhance neighbourhood cohesion. Mehta & Bosson (2010) presents four main physical qualities that distinguish successful third places;

Personalization
The spaces feel unique, recognizable and inviting. This enables individuals or groups to make the place distinctive and identifiable.

Permeability
The author also raises the importance of transparency in the façade. This enables passersby to understand the activities taking place inside the building and have a higher chance of participating.

Seating
To retain people and support social behavior, seating is identified as an important characteristic. Related to this, the author also underlines an importance of providing food and beverages within the establishment, as this combined with social activity makes people stay for longer.

Shelter
The final characteristic of successful third places is shelter. Providing comfort through weather protection increases the length of stay.

The author argues that third places are not just defined by their social role, but specifically by integrating physical design features such as these above. These are essential in transforming ordinary public spaces into vibrant sites of social interaction. (Mehta & Bosson, 2010)

Biophilic design

As populations have shifted from rural to urban areas, the separation of humans and nature has increased, with people living in urban areas experiencing a weaker connection to nature (Kageyama et al., 2024). Research shows that a disconnection from high-quality natural environments negatively affects our short- and long-term well-being, influencing physical and mental health, stress levels, and social relations (Carrus et al., 2015; Orstad et al., 2020). This separation indirectly affects the view of nature as our home, and subsequently our willingness to care for it. Today, green

space in Swedish cities is sparse and nearly half of Swedes (48%) report that they would like to see more parks and green spaces in their urban environments (White Arkitekter, 2023).

In the book Nature by Design - The Practice of Biophilic design, Keller (2018) defines biophilia as “the theory that people possess an inherent affinity for nature (…) developed during the long course of human evolution”. Biophilic design, as an extension to this, is articulated as the concepts of biophilia applied to the human-built environment. This concept is derived from a basic understanding of how humanity has evolved in relation to nature and how it in an evolutionary sense has contributed – and continues to contribute – to human health.

Nine universal principles for biophilic design are presented for an effective practice and application of biophilic design, along with 25 more specific design strategies with an overall aim of integrating authentic, meaningful connections to nature across interior, exterior, and transitional spaces to improve human health, wellbeing, and productivity while fostering emotional attachment, community, and ecological resilience. This is achieved through holistic and interrelated experiences in architecture that satisfy a wide range of human values, encourage an ongoing engagement and enhance human and environmental systems alike. (Keller, 2018)

The biophilic design principles are divided into three larger categories. **Direct experience of nature, indirect experience of nature**, and **the experience of space and place.**

Direct experience of nature relates to the actual contact to features and characteristics of the natural environment, including experiences of light, air, water, plants, animals, landscapes, weather, views of nature and fire. Keller (2018) describes these features as important, however there exists a tendency to regard biophilic design as only tending to these direct experiences.

Indirect experiences of nature instead relies on the human capacity to convert objective reality to images and other symbolic representations of nature. This also includes the transformation of natural materials, patina, natural geometries, color and texture. (Keller, 2018)

The third category, experience of space and place, focuses on the spatial setting.

Keller (2018) describe these principles to include prospect and refuge (perceiving long distances from a protected and "safe" place), organized complexity and transitional spaces (the threshold between spaces, interior and exterior). These elements, as integrated parts of a whole, reflect successful enviroments for humans over evolution that promote health and productivity.

This thesis will apply a number of these principles, with the goal of creating architecture that brings people closer to nature.

References

A number of built references are presented below, relevant to the project in terms of typology, spatial and/or structural organization, tectonic expression and materiality.

BUILT REFERENCES

Studio Muoto Lieu-de-vie / Public condenser, 2016
Paris-Saclay University Campus, France

The project demonstrates a hybrid approach to public architecture, which is highly relevant to this thesis. The building combines large-scale athletic spaces with smaller civic and communal functions such as cafeterias, terraces, and informal public areas within a single cohesive volume. Through its sectional organization, different programs are stacked to create contrasting spatial scales, allowing the spaces to function both independently and in relation to one another. Circulation is organized around a continuous open staircase that visually and physically connects the levels, showing how movement and programmatic layering can activate a building. Some characteristics for third place as presented by Mehta & Bosson are met, with the building having some permeability, offering seating in different configurations, and providing shelter through overhangs and loggia-like balconies.

Structurally, the project relies on a minimal and robust system that enables open spaces while also accommodating smaller and more intimate rooms within the same structure. The building also mediates between the surrounding urban context and the landscape. Public spaces at ground level and rooftop terraces extend the campus environment into the building, creating transitions between interior and exterior as well as between more public and more private spaces. Through its sectional organization, structural logic, and programmatic mix, the project demonstrates strategies for activating a site and accommodating a diverse range of users within a multi-functional building.

Relevance to thesis

The project demonstrates sectional layering as a strategy to combine and interweave different program types. It successfully integrates large-span spaces as well as smaller functions within a coherent structural system. The project has an articluated gradient of different levels of publicness. It utilizes characteristics of third place, proven to increase use and length of stay, and applies a number of biophilic design principles to create different experiences through interior and exterior.

Facade. (Delvaux. M., 2017). Reprinted with permission.
Figure 02

Rooftop basketball court. (Delvaux. M., 2017). Reprinted with permission.
Figure 03

Building section. (Studio Muoto, 2017). Reprinted with permission.
Figure 04

Interior space. (Delvaux. M., 2017). Reprinted with permission.
Figure 05

Interior space, views out. (Delvaux. M., 2017). Reprinted with permission.
Figure 06

Arne Jacobsen Landskrona Sports Hall, 1965
Landskrona, Sweden

The project is defined by a clear horizontality, read as a solid roof plane hovering above a glass structure. It is placed on a podium, slightly elevated above its context, which continues into the building and is excavated to form the bleachers and the court.

The entrance floor is kept mainly open by the 10 steel columns, with the roof construction hidden inside the ceiling creating a calm and coherent interior. A small walled structure is placed by the entrance for press room and café, breaking up the transparency and directing the flow toward the edges, around the bleachers. The changing rooms are hidden away underneath the podium, connected to the court.

The building has some of the characteristics of third place, such as permeability and shelter, but given its mono-functional program does not functions as such.

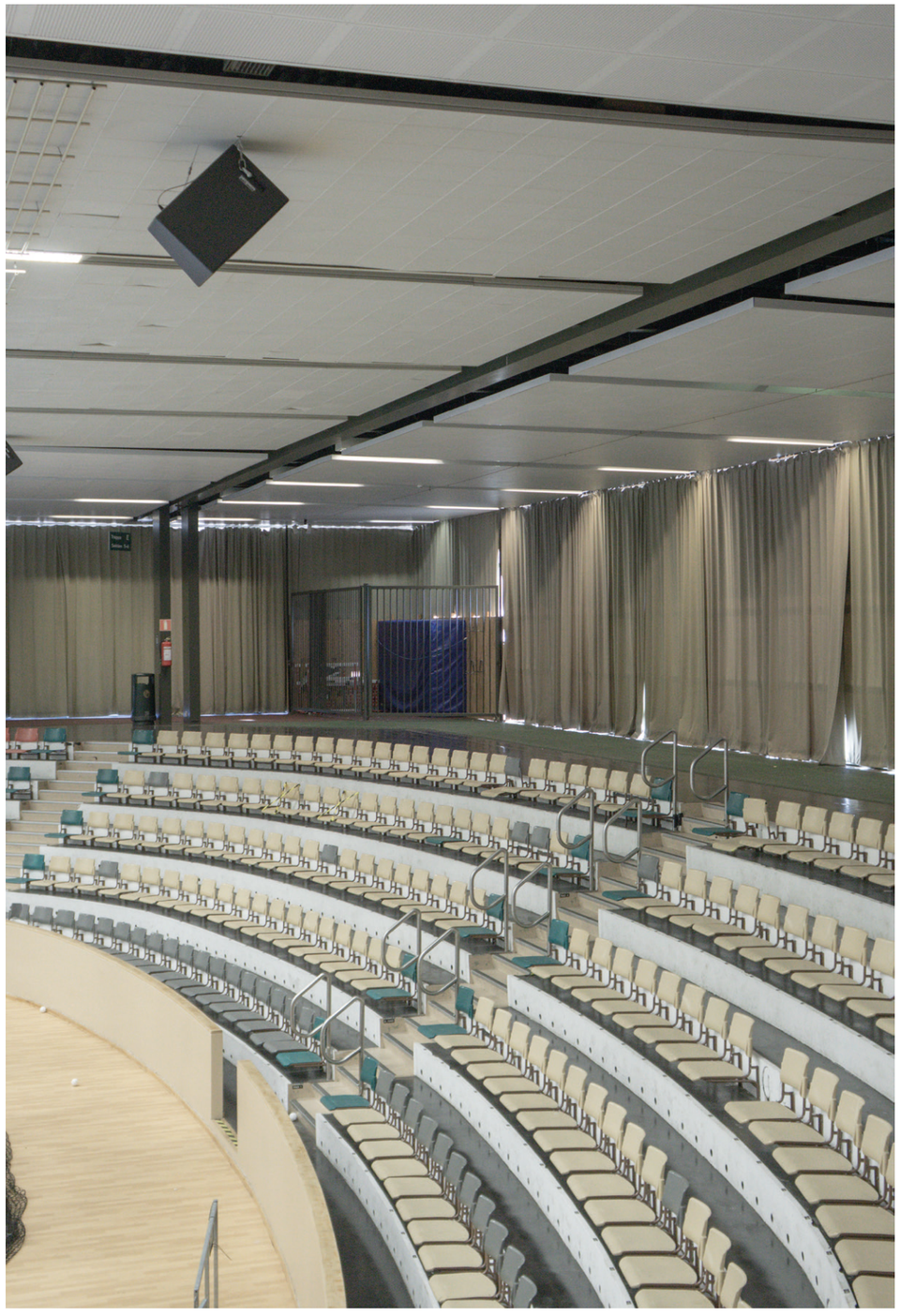
As a precedent, Landskrona Sports Hall is particularly relevant in its sectional handling of large volumes, its integration with the ground, and its use of abstraction to unify diverse spatial conditions. It demonstrates how a sport hall can move beyond pure function to become a coherent spatial environment, directly informing the thesis exploration of the sport hall as integrated civic infrastructure

Relevance to this thesis

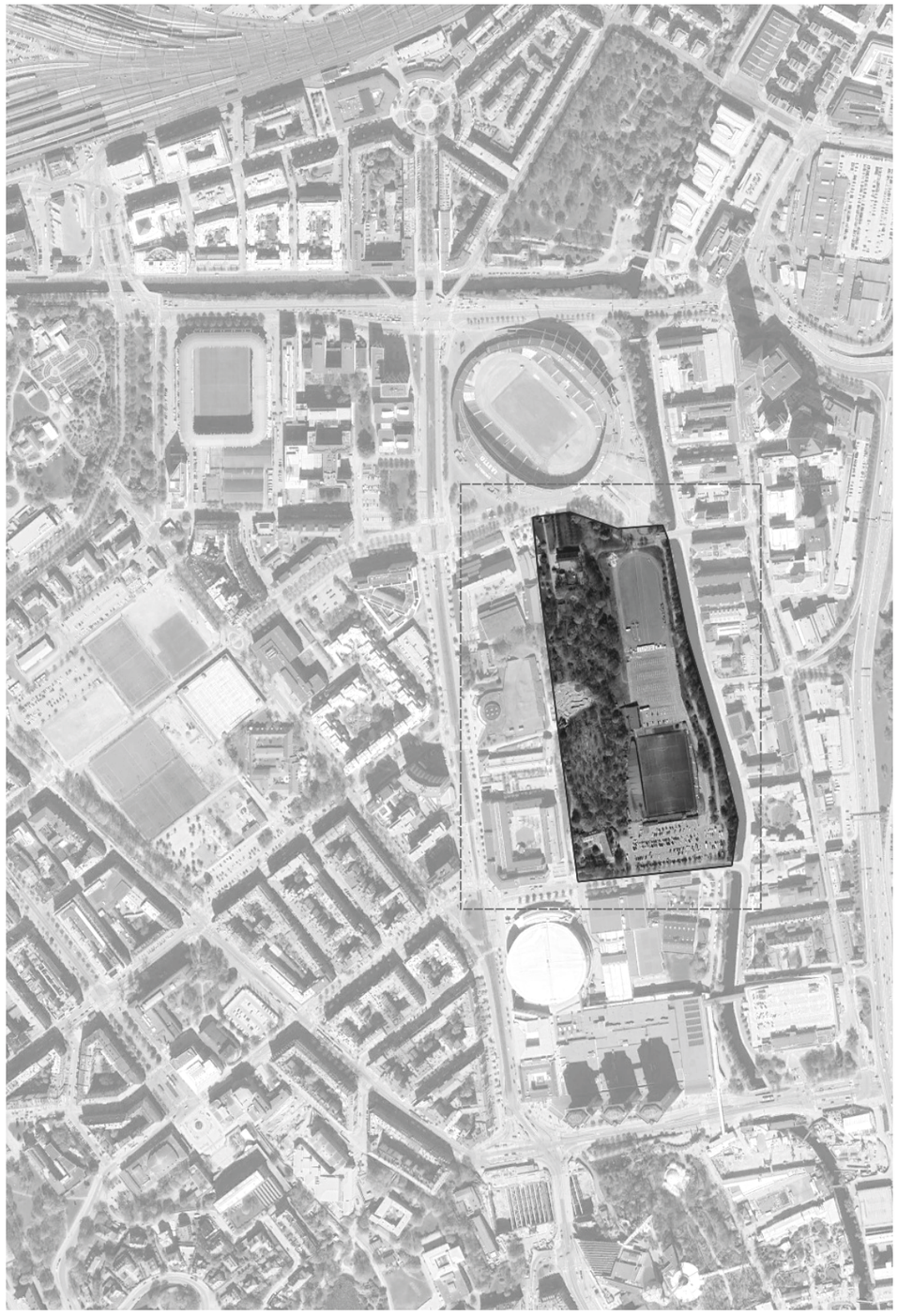
The project makes use of a continous roof plane to conceal its structure, giving rise to a spatial continuity in the interior. Through the roof overhang and the podium continuing outwards, the connection to the outside becomes very strong. It utilizes sectional strategy, submerging the building halfway into the ground, increasing the connection to the outdoors. Given its permeability and context, it has potential to be a third place that is limited by its program.

Roof plane and podium extending outward
Figure 07

Facade
Figure 08



Interior space, bleachers
Figure 09



Ortographic photo of the site
Figure 10

MAIN MATERIAL

DESIGN FRAMEWORK

From the literature review along with learnings from case studies, an architectural approach to the problem is produced to concretize specific tools, related to their intentions grounded in theory. These strategies and tools works to give the project a clear foundation and direction.

Theory	Intention	Strategy	Tool	Outcome
Hybrid architecture	Sports hall as multifunctional, integrated, social infrastructure	Programmatic integration across scales	Internal balconies and galleries	Increased occupation time and informal use of building
Third place		Permeable facade	Stairs as spatial elements	Spontaneous meetings and overlapping programs
Biophilic design	Building as mediator between urban and landscape	Sectional continuity	Glass wall envelope	Legible continuous interior
		Circulation as connector	Glazing between programs	Improved well-being through connection to nature
		Landscape integration	Double-height spaces	
		Material tactility and sensory experience	Shared communication	
		Prospect & refuge	Topographic continuity	
		Informal seating areas	Sectional material zoning	
			Sunken bleachers	
			Varying interior landscape	

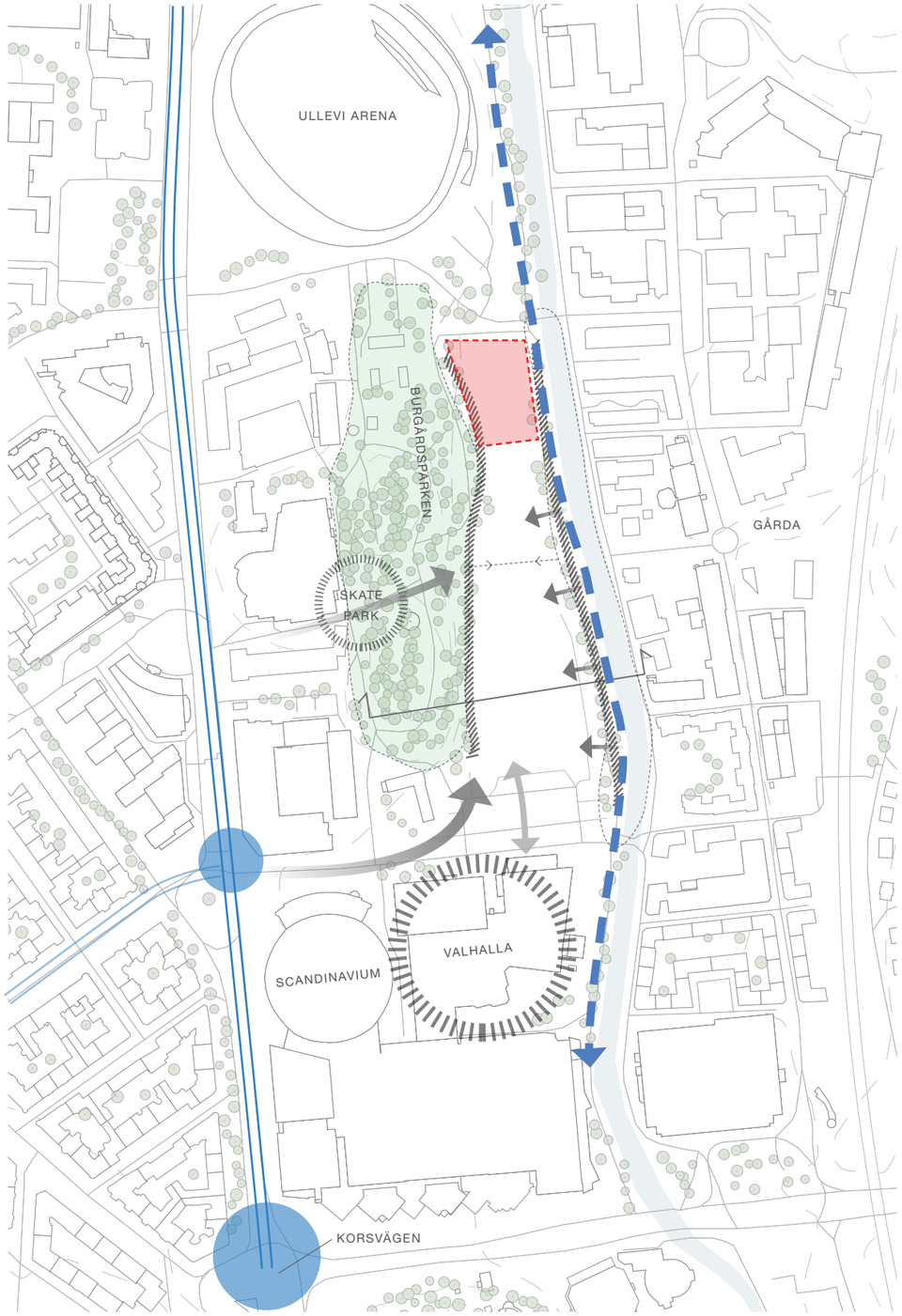
SITE ANALYSIS

The project site is located in central Gothenburg, in the area between Ullevi and Valhallabadet, just north of Valhallagatan. Despite its central location and proximity to several major public institutions and green spaces, the area is currently characterized by fragmented land use and a lack of accessible public space. Large parts of the site are occupied by service areas for Ullevi, surface parking lots, and fenced-off sports fields. These functions, combined with extensive impervious surfaces, create a landscape that is primarily infrastructural rather than functioning to enable public use and interaction, simultaneously creating a barrier between the two ecosystems of Burgårdsparken and Mölndalsån.

As the northern part of the site is designated as a service area for events at Ullevi, the project primarily focuses on the southern portion. This is also beneficial given its proximity to the public transport hub of Korsvägen and Scandinavium, as well as latching on to the flows coming from residental areas in Gårda and Heden. Located at the threshold between the urban character of Valhallagatan and the adjacent park landscape, this area presents an opportunity for the building to address both contexts by establishing a spatial transition between the city and the natural environment.

As the project also aims to improve access to nature and reconnect the site with the surrounding landscape, there is value in limiting the building height so as not to obstruct visual connection from the hill of Burgårdsparken to Mölndalsån and Gårda. Maintaining visual connections between these spaces can help reinforce the relationship between park and river, having the area experienced as a whole.

The riverside path should also be considered an important direction for the building. With the removal of fencing and barriers, the entire edge of the park becomes accessible, allowing entry and visual contanct from multiple points along the path. The building should therefore avoid creating a backside toward this public edge. Instead, its design should respond with an open and active façade.



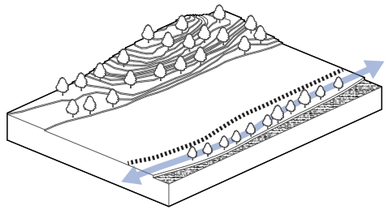
Site analysis
1:5000

Burgårdsparken skatepark
Figure 11

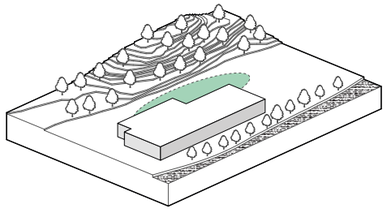
View from the riverside path to the park
Figure 12

Burgårdsparken
Figure 13

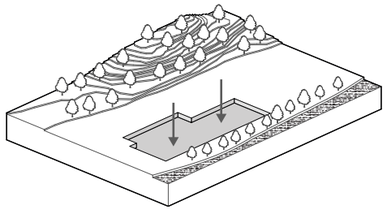
Bicycle & walking path along the river
Figure 14



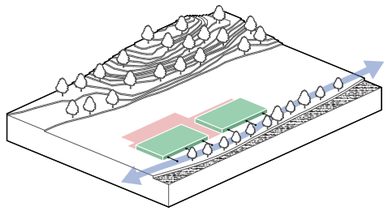
The site is defined by a highly used bicycling path running alongside the river. A flat area, currently surrounded by physical barriers, separates the river from the park to the west.



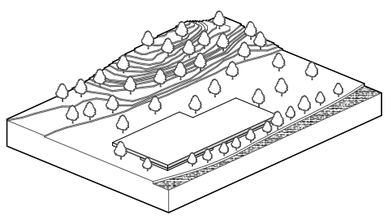
The volume is placed with an undisturbed facade along the path, creating a protected and calm public space on the opposite side



The building is partly submerged, allowing the landscape to extend down through the building and lowering the building height, submitting to surrounding structures and trees

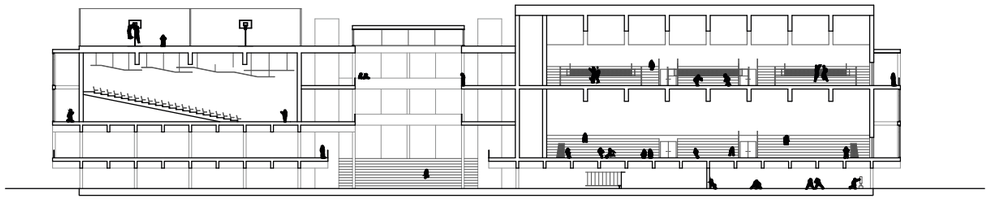


Sports courts are placed along the path, encouraging curiousity through visual connection. Open program faces park.

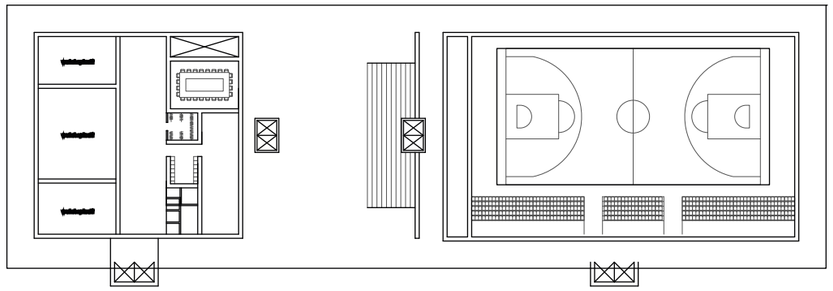


A continuous roof slab ties the function together, having the building experienced as a whole.

DESIGN DEVELOPMENT



Schematic section of early iteration with functions stacked



Schematic plan of early iteration

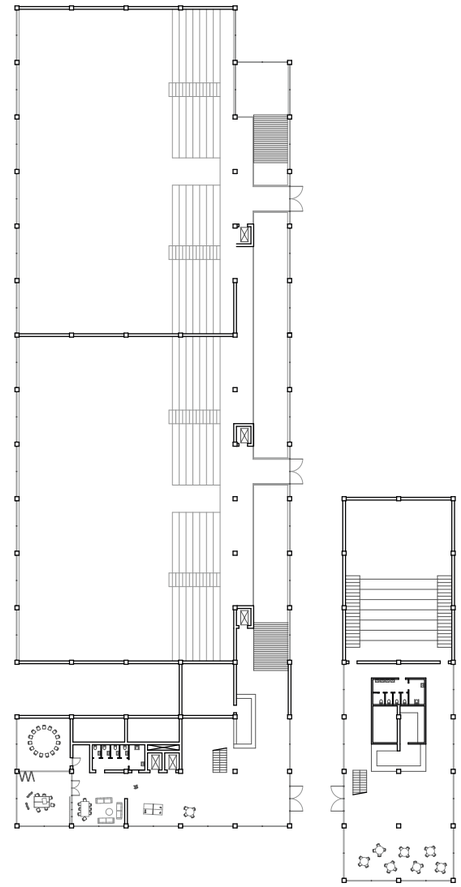
Early in the project, an amibtion existed to design a much larger building, including vast spaces for exhibition, conference, performances and more. This was largely inspired by Renzo Pianos' *Centre Pompidou*.

However, by stacking the sports halls on top of each other, a big challenge in construction and total volume height presented itself. This brought with it problems in sectional organization regarding the public program, where ceiling heights would be far to high or low to be able to function with the high ceilings of the sports halls.

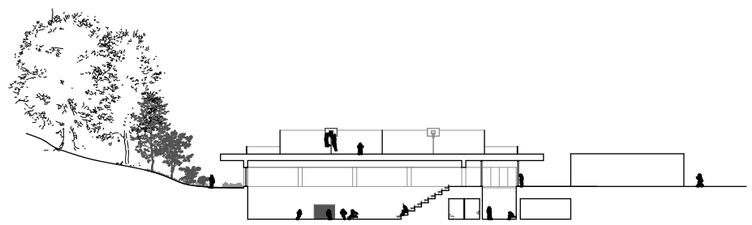
After a few iterations and attempts to adapt the building to the site and its condition, the decision was made primarily to significantly lower the volume as to not create even larger barriers between Burgårdsparken and Mölndalsån. It became evident that such a tall and long building would completely block off the visual connection between the two, resulting in an equal or greater separation compared to the one already on site.

As a response to the challenged discovered in the earlier iteration, the organization was shuffled around, with the sports halls placed next to each other, halfway submerged into the ground. This created a more articulated connection between the interior and exterior.

By enabling access to the roof, the objective was to have the hill of Burgårdsparken continue and become part of the building. This was a pivotal moment in the process, and the decision had to be made whether to keep the current position of the building, bordering Burgårdsparken, and work out how a connection to the hill would be made, or move the building to have a closer connection to the river and the path along it. With arguments such as not having a more than neccesary impact on the topography and natural systems, the decision was made to shift focus toward the east side of the area, designing a building more connected to the river and with a lighter, less impactful attitude to the rest of the area.



Schematic plan of early iteration, sports halls along corridor



Schematic section of early iteration, problematic relation to hillside

PROJECT DESCRIPTION

The project reinterprets the conventional sport hall as a hybrid social infrastructure, integrating large-span sports halls with public programs in a continuous architectural system. Located at the threshold between the event district and a new city park envisioned at the site, the building acts as both connector and destination, mediating between urban and green spaces.

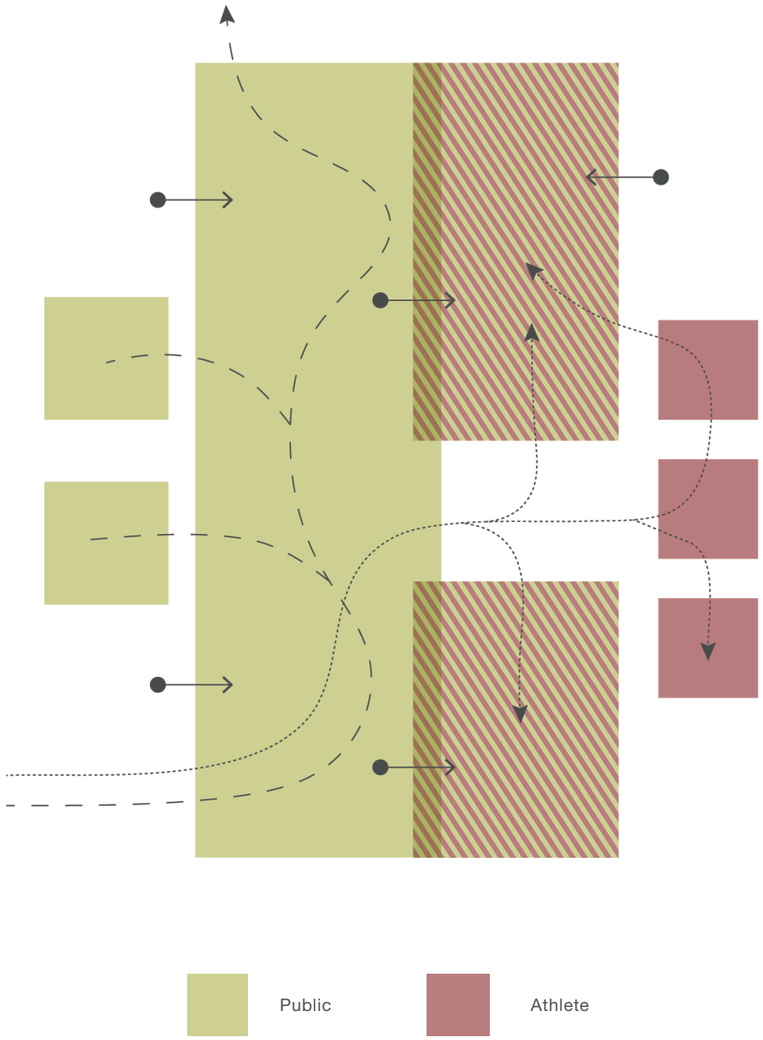
Rather than organizing functions as separate volumes, the project is structured through section, where large sport halls and public spaces are interwoven.
This enables visual and spatial connections across programs while maintaining functionality, supporting both organized activities and informal public use throughout the day.

Three key architectural strategies define the project. First, the building is partially embedded into the ground, allowing the sports halls to achieve the necessary height while maintaining a low building volume. This establishes a continuity between landscape and interior, where the building is experienced as an extension of the ground. Second, a continuous roof plane spans the structure, unifying the program beneath a single gesture. The large overhang provides shelter, reduces glare, and reinforces the perception of the building as a public space. Third, a transparent perimeter dissolves the boundary between inside and outside, exposing internal activity throughout and sparking curiousity in people passing by.

The spatial organization is defined by a gradient of publicness. The entrance level is open and permeable, with minimal enclosed volumes and strong visual connections. The upper foyer acts as an unprogrammed space for informal occupation, linking public and athletic programs. From here, movement extends horizontally or descends to the lower level, where sport-specific functions are located. Despite this separation, the two levels remain interconnected through double-height spaces and internal galleries, allowing visual continuity between foyers and courts. A central stair operates as both circulation and social space, connecting levels as well as enabling informal gathering and seating.

Material and structure reinforce this organization. The upper level is constructed in timber, creating a lighter and more tactile environment, connected to the natural environment around the building, while the lower volume is defined by concrete, expressing its position within the ground. In the roof, a steel truss system enables large spans, concealed in the roof to maintain spatial continuity. Through its sectional integration and programmatic mix, the building transforms the sport hall into an active public structure, supporting social interaction while reconnecting the site to its surrounding landscape.

View from path along river
Figure 15



The two main flows of the building can be distinguished between the athlete and the public, with some functions being solely for athletic purposes, and some serving the public. These flows are separate but interweaved, with strong visual connections throughout with the aim to give rise to interaction between visitors and spark curiosity cross-function.

PROGRAM

Entrance floor

Upper foyér	1200 m²
Café	100 m²
Reception	50 m²
Gallery	160 m²
Concourse	900 m²
Restrooms	210 m²
Cleaning centre	20 m²
Recycling	25 m²

Basement floor

Lower foyér	930 m²
Sports halls	3000 m²
Martial arts	360 m²
Locker rooms	340 m²
Judges room	30 m²
First aid	30 m²
Restrooms	100 m²
Storage	300 m²
Cleaning centre	15 m²
Technical	150 m²

Total 7920 m²

The program is based on the brief for the development of the event district by Göteborgs Stad (2023) and the further processing by Krook & Tjäder (n.d.). Public functions are added to it to establish its place as a public building and a third place for the residents of Gothenburg. These rooms are generous in their size and largely unprogrammed, enabling a wide range of activities, spontaneous and planned, as well as supporting the athetlic program by providing space for gathering and spectating.

The building consists of a highly permeable entrance floor with the aim of acting as a third place for residents in the city. The foyérs act as both as a common area for recreation, studies, gathering, as well as communication space feeding other functions. This public space extends into the basement floor, which also houses supporting functions for the athletes, technical rooms, and storage.

PROPOSAL

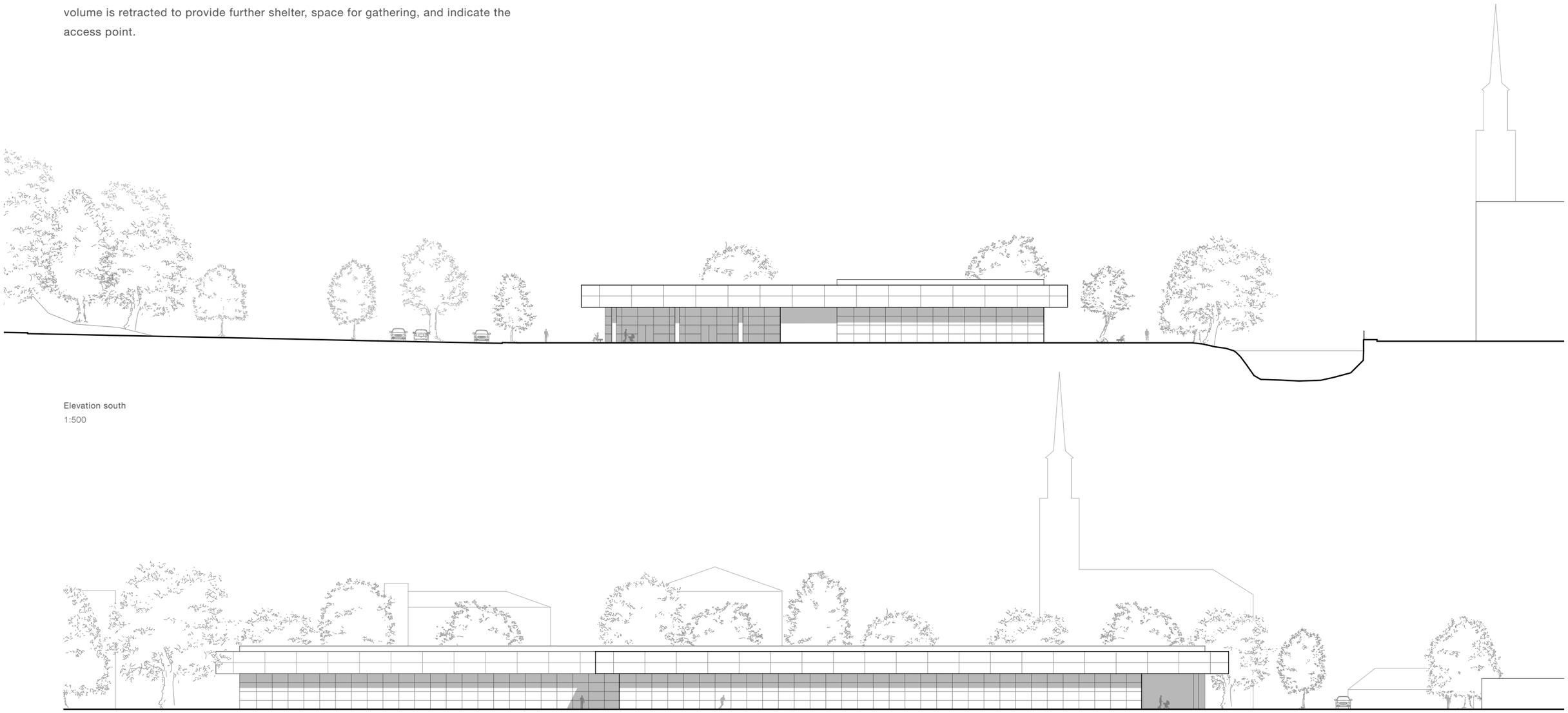
The building is situated in close connection to the flow of Valhallagatan, across the street from Valhalla swimming hall and its future extensions. To the east, its has a direct connection to the bicycle path along the river, taking a step back from the park to the west.

0 10 50 100 200

Site plan
1:2000

Perspective of entrance
Figure 16

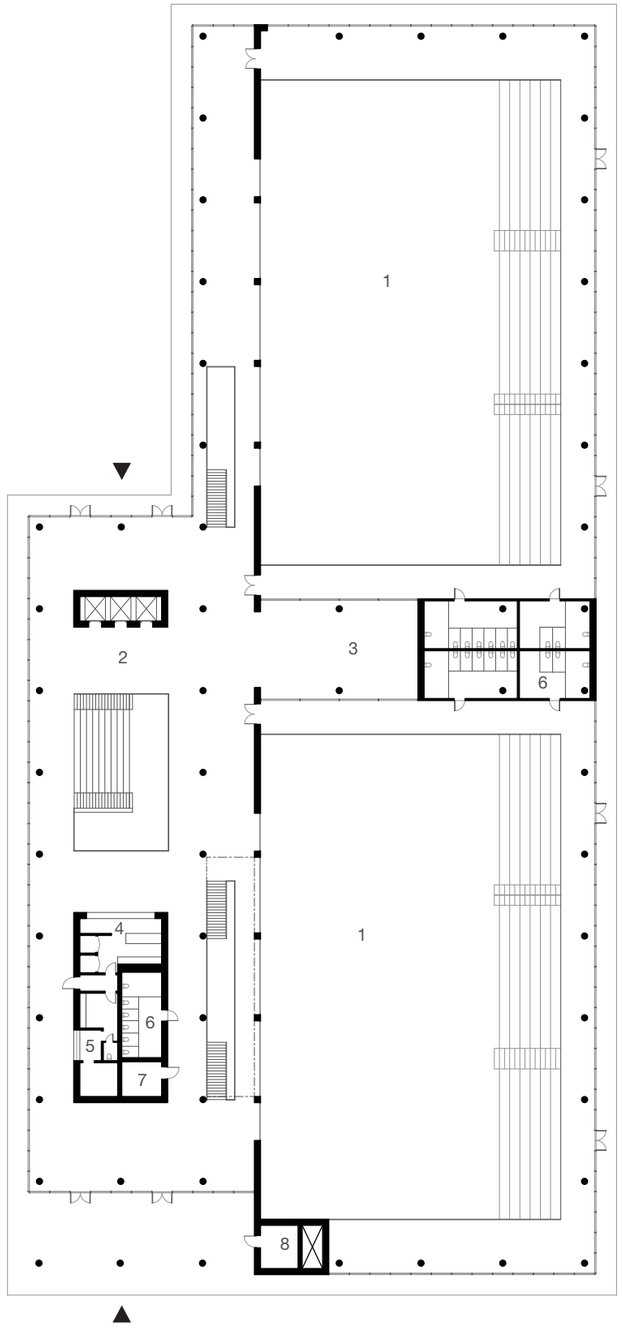
Views in and out from the building are enabled through the glazed perimeter, sparking curiousity in passersby. A large overhang provides shelter from the elements as well as reduces glare, increasing the buildings transparency. At the south entrance the volume is retracted to provide further shelter, space for gathering, and indicate the access point.



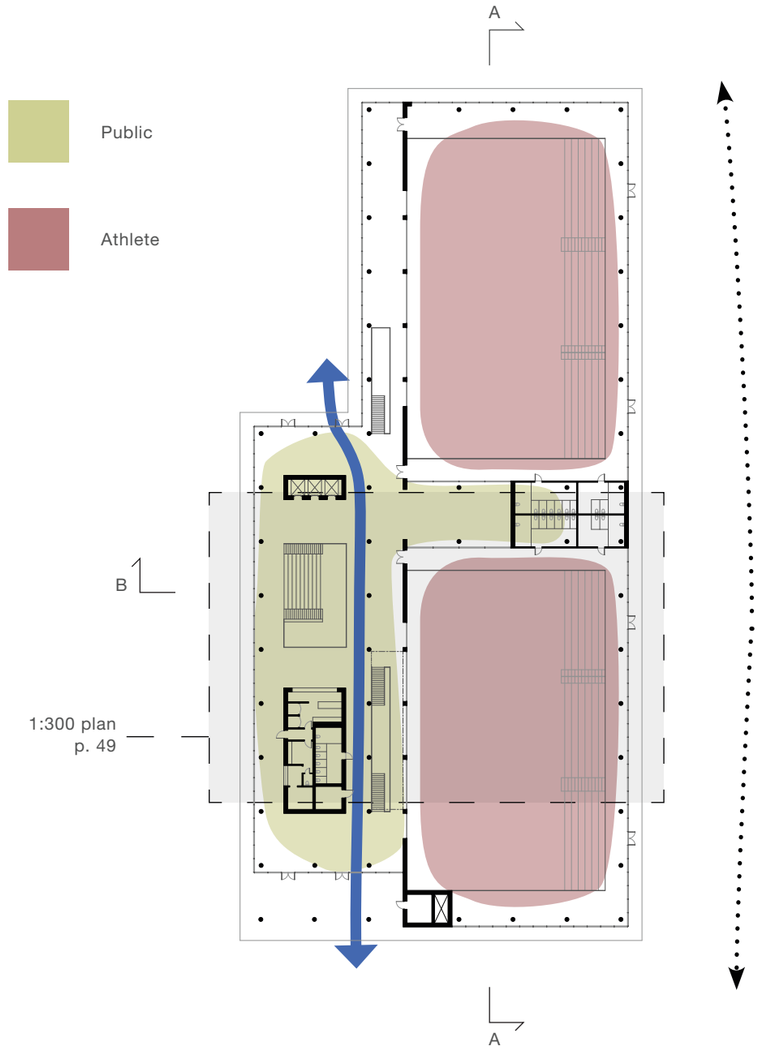
Elevation south
1:500

Elevation west
1:500

1. Sports hall
2. Upper foyér
3. Gallery
4. Café
5. Reception
6. Restrooms
7. Cleaning centre
8. Recycling



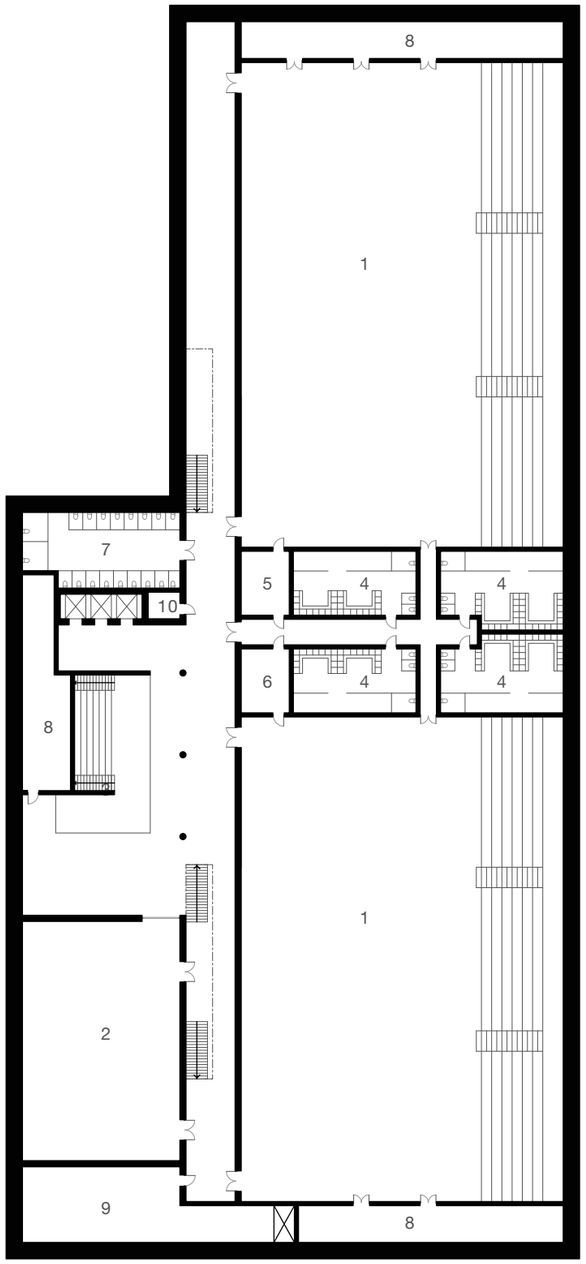
Entrance floor
1:600



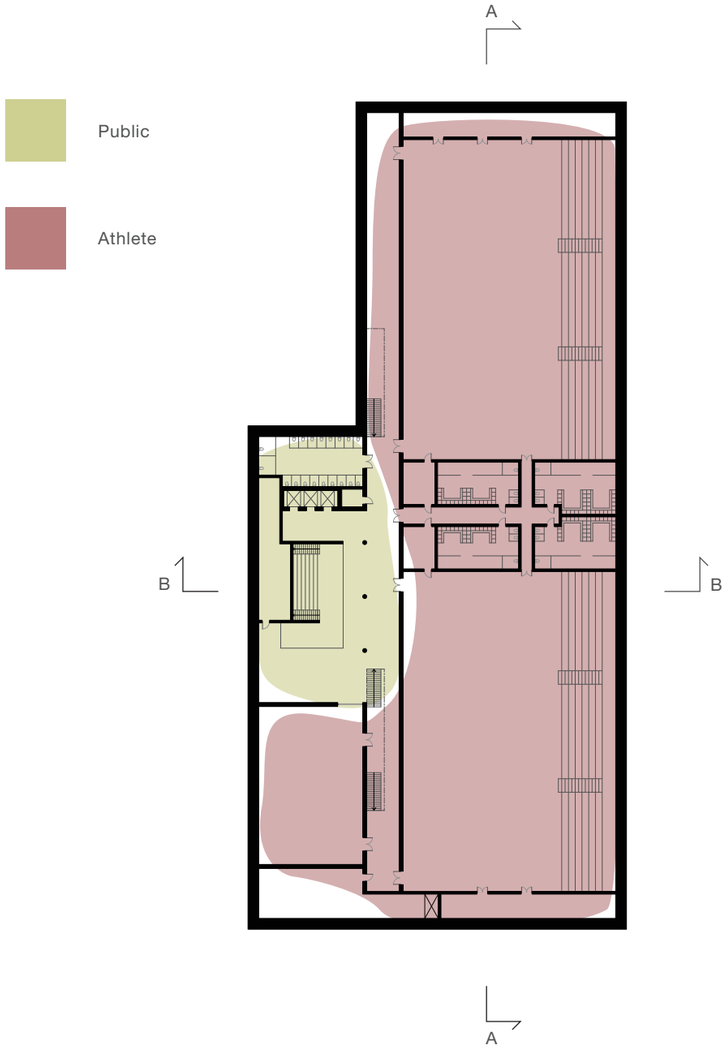
The entrance floor is characterized by a transparency with few closed volumes. A café and reception serve the open areas. By having these non-defined spaces designed with different qualities in terms of noise, light, and traffic, a wide range of activities are able to take place. When entering, one is given the choice to immediately access the basement floor, housing functions specific for sports, or walking through the shared areas. A visual connection to the sport halls is constantly present.

View from park
Figure 17

1. Sports hall
2. Martial arts
3. Lower foyér
4. Locker room
5. Judges room
6. First aid
7. Restrooms
8. Storage
9. Technical
10. Cleaning centre

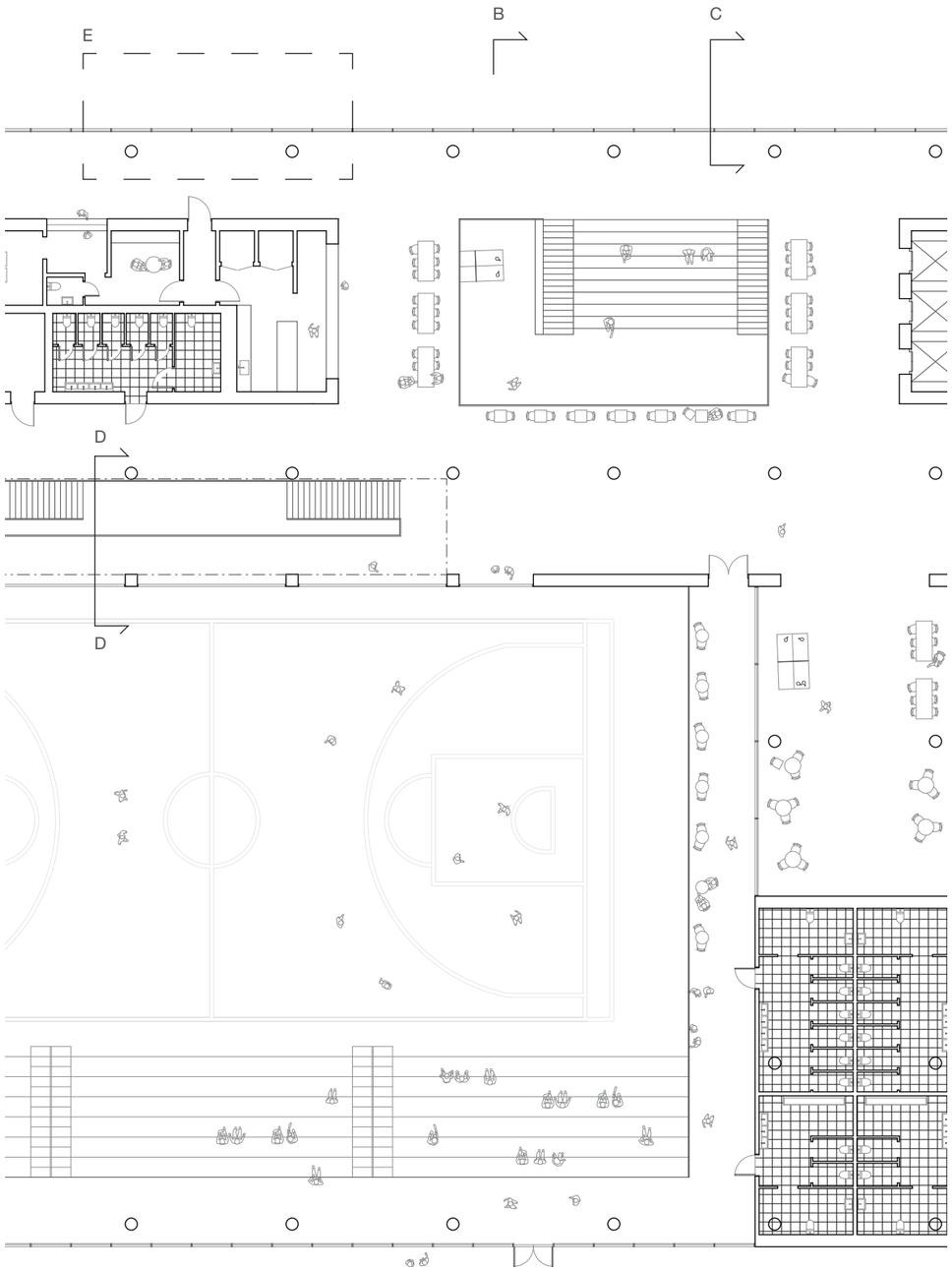


Basement floor
1:600



The basement floor mainly houses the athletic program. However, the border between the two levels is diffused by the double ceiling height space in the heart of the building, where a large staircase for seating ties the two floors together both visually and audially.

A longitudinal corridor serves to feed the sport halls, with the northern part of it doubling as a warm-up area, given its disconnection from the flow.

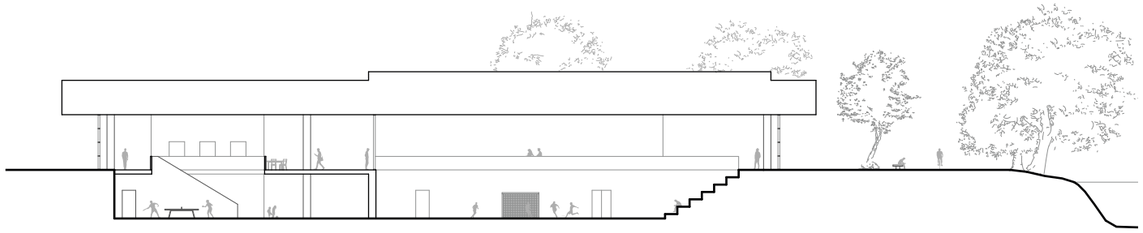


Plan
1:300

The common spaces on the entrance floor are facing toward the park, clearly showcasing its use and inviting people in. The space continues inward, becoming increasingly connected to the sports program.

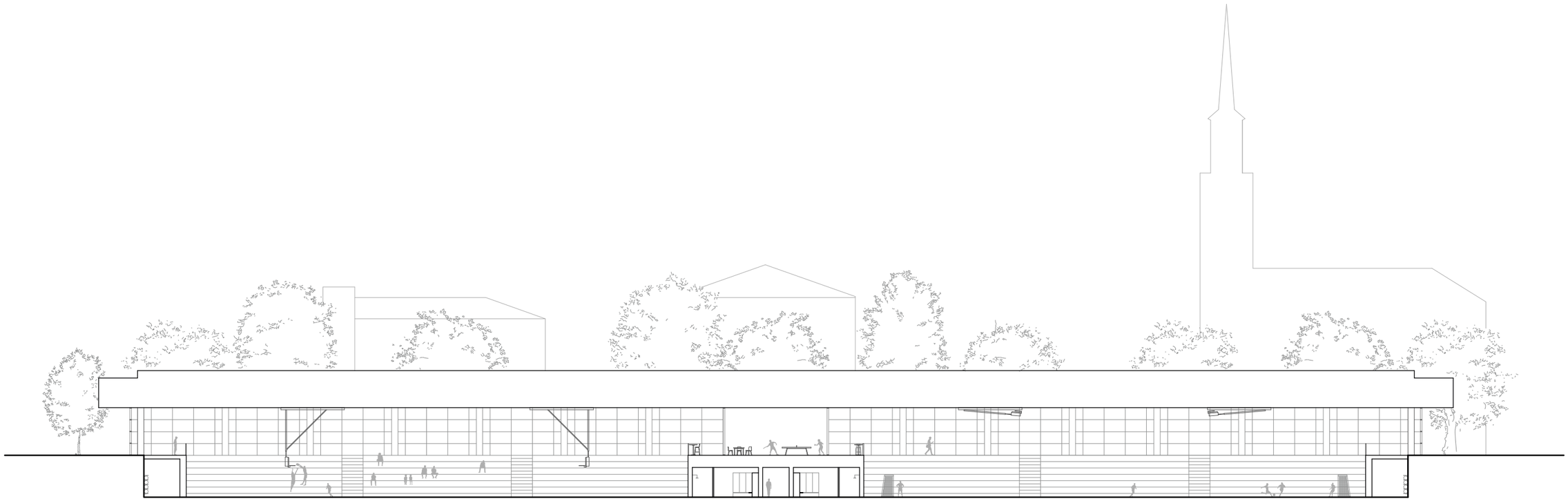
Circulation from the entrance to the bleachers is organized through a concourse overlooking the courts. Its width accommodates both movement and spectatorship, allowing people to spectate without interrupting flow. Storage for athletic equipment is integrated beneath the gallery.

The sports halls each accommodates approximately 550 seated spectators, with restrooms accessible directly from the concourse. From the concourse, you have a panoramic connection to the riverside through the large glazed wall, allowing for views in and out of the sports hall.

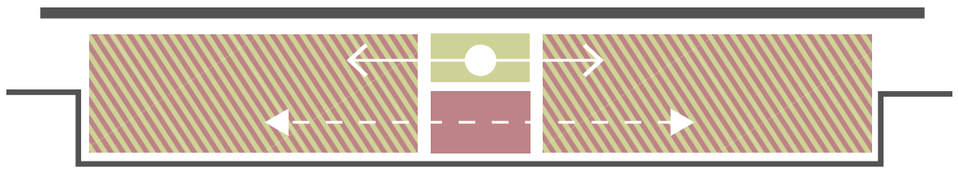


Section B-B
1:500

Sports court and bleachers, connection to outside
Figure 18



Section A-A
1:400



Sectional diagram
Figure 19

Given the sports hall need for high ceiling clearance, the building is submerged with the aim to reduce volume height, submit to the surrounding landscape and structures, and decrease visual impact. This enables a strong connection in between the programs as well as to the exterior.

The two sports halls are separated at the middle of the building. At the basement level, this volume houses locker rooms and similar functions with direct access to the courts. Above, a concourse overlooking the court continues around and is stepped down to form the bleachers. Between the two halls a glazed gallery allows for activites to take place, visually connected to the courts but without interfering.

TECTONIC SYSTEM

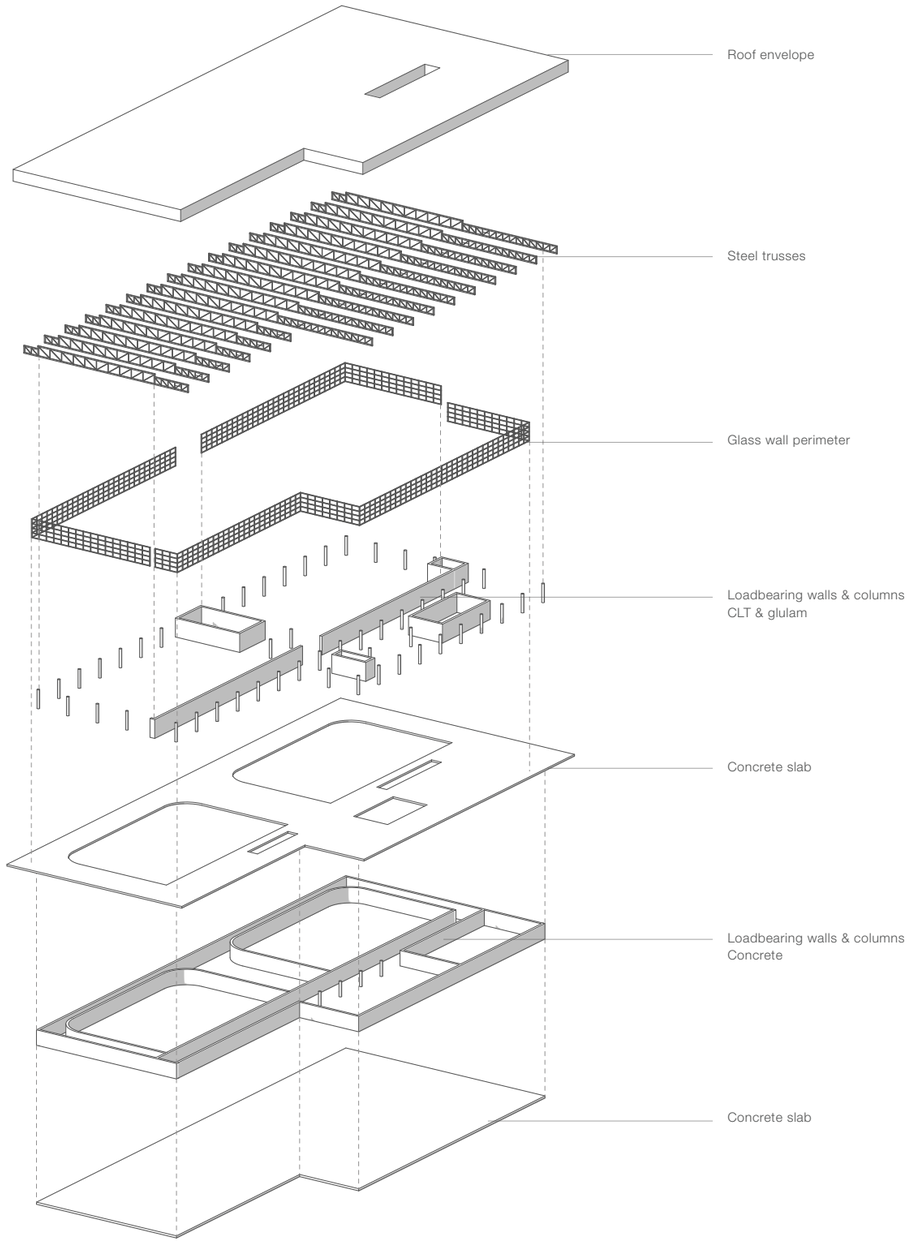
The building is expressed as a unified structure organized under a continuous roof plane. Spanning across the entire volume, the roof is read as a solid, hovering element, enabled by concealed steel trusses that allow large column-free spaces.

The load-bearing structure is set back from the façade, with glulam columns supporting the roof internally on the entrance floor (p. 57). This allows for an almost fully glazed perimeter, where the façade acts as a lightweight enclosure rather than structure, reinforcing transparency and visual continuity between interior and exterior. A cast concrete podium around the building also works to connect the inside with the outside, giving the illusion that the floor continues into the terrain (p.59).

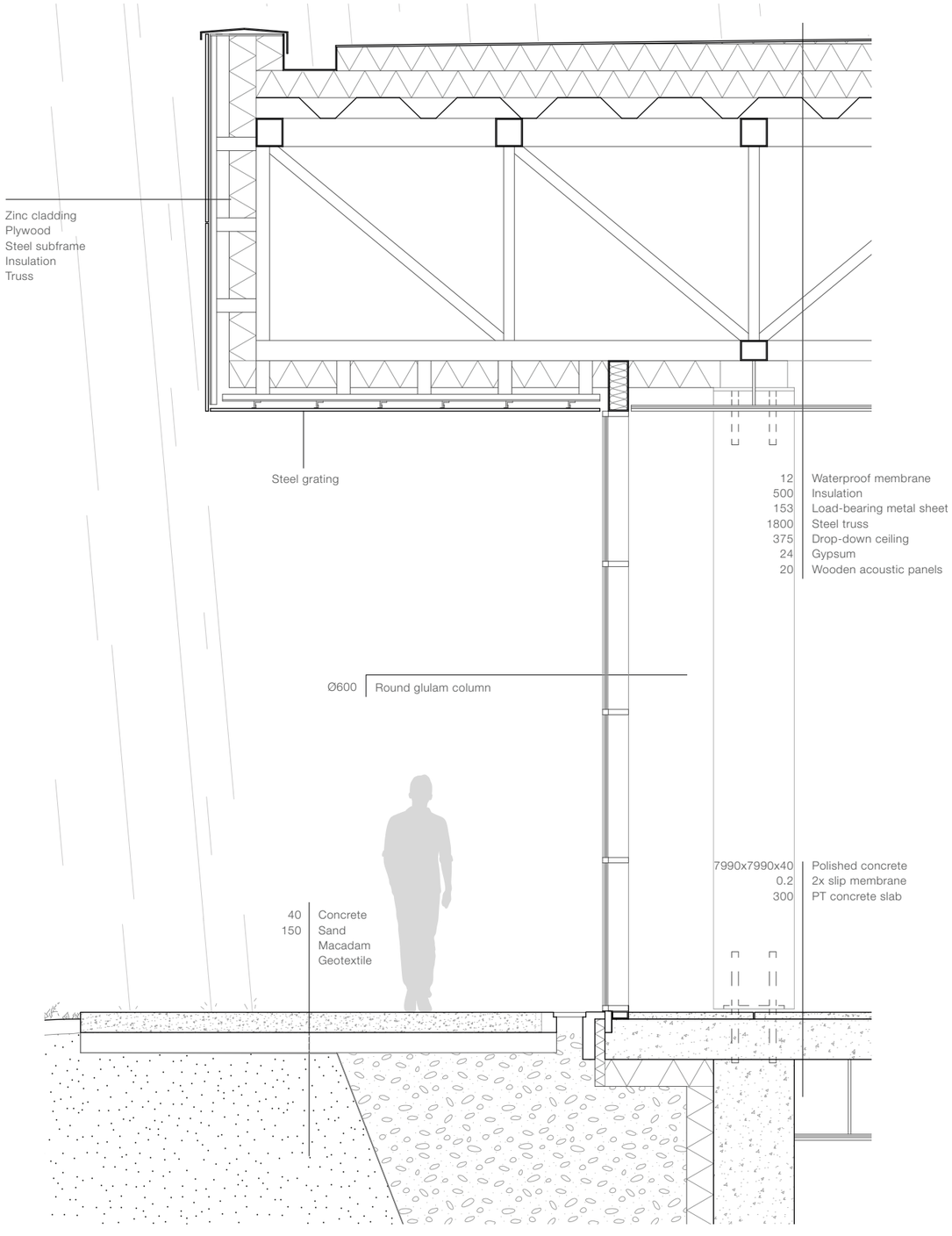
The roof extends beyond the envelope, forming a deep overhang that mediates between inside and outside. It provides shelter and reduces glare, increasing the building's transparency and openness toward its surroundings.

A timber construction defines the upper level, creating a lighter and more tactile environment, while concrete in the lower level expresses the buildings embedded condition in the ground and supports the more robust athletic functions. This sequence reflects a transition from a surface landscape to an underground environment.

At the deepest part of the building, a skylight is placed over a double height space to ensure daylight and increase the connection to the outside (p. 61).

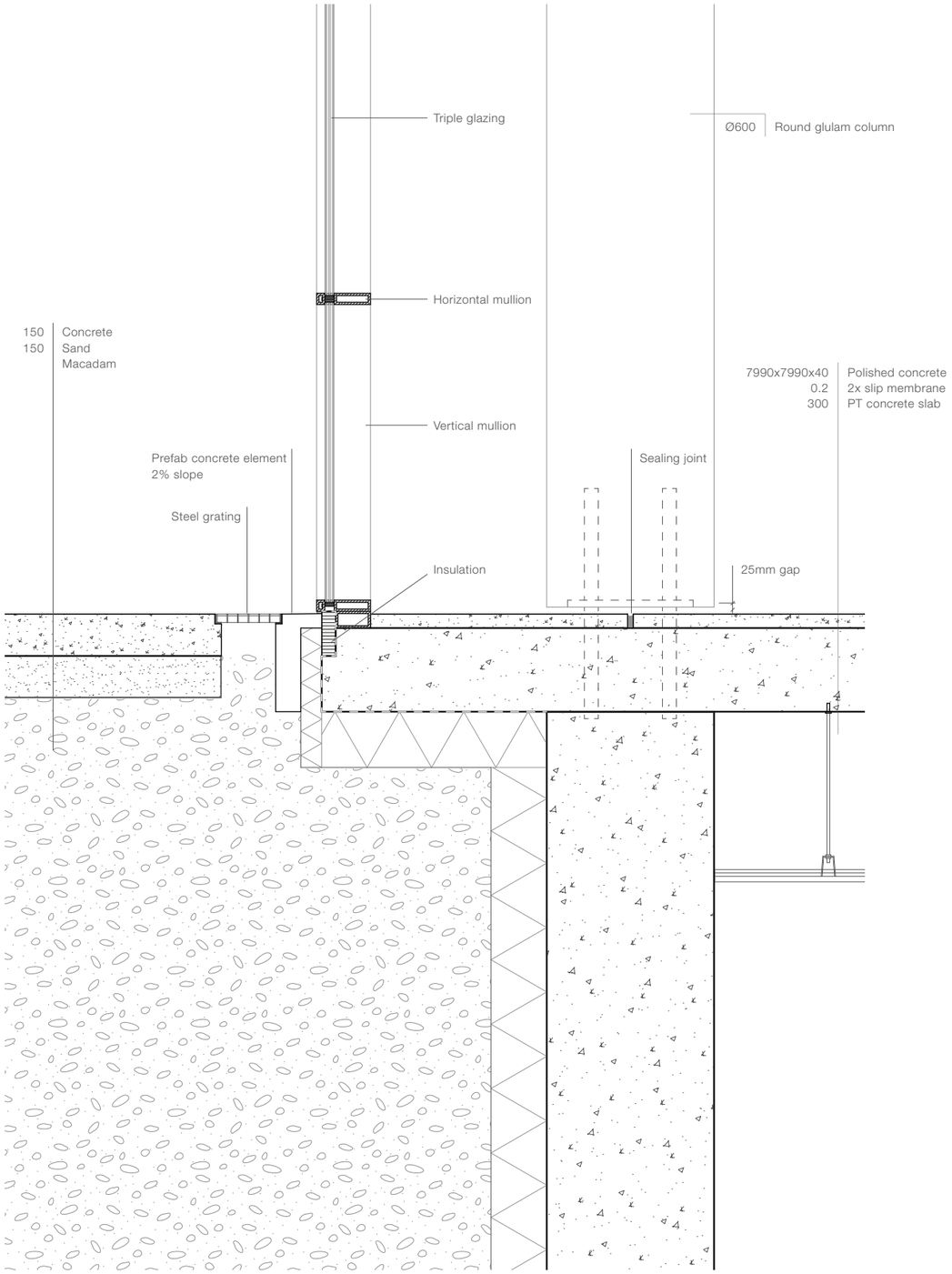


Structural diagram
Figure 20

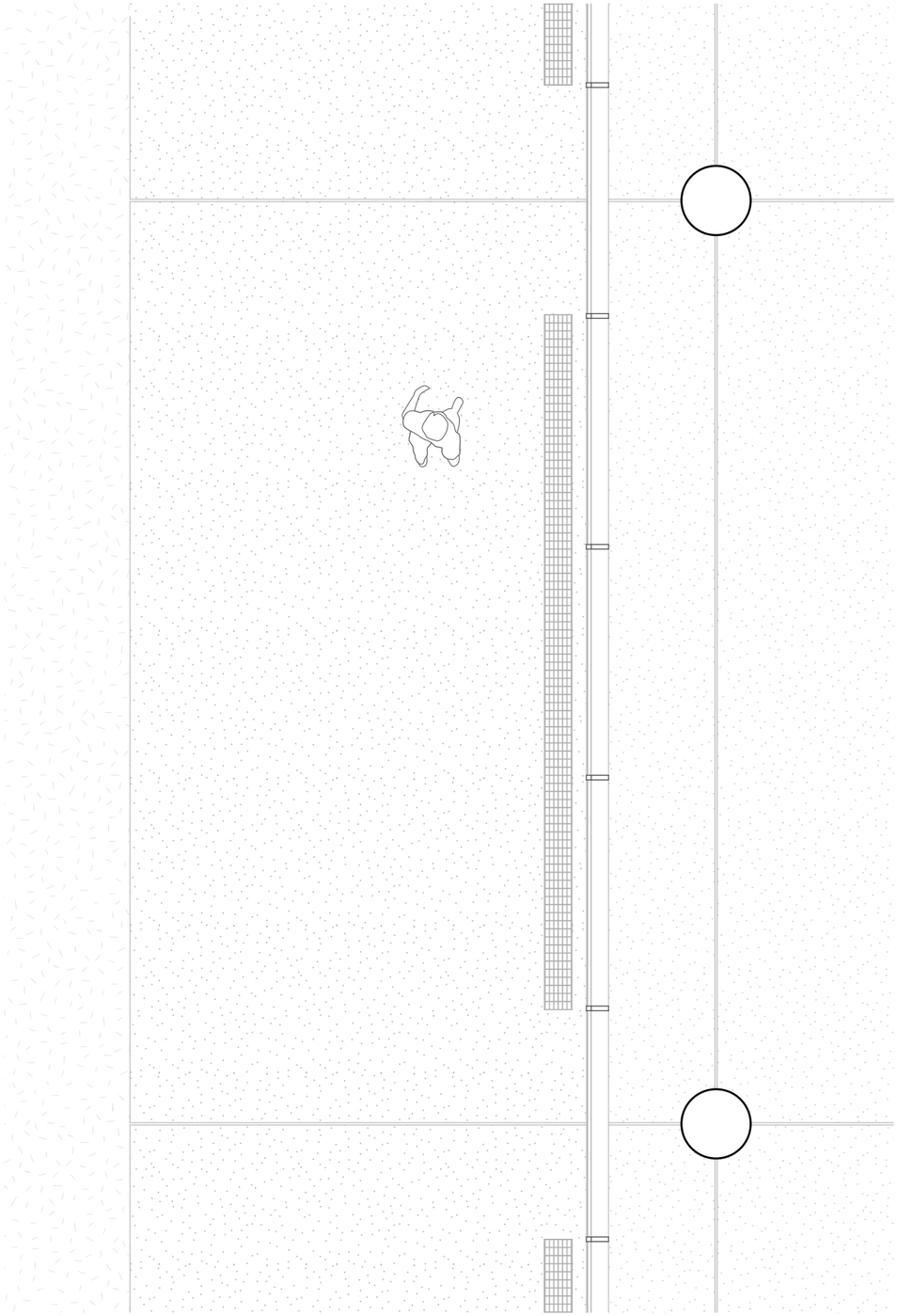


Detail section C
1:40

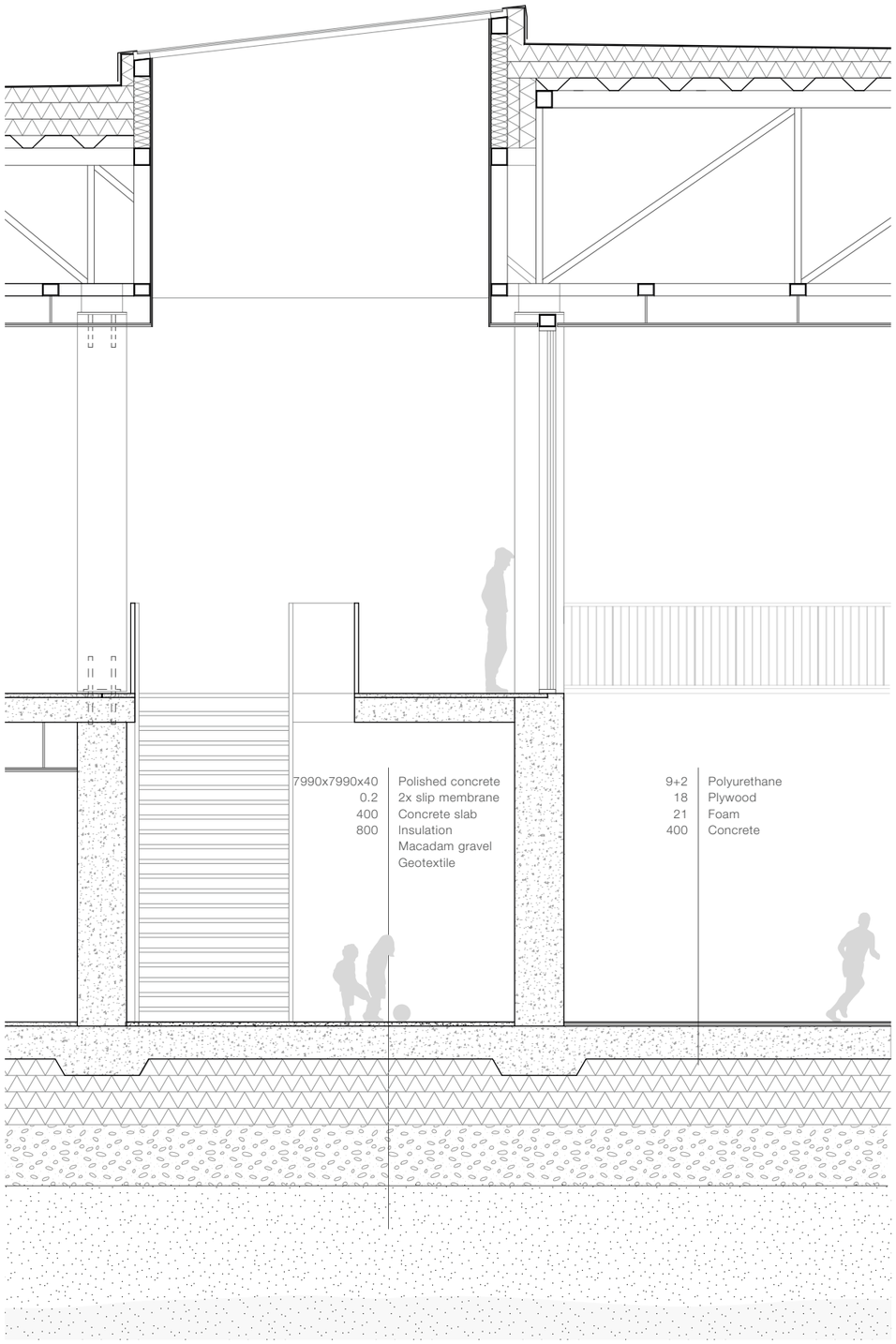
Elevation facade
1:40



Detail section C
1:20



Horizontal detail E
1:50



Principle section D
1:70

Upper foyér - skylight & glazing to sports hall
Figure 21

View from path along Mölndalsån
Figure 22

DISCUSSION

The project set out to explore how the sports hall could be reinterpreted as a multifunctional and socially integrated infrastructure, acting as a mediator between the urban environment and the surrounding natural landscape. This was established by developing specific strategies and tools from theory of hybrid architecture, third place, and biophilic design to achieve a building that is activated throughout the day, supports spontaneous interaction through overlapping programs and enhances well-being through connection to nature.

The placement of the building, given its close connection to the event district along with a natural environment, presents both a challenge and an opportunity. By aligning with existing pedestrian and cycling flows in the city, with close connection to established public transport and everyday commuting paths, the project builds on pre-existing movement patterns rather than imposing new ones. This increases the potential for spontaneous use while reinforcing the role of the site as part of the larger urban network. At the same time, the mediation between the urban and the landscape condition remains a challenge. While the building establishes a relationship and continuity with the surrounding terrain, its expression is relatively uniform. This raises the question of whether a stronger differentiation could enhance the dialogue between the contrasting contexts by treating the southern part of the building as more of an urban element.

With the ambition to function as hybrid architecture and a third place, another layer of complexity is introduced. While the interweaving of a public program and athletic spaces create an opportunity for overlap and visual interaction between functions, the extent to which the building can operate as a true third place remains dependent on actual use, beyond the scope of the project. The effectiveness of informal use can be questioned, and to further establish the project as a hybrid building and give incitive to visit, the unprogrammed public spaces could be complemented by providing additional, more articulated functions. This could take the form of spaces that are not necessarily programmed, but more flexible to fit another range of functions in terms of acoustics and privacy, to be able to adapt to use and need over time. In earlier iterations of the project, these spaces existed but where abandoned in favor of building size.

Biophilic design has informed the project through strategies such as visual connections to the landscape, daylight access, material choices, and spatial conditions of prospect and refuge. However, this remains an aspect with potential for further development. Given the project's ambition to support well-being and function as an everyday social environment, a deeper integration of biophilic principles beyond visual connection could strengthen the relationship between users and the natural context. Related to this - the development of a park environment of the area is at this point solely conceptual, and could be further developed in parallel with the building to create a symbiotic relationship between the two to further strengthen and argue for the buildings place in its context.

The building has a clear exterior language, that is at some places broken in favor of functionality. For example, the glazed wall along the river is broken up at the middle, housing the restrooms connected to the concourse. These specific places could be reworked to further increase the strength of the minimalist approach, reducing the expression to purely a roof slab hovering above a glass wall.

Overall, the project demonstrates how a sports hall and its program can be expanded and translated into a more integrated public structure. At the same time, it highlights the challenges of translating theoretical concepts into spatial and programmatic realities, particularly in balancing openness and flexibility with specificity and clarity.

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AI APPENDIX

AI tools were used in the processing of certain visualizations in this booklet, including generative features in Adobe Photoshop and D5 Render.

No text or design content was generated by AI.

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