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Multifunktionszentrum in Mitrovica, Kosovo

Multifunctional Center in Mitrovica, Kosovo

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Wien, am ________________

Datum

Unterschrift

ABSTRAKT

Das Ziel dieses Projekts ist eine Brücke in Mitrovica - Kosovo, zu gestalten und sie als mehr als nur einen Übergang über den Fluss zu betrachten.
Mitrovica ist eine Stadt mit ethnischer Vielfalt, die jedoch auch viel von historischen und politischen Spaltungen geprägt ist.
Die derzeit bestehenden Brücken sind sowohl für Fußgänger als auch für Fahrzeuge gedacht, werden jedoch sehr wenig genutzt und haben sich zu Symbolen der Trennung anstelle der Verbindung entwickelt.
Die Idee dieser Arbeit ist, das Konzept einer Brücke neu zu denken. Statt nur eine funktionale Struktur zu sein, würde dieses neue Design die Brücke in ein lebendiges Gemeinschaftszentrum verwandeln, das es den Menschen gleichzeitig ermöglicht, den Fluss sicher zu überqueren. Durch die Belebung des Raumes mit Aktivitäten, soll das Ziel verfolgt werden, Menschen zusammenzubringen und die Lücken zwischen den verschiedenen Gemeinschaften Mitrovicas zu überbrücken.
Das multifunktionale Zentrum würde Räumlichkeiten für verschiedene Funktionen anbieten – kulturelle Bereiche, Märkte, Freizeitzonen sowie Orte für Bildungsangebote. Alle diese Elemente sind darauf ausgerichtet, Interaktionen zu fördern und Beziehungen über ethnische Grenzen hinweg aufzubauen.
Darüber hinaus soll das Zentrum ein Ort der Kreativität sein, an dem Aktivitäten wie Workshops, Kunstausstellungen und kulturelle Veranstaltungen stattfinden, die für alle zugänglich sind. Durch die Bereitstellung von Lern- und Entwicklungsmöglichkeiten zielt das Zentrum darauf ab, die Menschen zu stärken und gegenseitigen Respekt zu fördern.
Doch es geht nicht nur um soziale Verbindungen. Das Zentrum wäre auch ein Ort, an dem die Bewohner zusammenkommen können, um über lokale Themen zu diskutieren und Projekte zu entwickeln, die der gesamten Stadt zugutekommen. Eine solche Zusammenarbeit ist entscheidend für den Aufbau stärkerer Gemeinschaftsbindungen und das Gefühl der Eigenverantwortung für den Raum.
Im Kern geht es bei diesem Projekt darum, die Wahrnehmung vom Fluss Ibër zu verändern – von einer Linie, die trennt, zu einem Symbol der Einheit. Das Design stellt sich eine neue Identität für Mitrovica vor, die ihre multikulturelle Geschichte anerkennt und Möglichkeiten zur Zusammenarbeit schafft.
Mit seinem frischen, innovativen Erscheinungsbild würde das Zentrum zudem zu einem markanten Merkmal der Skyline der Stadt werden und Hoffnung sowie Fortschritt repräsentieren.
Durch die Umwandlung der Brücke in ein multifunktionales Zentrum adressiert dieses Projekt sowohl das praktische Bedürfnis nach Konnektivität als auch die tieferliegenden sozialen Spaltungen in Mitrovica. Es ist ein Schritt zur Heilung einer Stadt, die zu lange geteilt war, und trägt dazu bei, ein Gefühl von Gemeinschaft und Zugehörigkeit wieder aufzubauen.

ABSTRACT

This project is about rethinking a bridge in Mitrovica, Kosovo, as something more than just a way to cross the river. Mitrovica is a city with ethnic diversity, but it's also been deeply shaped by historical and political divisions.
The bridges that exist right now are supposed to be for both pedestrians and cars, but most of them are barely used and have ended up becoming symbols of separation rather than connection.

The idea here is to change the script on what a bridge can do. Instead of just being a functional structure, the concept of this project would turn it into a community center while still letting pedestrians cross the river safely. By filling the space with activity and purpose, the goal is to bring people together and help bridge the gaps between Mitrovica's different communities.

The multifunctional center would offer spaces for different functions - cultural spaces, markets, recreational areas, and areas for education - all designed to get people interacting and building relationships across ethnic lines. It would also be a place for creativity, hosting things like workshops, art shows, and cultural events that everyone can take part in. By offering opportunities for learning and growth, the center aims to empower people and encourage mutual respect.

But it's not just about social connections, the center would also be a place where residents can come together to talk about local issues and work on projects that benefit the whole city. This kind of collaboration is crucial for building stronger community ties and giving people a sense of ownership over the space.

At its heart, this project is about changing how people see the River Ibër—from a line that divides to a symbol of unity. The design imagines a new identity for Mitrovica, one that embraces its multicultural history and creates opportunities for cooperation. With its innovative look, the center would also become a standout feature in the city's skyline, representing hope and progress.

By turning the bridge into a multifunctional center, this project addresses both the practical need for connectivity and the deeper social divides in Mitrovica. It's a step toward healing a city that's been divided for too long, helping to rebuild a sense of community and belonging.

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01.

INTRODUCTION

This thesis explores the design of a multifunctional center in Mitrovica, a city known for its rich cultural diversity and complex socio-political landscape. The motivation for this project comes from the need for a communal space that encourages social interaction, cultural exchange, and economic development in a region that has historically faced division and conflict. Given Mitrovica's unique context, there is a significant opportunity to create an architectural intervention that not only meets practical community needs but also promotes unity among its diverse population. The choice of this project is based on the belief that architecture can serve as a transformative force within communities.
The envisioned multifunctional center is intended to be a dynamic hub that accommodates a variety of activities, such as educational programs, cultural events, and recreational opportunities. By integrating these different functions, the center aims to enhance the quality of life for residents and foster a sense of belonging and shared identity.

Ultimately, this thesis aims to demonstrate how thoughtful architectural design can serve as a powerful catalyst for fostering social cohesion and enriching cultural experiences within communities. The intention is to illustrate that architecture is not merely about constructing buildings; rather, it is about creating environments that promote interaction, collaboration, and a sense of belonging among individuals. The center is envisioned as a place where people from various backgrounds can come together, share ideas, and engage in meaningful dialogue. This kind of environment is essential for enhancing the overall well-being of the community, as it fosters connections and nurtures relationships among residents. By prioritizing inclusivity and accessibility in the design, we aim to ensure that everyone feels welcome and valued, regardless of their background or circumstances.

02.

SITE ANALYSIS

2.1 GEOGRAPHICAL LOCATION

Kosovo, a landlocked country in Southeast Europe, holds a strategically significant position within the Balkans. Bordered by Serbia, Montenegro, Albania, and North Macedonia, Kosovo serves as a vital crossroads for trade, culture, and diplomacy, enhancing its potential for economic development and establishing it as a key player in the European geopolitical landscape[1].
The geopolitical importance of Kosovo is deeply rooted in its historical context within the former Yugoslavia. Following the violent conflicts of the 1990s, Kosovo declared independence from Serbia in 2008, a move that has been recognized by over 100 countries, including the United States and a majority of EU member states[2].

As of 2023, Kosovo has a population of approximately 1.8 million people living within an area of 10,887 square kilometers, predominantly ethnic Albanian, with other minorities like Serbian, Bosniak, and others[3].
This demographic diversity enriches the region's cultural landscape. Despite historical tensions, particularly in northern areas with a Serbian majority, there have been ongoing efforts toward reconciliation and cooperation among ethnic groups, reflecting Kosovo's aspirations for stability and peace.

Kosovo's geopolitical position is further supported by the interests of external powers, particularly the European Union (EU). The EU has actively promoted stability and integration in the region, providing Kosovo with opportunities for economic development and political reform. This strategic support positions Kosovo as a potential for trade and investment, connecting various markets in the Balkans and beyond.In conclusion, Kosovo's geopolitical position in Europe and the Balkans is characterized by a complex interplay of historical legacies, ethnic diversity, and external influences. As Kosovo navigates its path toward greater international recognition and integration, the support of regional and global powers will be essential for fostering stability and promoting economic development. Understanding Kosovo's geopolitical significance is crucial for comprehending the broader dynamics of the region and the opportunities that lie ahead for a peaceful and prosperous future[4].

Kosovo has the potential to become a vibrant hub for innovation and investment in the Balkans. With a young population, it can harness creativity for economic growth. As Kosovo engages with international partners and pursues European integration, its prospects for peace and prosperity are promising. By fostering collaboration among its diverse communities, Kosovo can build a cohesive society while embracing its cultural heritage. Mitrovica, located in northern Kosovo, has a complex and multifaceted history shaped by its ethnic diversity and strategic significance. The area has been inhabited since antiquity, with evidence of settlements dating back to the Roman and Byzantine periods, when it served as an important administrative and economic center. Throughout the Middle Ages, Mitrovica was influenced by various empires, including the Ottoman Empire, which left a lasting cultural imprint on the region[5].

1 https://kosovo-mining.org/kosovo/geography/?lang=en
2 https://mfa-ks.net/lista-e-njohjeve/
3 Kosovo Agency of Statistics. (2023). *Population and Housing Census 2023*. Retrieved from [KAS](https://ask.rks-gov.net/en/kosovo-agency-of-statistics)


Fig. 2.1.1. The location of Kosovo on the European map

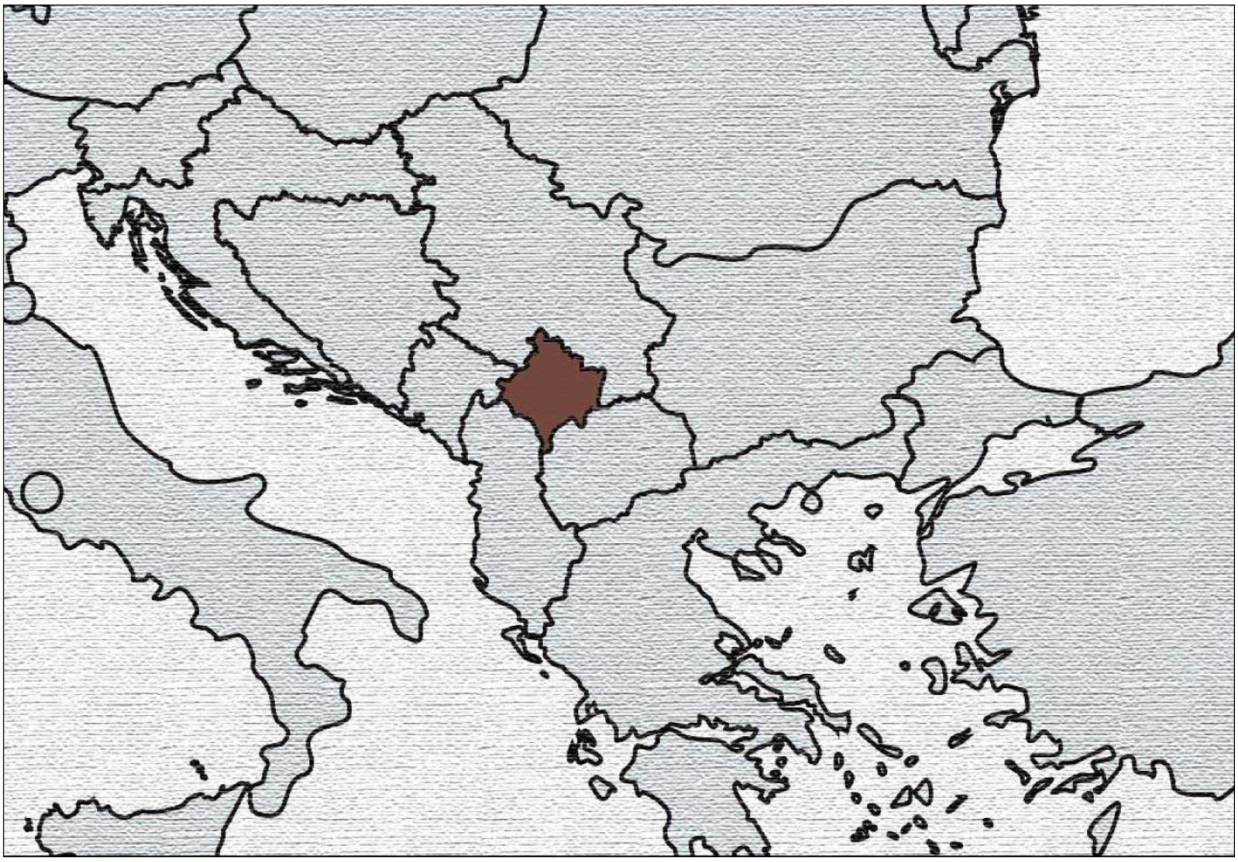


Fig. 2.1.2. The location of Kosovo in the Balkan Peninsula

The municipality of Mitrovica is divided by the River Ibër, which separates the predominantly Albanian southern part from the northern part of the city which ia mostly lived by other nationalities. This geographical and ethnic division has significantly influenced the city's social dynamics and governance[4].

The Mitrovica region, often called the "Treasure of Kosovo" spans an area of 2,083 km² and is home to nearly 300,000 people, with about two-thirds living in rural communities. At the heart of this region is the municipality of Mitrovica, surrounded by Vushtrri, Skenderaj, Zveçan, Leposaviq, and Zubin Potok.
Mitrovica is particularly notable for its abundant mineral resources, especially lead and zinc, which are essential for the future development of heavy industry in Kosovo[5].

In the central area of the city, a cultural center is positioned to the south of the main bridge that spans the river. Currently, this facility is only partially functional, which limits its capacity to positively influence the surrounding community.
The cultural center includes a performance hall and a library, both of which are crucial for supporting artistic endeavors and facilitating intellectual engagement among local residents. The center is managed by the Directorate for Youth, Culture, and Sports, an organization responsible for fostering cultural initiatives and activities throughout the region.
Additionally, the city library, located in the southern part of the city, plays an important role in promoting cultural engagement by organizing a variety of events that appeal to the diverse interests of the community. These events not only encourage participation but also help to build a sense of community through shared cultural experiences. However, it is important to recognize that the city's museums are in urgent need of new equipment and resources. Such upgrades are essential for improving their exhibitions and educational programs, which are vital for attracting visitors and enhancing the cultural offerings available to the public.
In summary, there is a noticeable lack of cultural institutions in the southern section of the city, underscoring the critical need for increased investment and development in this area. Addressing these gaps is essential for enriching the cultural landscape and providing more opportunities for community involvement.
By strengthening the cultural infrastructure, the city can improve the quality of life for its residents and cultivate a vibrant cultural environment that benefits everyone in the community[6].

4 Municipality of Mitrovica. "Overview of Mitrovica." [Municipality of Mitrovica Website](https://kk.rks-gov.net).
5 Urban development plan of Mitrovica 2009-2025 - page 31
6 Urban development plan of Mitrovica 2009-2025 - page 77

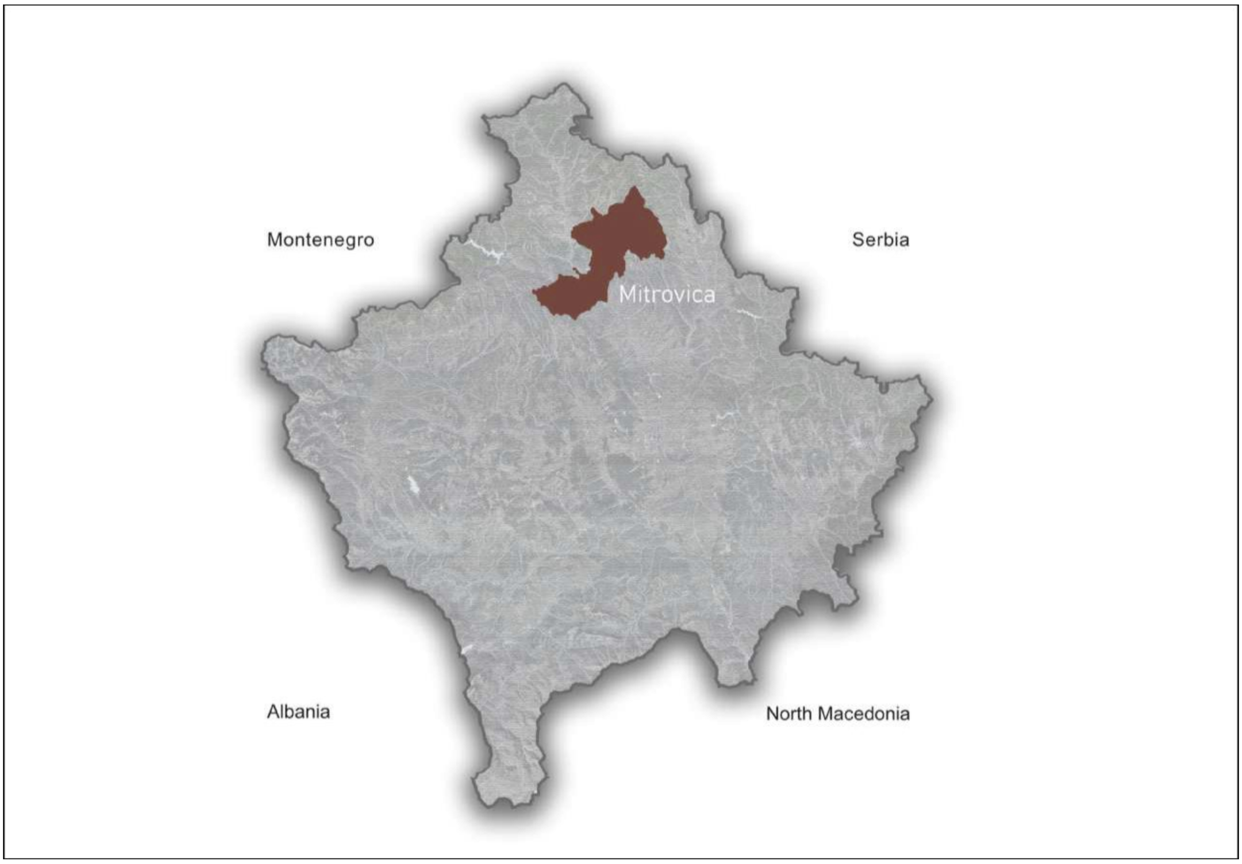


Fig. 2.1.3 The location of Mitrovica in Kosovo

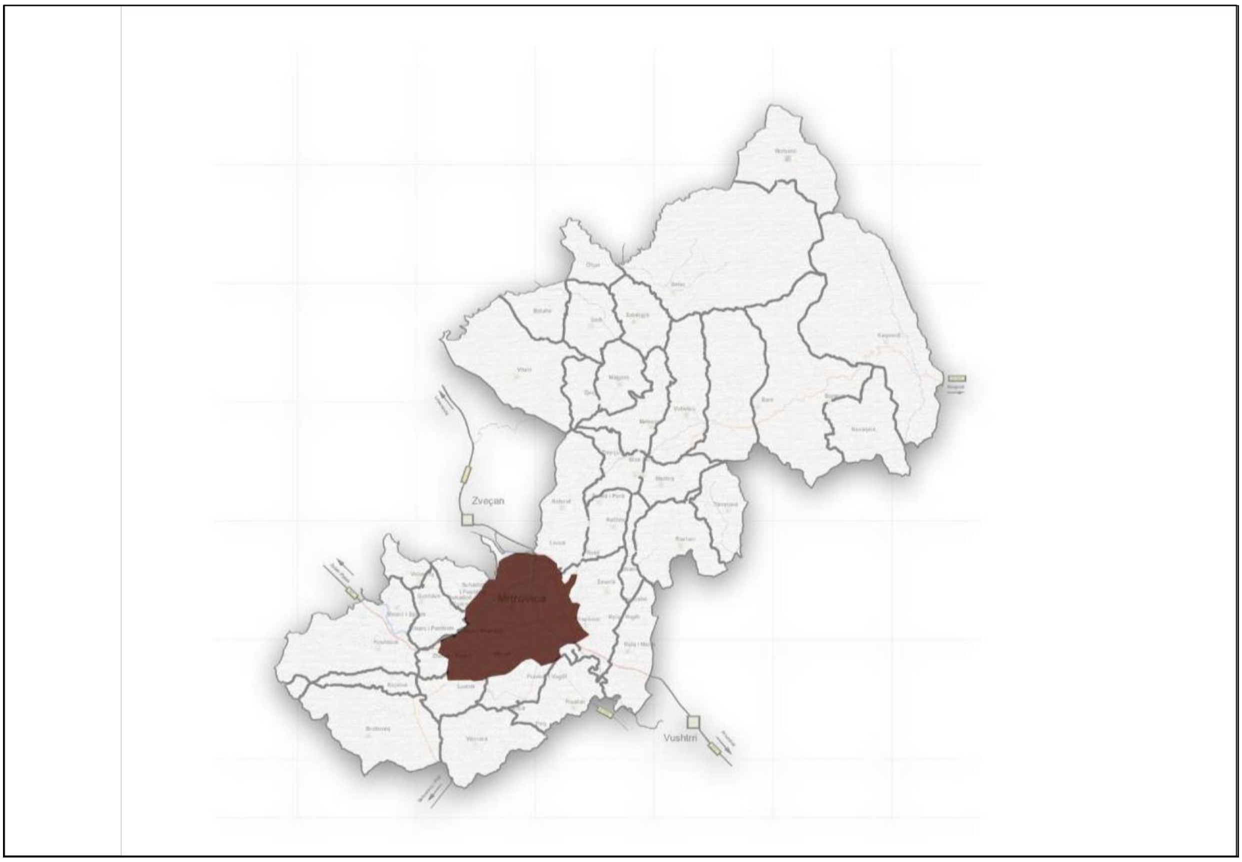


Fig. 2.1.4 The city of Mitrovica and its villages

2.2 City landmarks

Fig. 2.2.1 University of Mitrovica

Fig. 2.2.2 Cultural center

Fig. 2.2.3 Artificial lake of Mitrovica

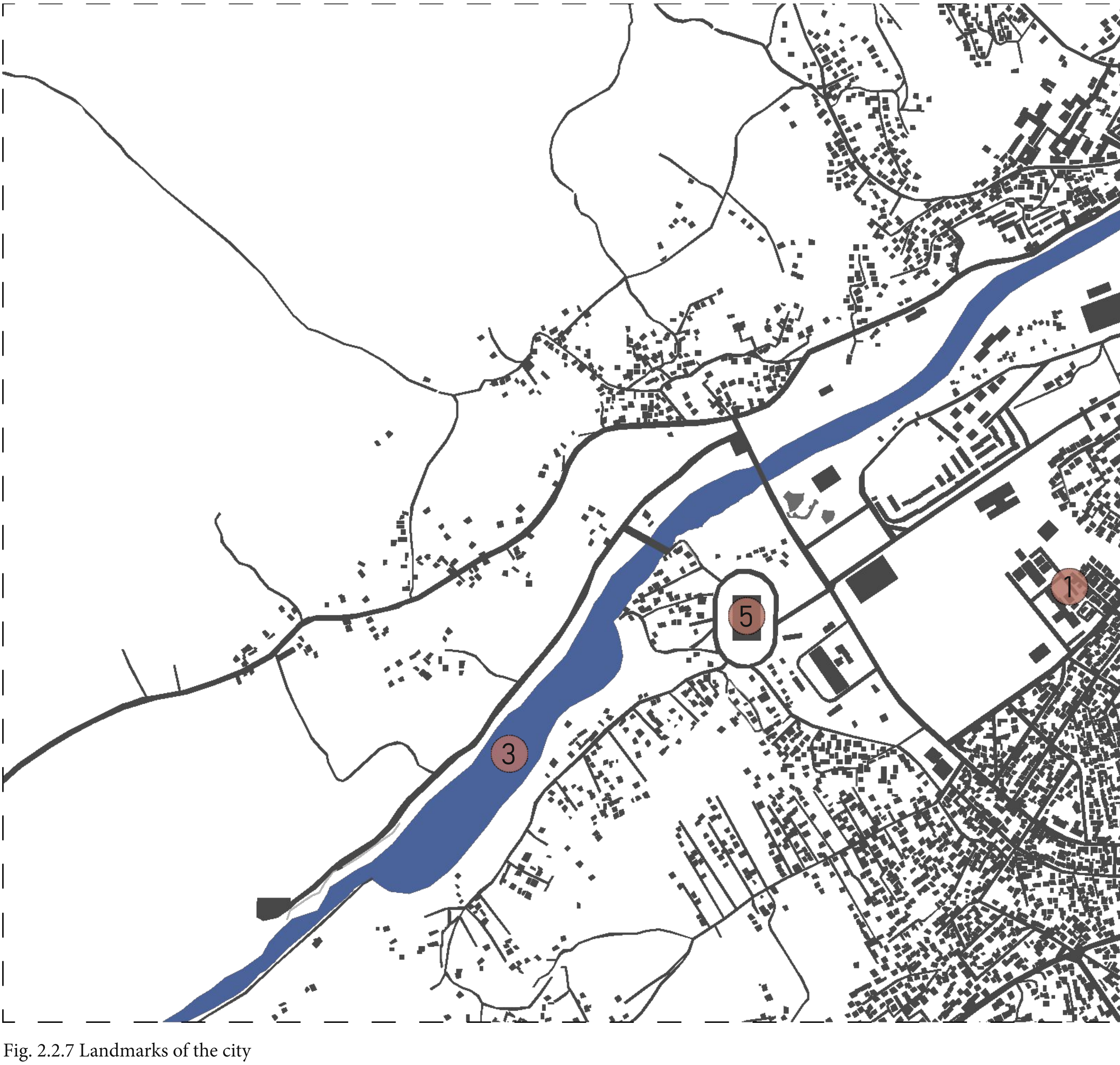


Fig. 2.2.7 Landmarks of the city


Fig. 2.2.4 Main bridge of Mitrovica


Fig. 2.2.5 Football stadium “Adem Jashari”


Fig. 2.2.6 Battery factory “Fafosi”

2.3 Roads and rivers

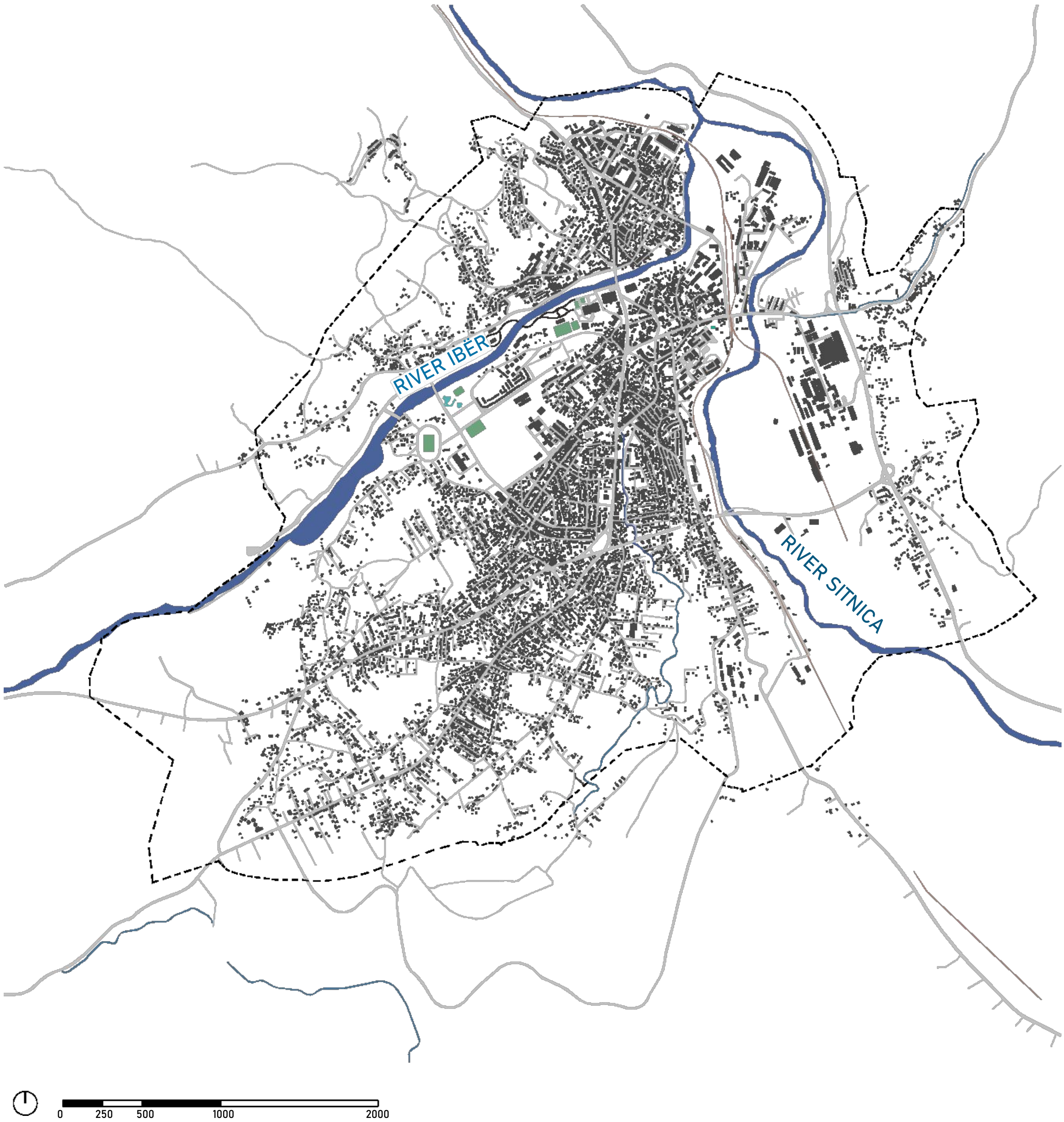


Fig. 2.3.1 Rivers in Mitrovica

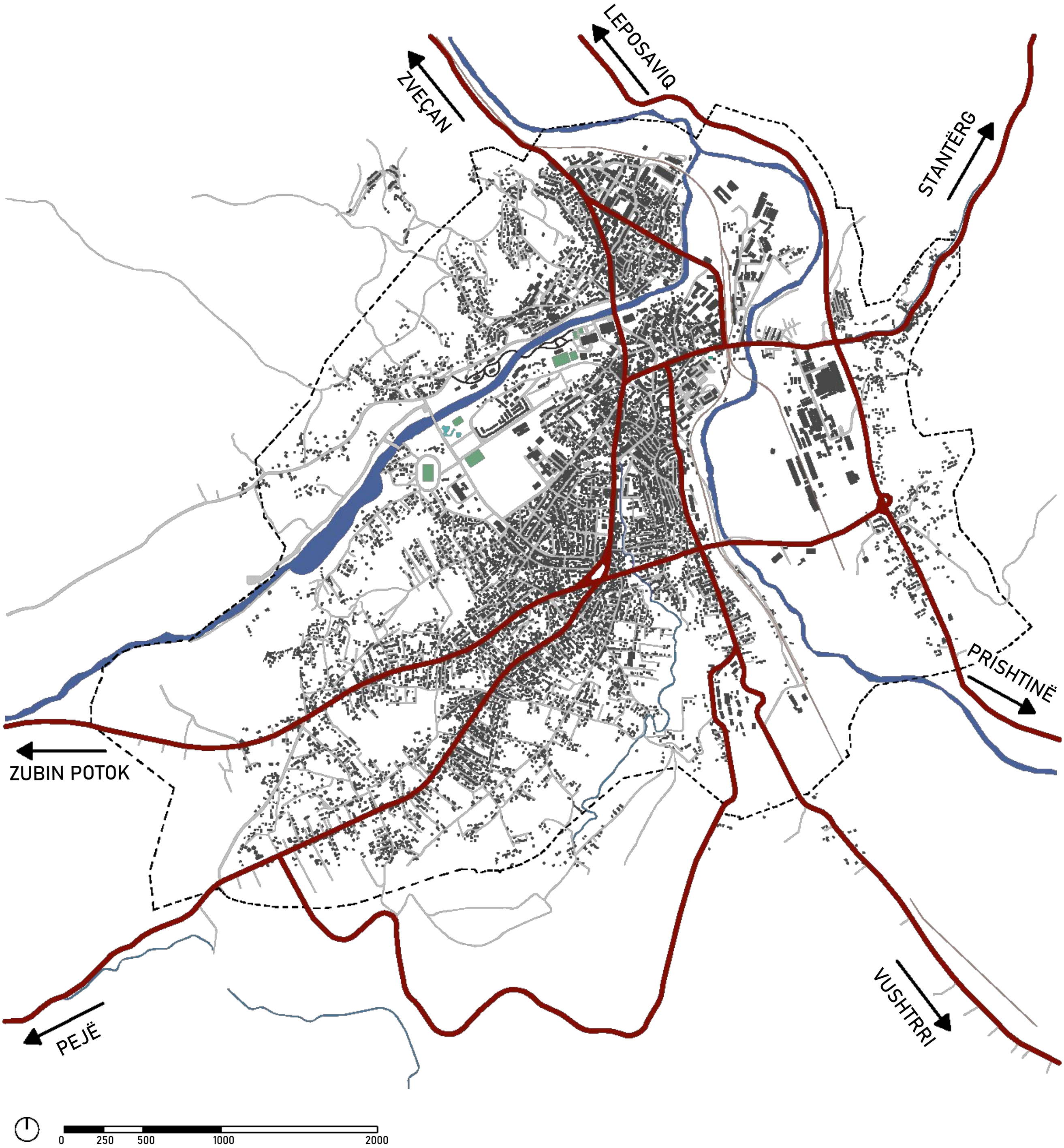


Fig. 2.3.2 Main roads of the city

2.4 Existing bridges

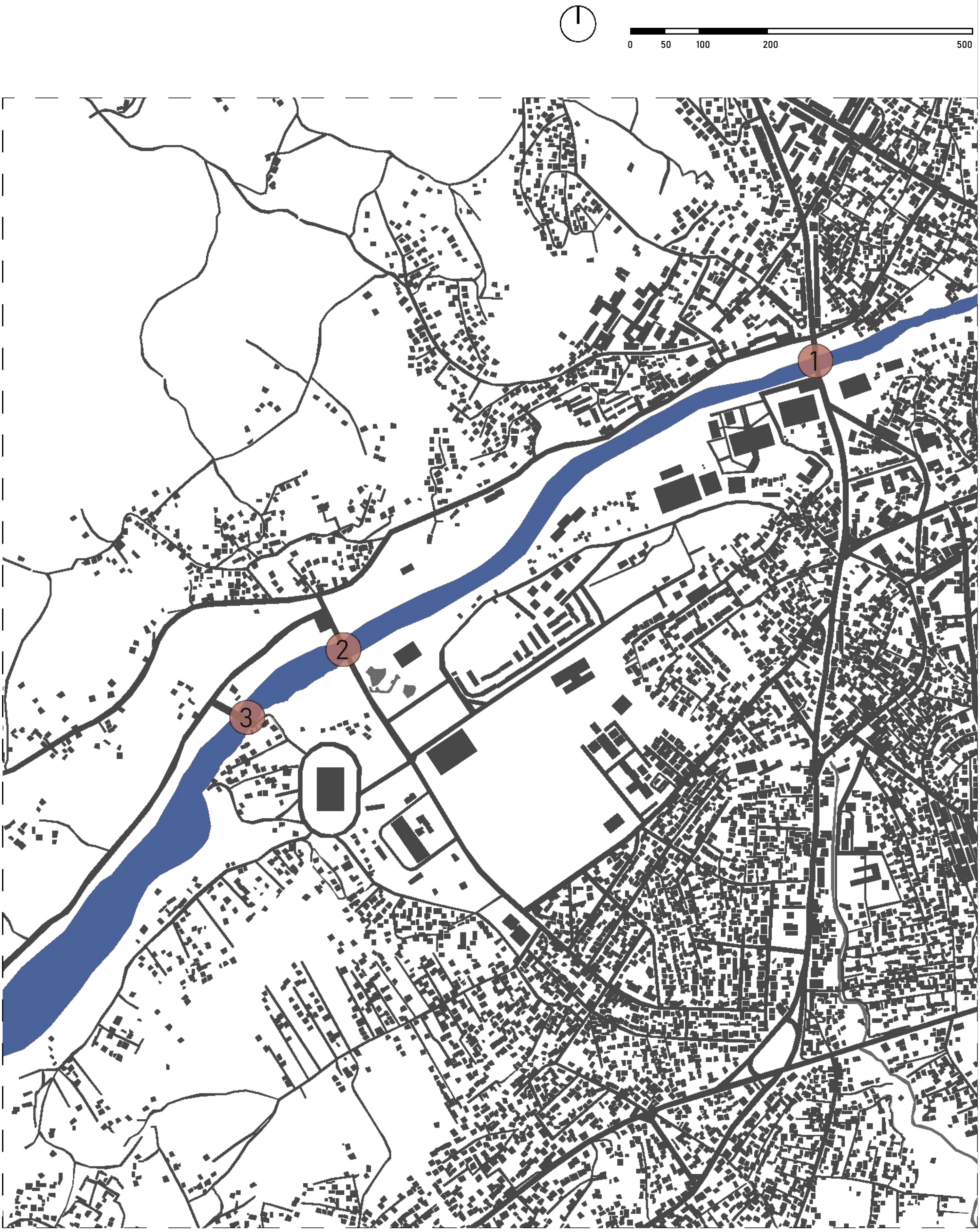


Fig. 2.4.1 Main bridges of the city

Fig. 2.4.2 Main bridge of Mitrovica

Fig. 2.4.3 The Suhodolli bridge

Fig. 2.4.4 The bridge of articial Lake

2.5 The Barricades

The Bridge of Mitrovica, stretching over the River Ibër, isn't just a bridge. It's a symbol—a painful reminder of the war that tore Kosovo apart and the divisions that still exist.
For years, it's been a flashpoint between the Albanian and Serb communities, a place where tensions simmer beneath the surface, ready to erupt. The barricades that appear on the bridge aren't just piles of concrete and metal; they're physical reminders of a conflict that refuses to end. They tell a story of people forced apart, of suspicion hanging heavy in the air, and of a community trapped in a cycle of division, desperately searching for a way forward.

When the barricades go up, life in Mitrovica doesn't just slow down—it fractures. It's not just about cars being stuck or people having to take long detours. It's about families and friends being cut off from each other, neighbors living in separate worlds. Businesses that depend on customers from both sides of the river take a hit. Shopkeepers watch as their livelihoods shrink, and the frustration builds. And it's not just one side feeling the pain—Albanians and Serbs alike are caught in this cycle, each carrying the weight of a city divided, even if they are not aware of it.

But the barricades do more than hurt the economy. They feed something deeper and darker: fear. Every time someone walks past those barriers, they're reminded of the past—of the war, the losses, the scars that haven't healed. It's hard to trust someone when there's a wall, real or imagined, standing between you. How do you build a future together when you can't even cross a bridge to talk? The barricades aren't just blocking roads; they're blocking hope.

For the Kosovan Albanian community, which has fought so hard for peace and stability, the barricades feel like a step backward. These barriers, often put up by the Serb community in northern Kosovo—are more than just an inconvenience.[7]
They're a direct threat to any sense of normalcy. A 2023 report by the European Stability Initiative put it bluntly: the barricades are a political tool, reinforcing divisions and undermining efforts to build trust between communities.[8] Taking them down isn't just about making life easier—it's about creating a space where people can breathe, where trust can start to grow again. It's about giving the next generation a chance to grow up in a city that's united, not torn apart by history and outside influence. The barricades aren't just a local issue; they're part of a bigger struggle for Kosovo's future.

The truth is, the barricades on the Bridge of Mitrovica are more than just physical objects. They're a reflection of the pain, the history, and the struggles of a community that's been through too much. They're a reminder of how far Mitrovica still has to go. But they're also a challenge—a call to action for everyone who calls this city home. If Mitrovica is ever going to heal, it's going to take more than just removing the barricades. It's going to take courage, understanding, and a willingness to face the past head-on. Only then can the bridge become what it was meant to be: a connection, not a barrier.

7 https://www.euronews.com/2022/12/27/tensions-escalate-in-northern-kosovo-as-more-barricades-are-erected
8 https://www.europarl.europa.eu/doceo/document/RC-9-2023-0437_EN.html


Fig. 2.5.1 Serbs in Mitrovica block the main bridge

Fig. 2.5.2 The police guarding the barricaded Bridge


Fig. 2.5.3 Citizens planting flowers and trees on the barricades

2.6 Building area

Fig. 2.6.1 Building area

Right now, the bridges in Mitrovica are more than just physical structures; they're symbols of division. They're crowded, they're tense, and during politically charged moments, they become flashpoints for conflict. A new bridge could change that. It would ease the daily grind of pedestrians, make life a little smoother, and, most importantly, help rebuild trust between communities. Imagine being able to cross the river without hesitation—whether it's for work, school, or just to see a friend.

The area marked in red in the map is an area that's been overlooked for years, a place that's ready for a fresh start. The bridge could be the spark that revitalizes the whole neighborhood. Adding pathways that link the south and north part of the city to the community center, would make it easier for everyone to get around. These pathways wouldn't just be practical; they'd encourage people to stop, chat, and connect. It's about creating a space where people feel welcome.

03.

AIMS AND OBJECTIVES

The primary goal of this project is to create an innovative bridge that connects two sides of a river, serving as a catalyst for community cohesion and progress. This bridge will feature a unique design for the city of Mitrovica, utilizing modern materials and techniques to ensure both durability and influence the architectural image of the city.

A key aspect of this project is enhancing pedestrian connectivity. The bridge will provide a safe and inviting pathway for pedestrian movement, encouraging people to explore and engage with their surroundings. By prioritizing pedestrian access, the bridge aims to foster a sense of belonging and encourage social interaction among community members.

In addition to facilitating movement, the bridge will serve as a vibrant social space. Thoughtfully designed areas for gathering, relaxation, and scenic views will create opportunities for people to come together, share experiences, and enjoy the natural beauty of the river. These features will transform the bridge into a communal hub, aligning with contemporary urban design principles that emphasize the importance of public spaces in strengthening community ties.

Innovative architectural elements will ensure the bridge stands as a visual landmark, reflecting the unique spirit and aspirations of the community. The design will incorporate artistic features that celebrate local culture and history, making the bridge not just a functional structure but also a source of pride for residents.

Overall, this project aims to create a functional and inspiring bridge that prioritizes connectivity and community engagement. By focusing on pedestrian access and social interaction, the bridge will contribute to a more vibrant and connected community, enhancing the quality of life for all who use it.

04.

METHODOLGY

4.1 Variations of forms

VERSION 1

The proposed architectural design is an innovative structure that serves as both a bridge and a building, connecting two parts of the city across a river. Its striking form features interconnected triangular elements, creating a visually dynamic shape. At the center, there is a main area designed for various activities, promoting community engagement and interaction. Flanking this central space are two sections dedicated to ancillary functions, providing essential support services that enhance the overall experience.

However, one notable drawback of this design is that it lacks the fluidity typically associated with traditional bridges. This rigidity may affect the aesthetic appeal and the seamless integration of the structure into its urban surroundings. While the design offers an exciting vision for urban connectivity, it also raises questions about how to refine its form to better align with the natural flow of the environment.

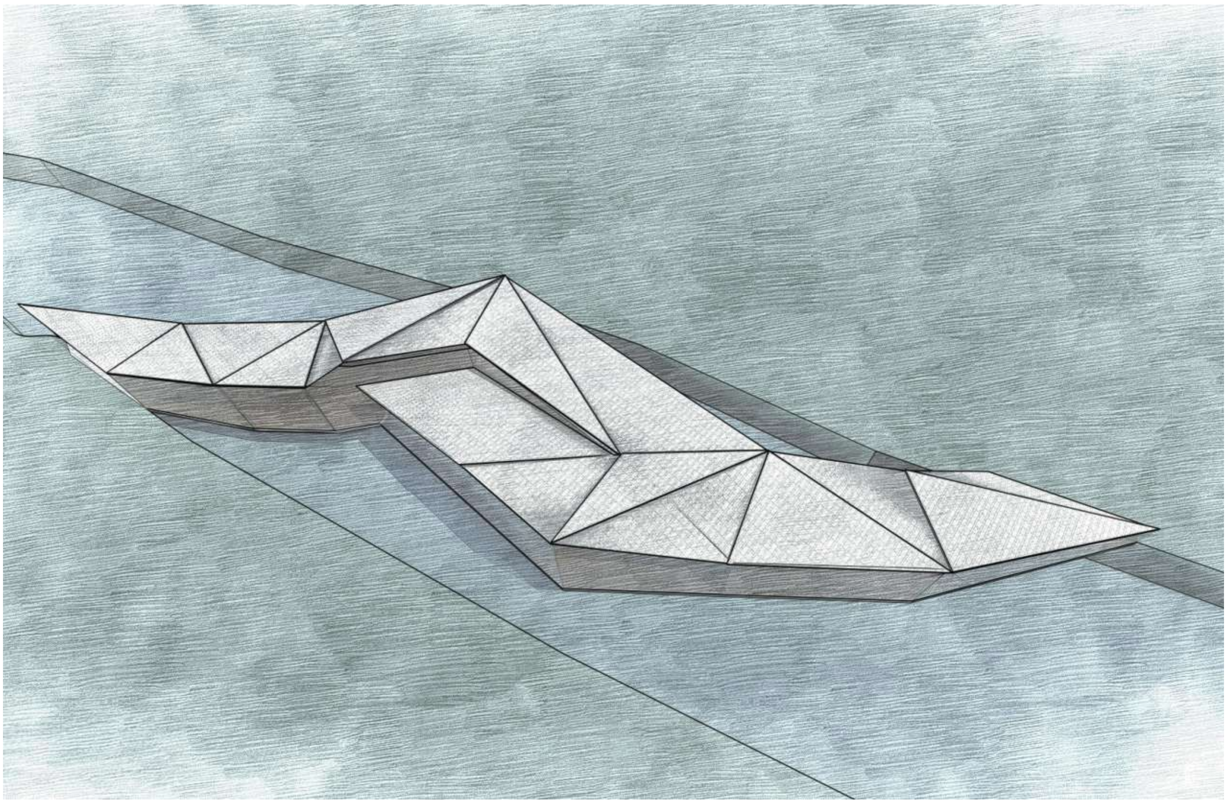


Fig. 4.1.1 Version 1

VERSION 2

The proposed architectural design features a dual-part structure with a distinct elevation difference between its segments. One section begins and ends at ground level, providing direct access, while the other is elevated, starting at a height of 5 meters and concluding at the same elevation. These two components serve as the primary entrances to the building.

However, the design presents several notable disadvantages. Its slender profile limits the capacity to function as a multifunctional center, restricting the range of activities and uses that can be accommodated within the space. This lack of versatility may hinder the building's ability to meet the diverse needs of the community. Additionally, the structure's form lacks the fluidity typically associated with traditional bridge designs, which may detract from its aesthetic appeal and diminish its potential to integrate harmoniously into the surrounding urban landscape. Thus, while the design aims to enhance connectivity, it raises important considerations regarding its functional adaptability and visual coherence.

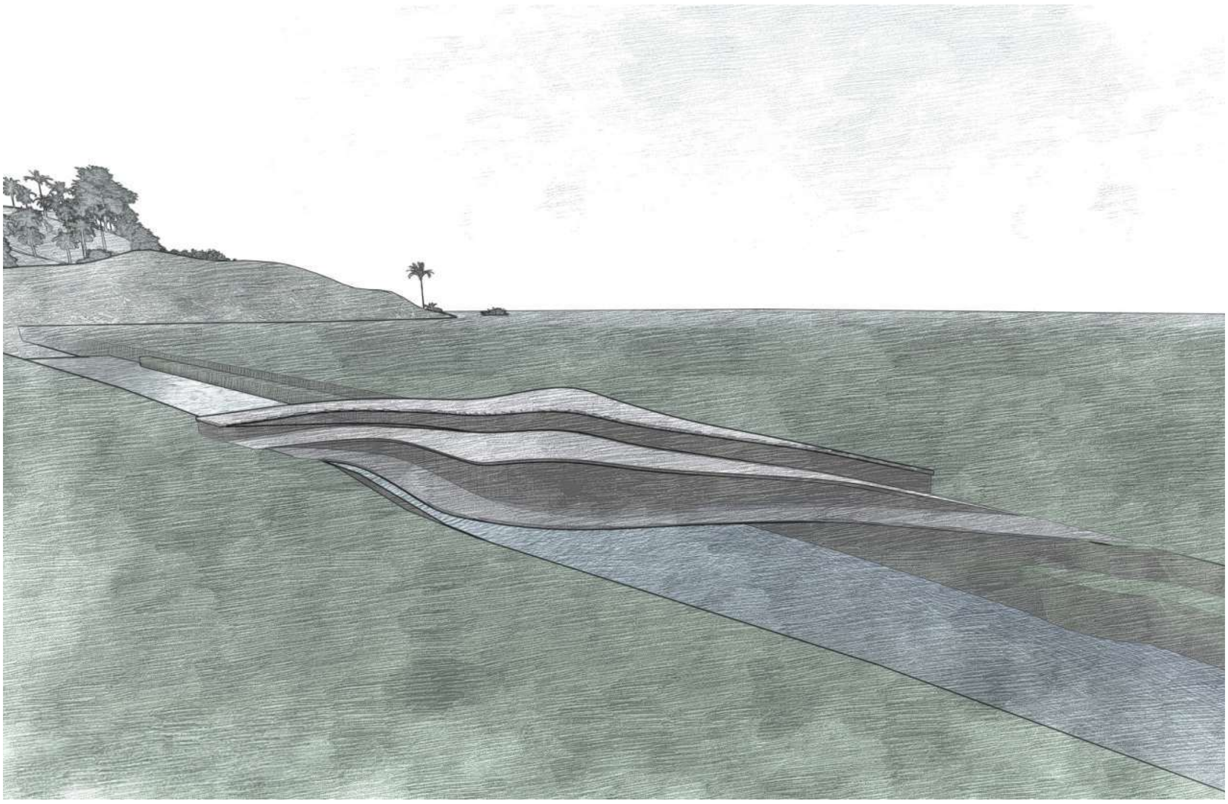


Fig. 4.1.2 Version 2

VERSION 3

The next design resembles a bridge, with both parts of the building starting at ground level and rising to a high point in the middle. This creates an interesting feature where pedestrians can walk on the roof, effectively using it as a bridge to connect different areas. This elevated walkway could offer stunning views of the surroundings and encourage more foot traffic, making the space feel vibrant and alive.

However, there are some downsides to this design. One major issue is that the entrances would have to be located on the sides of the building instead of the front. This side-entry setup could make it less convenient for people to access the building and might disrupt the natural flow of foot traffic. Additionally, having entrances on the sides may limit visibility and make the building feel less inviting, potentially deterring visitors. While the idea of a roof bridge is innovative and could enhance connectivity, it's important to address these access challenges to ensure that the building is user-friendly and meets the needs of the community. Balancing the aesthetic appeal with practical functionality will be key to the success of this design.

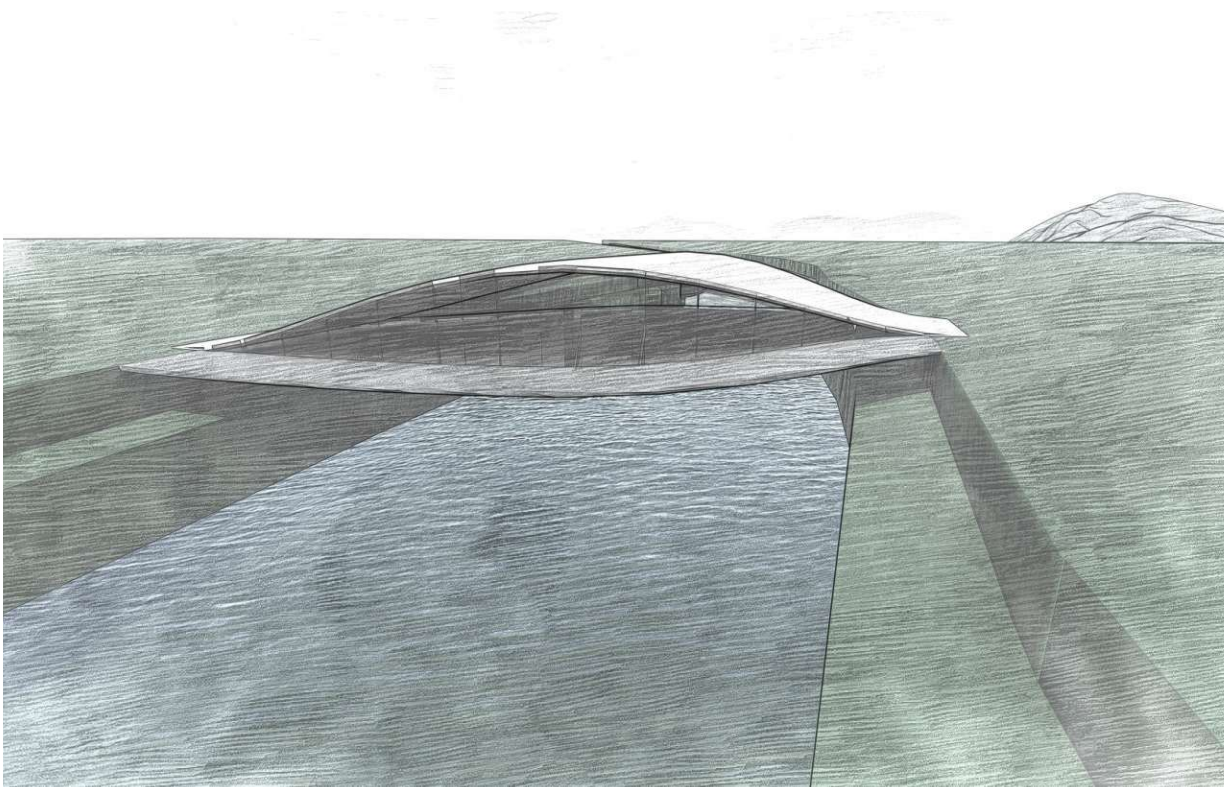


Fig. 4.1.3 Version 3

VERSION 4

The next design features two sections of the building that start from ground level, giving it a bridge-like appearance. The elongated shape is intended to create a larger, more open space, making it easier to organize and use for various activities. This layout could enhance the overall functionality of the building, allowing for flexible use of the interior.

However, like previous designs, this one has its drawbacks. The entrances would need to be positioned on the left and right sides of the building, which could complicate access for visitors. This side-entry setup might disrupt the natural flow of foot traffic and could make the building feel less inviting. On the upside, the roof would serve as a pedestrian bridge, providing a unique way for people to move between different areas. While this feature adds an interesting element to the design, it's important to think about how the side entrances and overall accessibility will impact the user experience. Striking a balance between innovative design and practical access will be key to ensuring the building effectively serves its intended purpose.

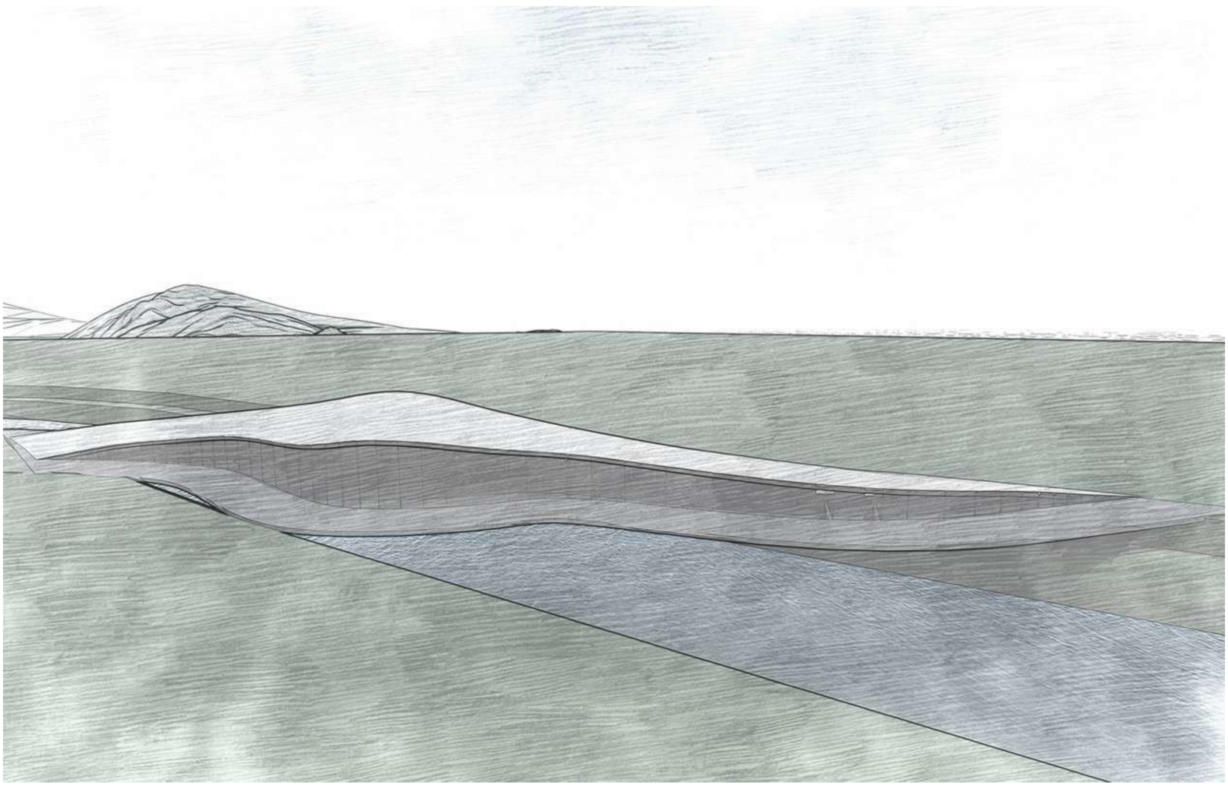


Fig. 4.1.4 Version 4

FINAL FORM

The decision to create a hybrid design that blends elements from both the second and third versions came from a genuine desire to improve both how the space functions and how it looks. The second design's idea of having two distinct sections is particularly appealing because it allows for more room to accommodate a variety of activities. This flexibility is crucial, especially in today's world where spaces need to serve multiple purposes. Plus, by using the roof as a bridge, we're not just maximizing the space inside; we're also encouraging people to move around and interact with the building in a more engaging way. It turns the exterior into a lively area for pedestrians, creating a connection between different parts of the building and the surrounding neighborhood.

On the other hand, the third version's bridge-like shape adds a unique flair to the design. This aspect gives the building a sense of flow and movement, making it visually striking and inviting. The curves and lines of the design create an atmosphere that feels dynamic and alive,
encouraging people to explore and enjoy the space. It's not just about aesthetics; it's about creating an environment where people want to
gather and interact, fostering a sense of community.

By combining these two elements, we're achieving a balance between practicality and beauty. The roof as a pedestrian bridge serves a functional purpose while also acting as a visual highlight that draws people in. It's a thoughtful way to promote sustainability by encouraging walking and reducing the need for cars, which is increasingly important in urban settings.

In the end, this hybrid design captures a modern approach to architecture that addresses the challenges of urban living. By blending the best features from previous designs, we're creating a space that feels welcoming, accessible, and adaptable to people's needs. This combination of design elements shows our commitment to enhancing the community and enriching the architectural landscape. It sets a new standard for future developments, demonstrating how thoughtful design can tackle the complexities of modern life while bringing people together.

Additionally, the design emphasizes sustainability with eco-friendly materials and energy-efficient systems, reducing its environmental impact. We aim to foster a sense of community, encouraging social interactions and collaboration among users. The intuitive layout makes navigation easy, ensuring that the space meets practical needs while inspiring a sense of belonging. Ultimately, this hybrid design serves as a model for future projects, illustrating how innovative architecture can create vibrant urban spaces that people love.

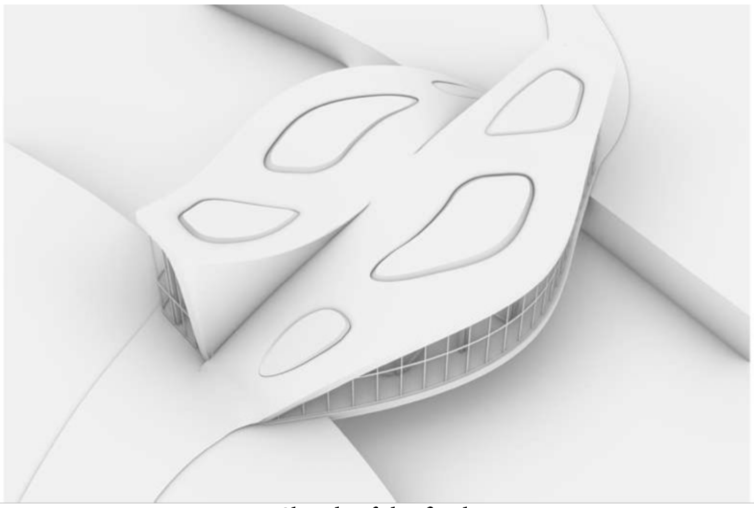


Fig. 4.1.5 Sketch of the final version

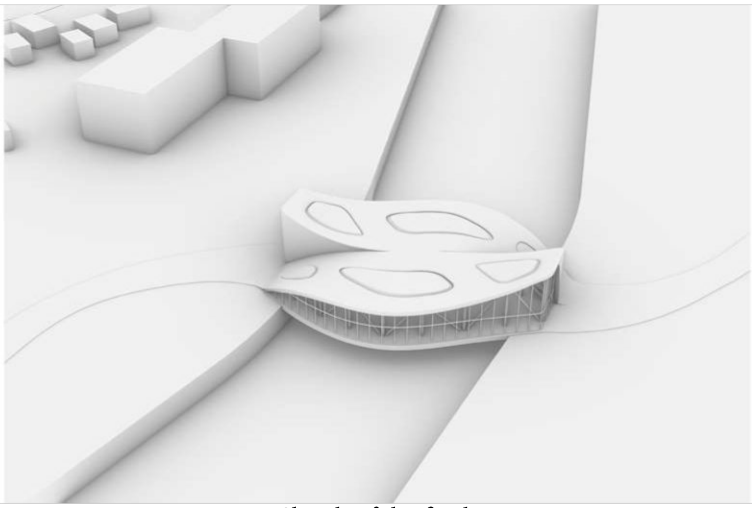


Fig. 4.1.6 Sketch of the final version

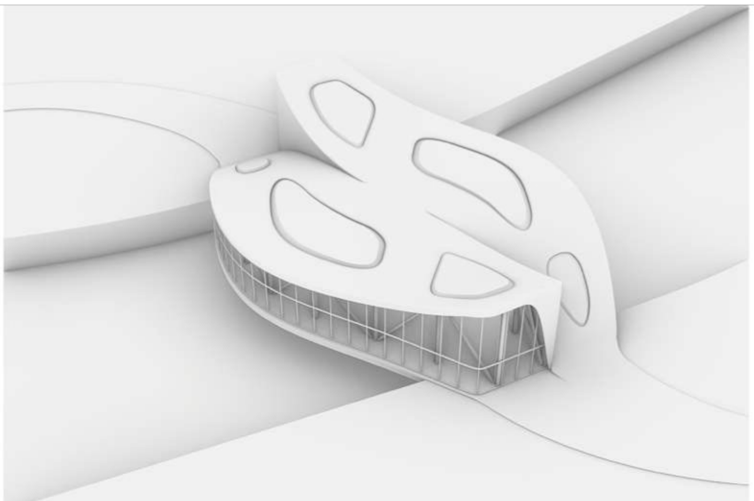


Fig. 4.1.7 Sketch of the final version

4.2 Concept idea

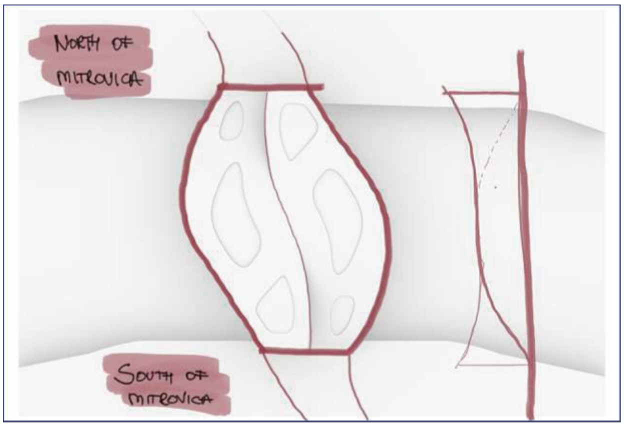


Fig. 4.2.1 Position of the building

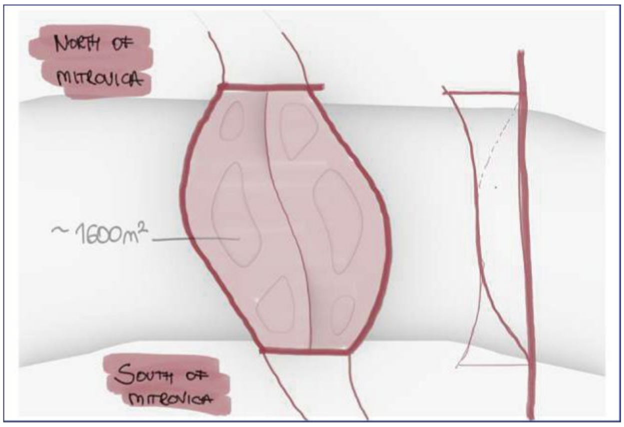


Fig. 4.2.2 Total area of the building

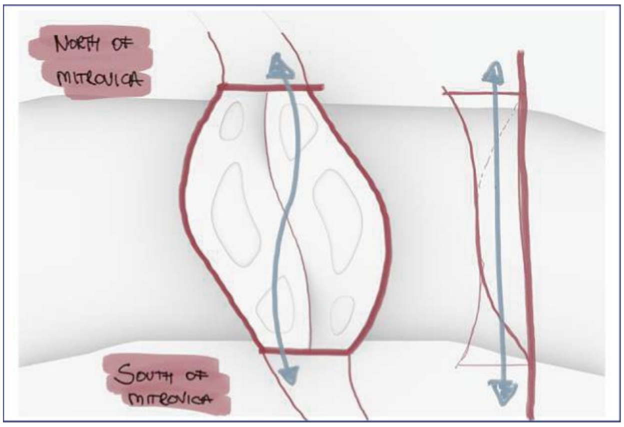


Fig. 4.2.3 Circulation system inside the building

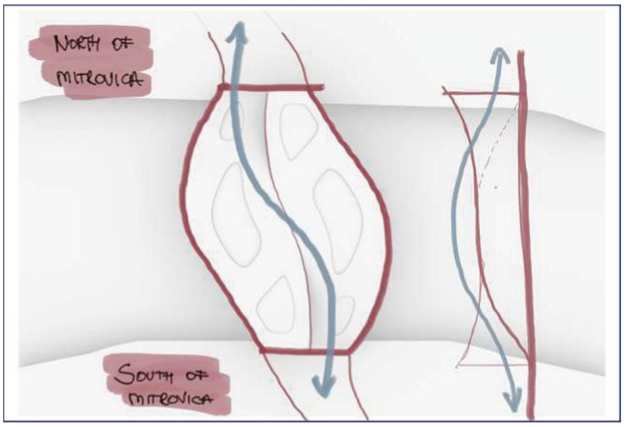


Fig. 4.2.4 Circulation system on the roof of the building

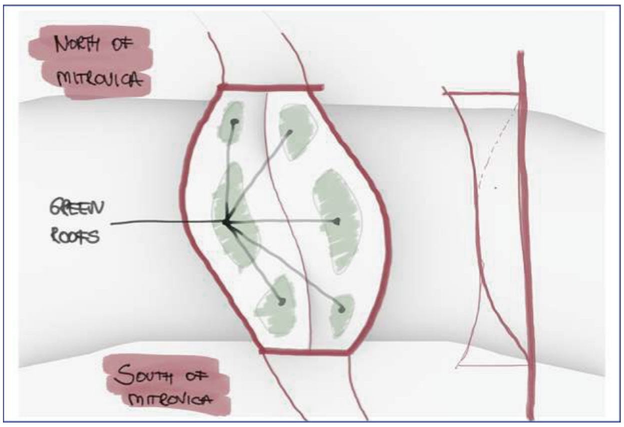


Fig. 4.2.5 Green roofs of the building

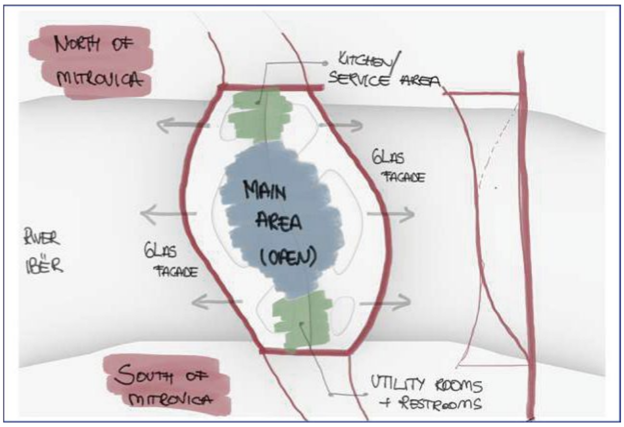


Fig. 4.2.6 Concept idea inside the building

Fig. 4.2.7 Perspective of bridge concept-idea

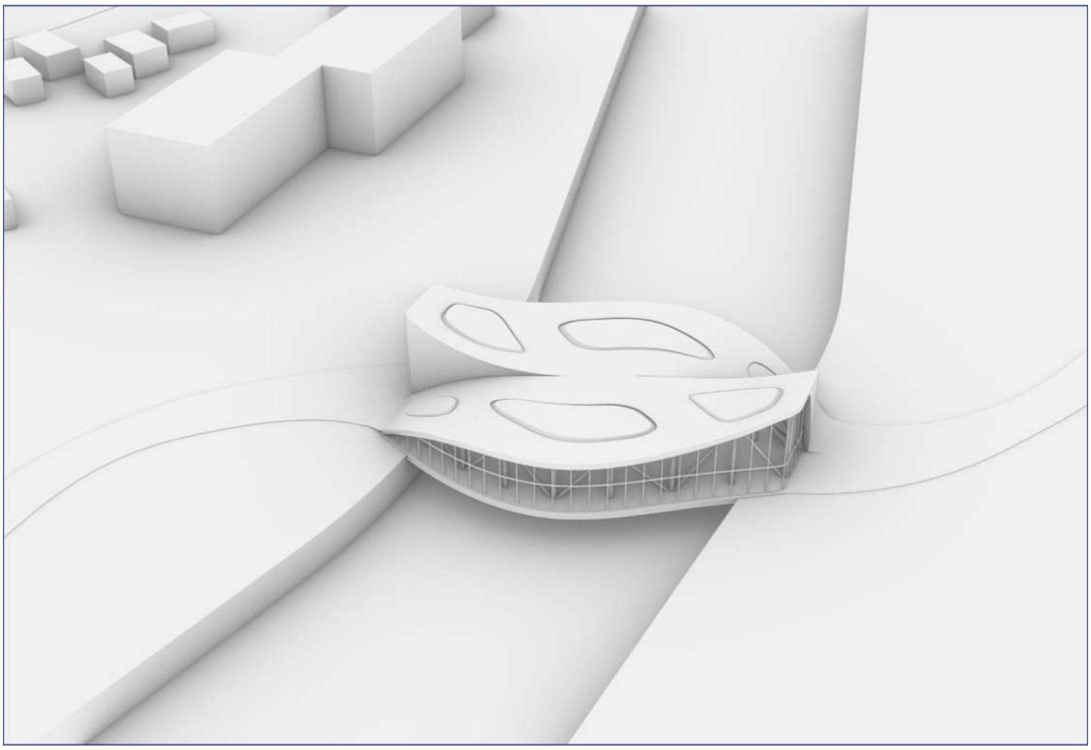
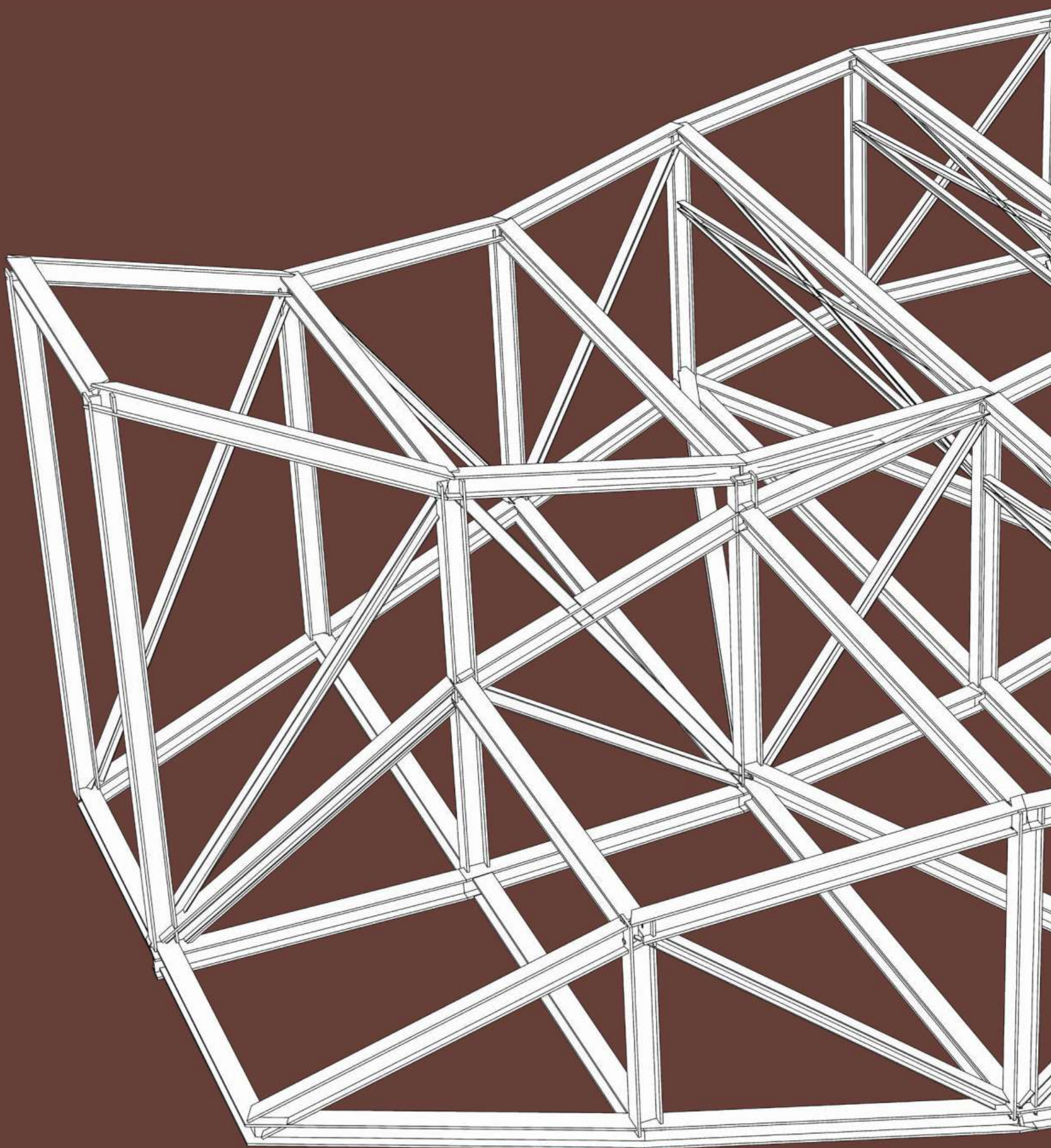


Fig. 4.2.8 Perspective of bridge concept-idea

4.3 Load-bearing structure

Calculation and Optimisation of the load-bearing structure

done with **Blender and Phaenotyp**



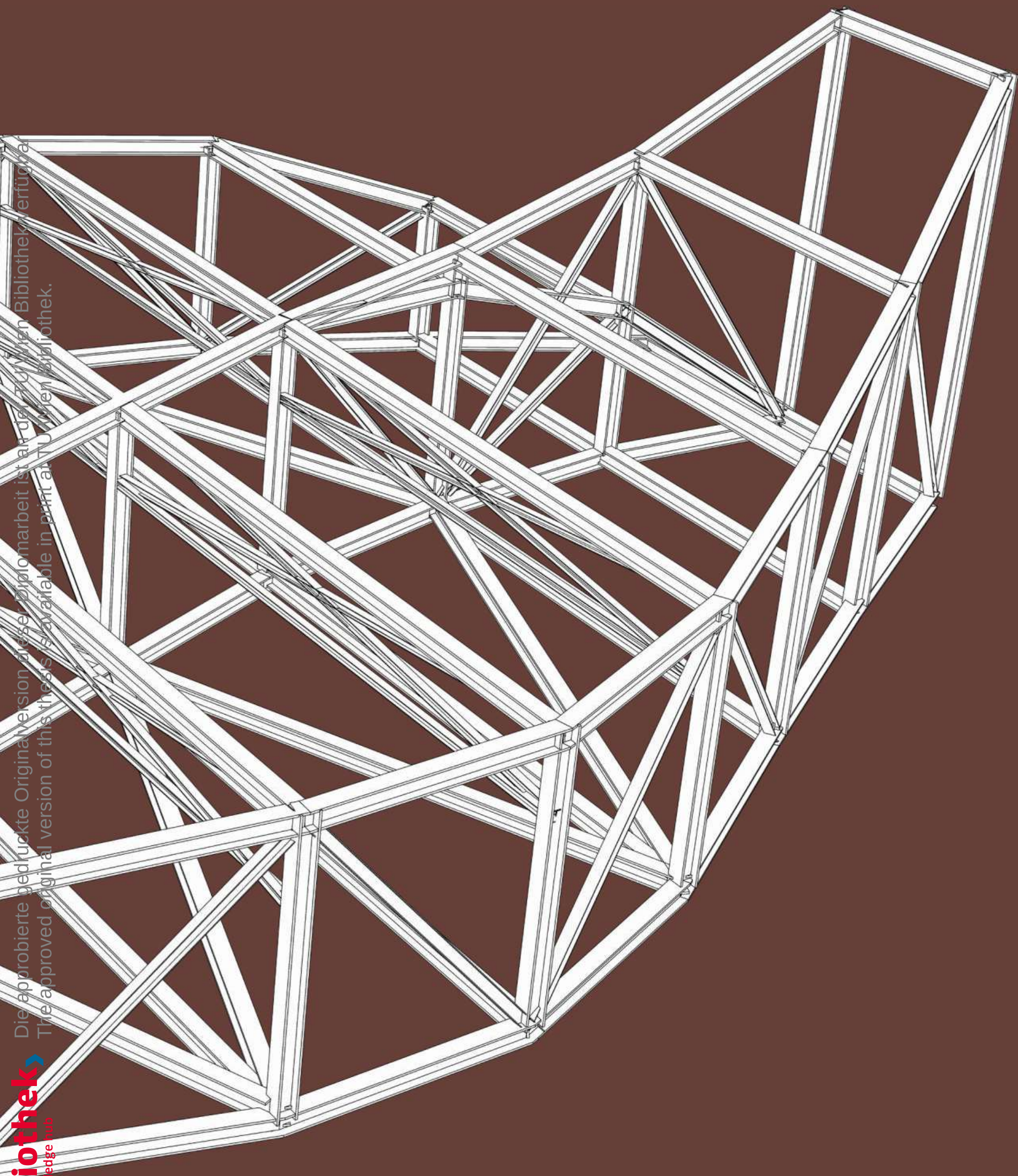


Fig. 4.3.1 Sketch of the main load-bearing structure

CALCULATION AND OPTIMISATION OF THE LOAD-BEARING STRUCTURE
done with Blender and Phaenotyp

The project focused on achieving an optimal balance between structure, shape, and function for a building design. Using Blender and Phänotyp for calculations and visualizations, various iterations of the load-bearing structure were tested to identify the most efficient design.
The initial concept featured a 50m-long building (figure 4.3.2) with a width ranging from 18m to 40m and included two prominent arches.
The maximal height of the building was 14m.

Early calculations (figure 4.3.3) revealed that side arches significantly influenced the structural dimensions required to support the building's weight.
To assess the impact of the arches, a test was conducted on a similar design (figure 4.3.4) with straight sides instead of arches. The results demonstrated that a structure with straight sides required smaller beams and columns while maintaining the same load-bearing capacity.

In subsequent iterations, adjustments were made to refine the shape of the building. The third version (figure 4.3.5) incorporated a narrower main structure, with some outer elements overhanging the primary supports.
In the next test (figure 4.3.17), it was observed the behaving of the structure in 10 steps, to see when the drastic change on the dimensions of the supporting structure. When the the round shapes are introduced on the structure, the beams and columns react and change in size.
Further tests led to the next version (figure 4.3.18), where the structure was divided into five main supporting sections, compared to the three sections in earlier versions.
In the fifth version (figure 4.3.19), diagonal supports were added to the sides to improve force distribution and enhance flexibility.
The sixth version (figure 4.3.20) additional diagonals were introduced in the middle of the structure, further optimizing the design.

These iterative experiments highlighted two key strategies for optimizing the building's supporting structure: incorporating diagonal supports and narrowing the structure's shape. These adjustments significantly improved the calculations and dimensions of the load-bearing system.

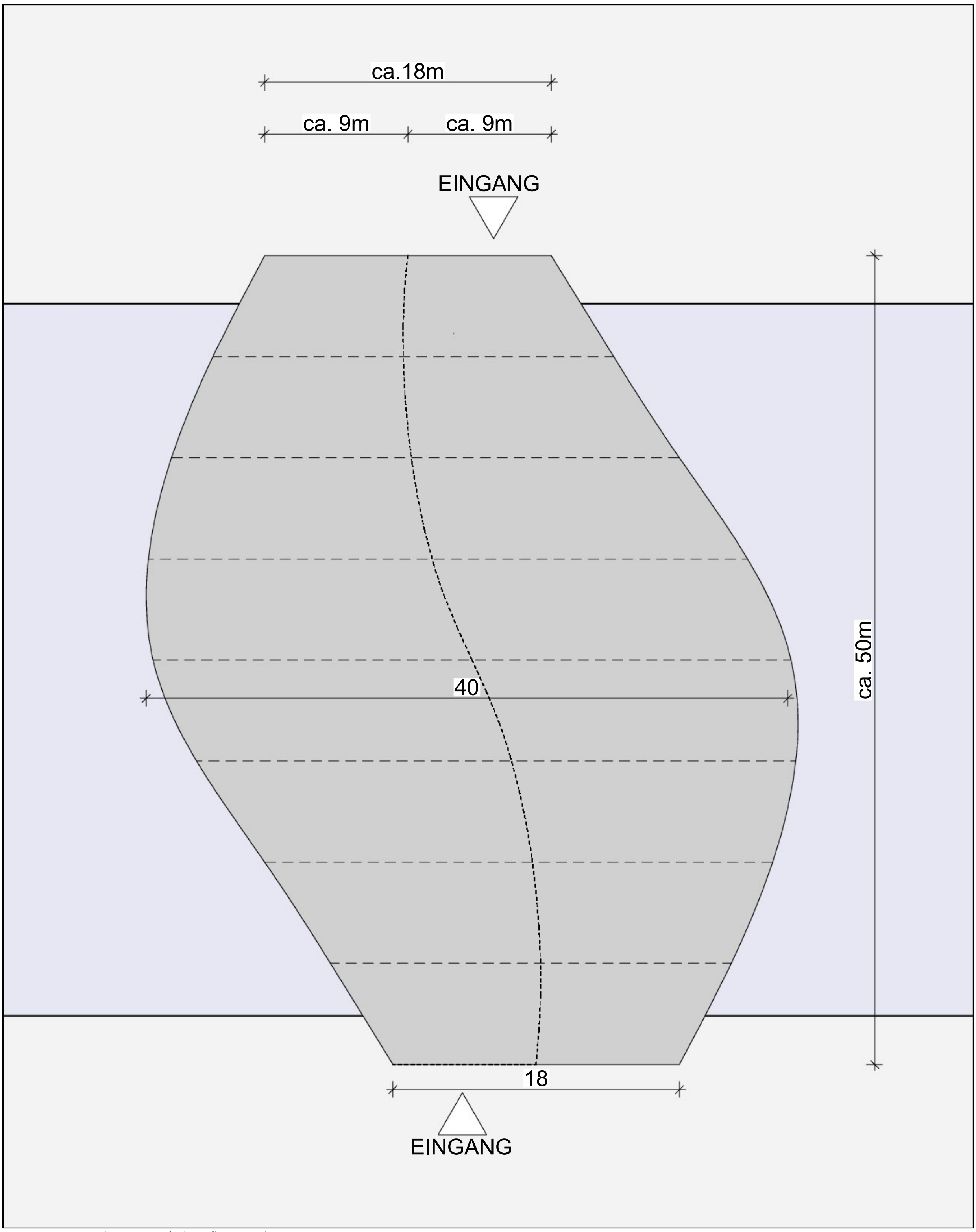


Fig. 4.3.2 Scheme of the floor plan

FIRST CALCULATIONS AND OBSERVATIONS

Due to the extensive time required for calculations using Blender and Phaenotyp, the initial computations were conducted on only half of the structure. This approach was adopted because the entire structure is symmetrical, allowing for the generation of more results in a shorter time frame, thereby facilitating a greater number of comparisons.

The initial calculations presented in Figure 4.3.3 revealed that the shape of the building plays a crucial role in determining the characteristics of its supporting structure. To gain a deeper understanding of how the arches located on the left and right sides of the building influence the overall structural integrity, a modified version of the model was created and analyzed using Blender and Phänotyp, as illustrated in Figure 4.3.4.

In this revised model, the original round arches were replaced with a straight structural design that was engineered to carry the same weight while maintaining the overall height of the building.
The results of this analysis were quite revealing, demonstrating that the dimensions of the supporting structure underwent significant changes. Specifically, the beams and columns were found to be smaller in size, indicating that the overall support system became more efficient and optimal as a result of this design alteration.
This finding underscores the importance of architectural shape in structural engineering, as it directly affects material usage and structural performance.

In the subsequent version of the model, depicted in Figure 4.3.5, a narrower main structure was introduced, featuring outer elements that overhang on the primary supports.
This design modification aimed to explore the effects of altering the main structure's width while maintaining the overall architectural integrity.

Interestingly, the analysis showed that even though the main support beams and columns were repositioned toward the interior of the building, their dimensions did not change. This outcome suggests that the overall shape of the building remained relatively consistent, which in turn influenced the stability and strength of the supporting elements.

Overall, these findings highlight the relationship between architectural design and structural efficiency, emphasizing the need for careful consideration of shape and form in the engineering of buildings.

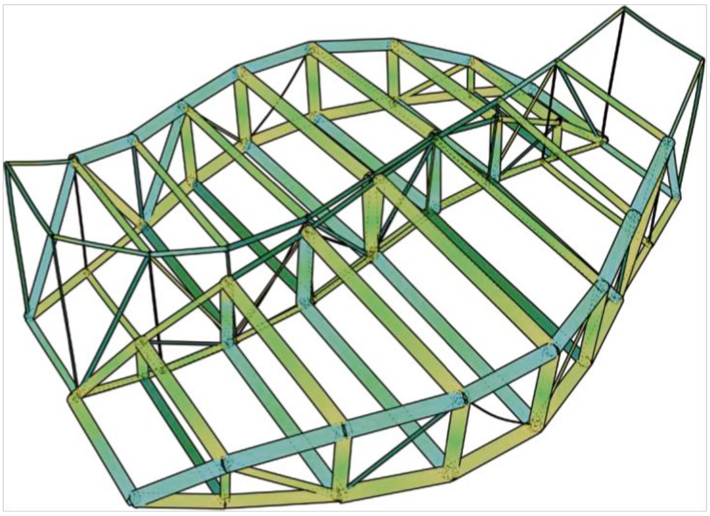


Fig. 4.3.3 Version 1

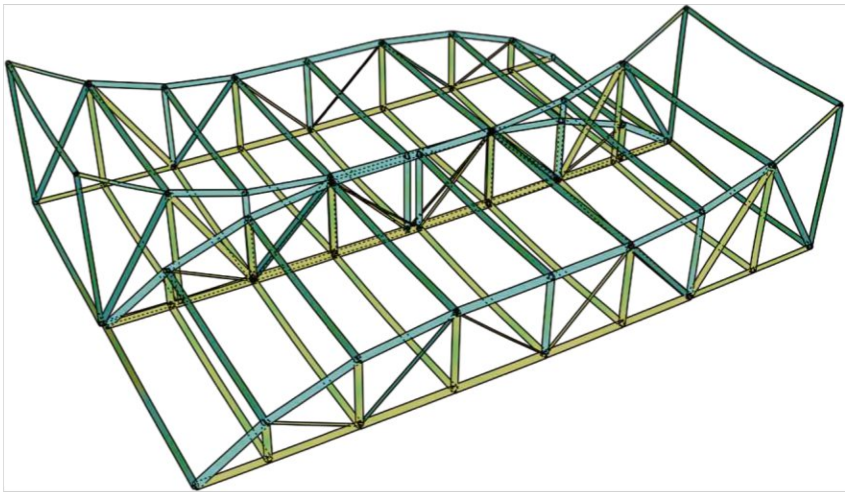


Fig. 4.3.4 Version 2

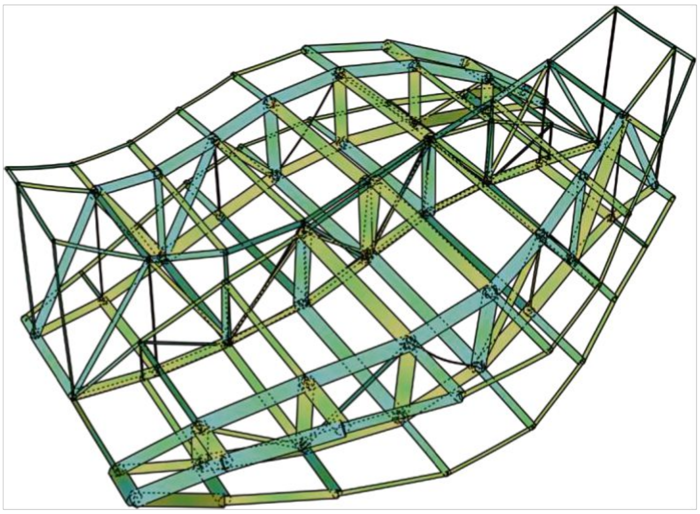


Fig. 4.3.5 Version 3

DEVELOPING A HYBRID MODEL

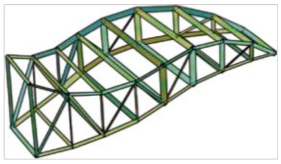
To gain a clearer understanding of the relationship between the structures illustrated in Version 1 and Version 2, a hybrid model (version 3a) was developed and is presented in Figure 4.3.17.

This model serves as a transitional representation that combines elements of both the straight-sided structure and the arch-based design. The purpose of this analysis is to explore how varying structural forms influence the overall efficiency and dimensions of the supporting system.
The ten images included in this section visually depict the gradient of transformation as the structure shifts from a design characterized by straight sides, which is associated with a more optimal supporting framework, to a configuration that incorporates arches on the sides.

As the shape of the structure changes, it becomes evident that the overall dimensions increase significantly, resulting in a less efficient support system. This progression highlights the critical impact that architectural design choices have on structural performance.
By examining this gradient, we can better understand how different forms affect material usage, load distribution, and the overall stability of the building. The findings from this analysis underscore the importance of considering both aesthetic and functional aspects in architectural design, as the choice between straight and arched structures can lead to substantial differences in structural efficiency.

Overall, this exploration not only illustrates the direct relationship between the two structural forms but also emphasizes the broader implications for architectural engineering and design practices.

Step 1



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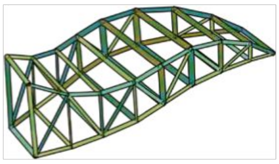

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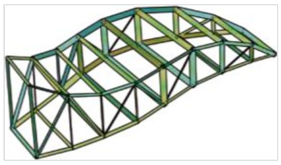

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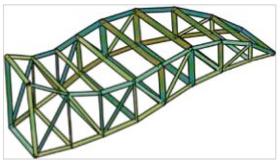

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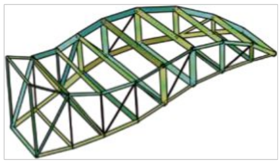

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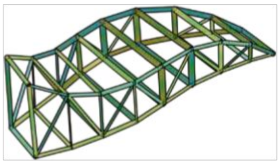

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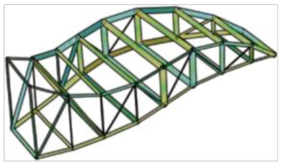

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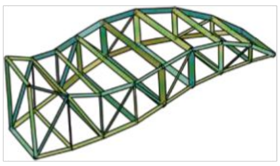

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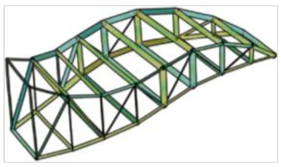


Step 10

Fig. 4.3.6 The Progress of version 1 in 10 steps

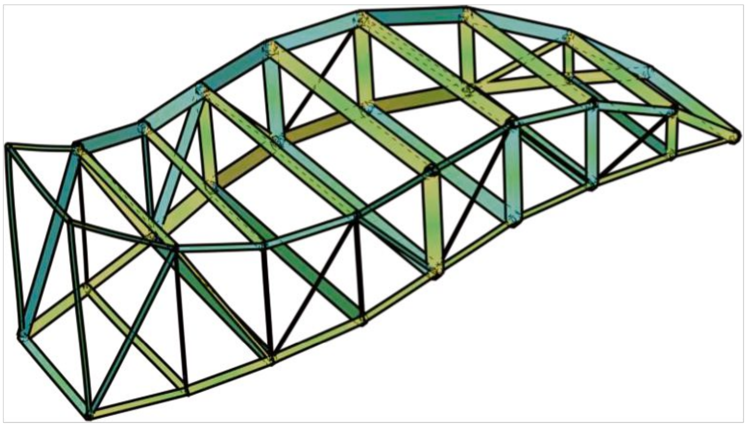


Fig. 4.3.7 The calculated half of version 1

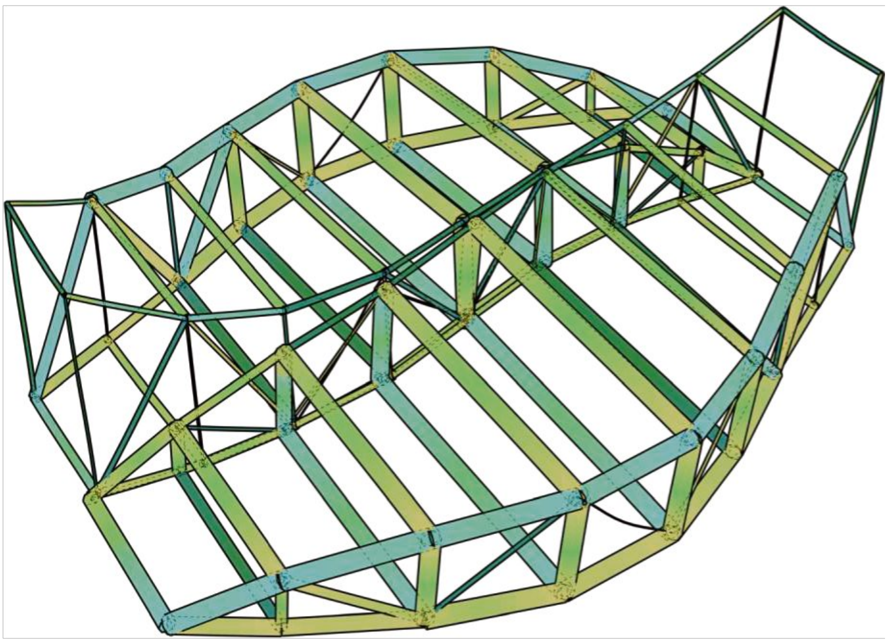
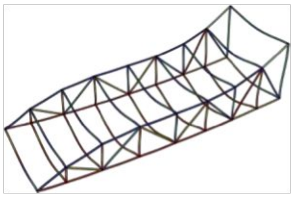


Fig. 4.3.8 The calculated version 1



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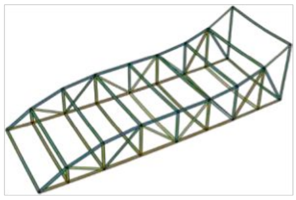

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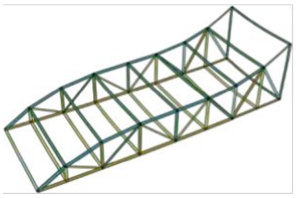

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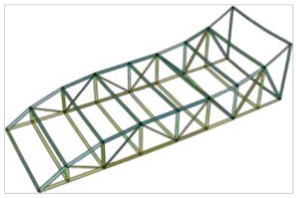

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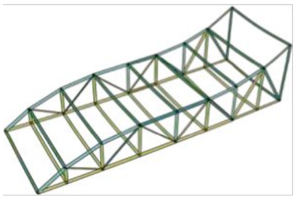

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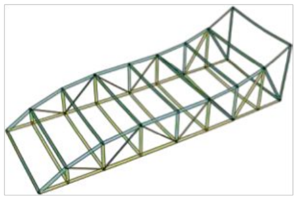

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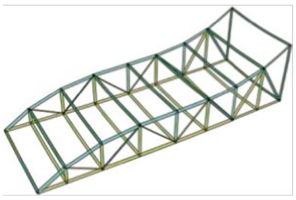

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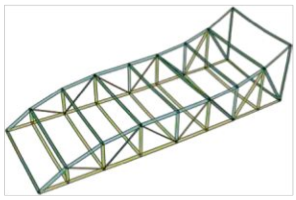

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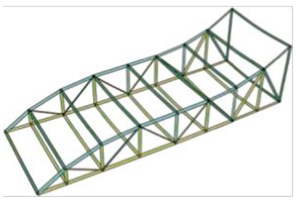

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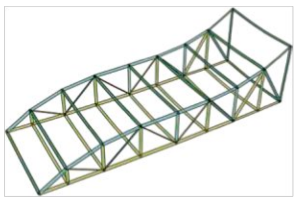

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Fig. 4.3.9 The Progress of version 2 in 10 steps

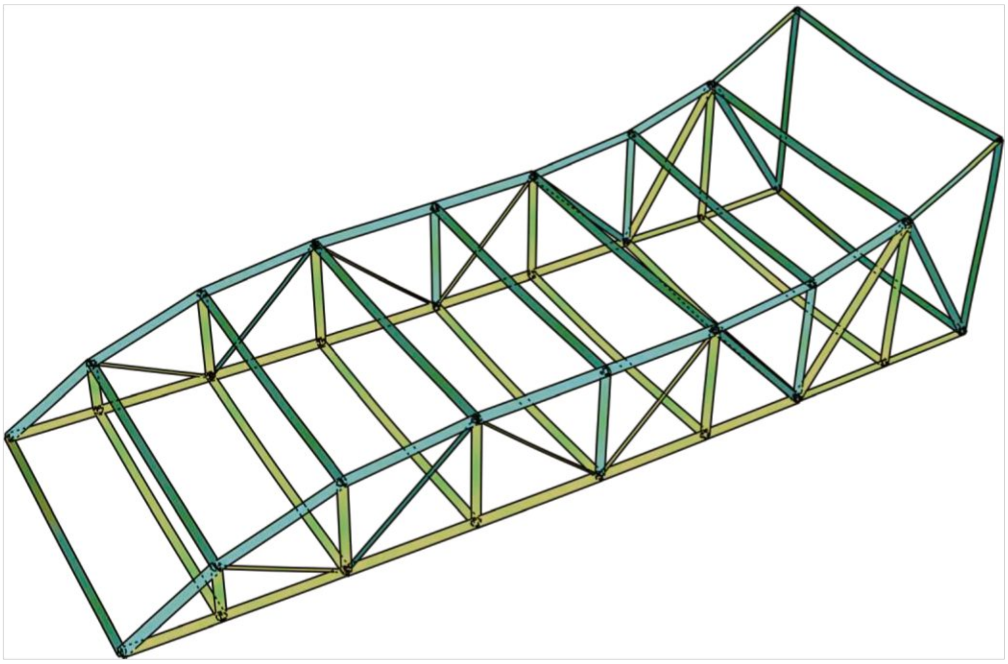


Fig. 4.3.10 The calculated half of version 2

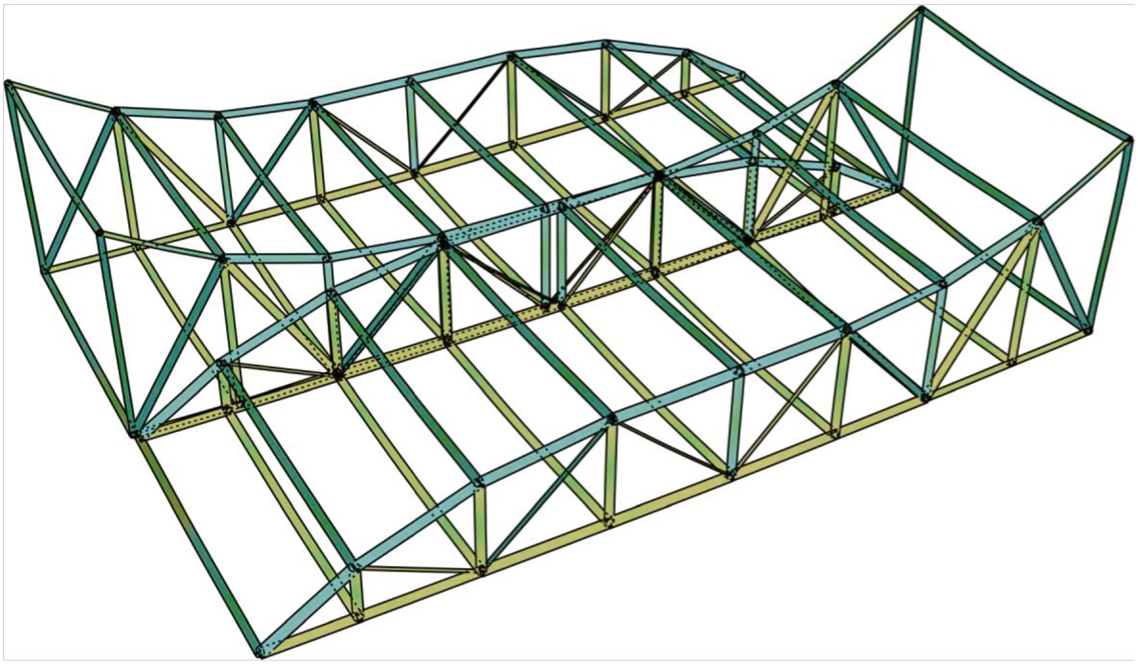


Fig. 4.3.11 The calculated version 2

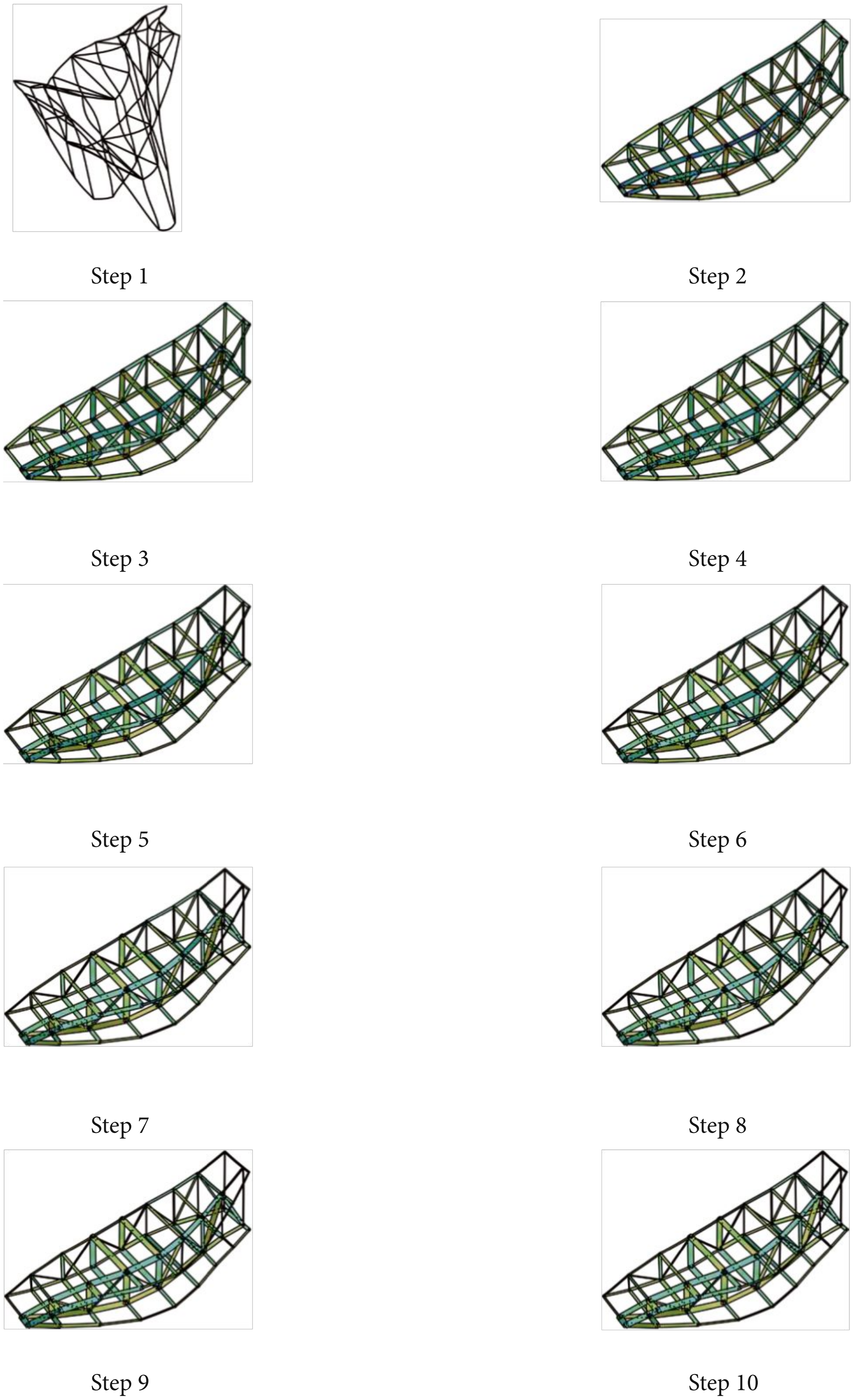


Fig. 4.3.12 The Progress of version 3 in 10 steps

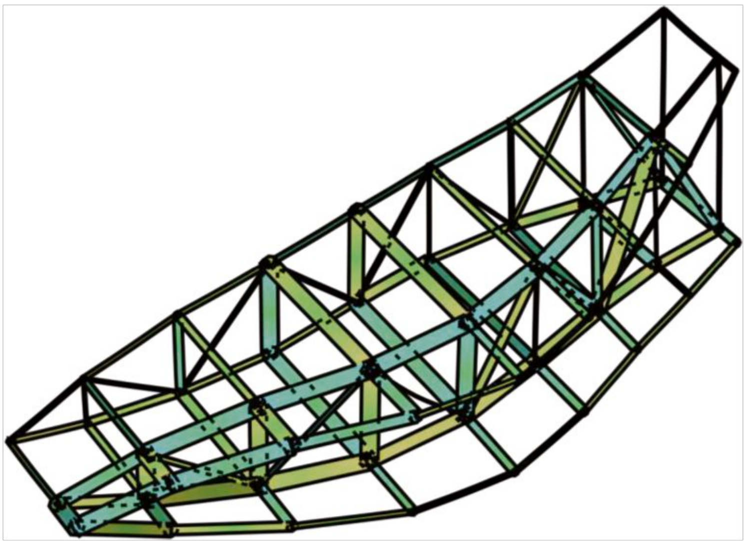


Fig. 4.3.13 The calculated half of version 3

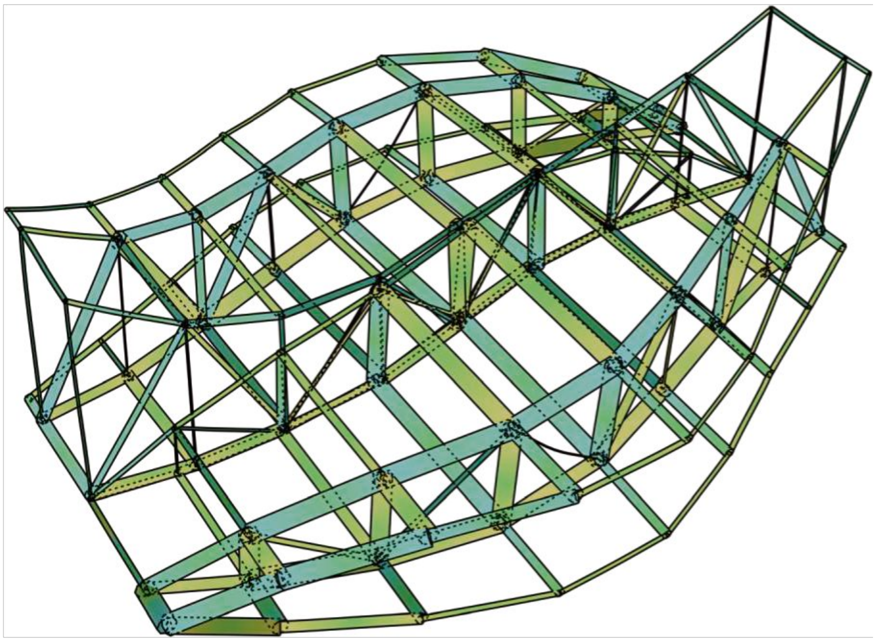
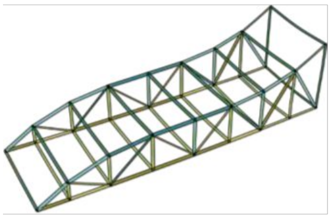


Fig. 4.3.14 The calculated version 3



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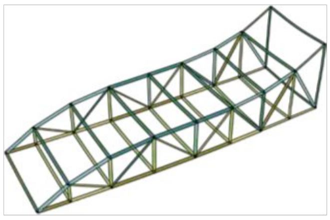

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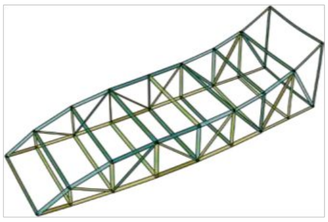

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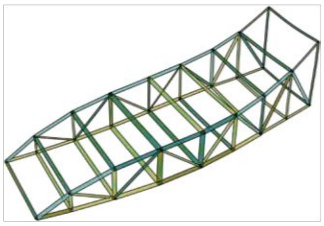

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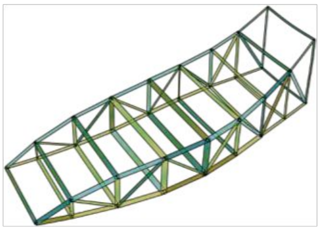

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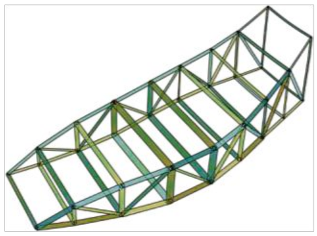

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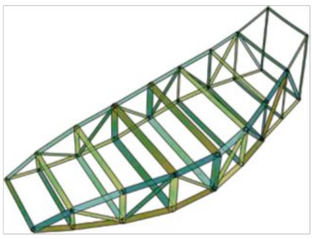

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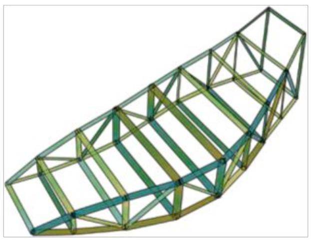

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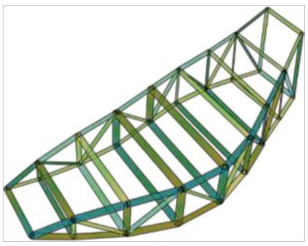

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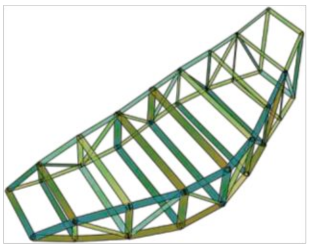

Step 10

Fig. 4.3.15 The connection of version 1 and 2 shown in 10 steps

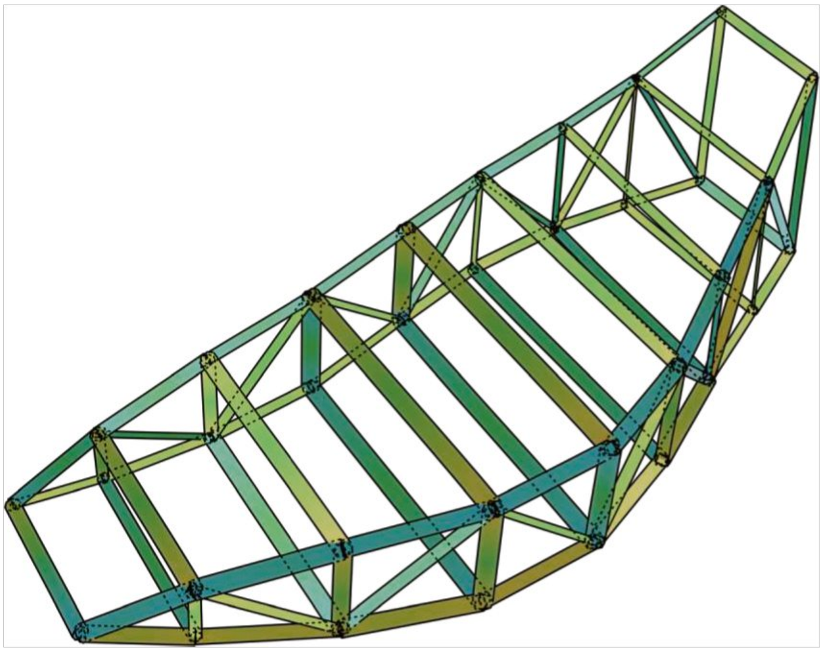

Fig. 4.3.16 Version 3a - The calculated half of the connection of version 1 and 2

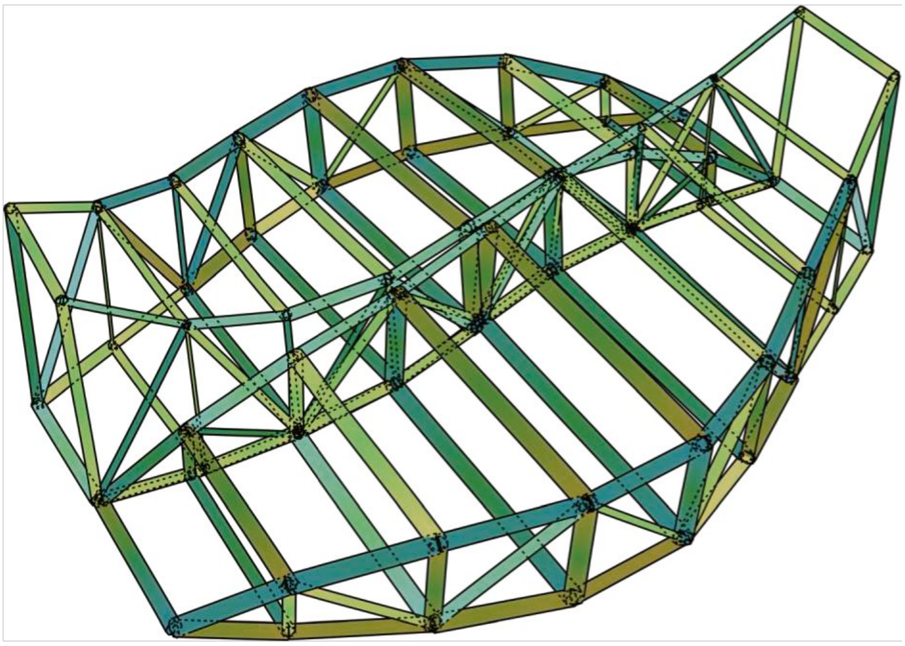

Fig. 4.3.17 Version 3a - The calculated version of the connection of version 1 and 2

ADJUSTING THE LOAD-BEARING STRUCTURE

The development of the structure progressed through several versions, each building on the insights gained from previous iterations. The fourth version, illustrated in Figure 4.3.18, introduced five main supporting sections, which aimed to enhance stability.
However, despite the increase in supporting sections, this version did not achieve greater optimization because the overall shape of the building remained unchanged from earlier designs.

This indicates that simply adding more supports does not necessarily lead to improved performance if the fundamental design does not evolve.

In the fifth version, depicted in Figure 4.3.19, diagonal supports were added to the sides of the structure. This strategic enhancement improved the distribution of forces throughout the framework, increasing flexibility and resilience.
The inclusion of diagonal supports is particularly important in engineering, as it helps mitigate the effects of lateral forces, such as wind or seismic activity, which can compromise structural integrity.

The design continued to evolve with the introduction of the sixth version, shown in Figure 4.3.20. In this iteration, additional diagonal supports were strategically placed in the middle of the structure. This modification provided extra reinforcement where it was most needed, further optimizing the design and enhancing its overall performance under various loading conditions.

Overall, each version of the structure reflects a thoughtful evolution in design, focusing on improving both stability and flexibility through targeted modifications.
This iterative process underscores the importance of testing and refining engineering designs, demonstrating how each enhancement contributes to achieving a more robust and efficient structural solution.
The ongoing development highlights the critical role of empirical evidence in guiding design decisions, ultimately leading to better performance and safety in engineering applications.

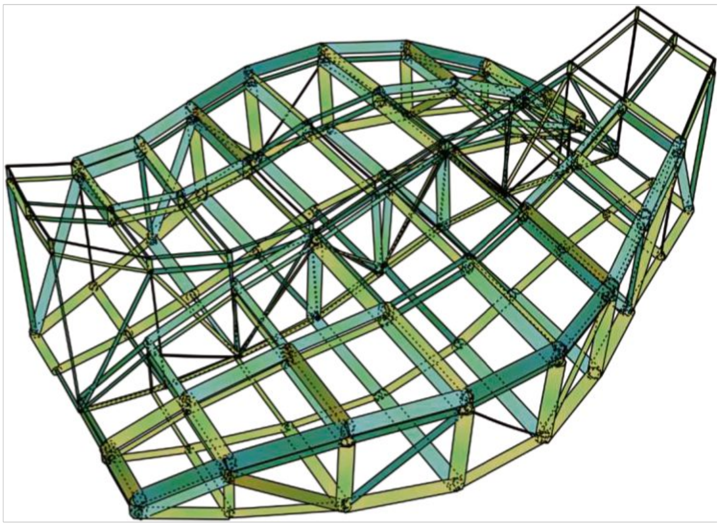

Fig. 4.3.18 Version 4

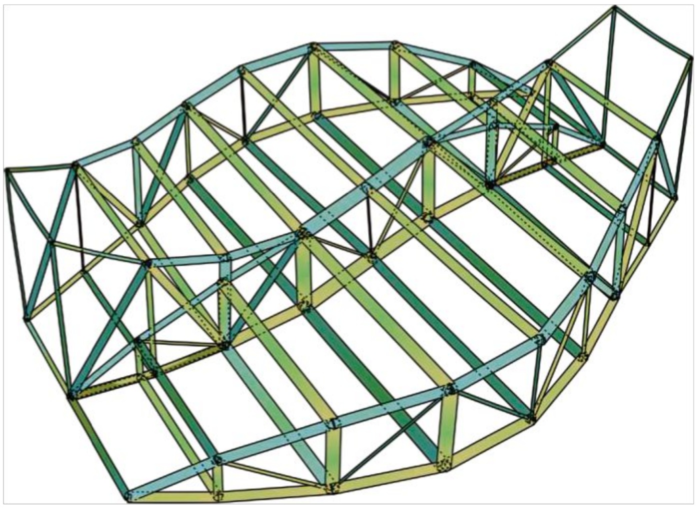

Fig. 4.3.19 Version 5

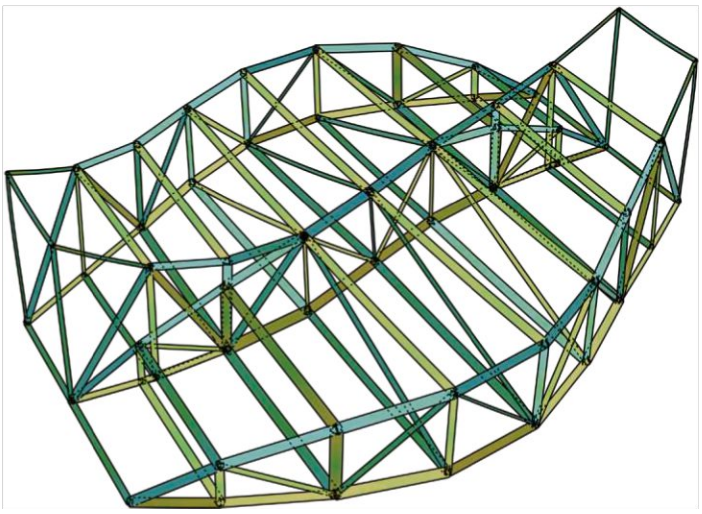

Fig. 4.3.20 Version 6

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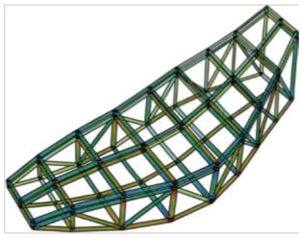

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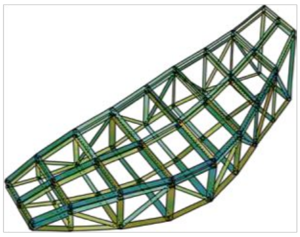

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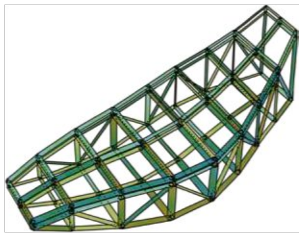

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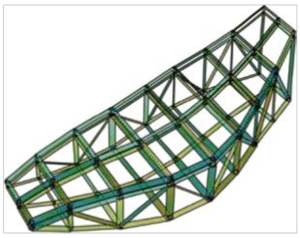

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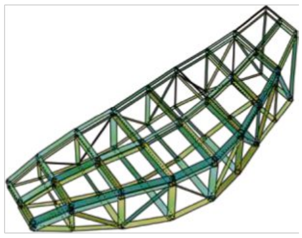

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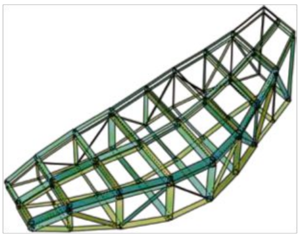
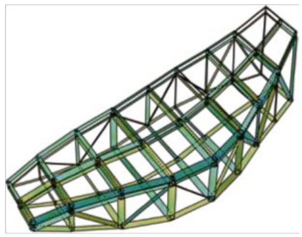
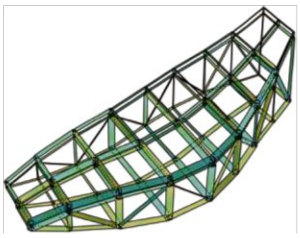


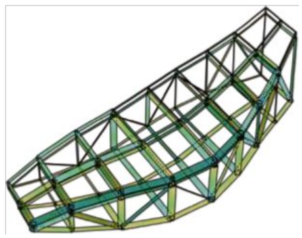
Step 7



Step 8



Step 9



Step 10

Fig. 4.3.21 The Progress of version 4 in 10 steps

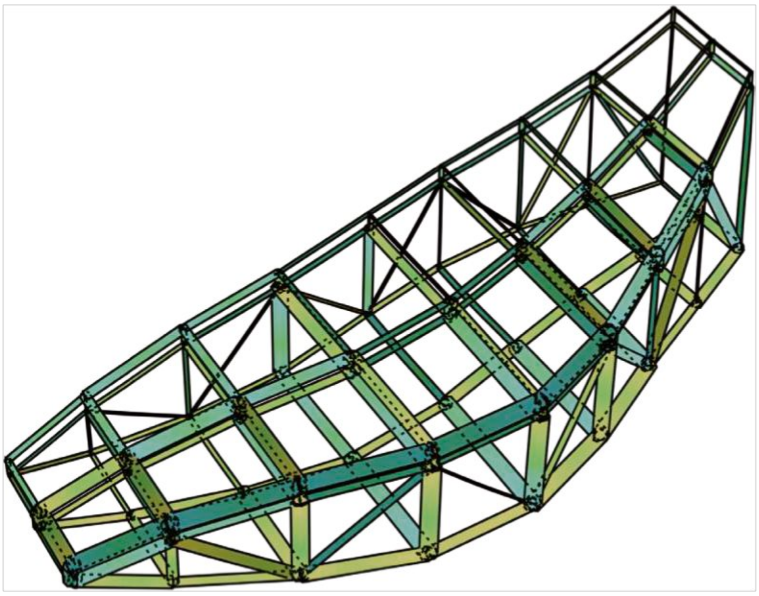


Fig. 4.3.22 The calculated half of version 4

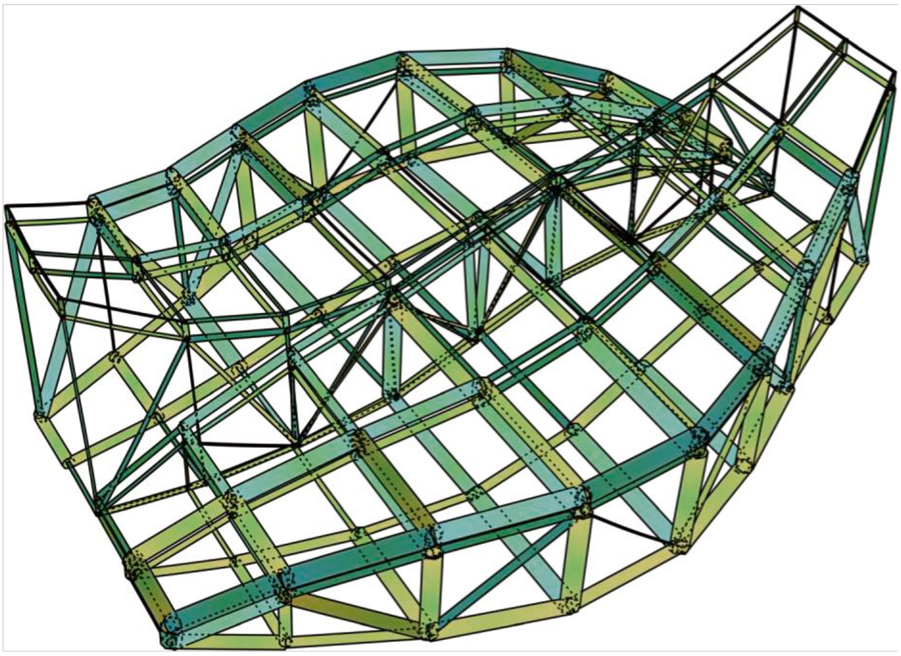


Fig. 4.3.23 The calculated version 4

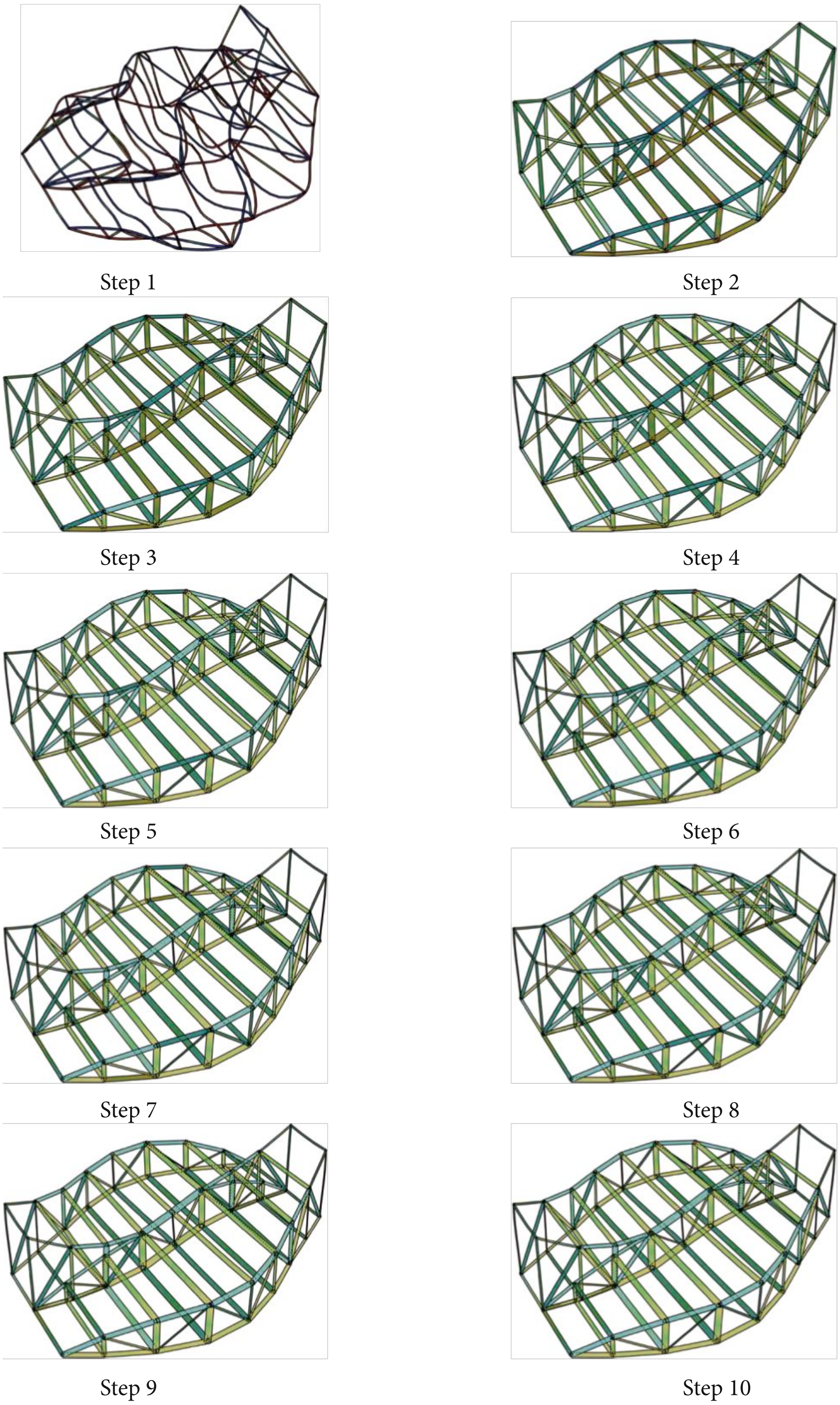


Fig. 4.3.24 The Progress of version 5 in 10 steps

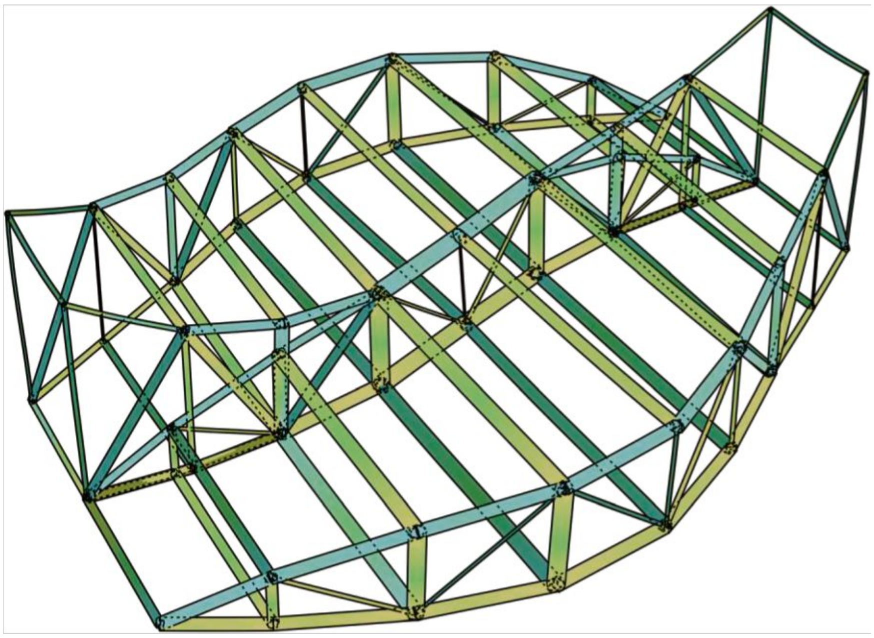


Fig. 4.3.25 The calculated version 5

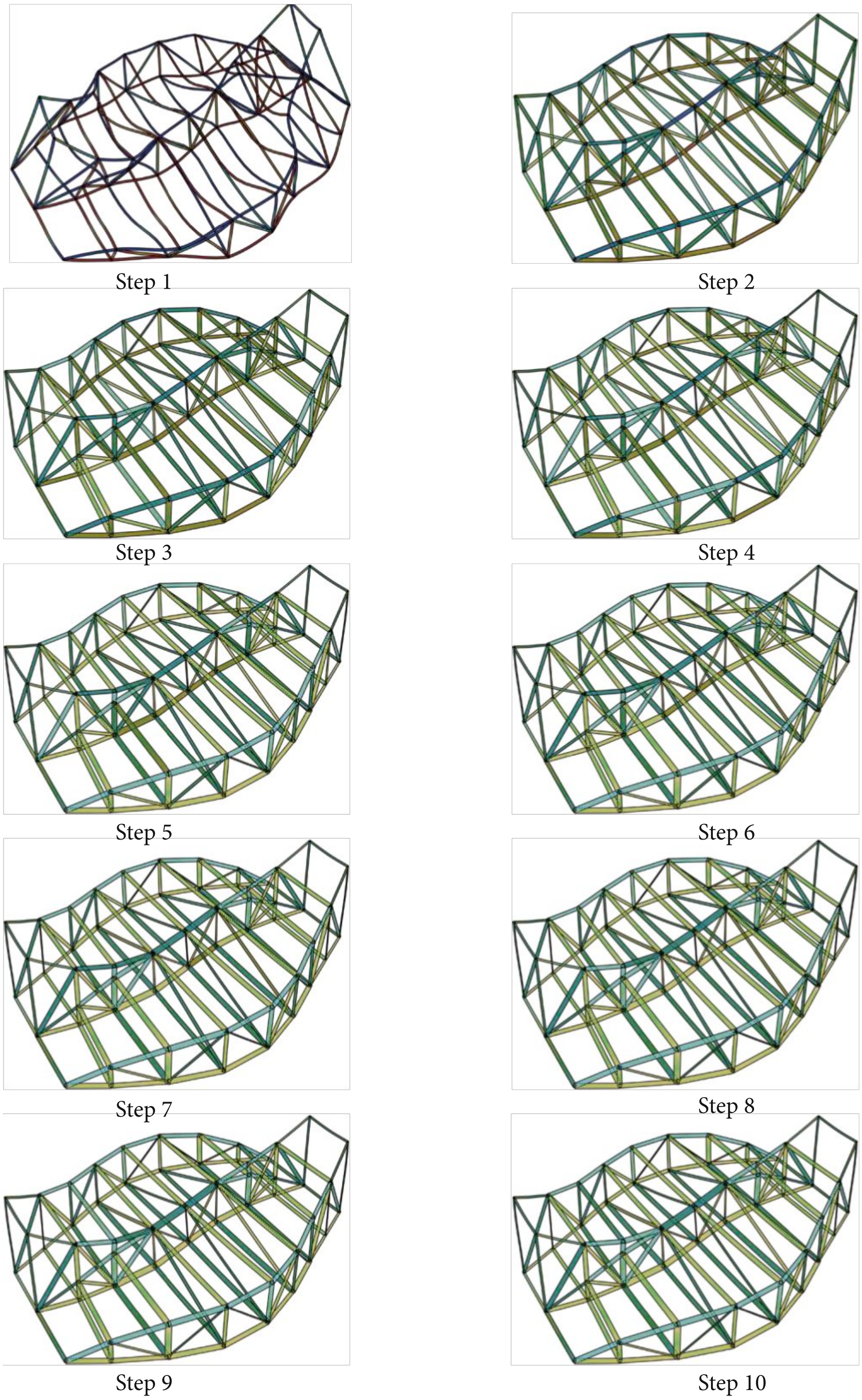


Fig. 4.3.26 The Progress of version 6 in 10 steps

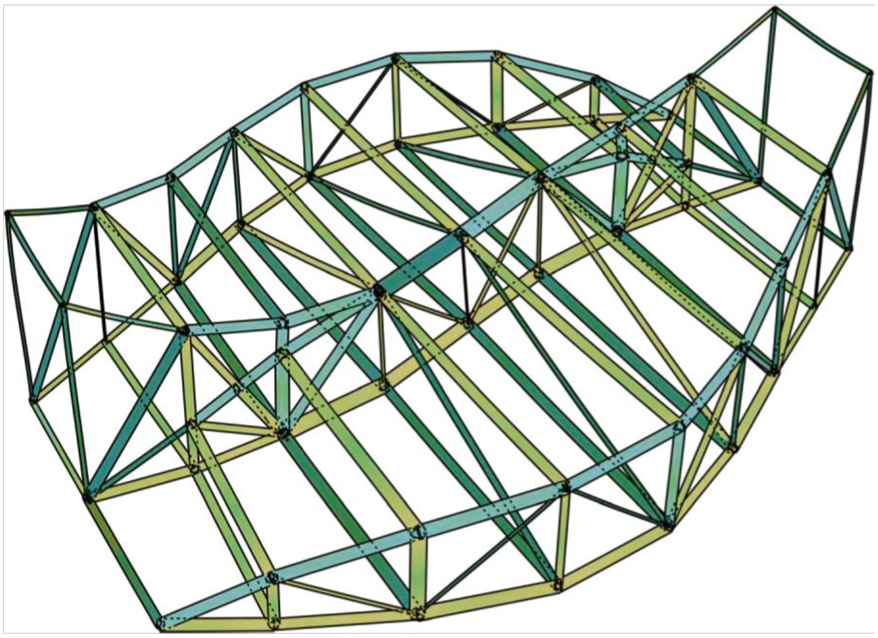


Fig. 4.3.27 The calculated version 6

OPTIMIZING THE SHAPE OF THE BUILDING

The calculations performed using Phänotyp revealed that optimizing the supporting structure of the building required only minimal alterations to its shape. The arched sides of the building significantly influenced the overall support system, prompting the decision to slightly narrow the structure. Specifically, the maximum width was reduced from 40 meters to 35 meters, while the length and height remained unchanged.
This strategic adjustment aimed to enhance the building's structural integrity without compromising its overall design.

After modifying the dimensions, four versions of the building were tested to determine the optimal supporting structure. In Version 7 (Figure 4.3.30), the supporting framework was designed with simple straight beams and columns, lacking diagonal supports. This initial configuration provided a baseline for evaluating the effectiveness of additional structural elements.
To explore the potential benefits of diagonal supports, they were introduced in Version 8 (Figure 4.3.32). The addition of these diagonal beams demonstrated a significant improvement in the supporting structure, indicating a move toward greater optimization. This version highlighted the importance of diagonal elements in enhancing stability and load distribution.

In Version 9 (Figure 4.3.34), further diagonal supports were incorporated, resulting in a more robust and stable structure. This iteration not only improved the overall stability but also allowed for a reduction in the size of the supporting framework, showcasing the effectiveness of the design modifications.

To gather more comparative data, version 10 (Figure 4.3.36) was created where the diagonal supports were oriented in a single direction on each side. However, this configuration did not yield any positive changes in performance, reinforcing the conclusion that Version 9 represented the optimal design after all adjustments were made.

The subsequent sections of the assignment will provide detailed calculations of the exact dimensions of the Profiles used in the supporting structure, along with 3D visualizations. This comprehensive analysis aims to further illustrate the benefits of the design modifications and their impact on the building's structural efficiency.

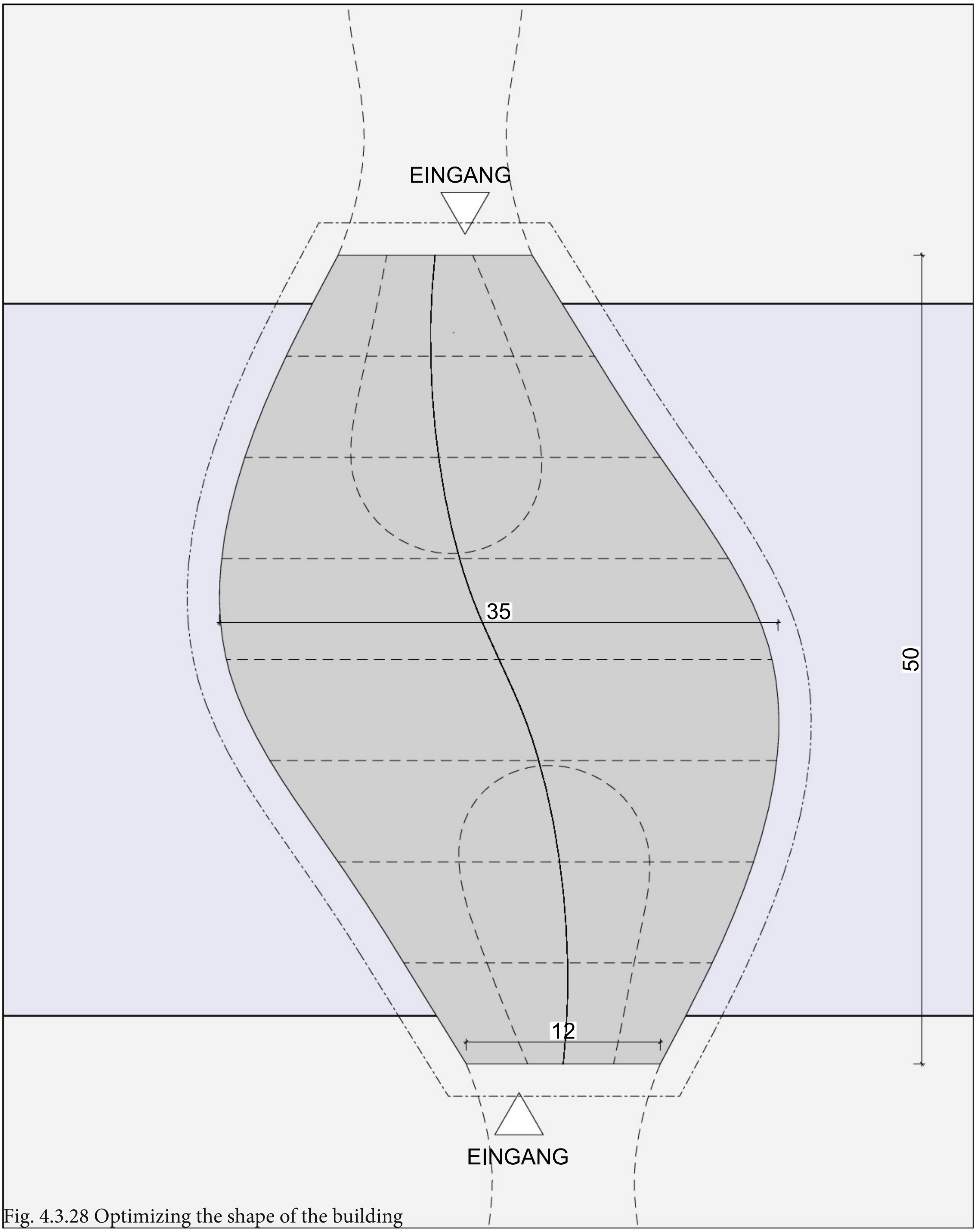
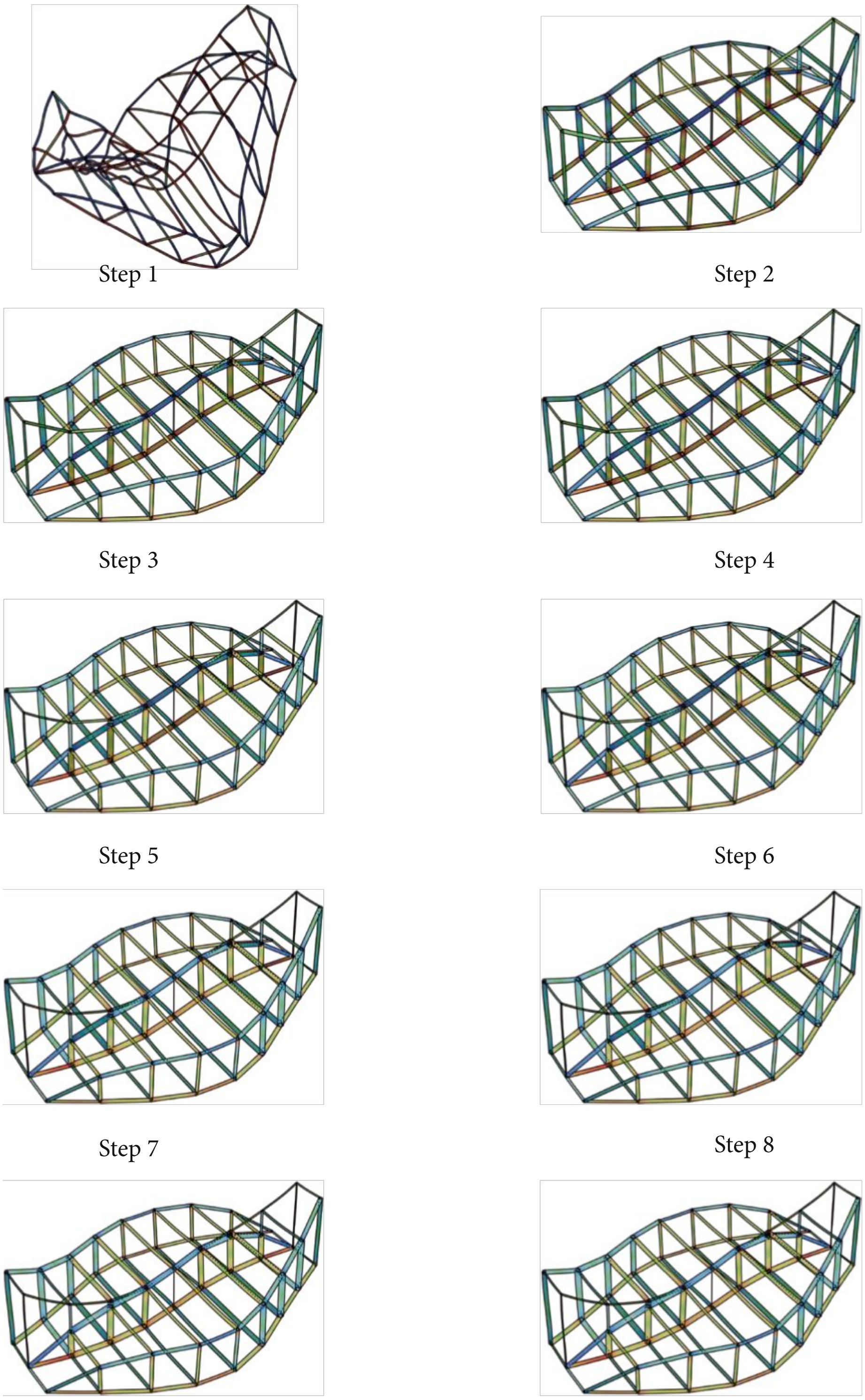


Fig. 4.3.28 Optimizing the shape of the building



Step 1 Step 2
Step 3 Step 4
Step 5 Step 6
Step 7 Step 8
Step 9 Step 10

Fig. 4.3.29 The Progress of version 7 in 10 steps

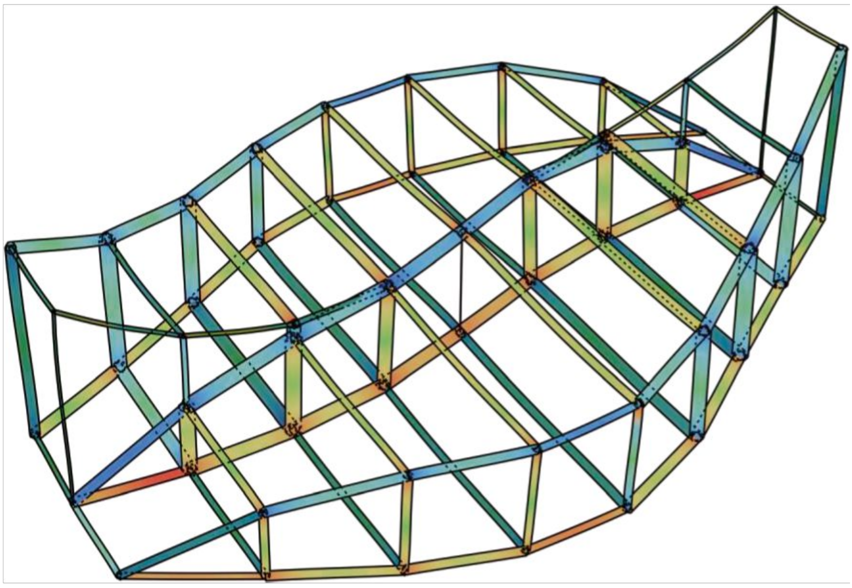


Fig. 4.3.30 The calculated version 7

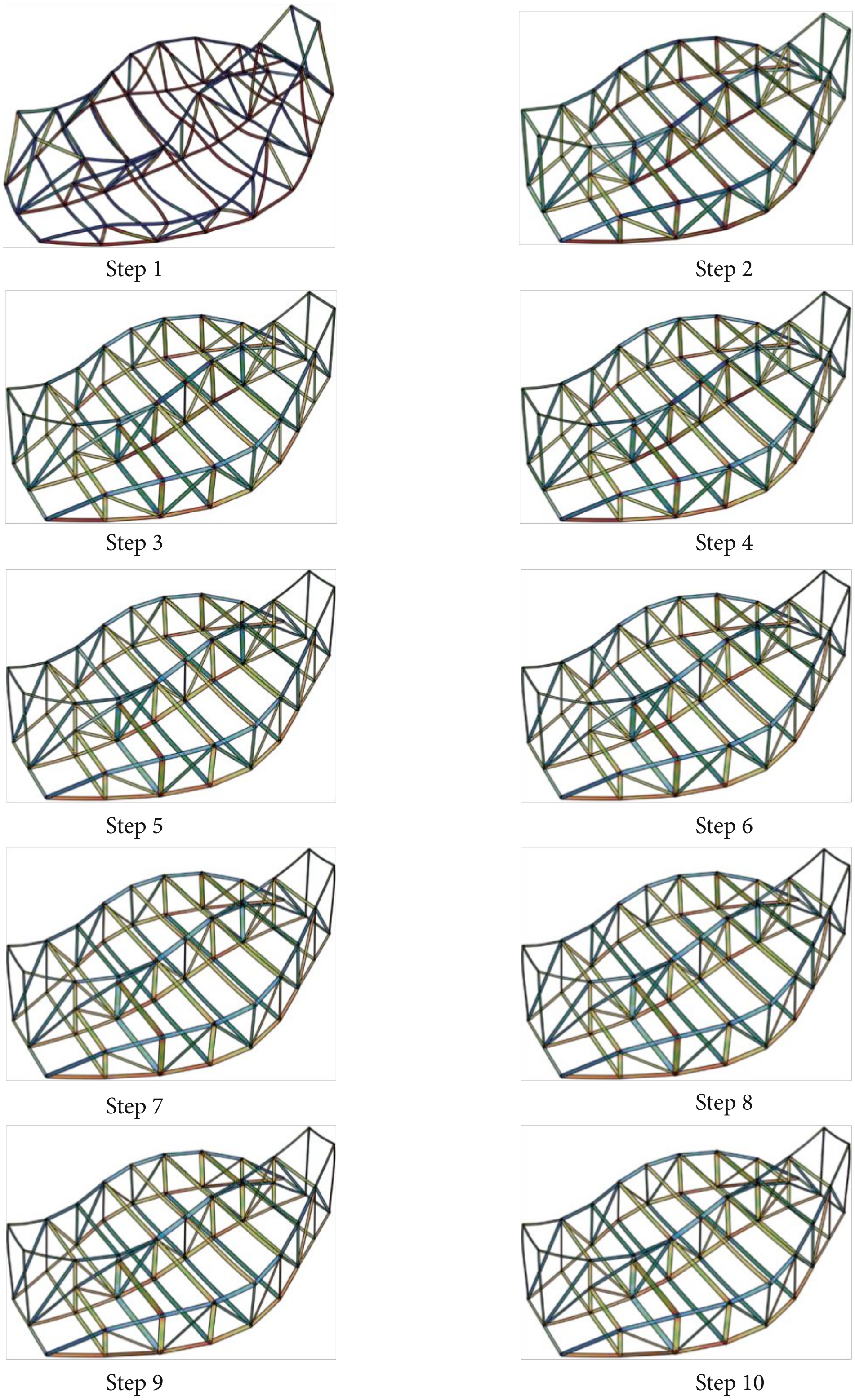


Fig. 4.3.31 The Progress of version 8 in 10 steps

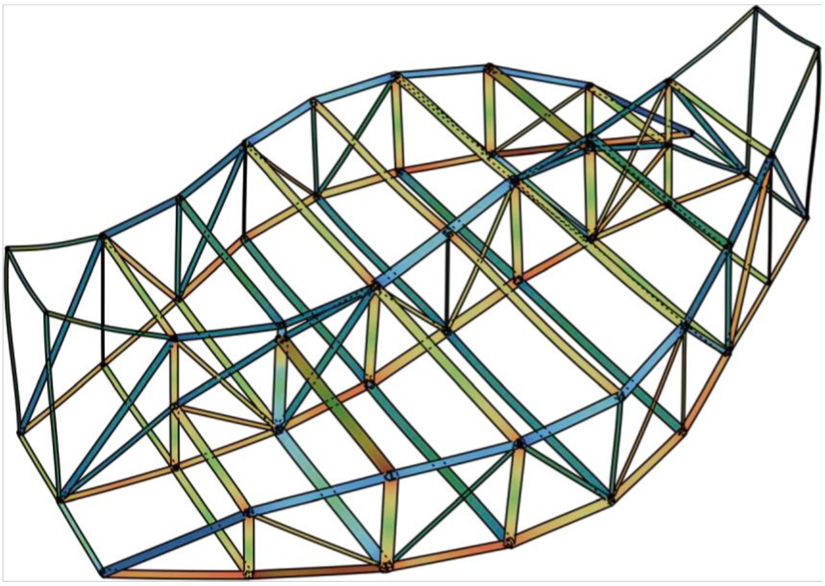


Fig. 4.3.32 The calculated version 8

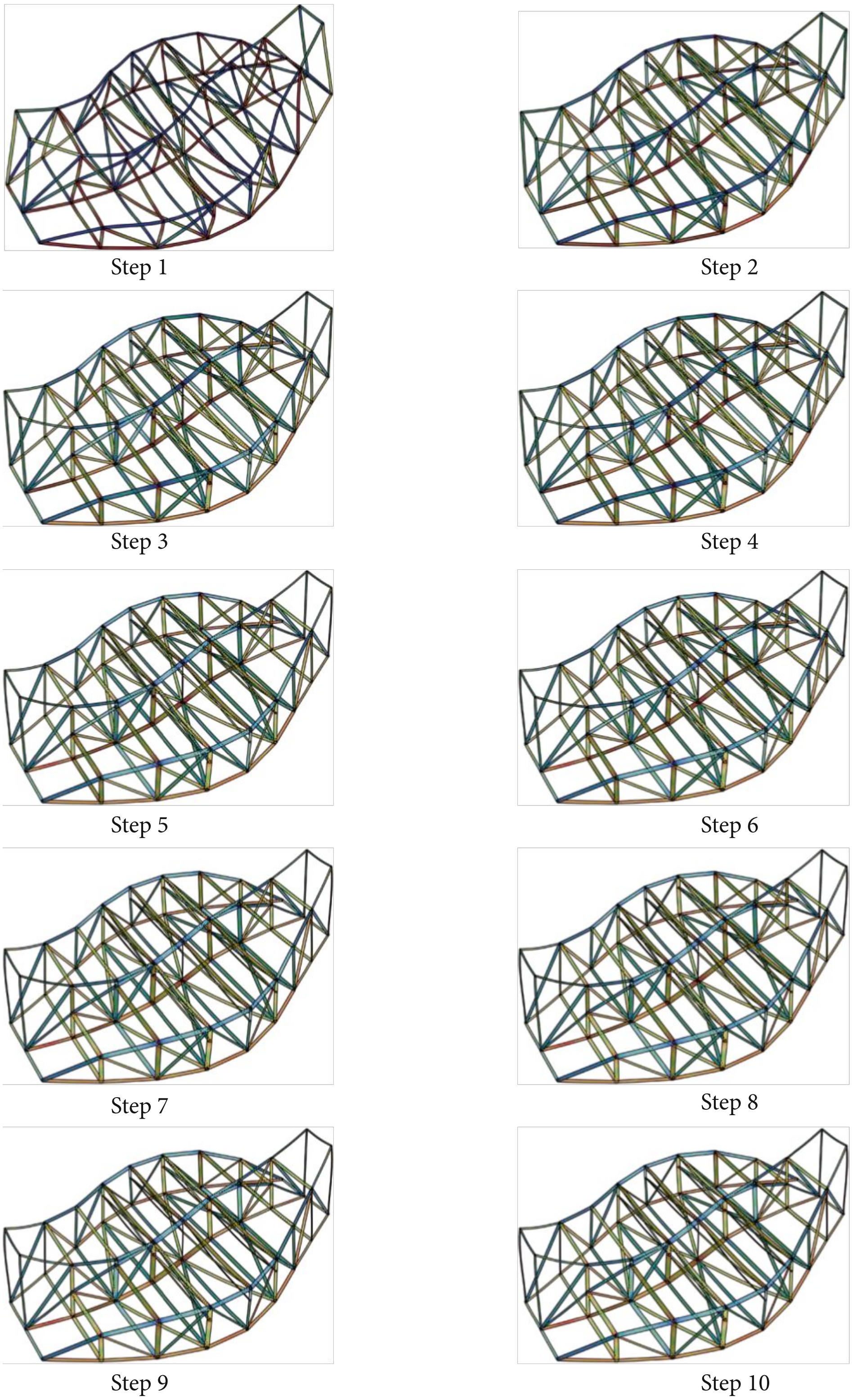


Fig. 4.3.33 The Progress of version 9 in 10 steps

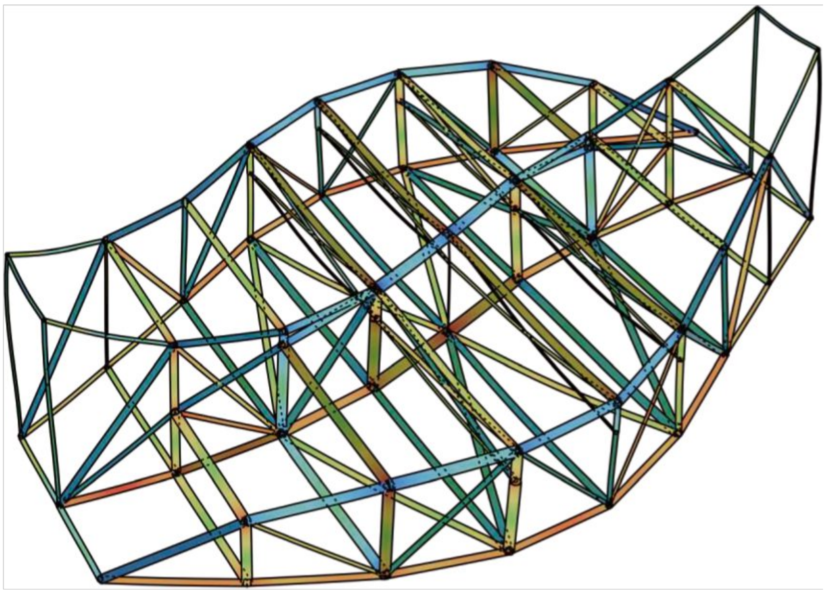


Fig. 4.3.34 The calculated version 9

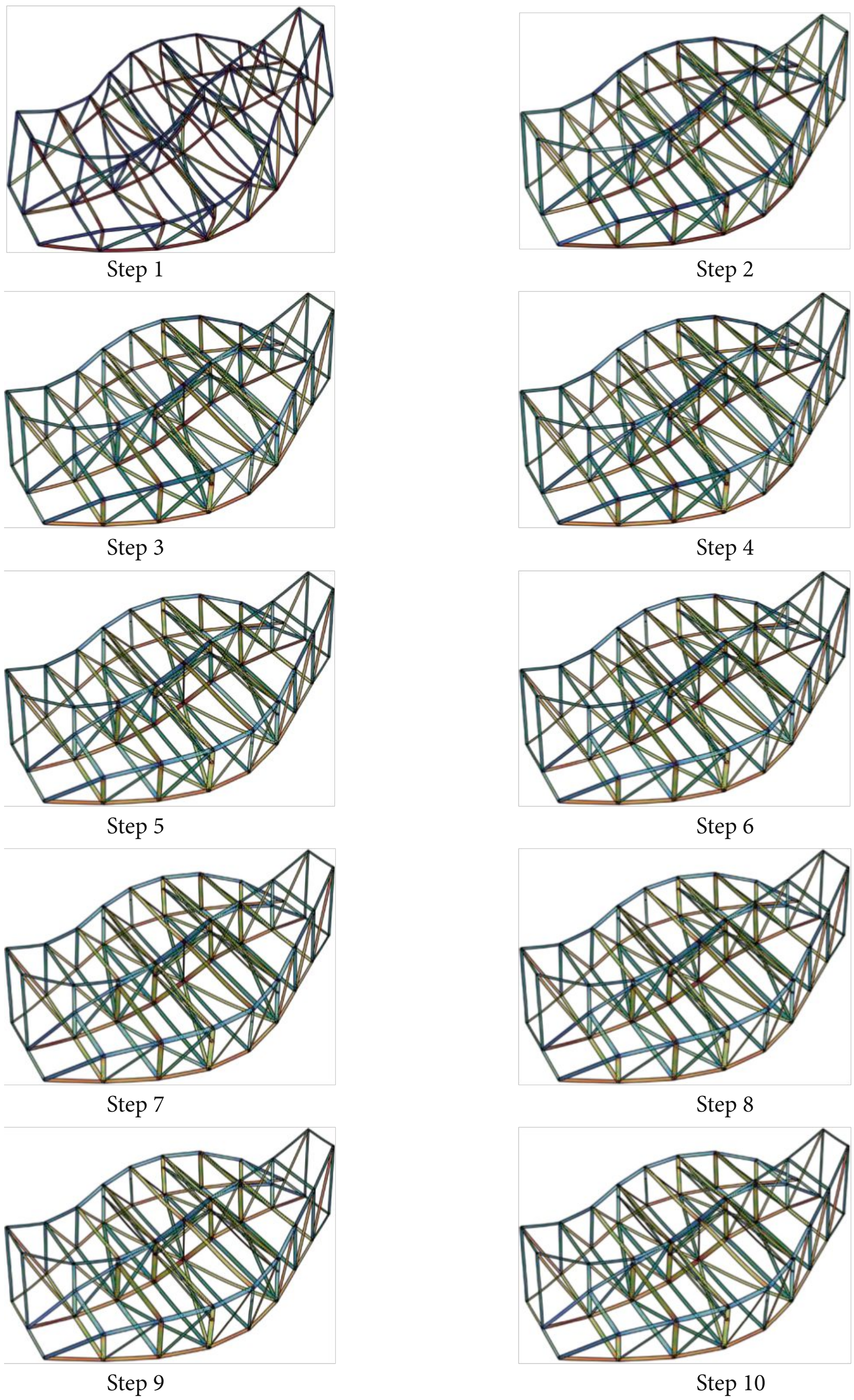


Fig. 4.3.35 The Progress of version 10 in 10 steps

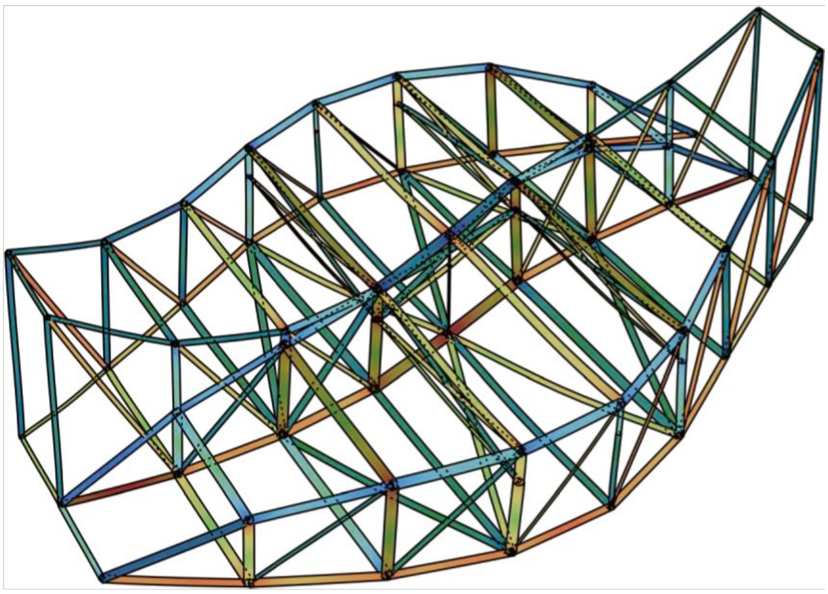


Fig. 4.3.36 The calculated version 10

FINAL RESULTS
MAIN LOAD-BEARING STRUCTURE

The final iteration of the building design, as illustrated in Figure 4.3.34, demonstrates significant improvements resulting from adjustments to the structure's width and the incorporation of diagonal supports.

These modifications have led to a highly optimized supporting framework, enhancing the overall stability and performance of the building.

Following extensive calculations conducted in Blender and subsequent analysis of the values obtained from Phänotyp, a decision was made to utilize three distinct types of steel-profiles throughout the entire structure.

Each profile was selected based on its ability to contribute to the building's strength and efficiency.

Profile 1: The first steel profile, designated as HD 483x428, is represented in blue in Figure 4.3.38. This profile was chosen for its robust dimensions, providing substantial support where it is most needed.

Profile 2: The second steel profile, HEB 280 (280x280), is depicted in green in Figure 4.3.38. This profile offers a balanced combination of strength and versatility, making it suitable for various load-bearing applications within the structure.

Profile 3: Lastly, the third steel profile, HEB 200 (200x200) profile, shown in brown in Figure 4.3.38, was selected for areas requiring a lighter yet still effective support solution.

The strategic selection of these profiles ensures that the building not only meets structural requirements but also optimizes material usage, contributing to overall efficiency. The final design reflects a careful balance between aesthetic considerations and engineering principles, resulting in a structure that is both visually appealing and structurally sound.
This comprehensive approach underscores the importance of iterative design and analysis in achieving an optimal architectural solution.

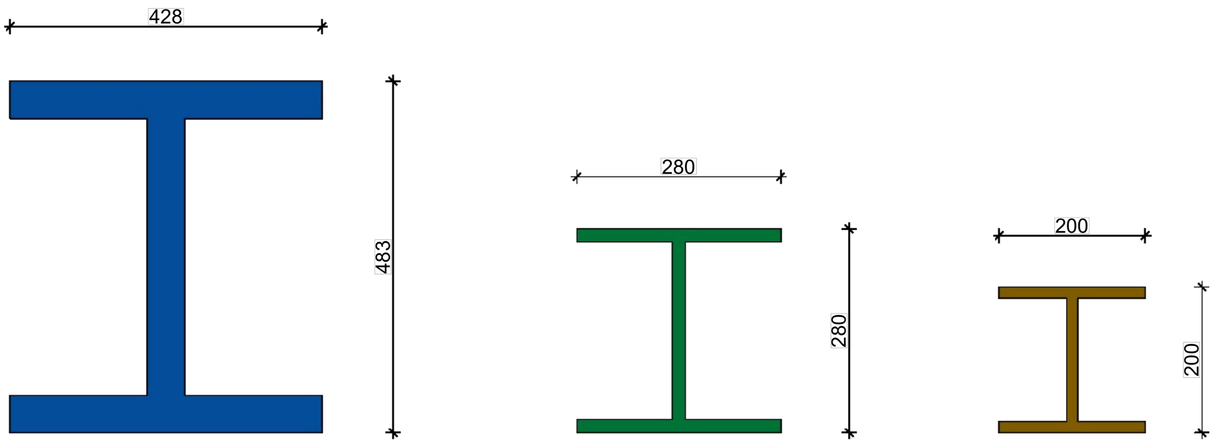


Fig. 4.3.37 The beams used for the load-bearing structure - Results of the calculations

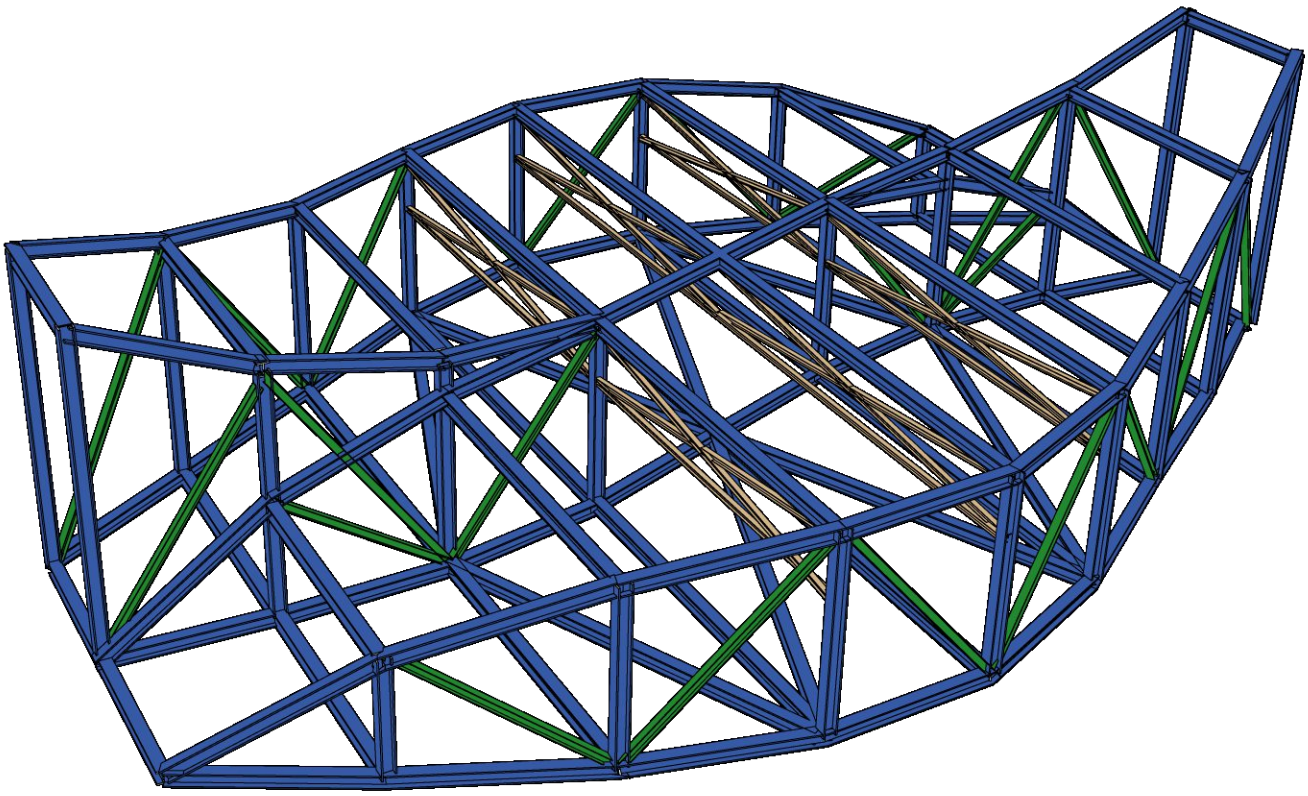


Fig. 4.3.38 3d of the beams used for the load-bearing structure

4.4 Structural steel cantilever

Structural steel cantilever

To achieve the desired open space and unobstructed views, the design incorporates a 2.5-meter cantilever overhang, strategically added to the calculated steel beams. This architectural choice emphasizes structural efficiency and aesthetic harmony. The cantilever beams extend outward, creating a larger usable area while eliminating intrusive columns along the sides. This not only enhances the bridge's aesthetic appeal but also allows for panoramic views through expansive windows, connecting the interior with the natural environment.

The concept underscores the importance of balance in design. By utilizing a cantilevered structure, the bridge achieves a harmonious relationship between form and function, maximizing usable space and creating a visually striking silhouette. This open design fosters a sense of freedom and accessibility, encouraging pedestrian engagement with the surroundings.

The use of steel beams is essential, as their high strength-to-weight ratio enables larger spans, maintaining an airy feel within the bridge. The engineered support structure ensures stability, even under varying loads, aligning with the philosophy of creating robust and reliable structures.

Additionally, the choice of steel contributes to sustainability, as it is both durable and recyclable. This commitment to environmentally friendly materials aligns with contemporary architectural practices that prioritize ecological responsibility.

In summary, the 2.5-meter overhang with mounted steel beams represents a strategic design choice that maximizes space, enhances safety, and contributes to the bridge's sustainability. By adhering to these principles, this design not only fulfills its functional purpose but also enriches the community, exemplifying how modern architecture can harmoniously blend with its surroundings while meeting diverse user needs.

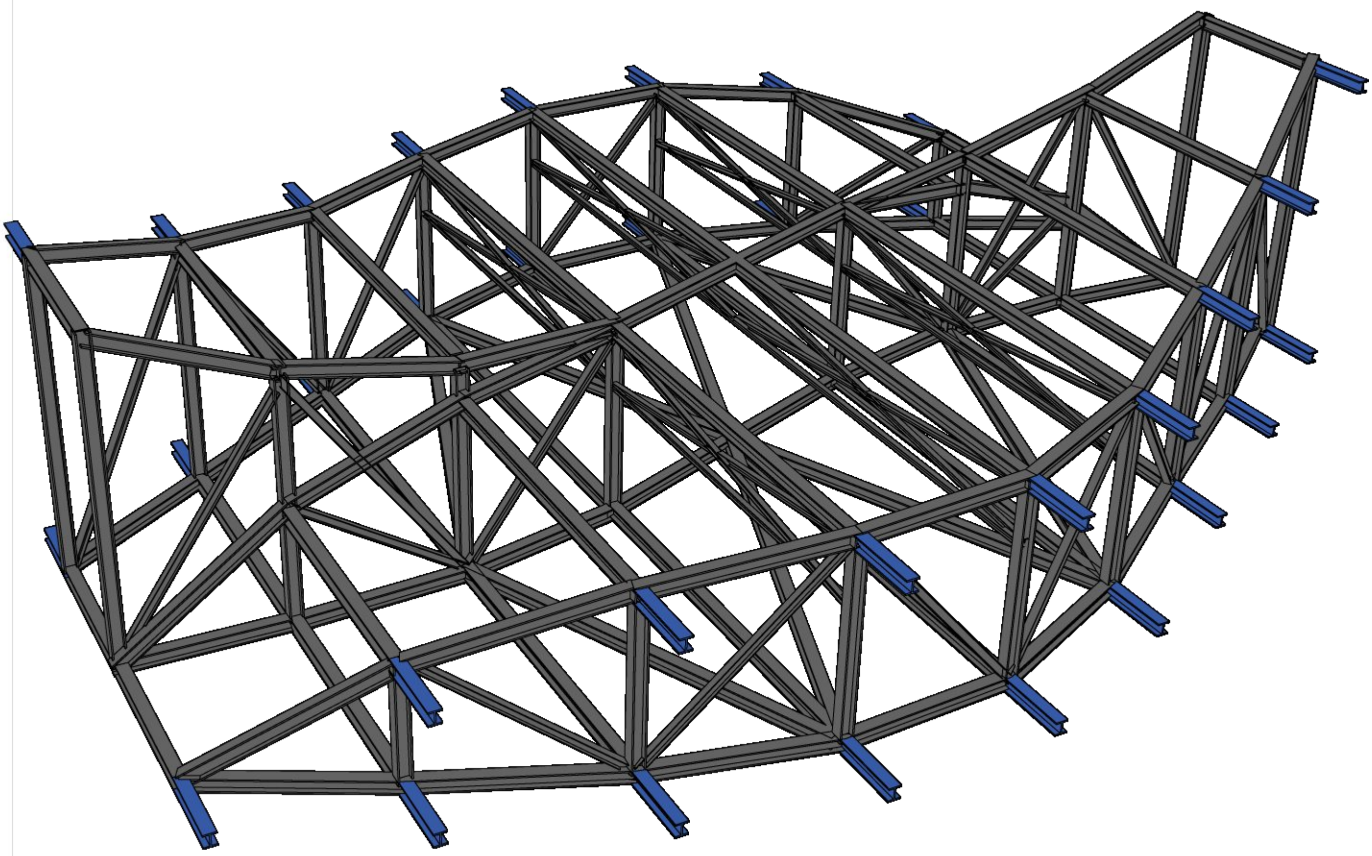


Fig. 4.3.39 The added beams on the sides shown in blue

4.5 Variety of purposes and functions

The multifunctional building is designed as a versatile and flexible space that caters to a wide range of community needs, fostering creativity, learning, and social interaction while offering picturesque views of the river.

Theater and Movie Screenings: A flexible theater space can be incorporated, equipped with audio-visual technology, allowing for a variety of configurations to accommodate live performances and movie screenings. This adaptable venue would host diverse events, from theatrical productions to film festivals, all while providing attendees with scenic views of the river.

Workshops and Seminars: Dedicated workshop rooms can be designed inside the building, to be versatile, facilitating hands-on learning experiences that can be easily reconfigured for different activities. These spaces can be utilized for a variety of educational programs, including art classes, cooking workshops, and professional development seminars, allowing community members to acquire new skills and knowledge in an inspiring environment with views of the river.

Conferences: A spacious and flexible conference hall can be included, capable of accommodating large gatherings and adaptable to various layouts. This area would be equipped with modern presentation technology and flexible seating arrangements, making it suitable for corporate meetings, community forums, and educational conferences, all while offering attendees the benefit of beautiful river views that enhance the atmosphere.

Art Exhibitions: An art gallery can be included to showcase local artists and rotating exhibitions, designed with flexibility in mind to accommodate different display needs. This space would provide a platform for creative expression and cultural appreciation, enhanced by large windows that frame the scenic river, encouraging community engagement with the arts.

Afterschool Activities for Children: A dedicated area for children would offer afterschool programs that include educational activities, arts and crafts, and recreational games. This flexible space would be designed to adapt to various activities, providing a safe and nurturing environment that supports children's development while allowing for views of the river to inspire creativity.

Community Meetings: The building would serve as a hub for community engagement, with flexible meeting spaces available for local organizations, clubs, and residents to gather. These adaptable areas would be designed to accommodate different group sizes and activities, with large windows that provide a calming view of the river, fostering a sense of belonging and encouraging participation.

In summary, this multifunctional building is designed to be a vibrant community center that meets diverse needs, promotes cultural enrichment, and strengthens community ties through its flexible spaces, all while offering stunning views of the river.

4.5.1 Sketches - how can the space be used?

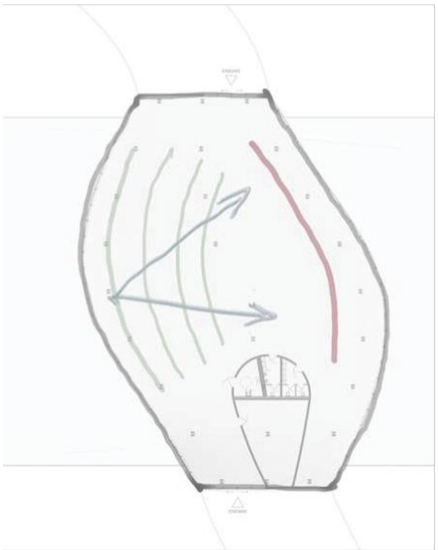


Fig. 4.5.1 Scenario 1 - Building is used as a theater and for movie screenings

Fig. 4.5.2 Scenario 2 - Building is used for workshops and seminars

Fig. 4.5.3 Scenario 3 - Building is used as a place to host conferences

Fig. 4.5.4 Scenario 4 - Building is used for courses and learning

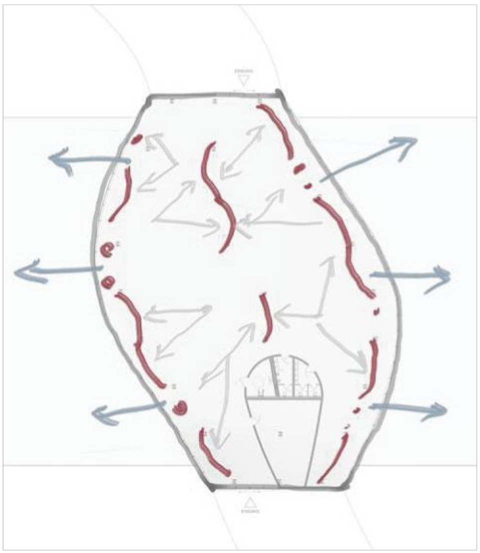


Fig. 4.5.5 Scenario 5 - Building is used for art exhibitions

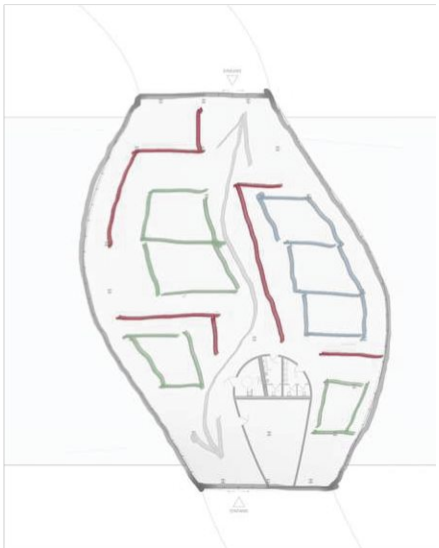


Fig. 4.5.6 Scenario 6 - Building is used for afterschool activities for children


Fig. 4.5.7 Scenario 7 - Building is used for community meetings


Fig. 4.5.8 Scenario 8 - Building is used as a coworking space

4.5.2 Scenarios of multifunctionality

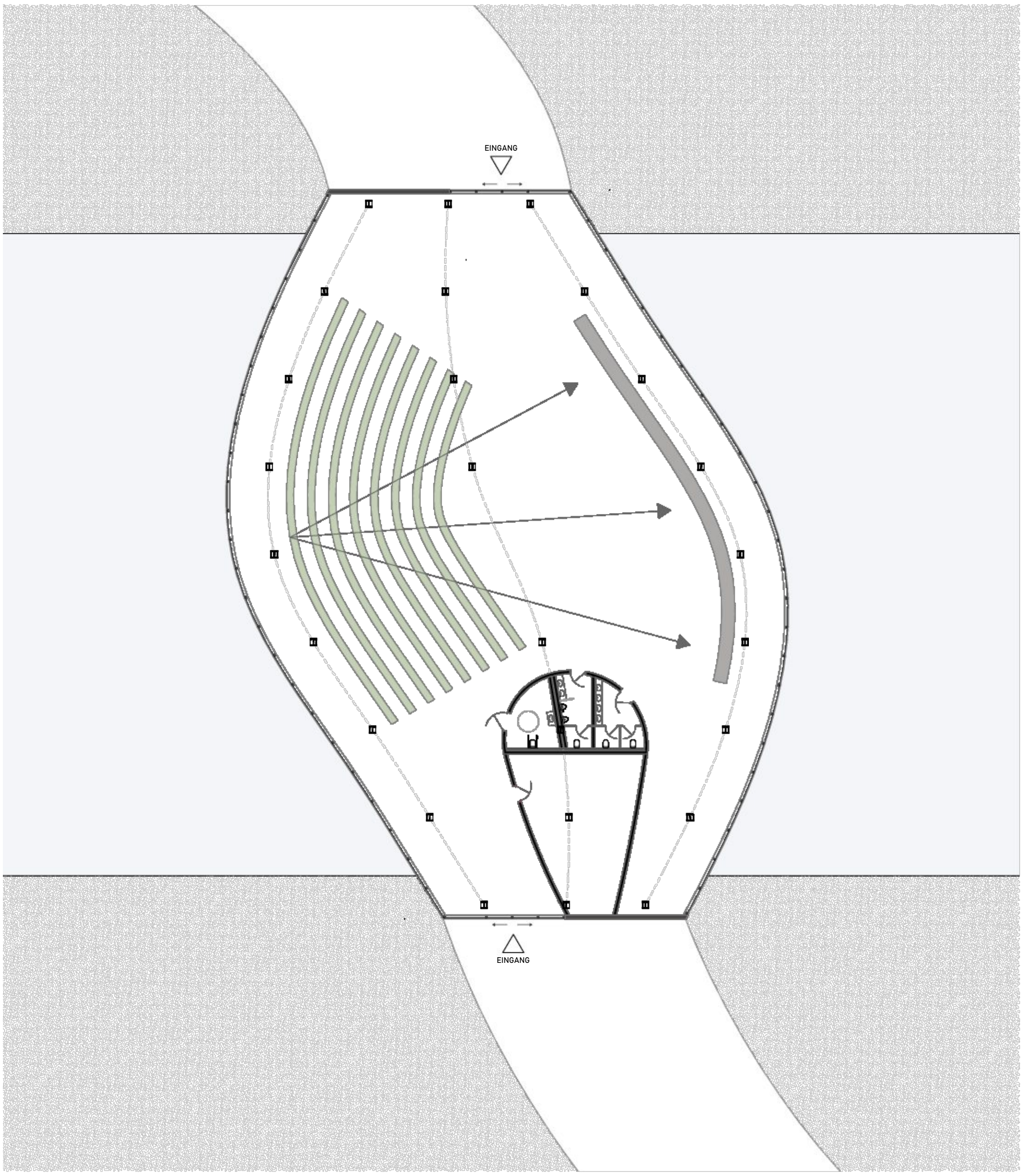


Fig. 4.5.2.1 Floor plan - Building is used as a theater and for movie screenings

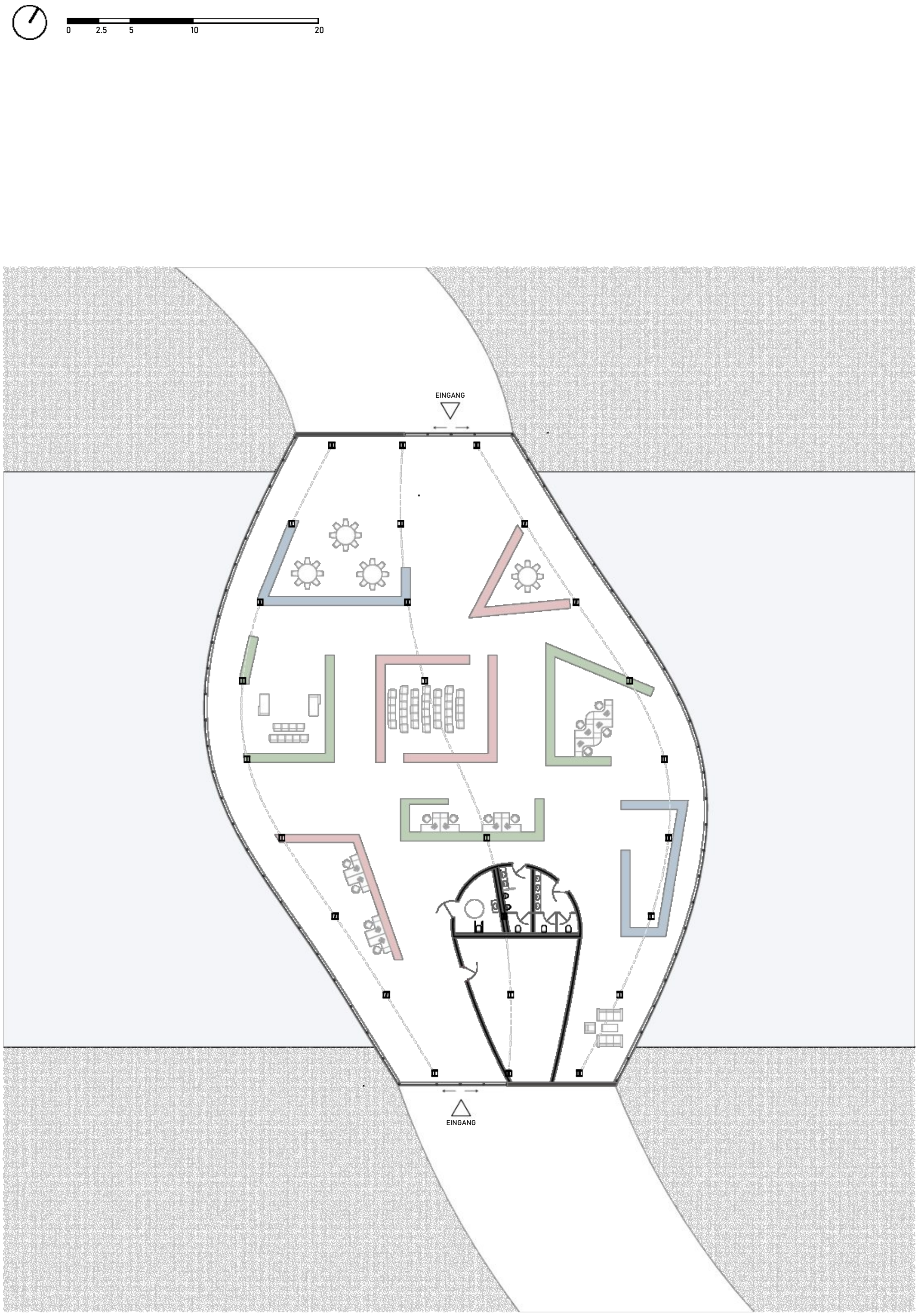


Fig. 4.5.2.2 Floor plan - Building is used for workshops and seminars

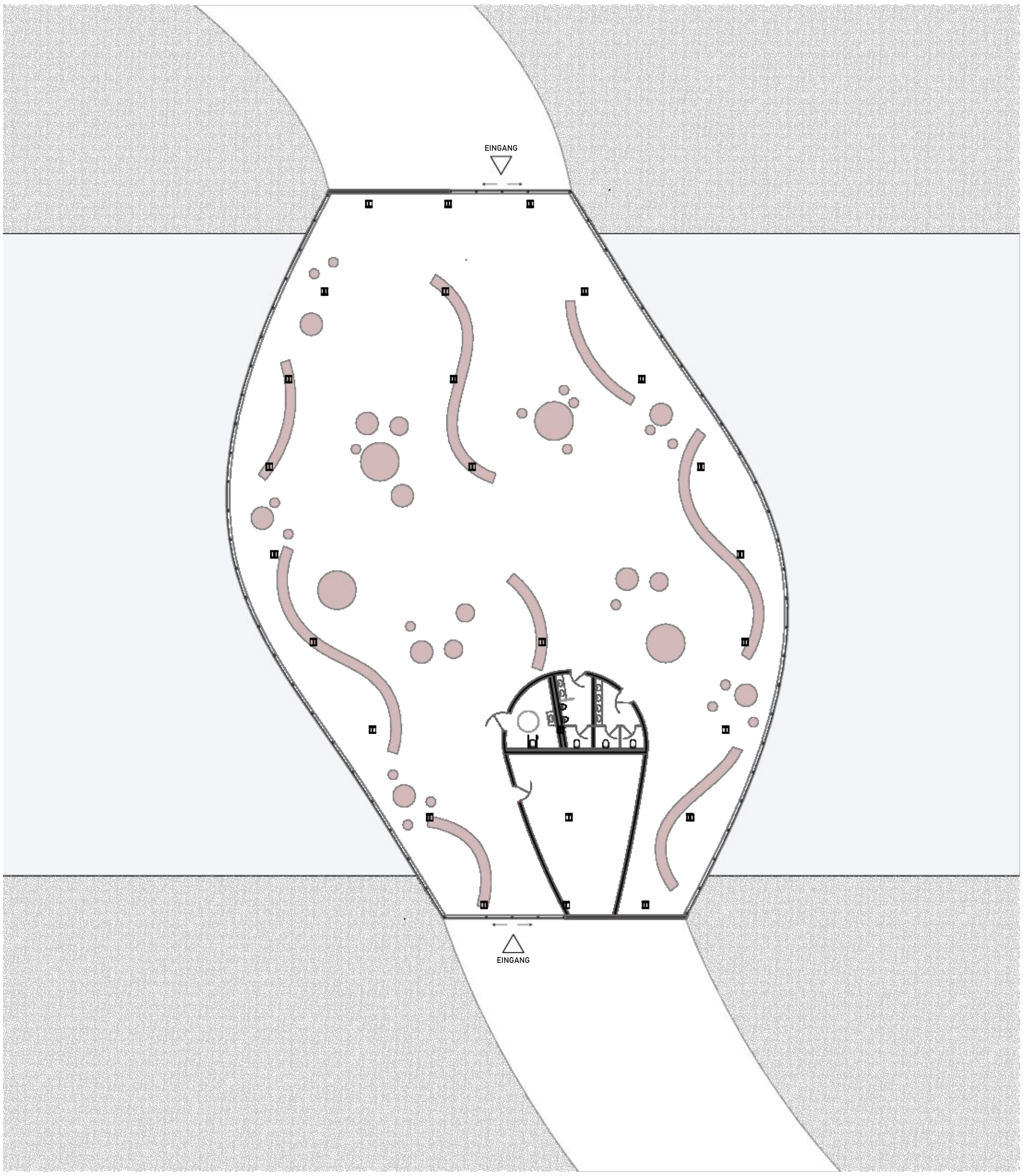


Fig. 4.5.2.3 Floor plan - Building is used for art exhibitions

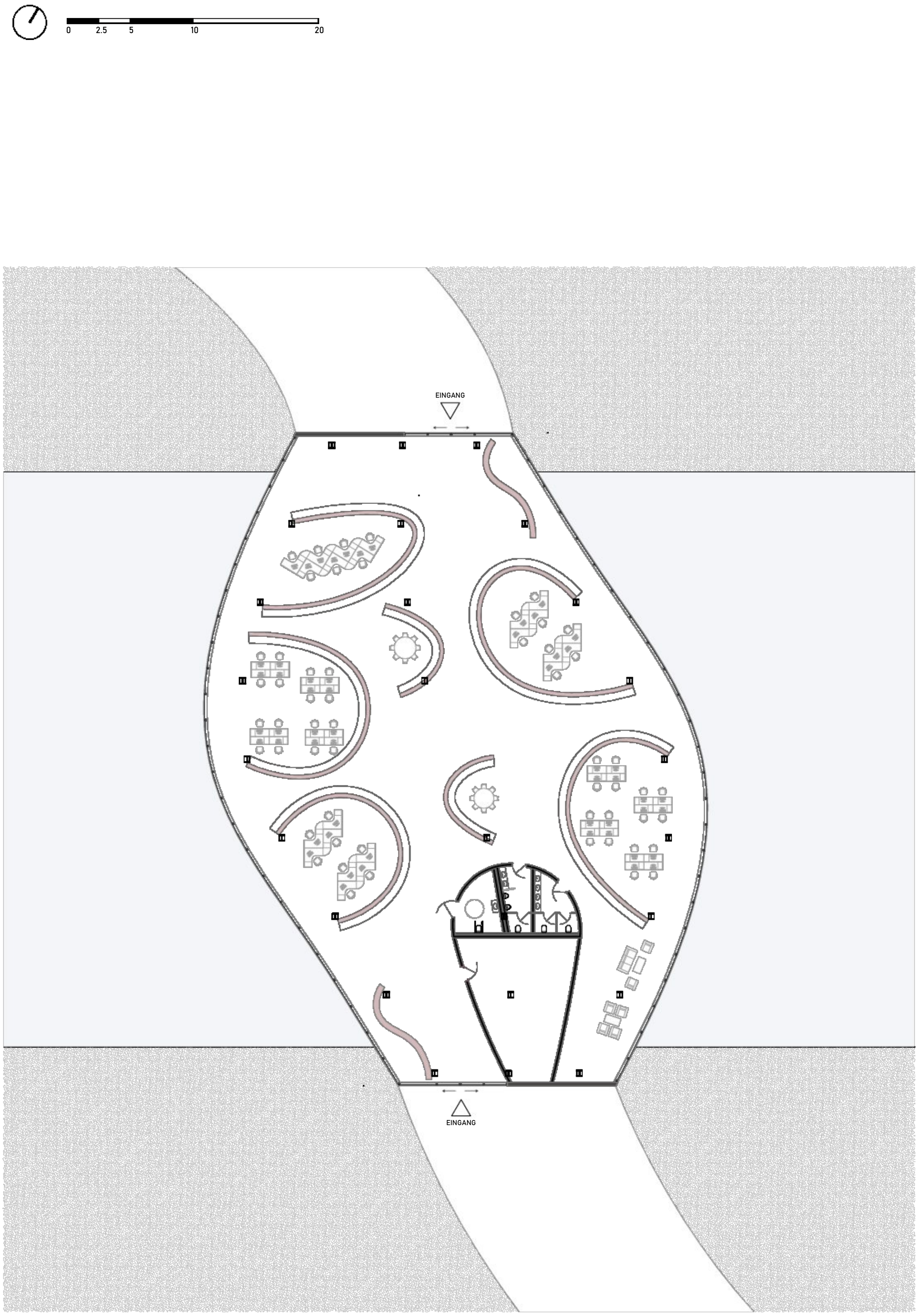


Fig. 4.5.2.4 Floor plan - Building is used as a coworking space

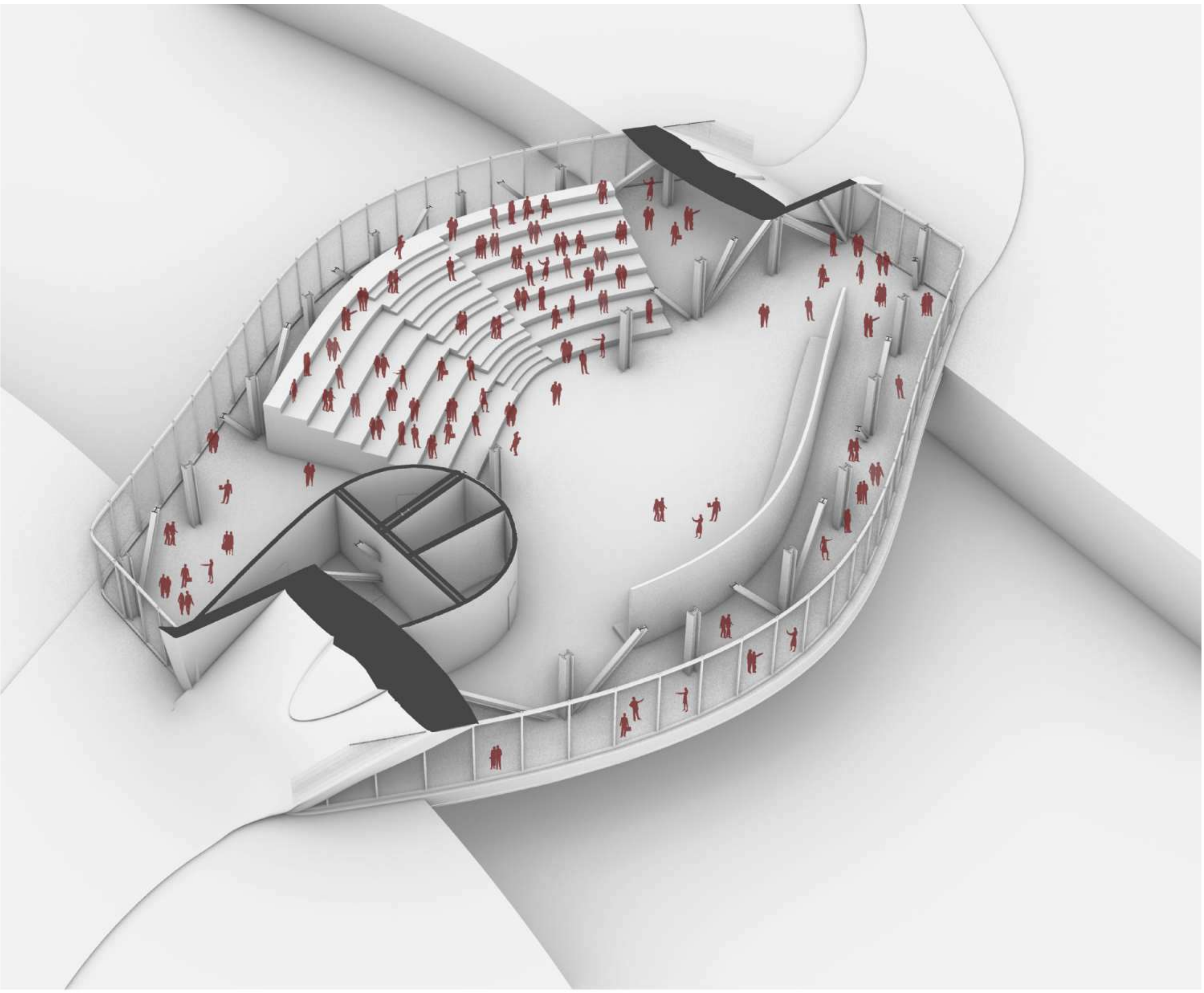


Fig. 4.5.2.5 3d Axo - Building is used as a theater and for movie screenings

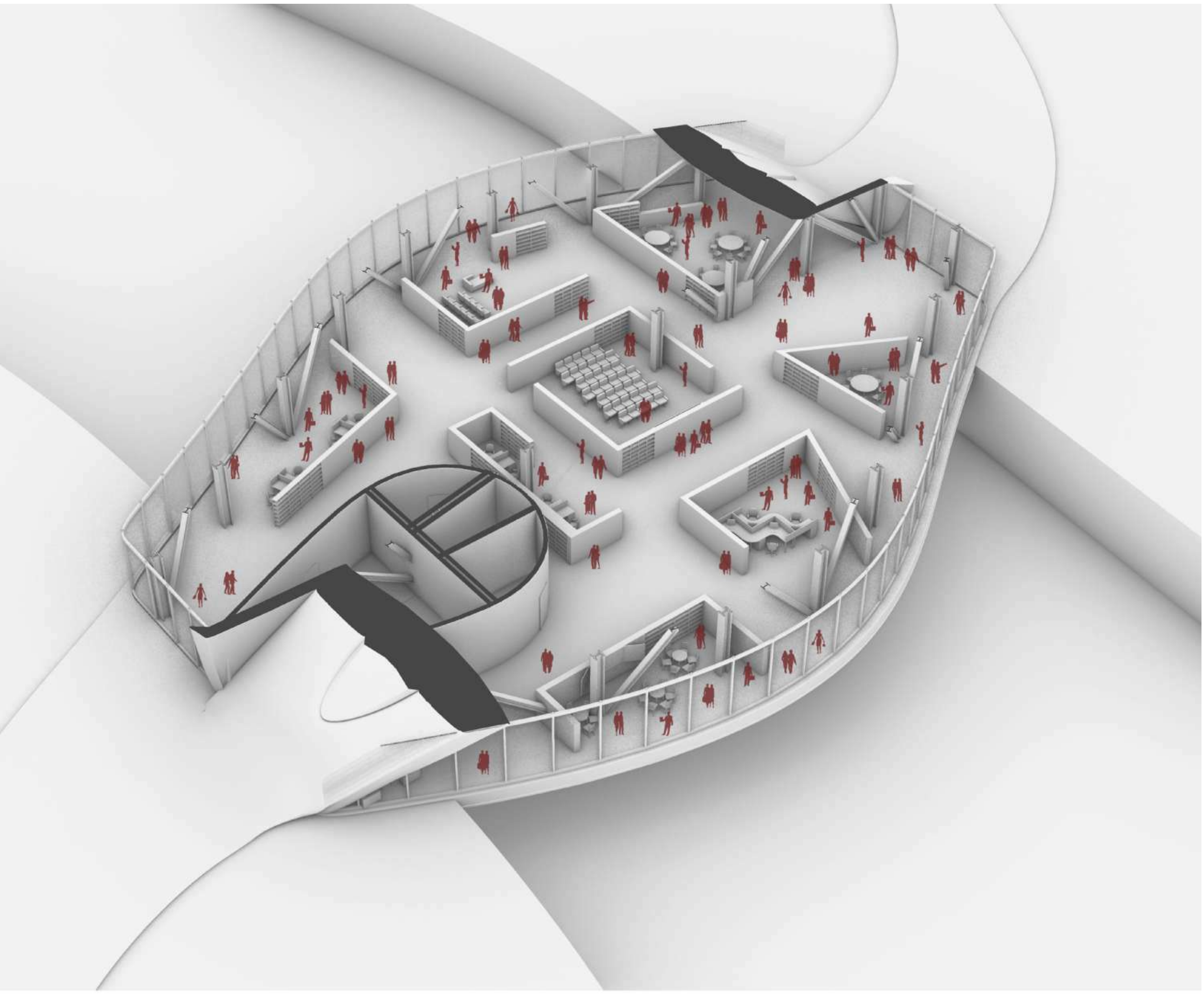


Fig. 4.5.2.6 3d Axo - Building is used for workshops and seminars

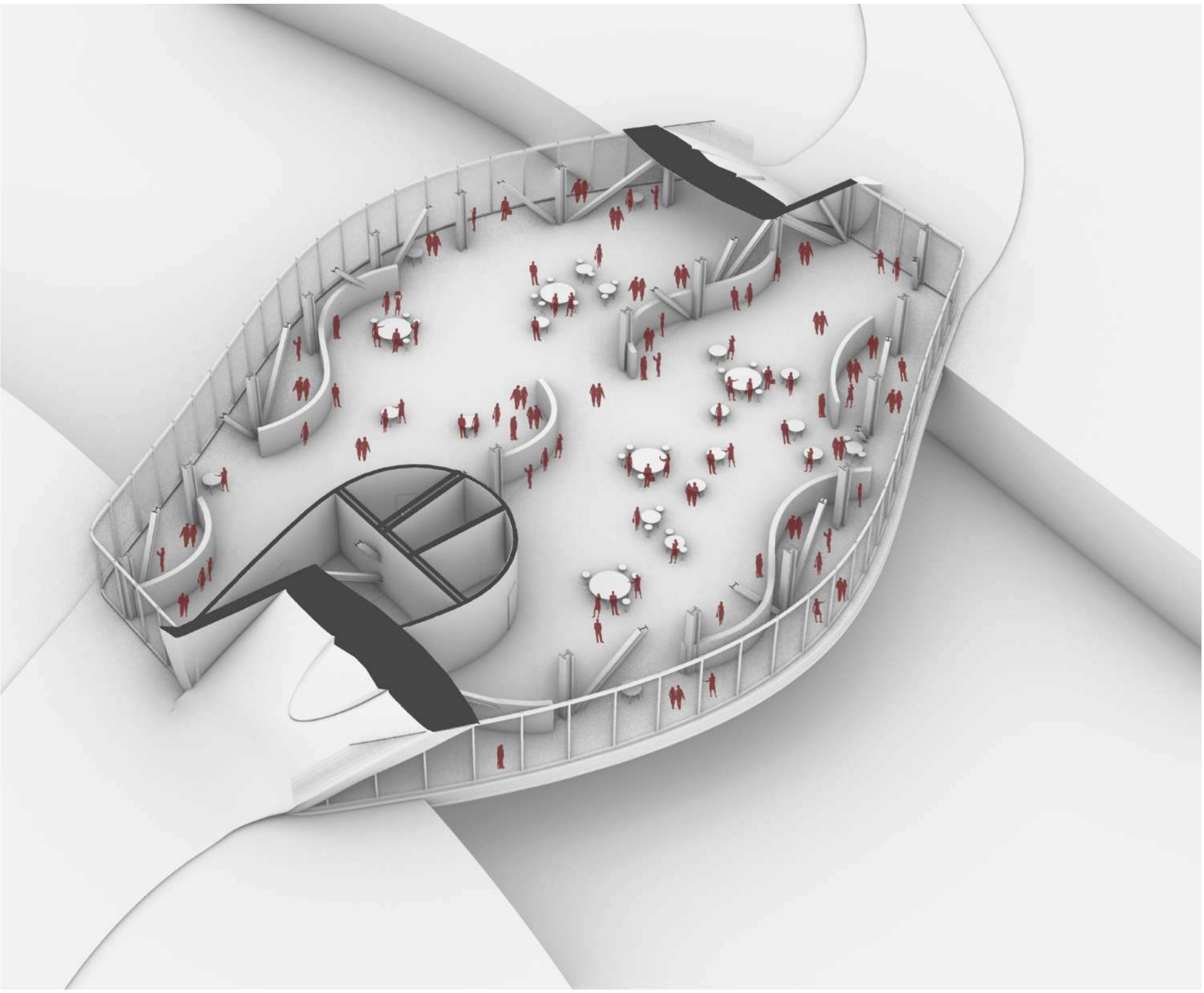


Fig. 4.5.2.7   3d Axo - Building is used for art exhibitions

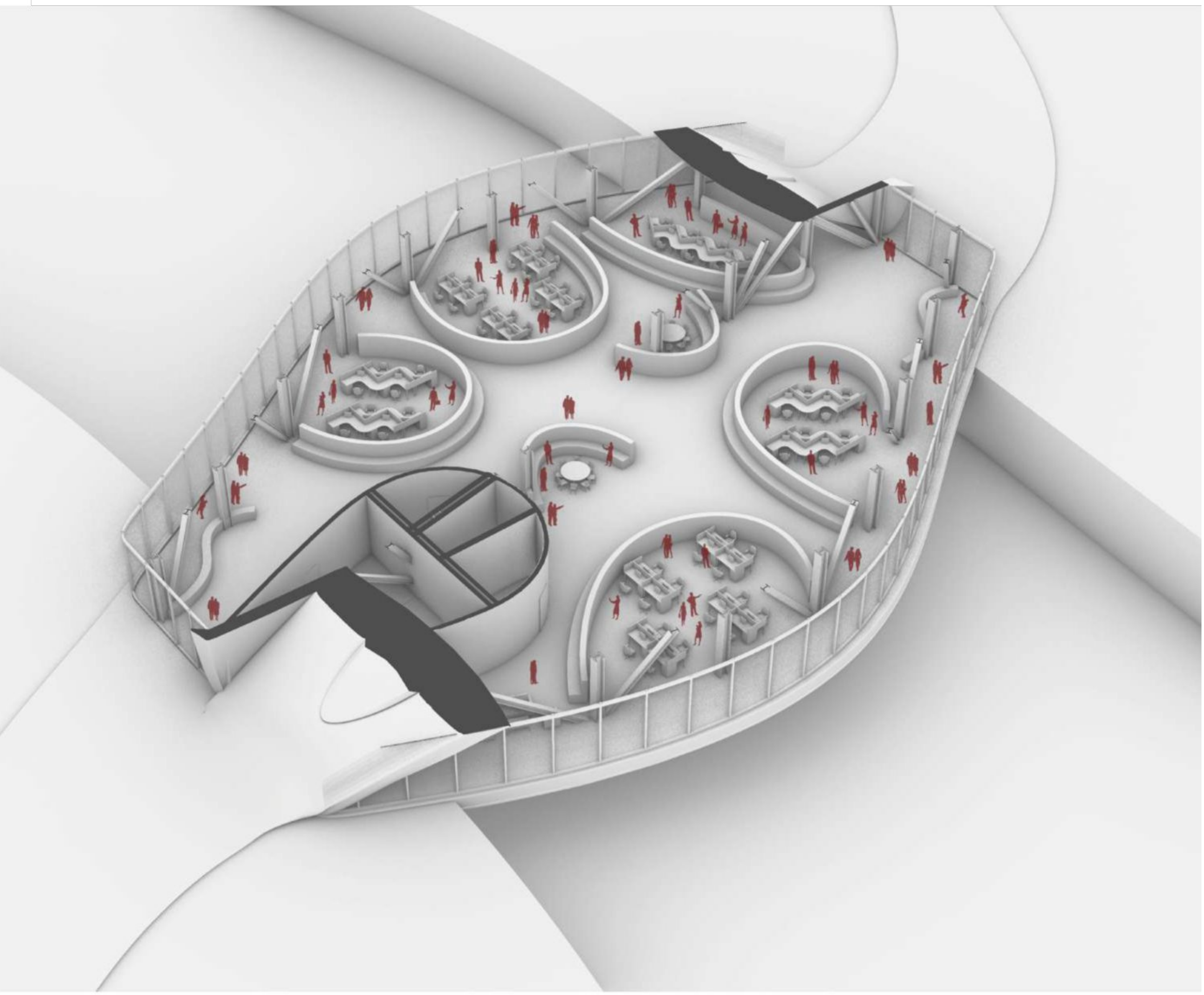


Fig. 4.5.2.8 3d Axo - Building is used as a coworking space

4.6 The surrounding pathways

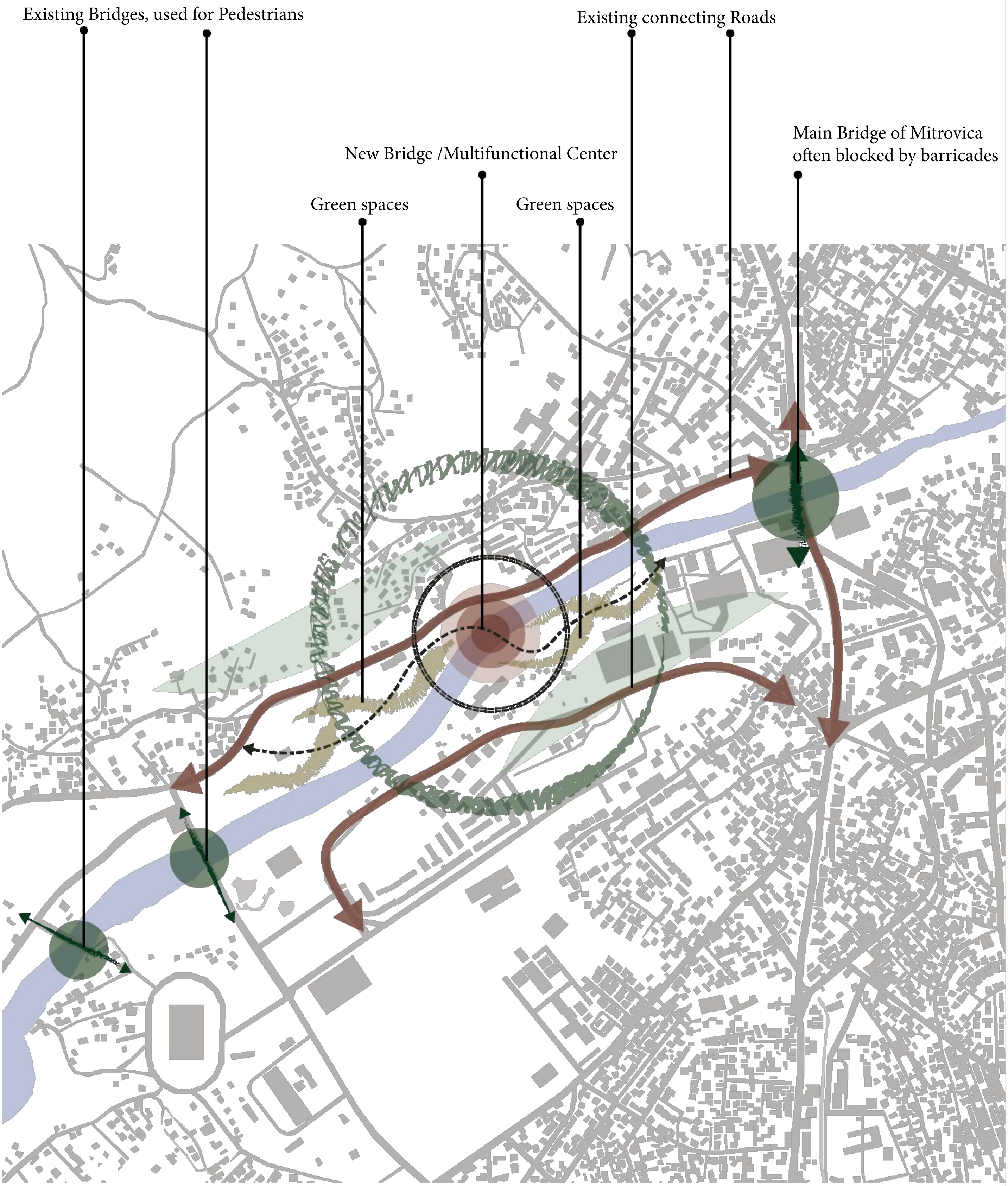


Fig. 4.6.1 Conceptual sketch of the usage of the area

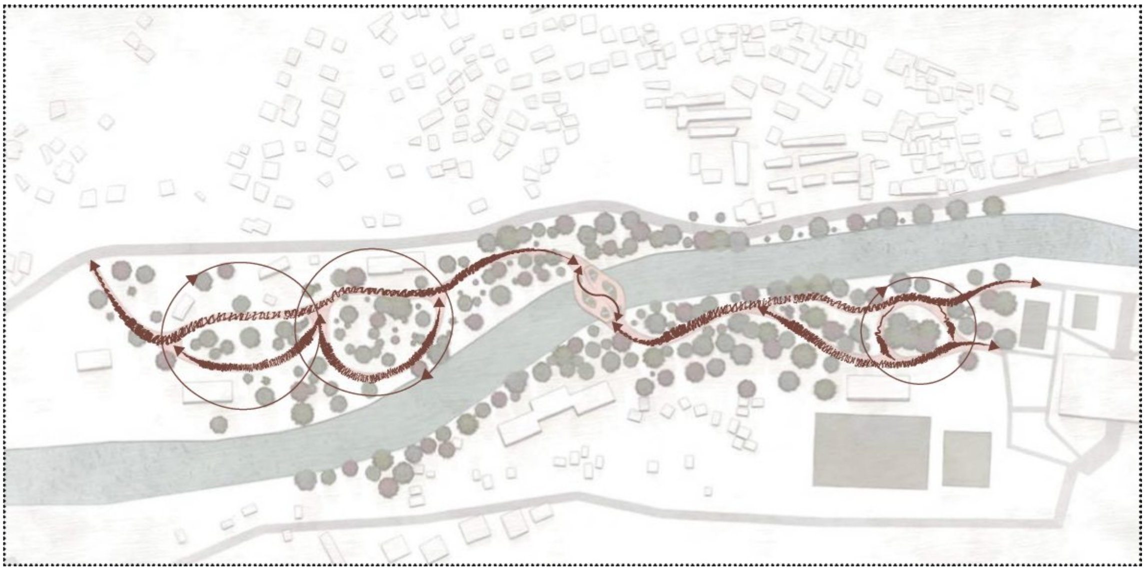


Fig. 4.6.2 Sketching the walking pathways

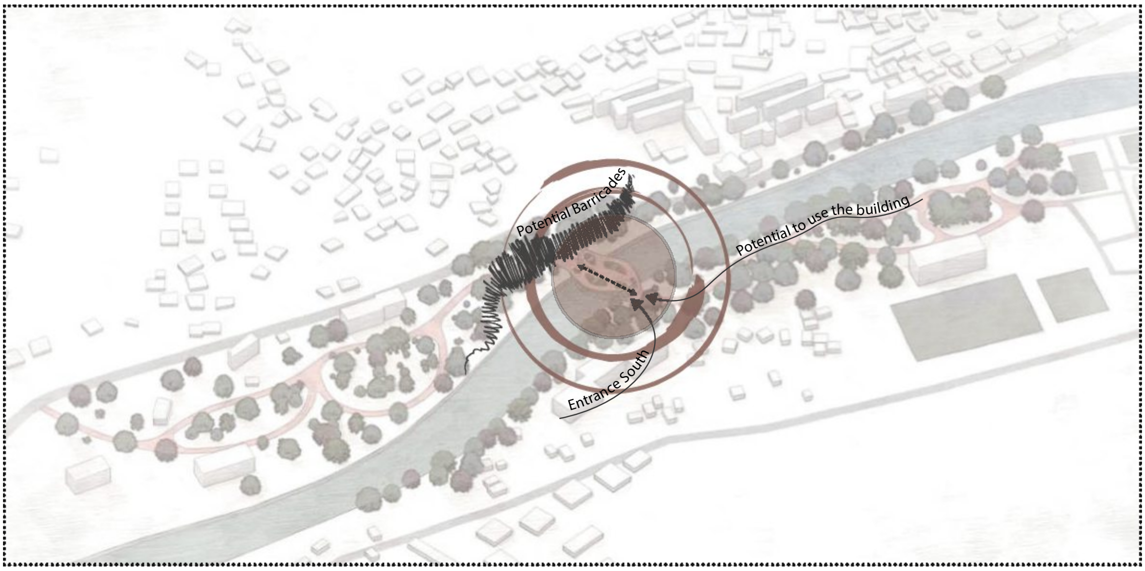


Fig. 4.6.3 Concept of using the space as a building, despite potential barricades

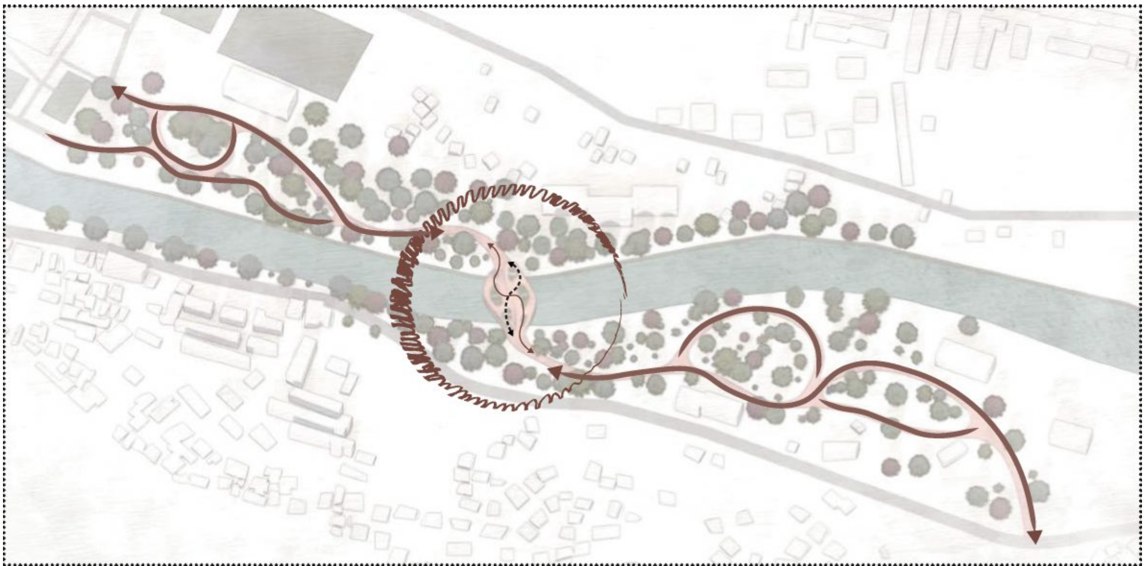


Fig. 4.6.4 Concept of using the roof of the building as a way to cross the river

05.

THE RESULT

5.1 Project on city context

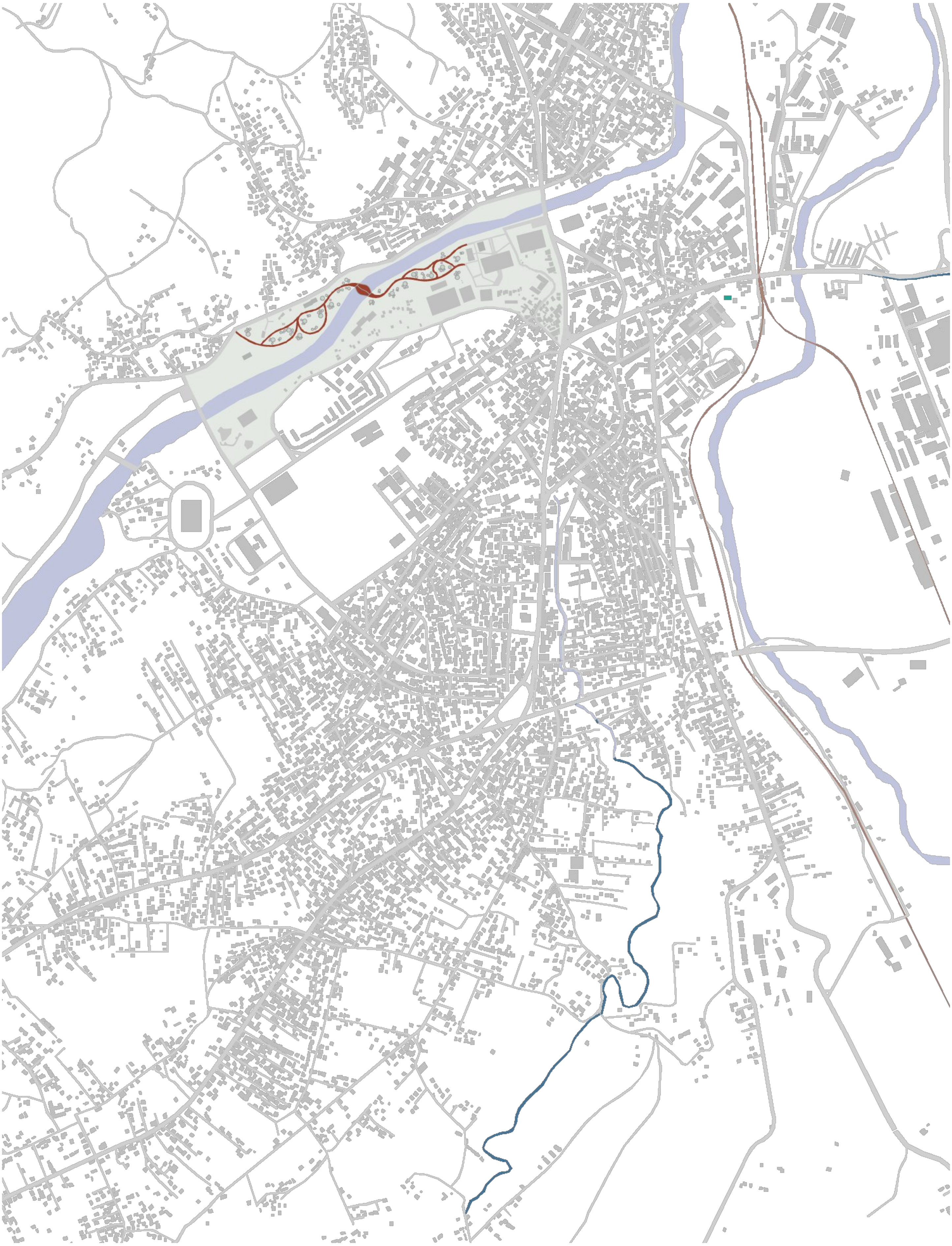


Fig. 5.1.1 Project on city context

5.2 Site plan

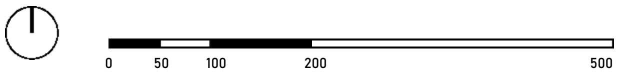


Fig. 5.2.1 Site plan

5.2 Site plan

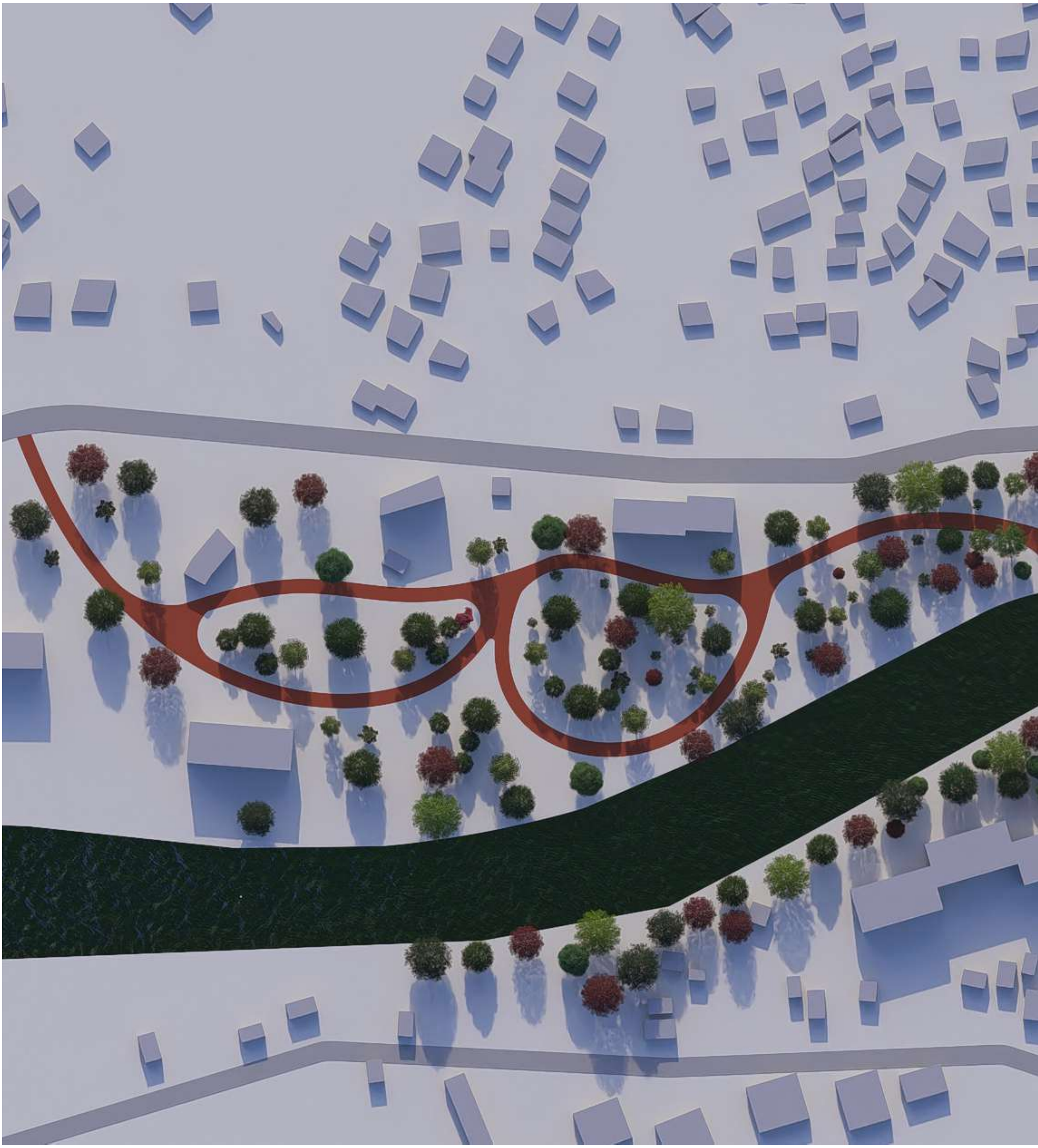
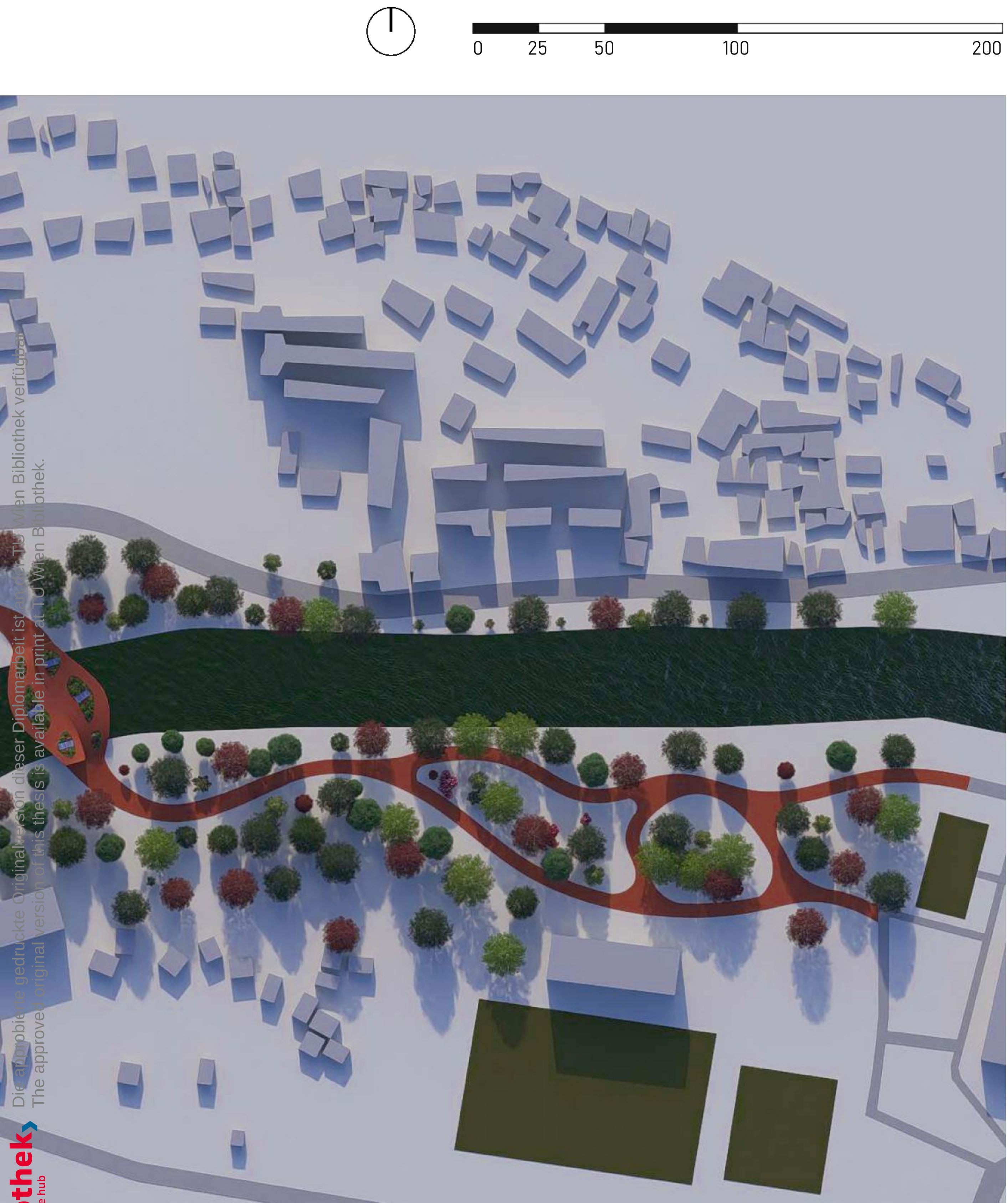


Fig. 5.2.2 Site plan


0
25
50
100
200

5.3 Roof plan

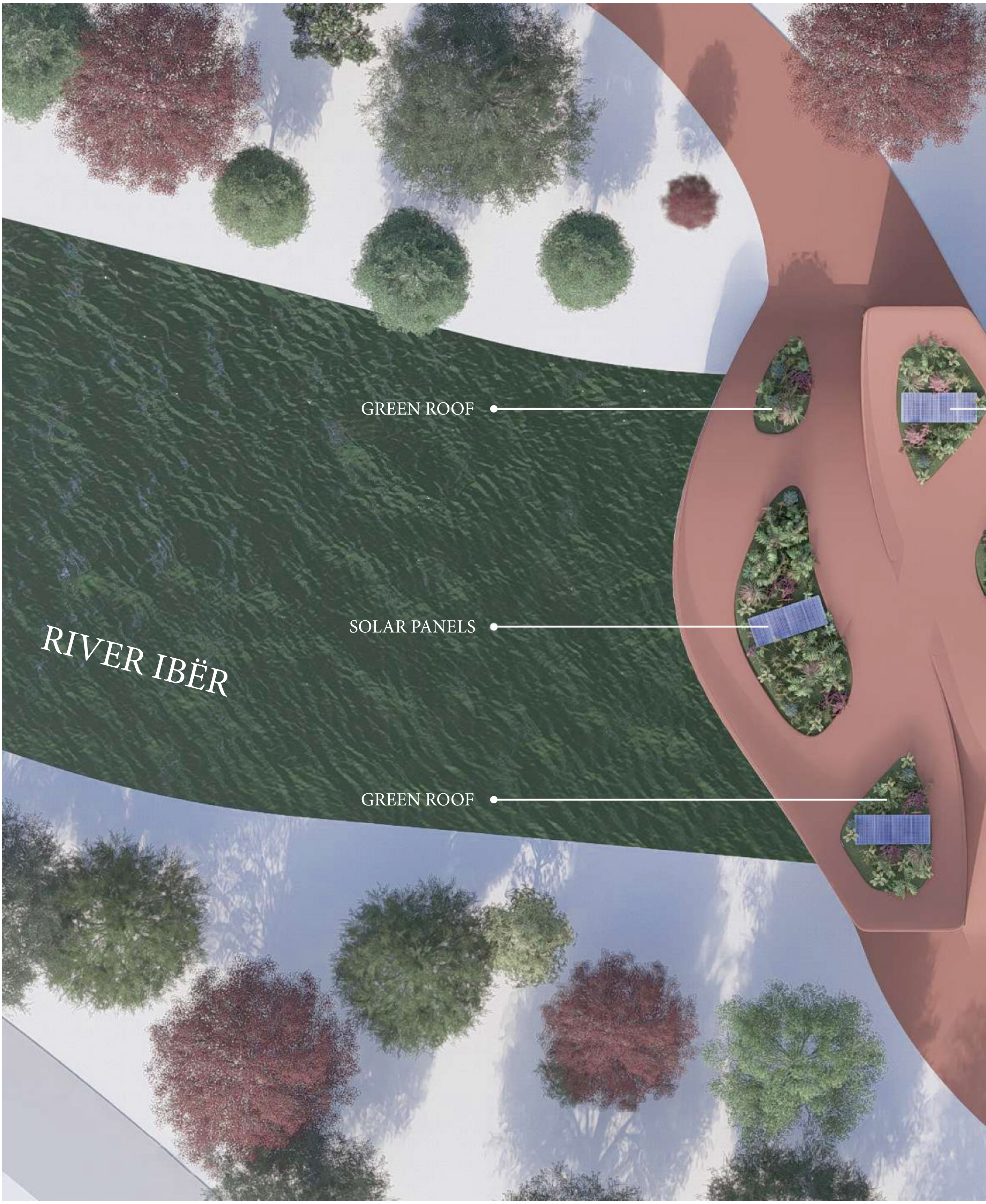
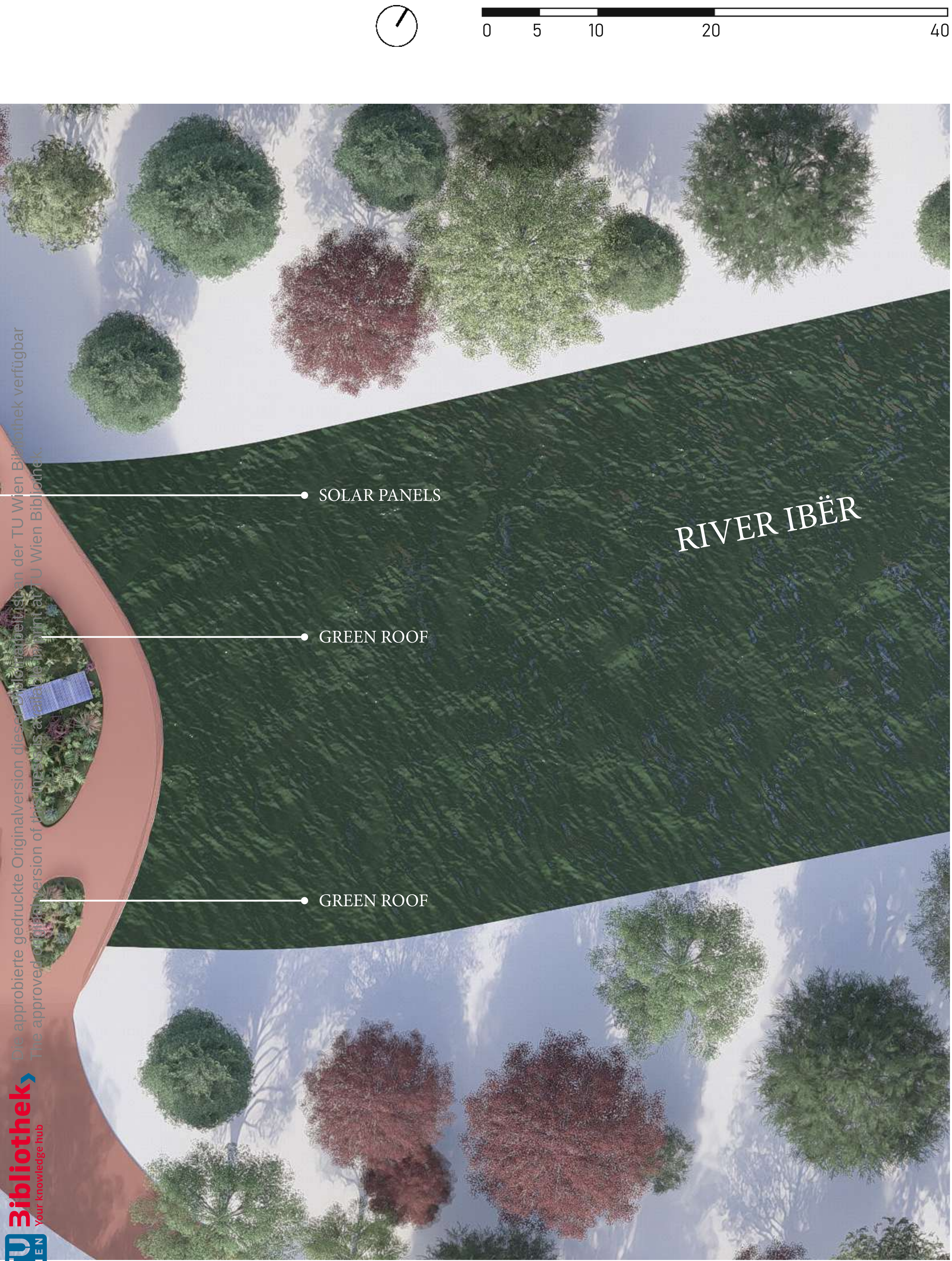


Fig. 5.3.1 Roof plan


0
5
10
20
40
SOLAR PANELS
RIVER IBËR
GREEN ROOF
GREEN ROOF

5.4 Ground floor

ca. 70m^2	1.	LEARNING AREA
ca. 250m^2	2.	EXHIBITION AREA
ca. 70m^2	3.	LEARNING AREA
ca. 100m^2	4.	KITCHEN & COFFEE AREA
ca. 14m^2	5.	ACCCESSIBLE RESTROOM
ca. 11m^2	6.	MEN´S RESTROOMS
ca. 13m^2	7.	WOMEN´S RESTROOMS
ca. 70m^2	8.	STORAGE ROOM
ca. 50m^2	9.	ENTRANCE AREA
ca. 50m^2	10.	ENTRANCE AREA
ca. 297m^2	11.	PAINTING/READING/SITTING AREA
ca. 297m^2	12.	PAINTING/READING/SITTING AREA
ca. 230m^2		CIRCULATION WAYS
1522m^2		TOTAL

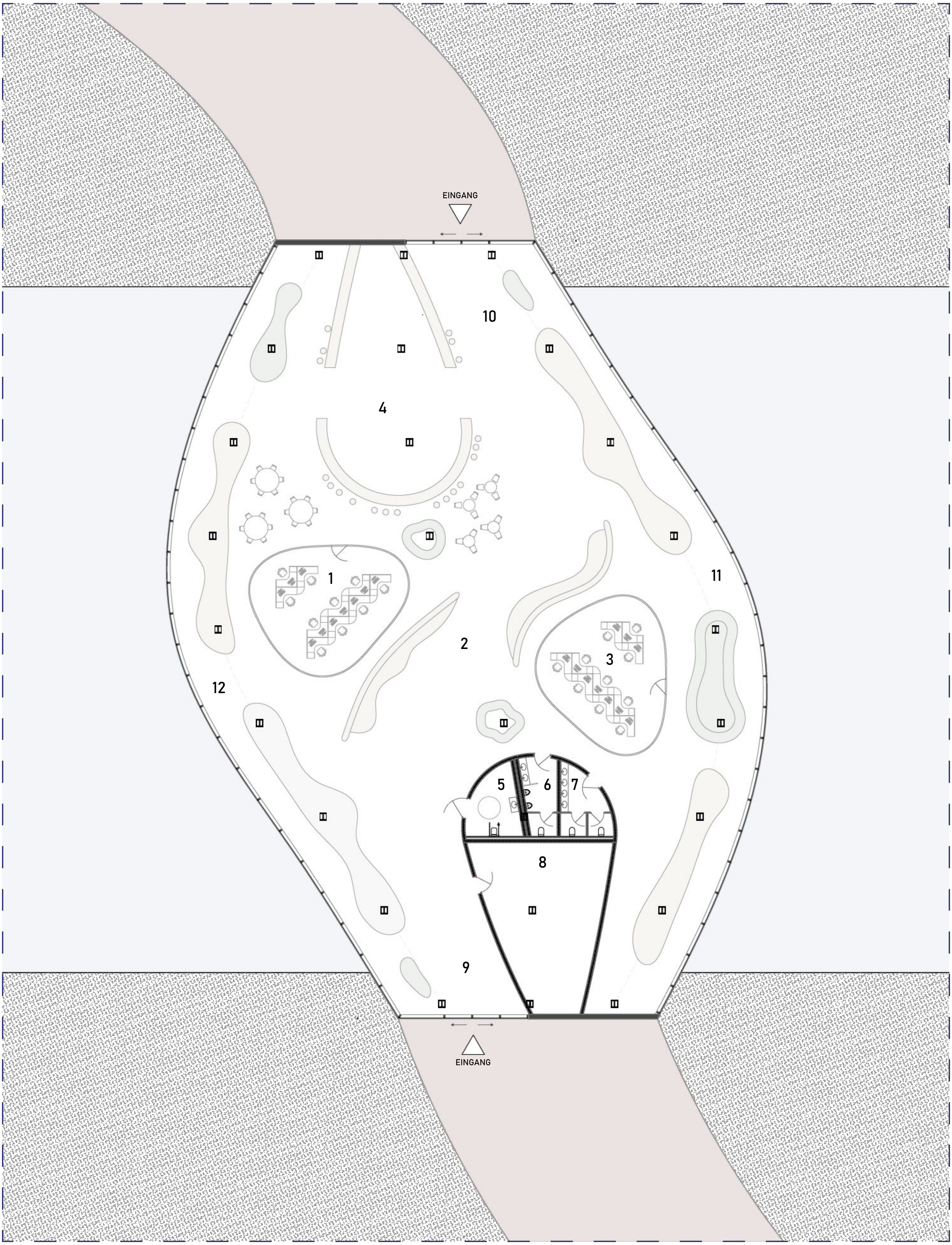
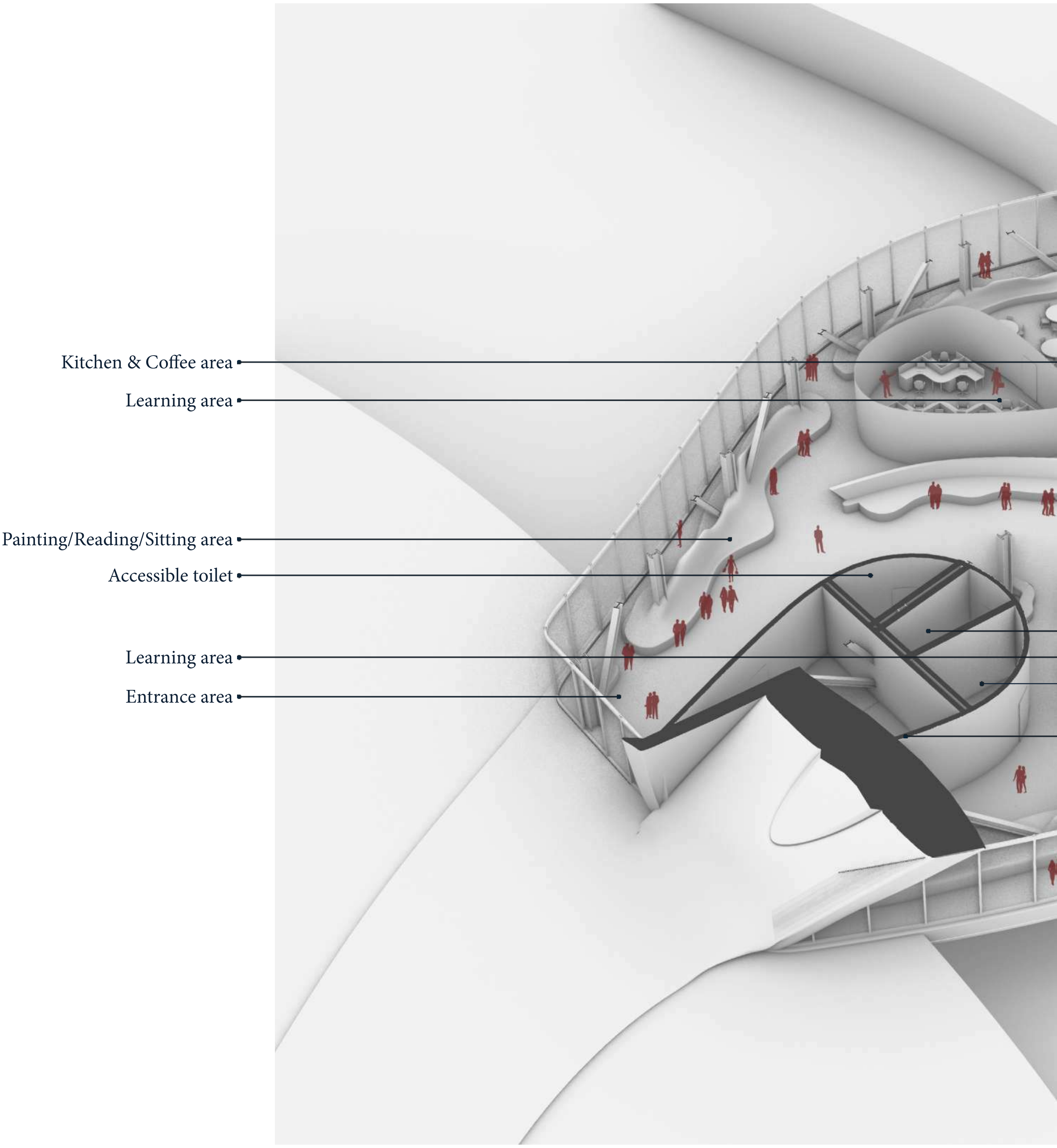


Fig. 5.4.1 Ground floor

5.4.1 Ground floor - Axo



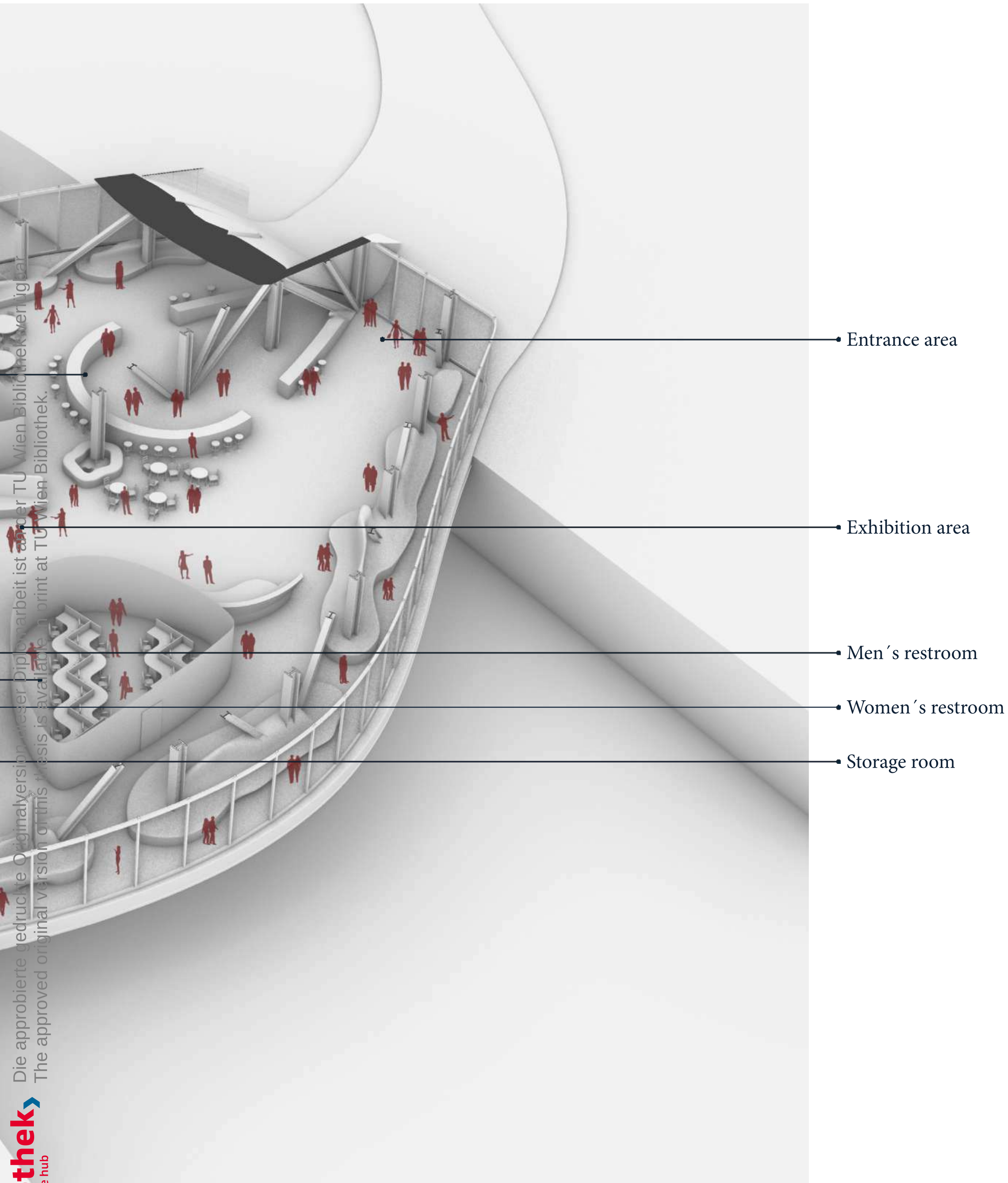
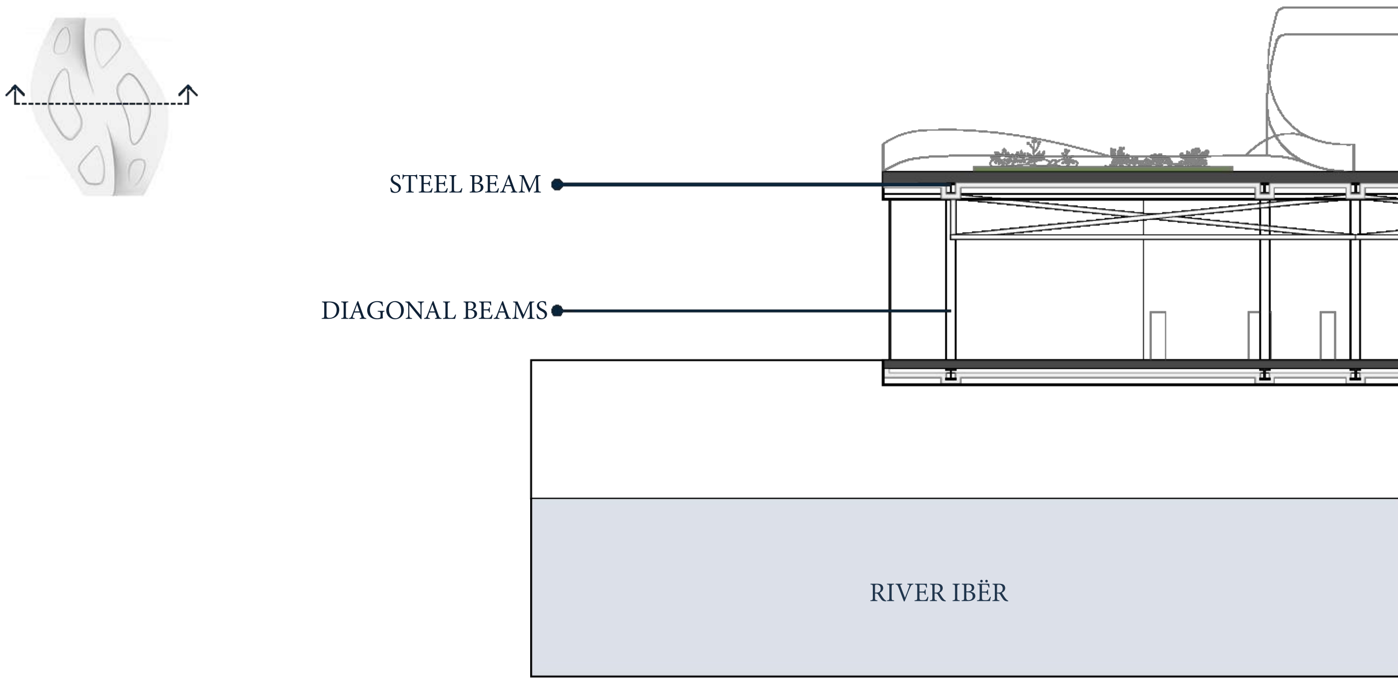
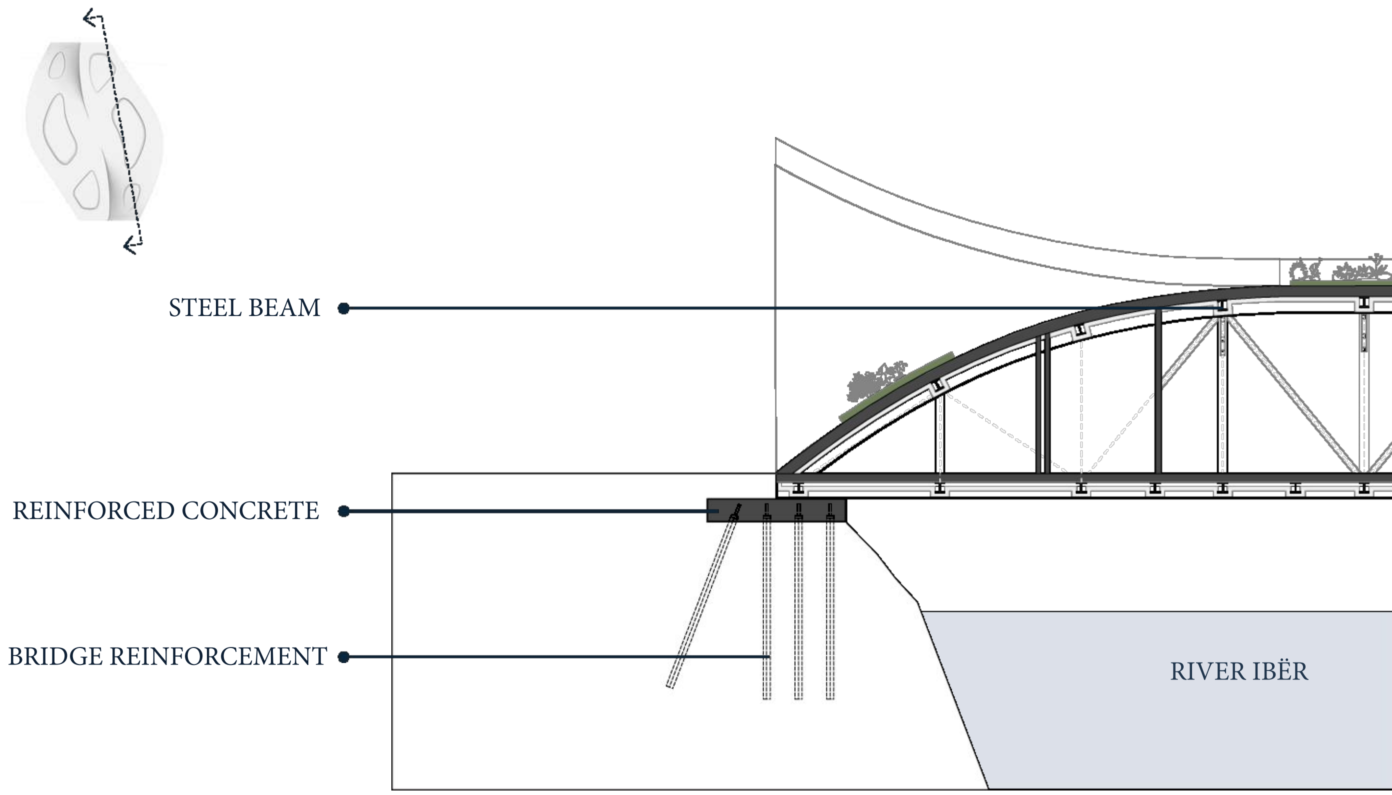


Fig. 5.4.1.1 Axo 3d - Ground floor

5.5 Sections 2d





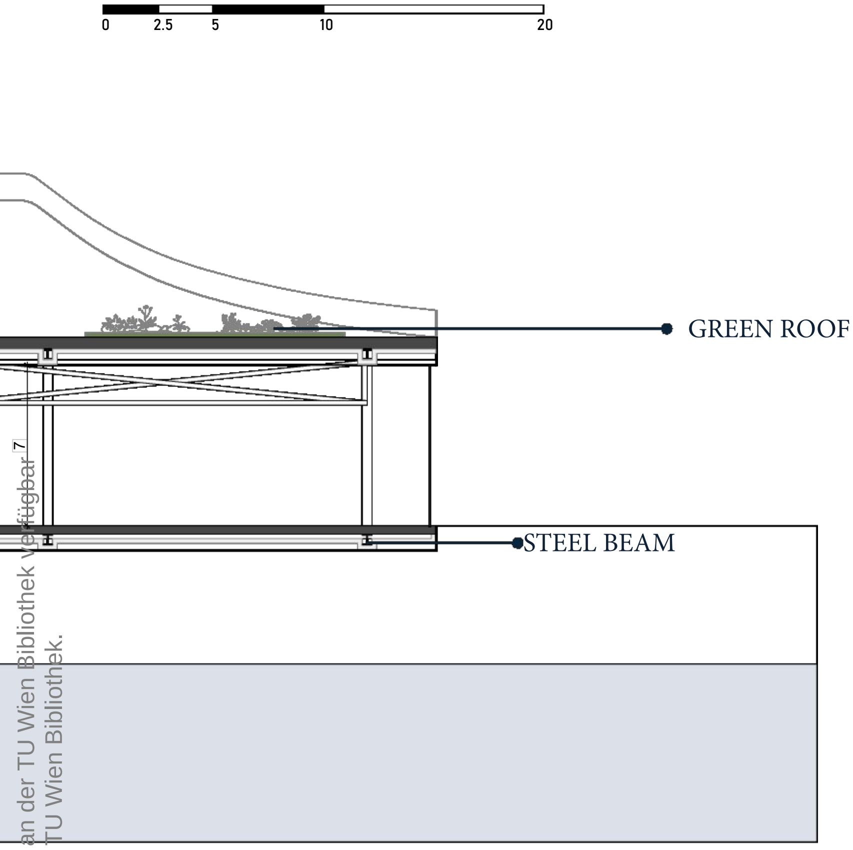


Fig. 5.5.1 Section 1-1

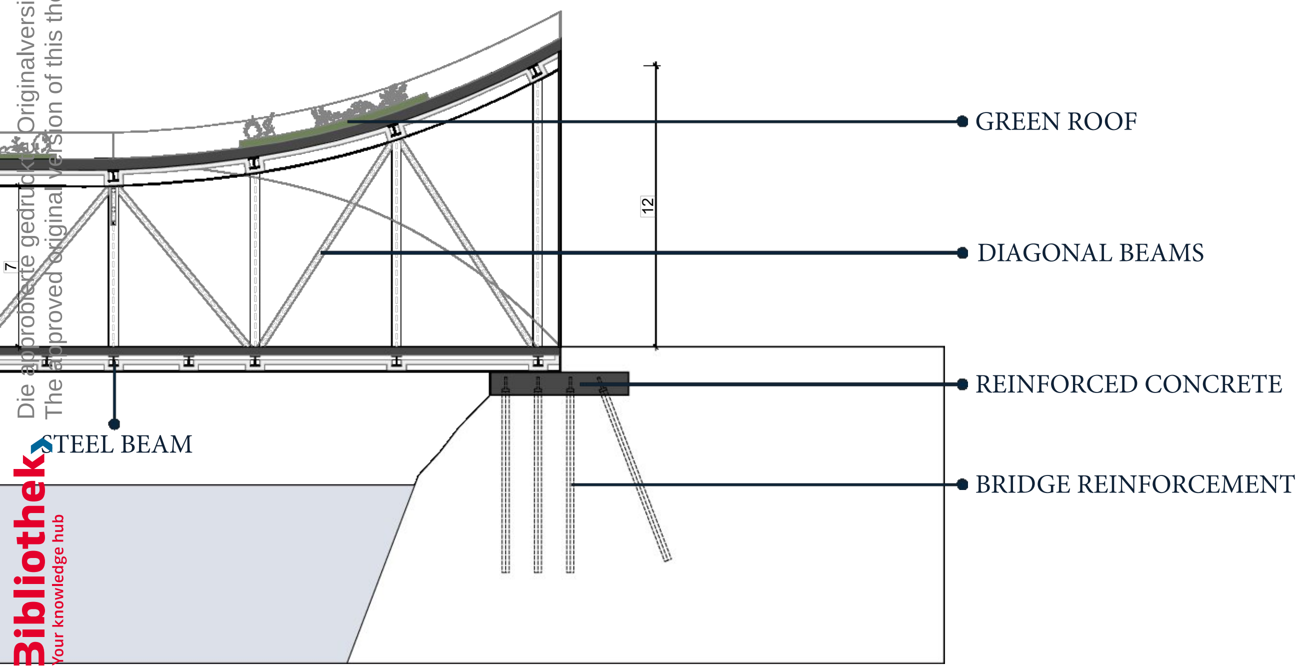
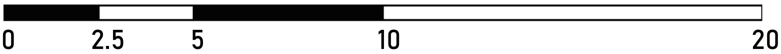
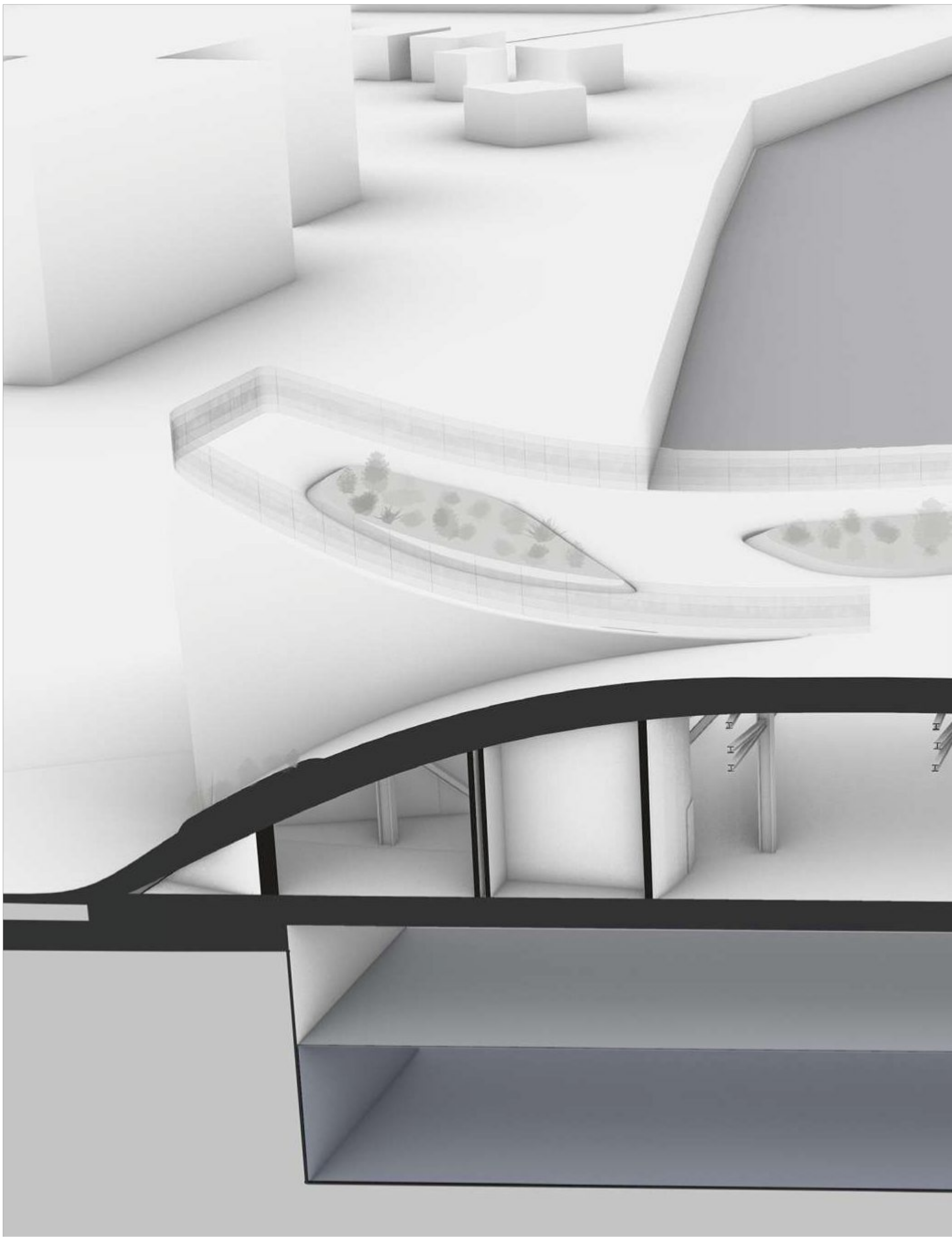


Fig. 5.5.2 Section 2-2

5.6 Sections 3d





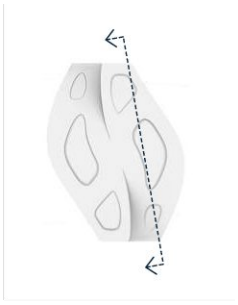
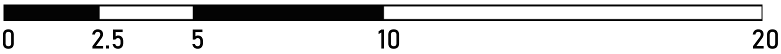
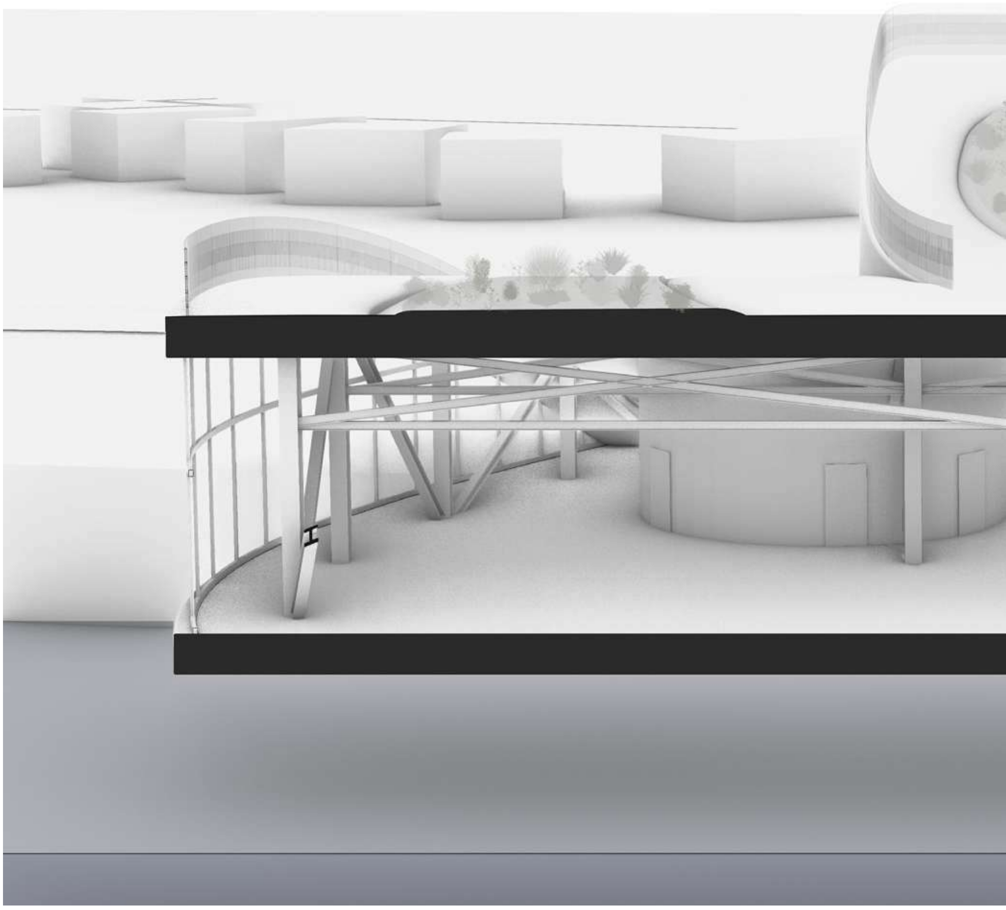
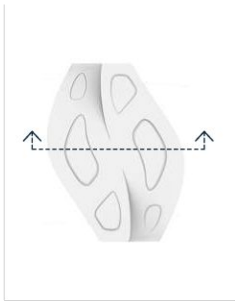


Fig. 5.3.1 3d Section

5.6 Sections 3d







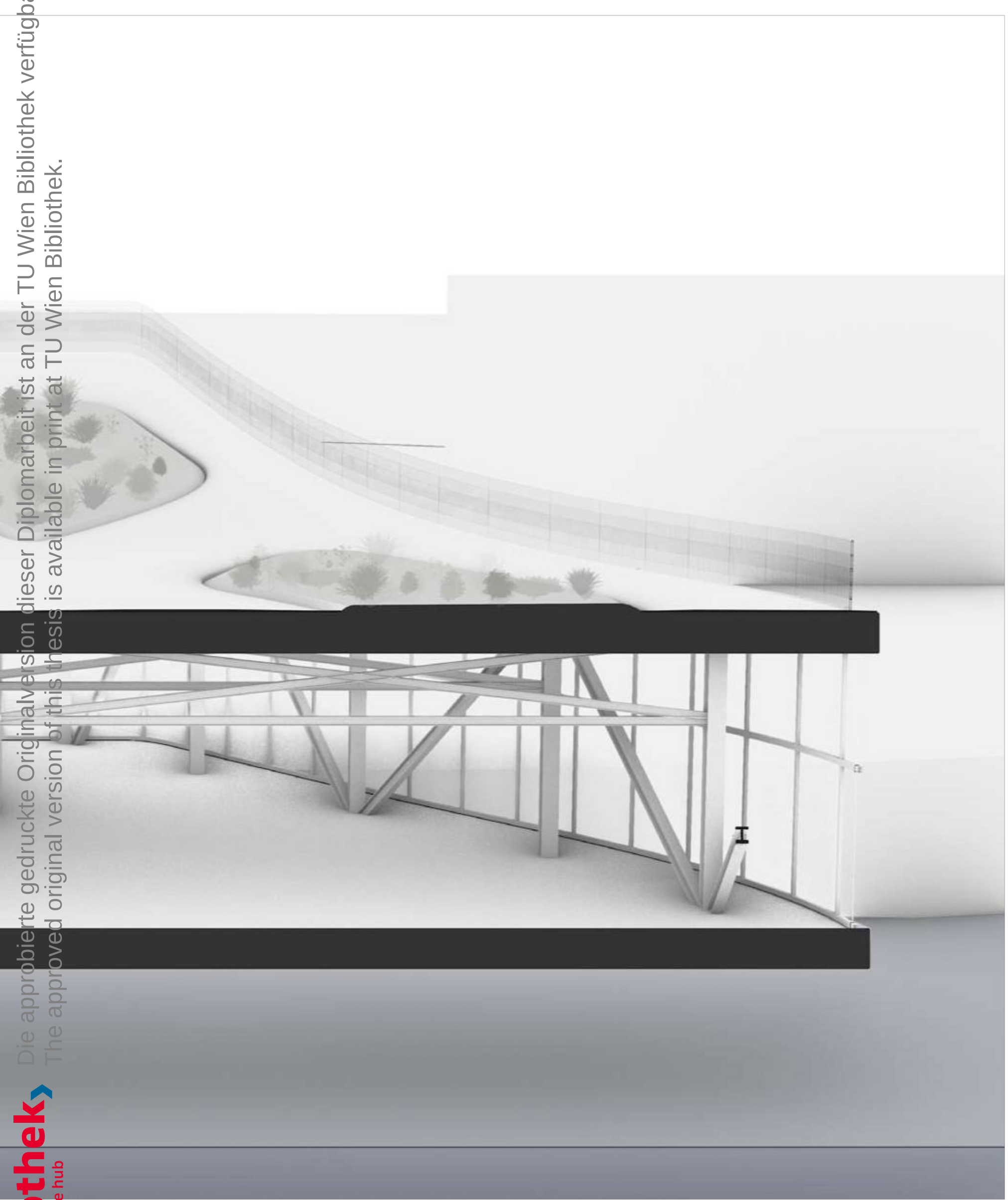
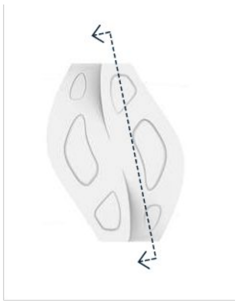


Fig. 5.3.2 3d Section

5.6 Sections 3d



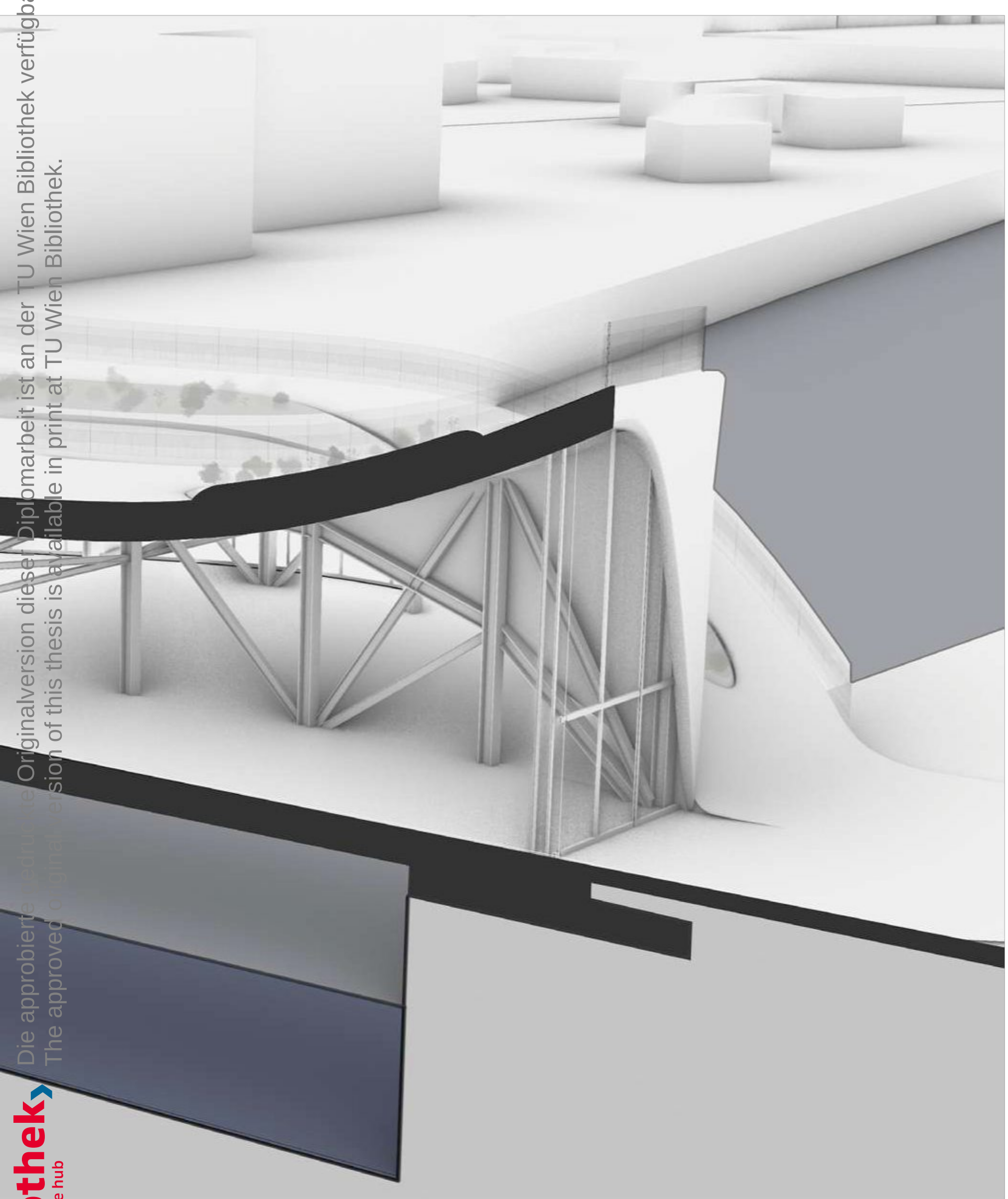


Fig. 5.3.3 3d Section

5.7 Details

- 3 cm Plastic flooring (Rubber flooring)
- 2 cm Water retention mat
- Filter fabric
- 2 cm Drainage element
- Root-resistant waterproofing
- 15-25 cm Sloped concrete
- Vapor barrier
- 40 cm Trapezoidal metal decking + Composite deck
- 42.8 x 48.3 Wide flange beams + Installation platform
- 20 cm Thermal insulation
- 5 cm Suspended ceiling

D3

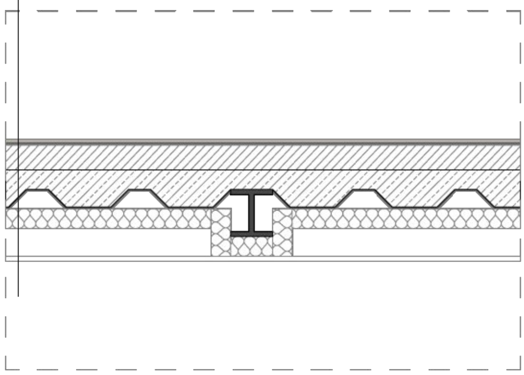


Fig. 5.7.3 Roof detail

- 3 cm Vinyl flooring
- 6 cm floor leveling compound
- Separation membrane
- 3 cm Impact sound insulation
- Separation membrane
- 5 cm Loose fill
- 40 cm Trapezoidal sheet + Composite deck
- 42.8 x 48.3 HEB beams + Installation level
- 30 cm Thermal insulation
- 5 cm Covering material

D4

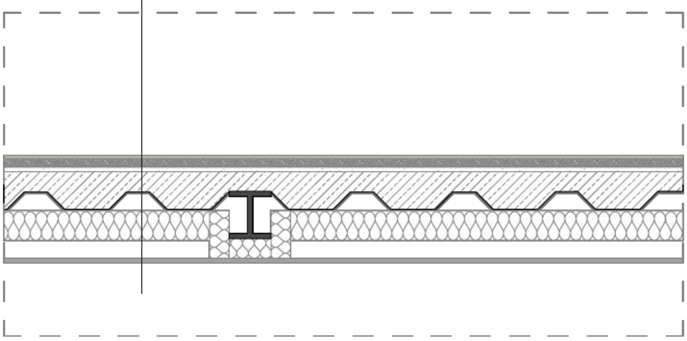
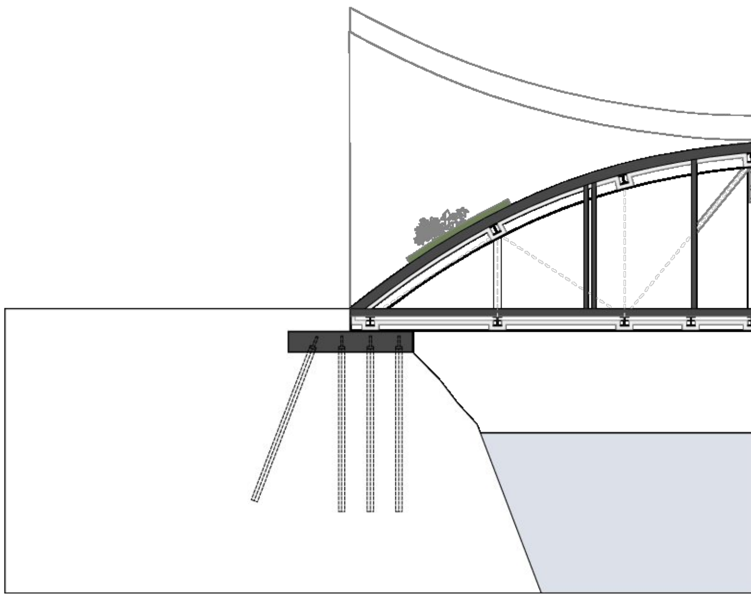


Fig. 5.7.2 Floor detail



- Grass, Flowers
- 20-40 cm Growing substrate
- 2 cm Water retention mat
- Filter fabric
- 2 cm Drainage element
- Root-resistant waterproofing
- 15-25 cm Sloped concrete
- Vapor barrier
- 40 cm Trapezoidal metal decking + Composite deck
- 42.8 x 48.3 Wide flange beams + Installation platform
- 30 cm Thermal insulation
- 5 cm Suspended ceiling

D2

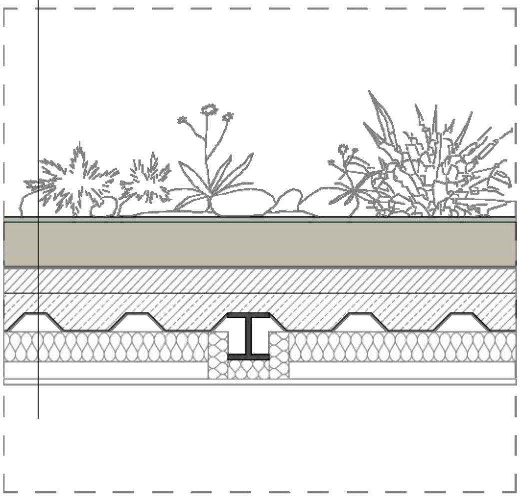


Fig. 5.7.4 Green roof detail

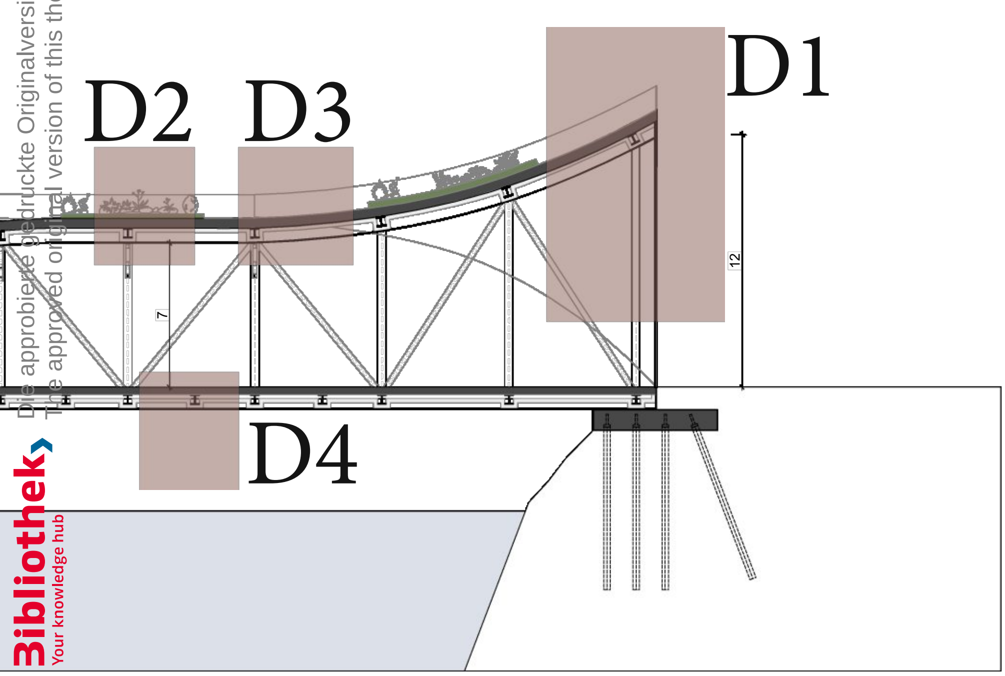


Fig. 5.7.1 Scheme of the details

D1

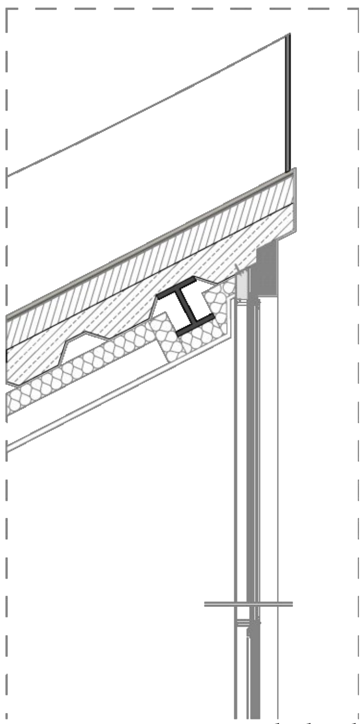


Fig. 5.7.5 Facade detail

5.8 Construction

The bridge's load-bearing structure is built using I-shaped steel beams, which are known for being strong, efficient, and reliable. The design went through a lot of revisions and fine-tuning to make sure it's not only sturdy but also visually appealing. The result is a solid framework that can handle heavy loads while looking great.
To ensure the bridge is stable and secure, three different types of steel beams were used, each with a specific role:

-HD 483x428 (blue): This is the heavy-duty beam, used in areas where the bridge needs to support the most weight. It's thick, strong, and does the heavy lifting to keep the structure stable in critical spots.
-HEB 280 (280x280) (green): This beam is more versatile. It's strong enough to provide support in various parts of the bridge but not overly bulky, so it helps keep the design efficient and balanced.
-HEB 200 (200x200) (brown): This is the lighter beam, used in areas that don't need as much support. It helps reduce the overall weight of the bridge, giving it a more open and airy feel.

The design process involved a lot of revising and testing. Tools like Blender for 3D modeling and Phänotyp were used for detailed analysis to make sure everything was optimized.
Diagonals were added to help distribute the weight evenly, which makes the bridge even more stable. Another feature of the support structure is the 2.5-meter cantilever overhang. This part of the bridge extends out without any columns underneath, creating extra space and giving people an oppen view. The cantilever adds a modern, sleek touch to the design and makes the bridge feel open and inviting. It's the type of feature that invites you to pause and appreciate the building, the scenery, the river, and the company.
The steel beams are a key part of what makes this design work. They're strong but not too heavy, which allows for longer spans and gives the bridge its light, open feel. Plus, steel is durable and recyclable, so it's a sustainable choice that fits with modern building practices.
In the end, this bridge is a great example of how design and structure can function and create balance. The steel beams and cantilever overhang work together to create a structure that's not only strong and stable but also visually striking.
It's a bridge that serves its purpose while adding something special to the community—showing how thoughtful design can make a real difference.

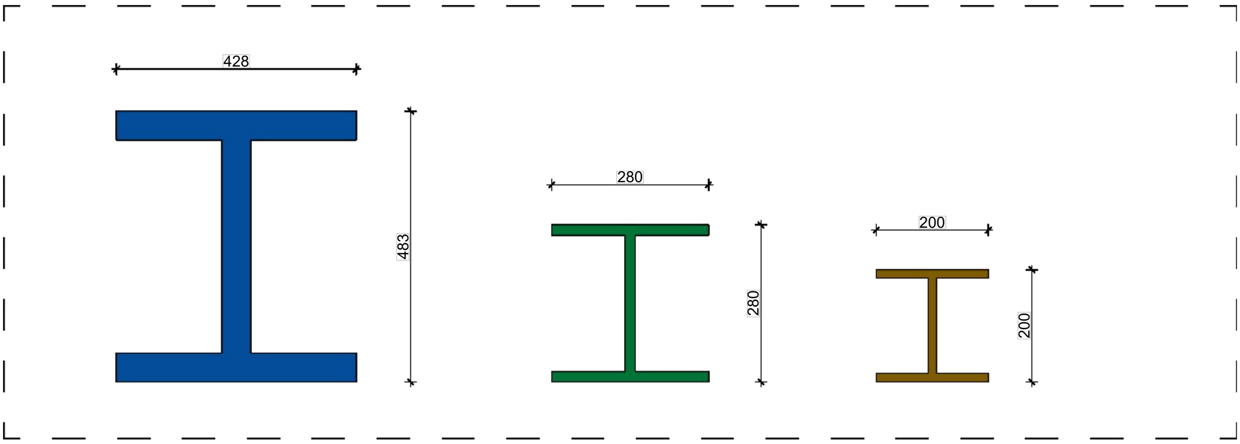


Fig. 5.8.1 The beams used for the load-bearing structure - Results of the Phänotyp calculations

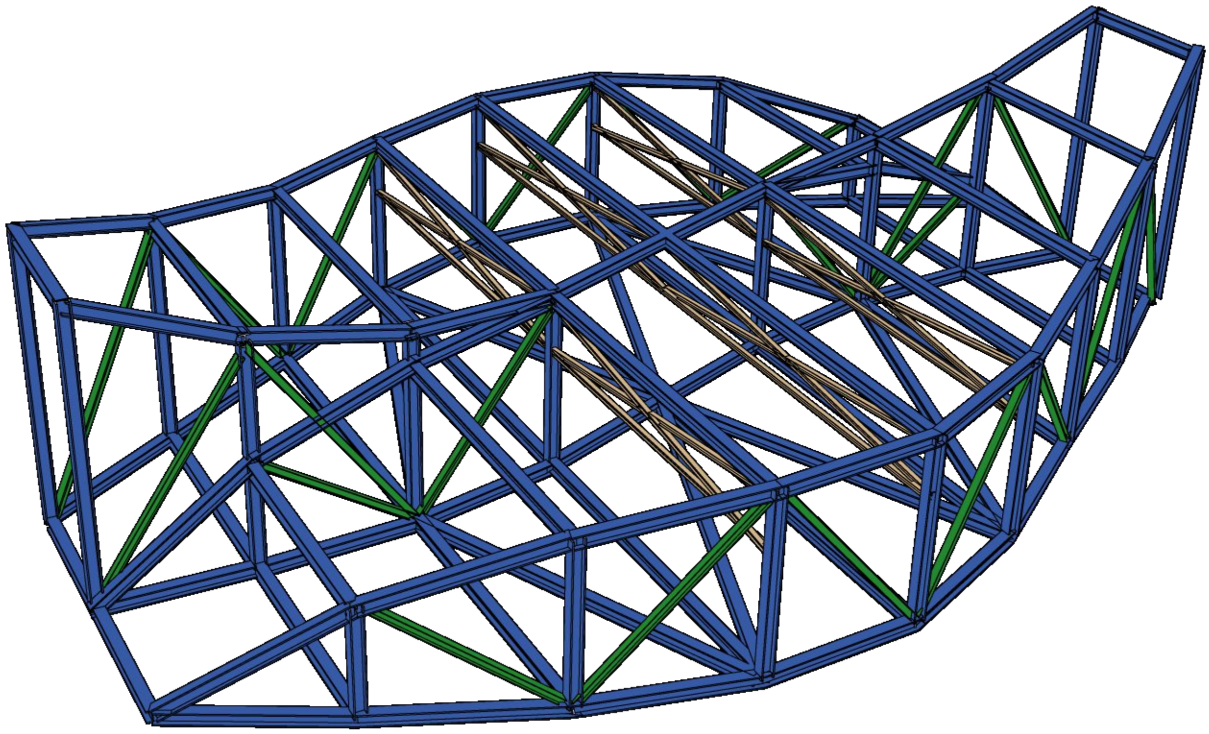


Fig. 5.8.2 - 3d of the beams used for the load-bearing structure

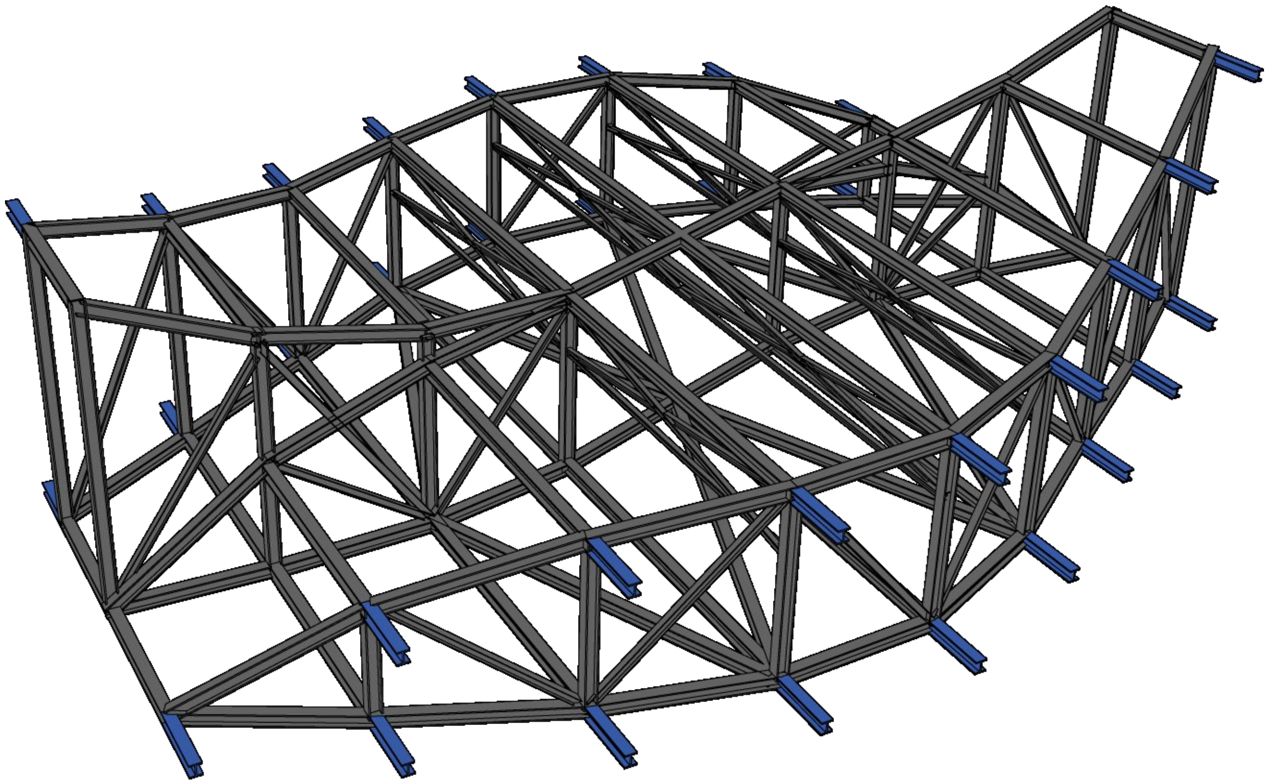


Fig. 5.8.3 - The added beams shown in blue, main structure in gray

5.9 Elevations

Fig. 5.9.1 North-East elevation

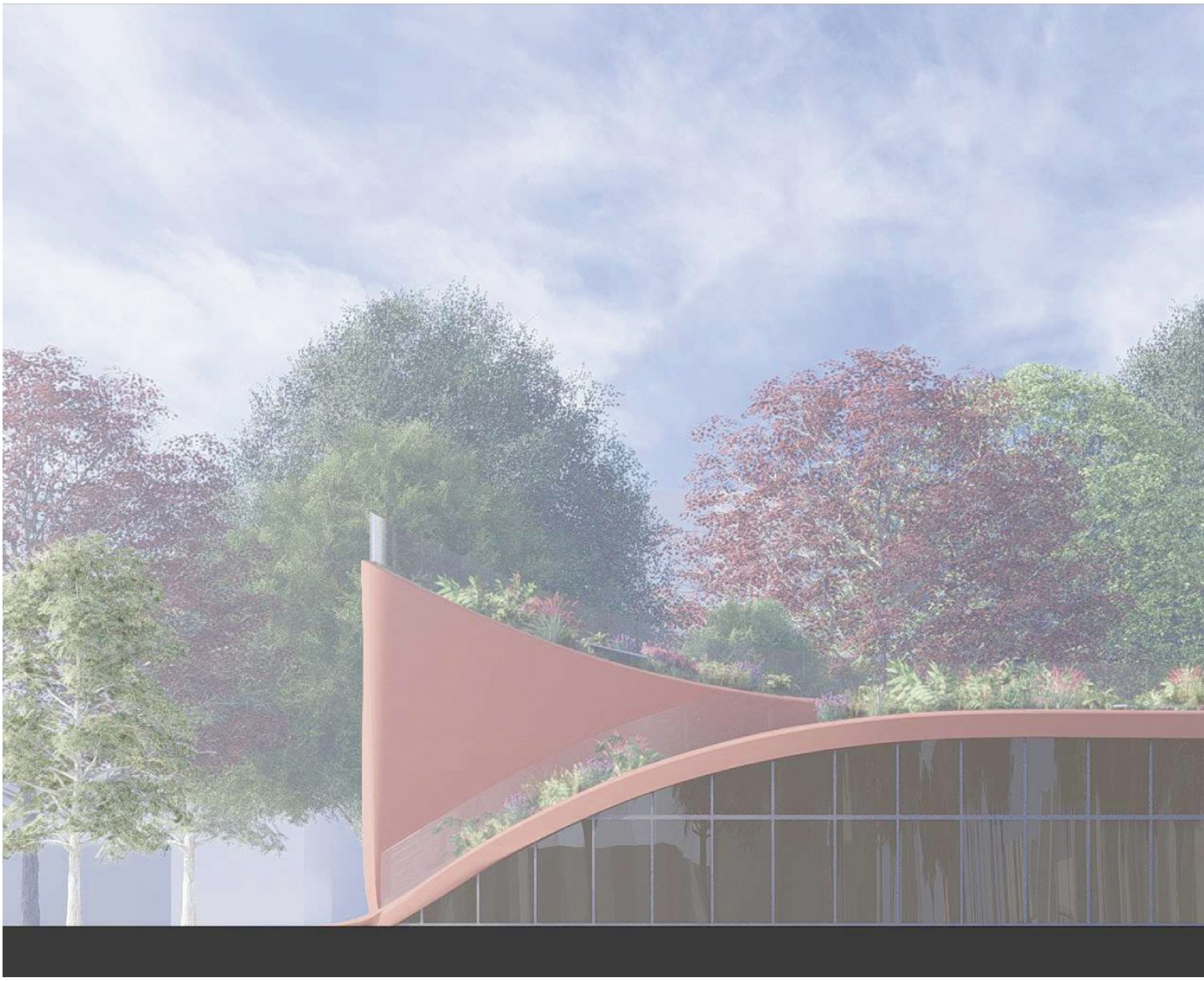


Fig. 5.9.2 South-West elevation

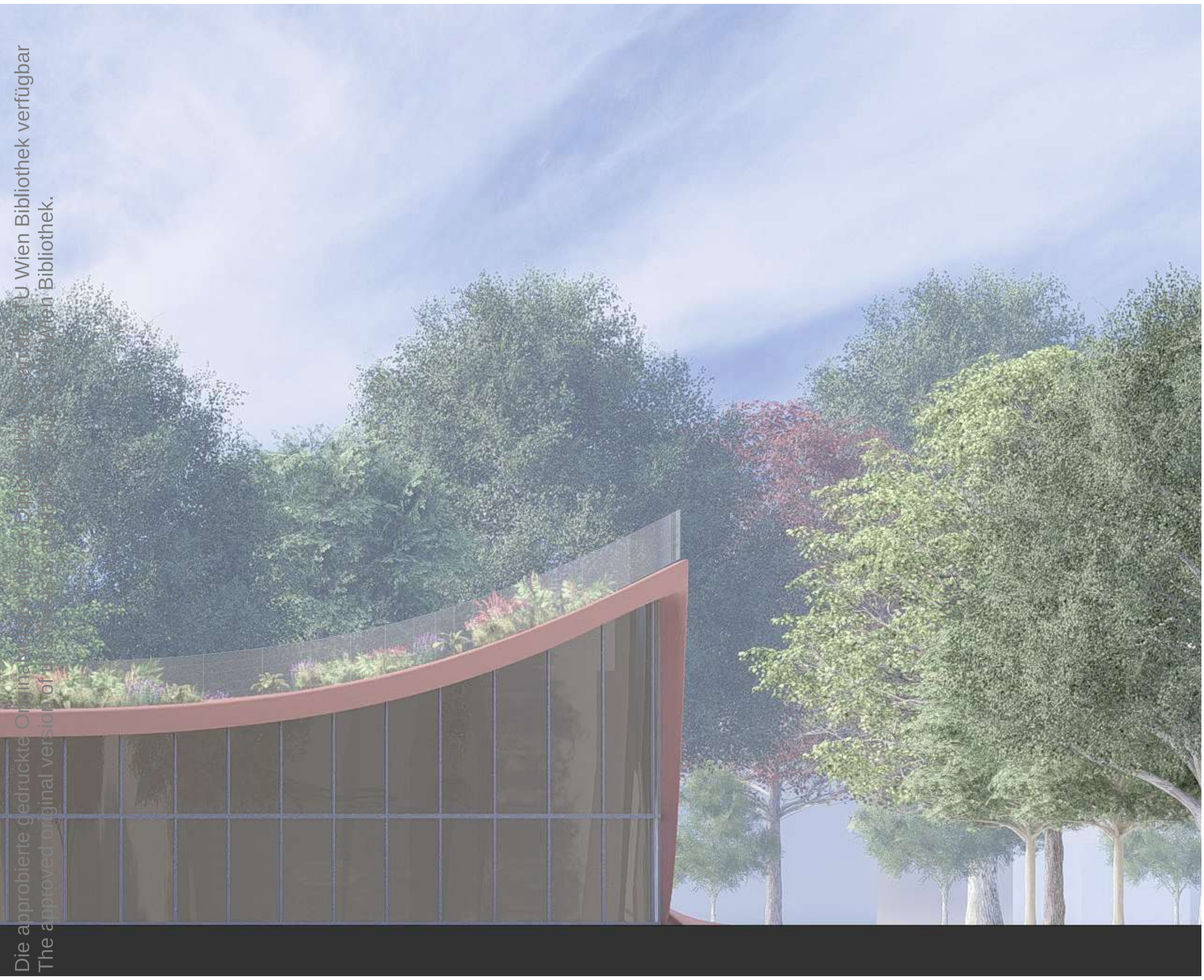


Fig. 5.9.3 South-East elevation

Fig. 5.9.4 North-West elevation

5.10 Visualizations - Exterior

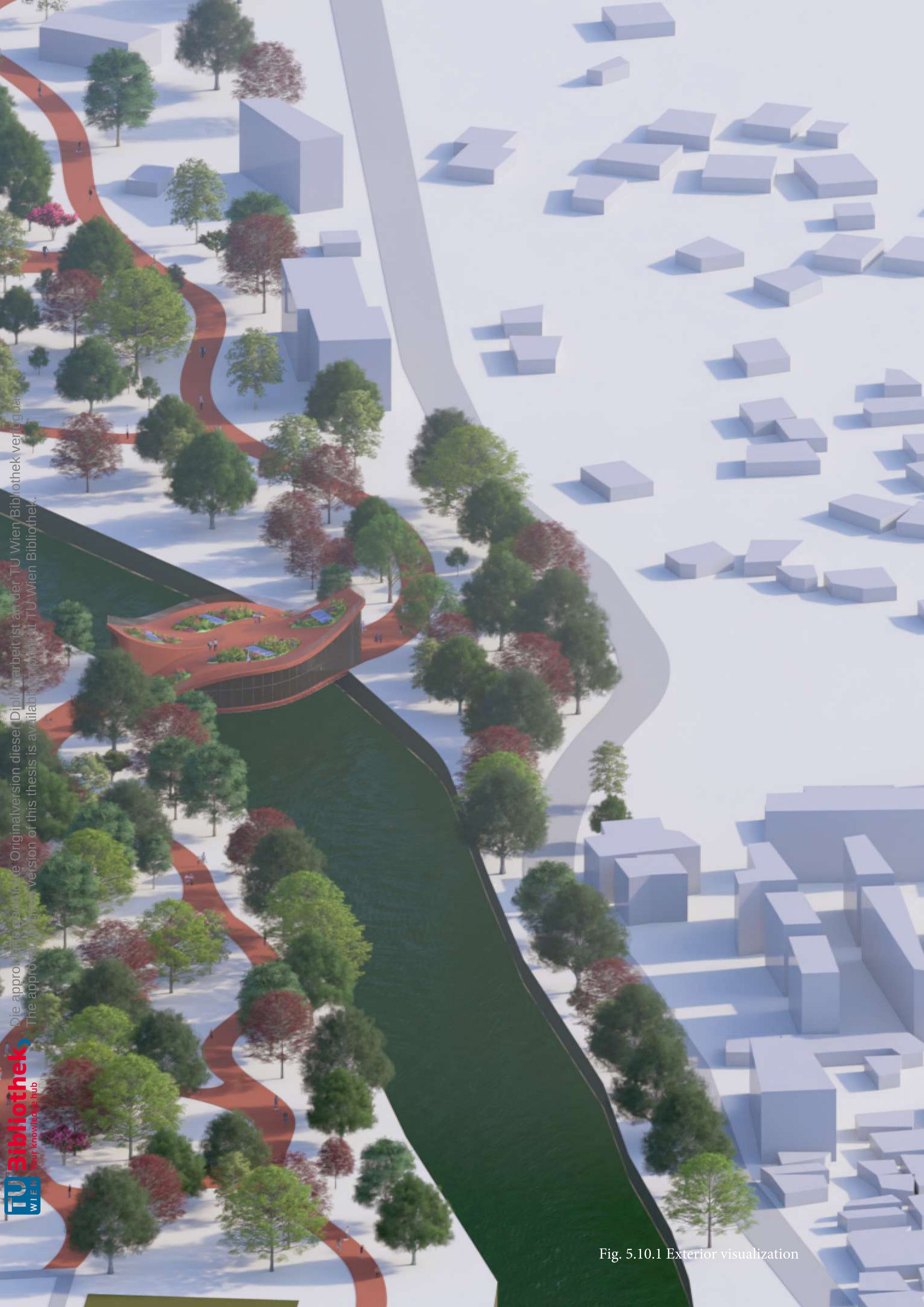


Fig. 5.10.1 Exterior visualization

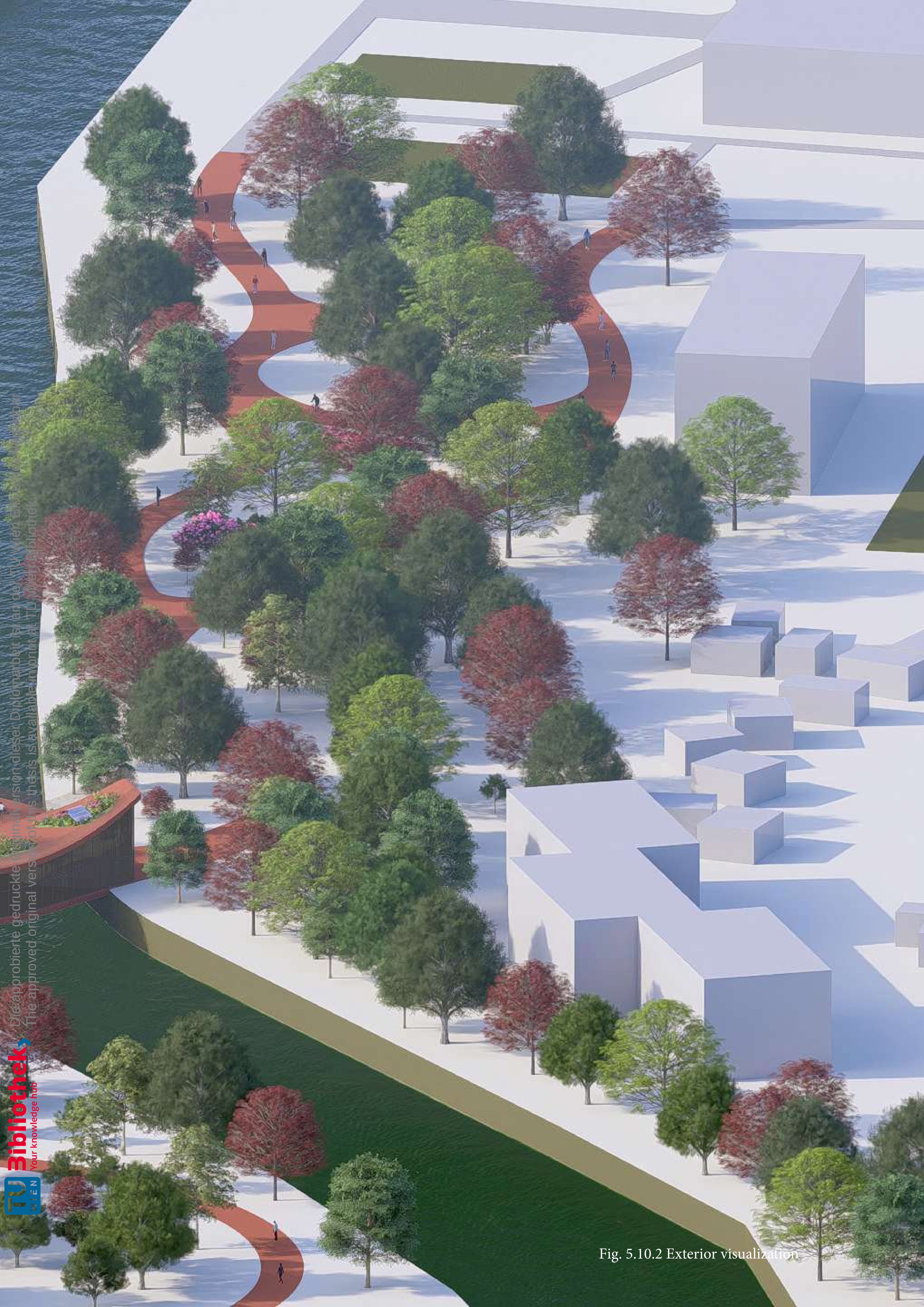


Fig. 5.10.2 Exterior visualization

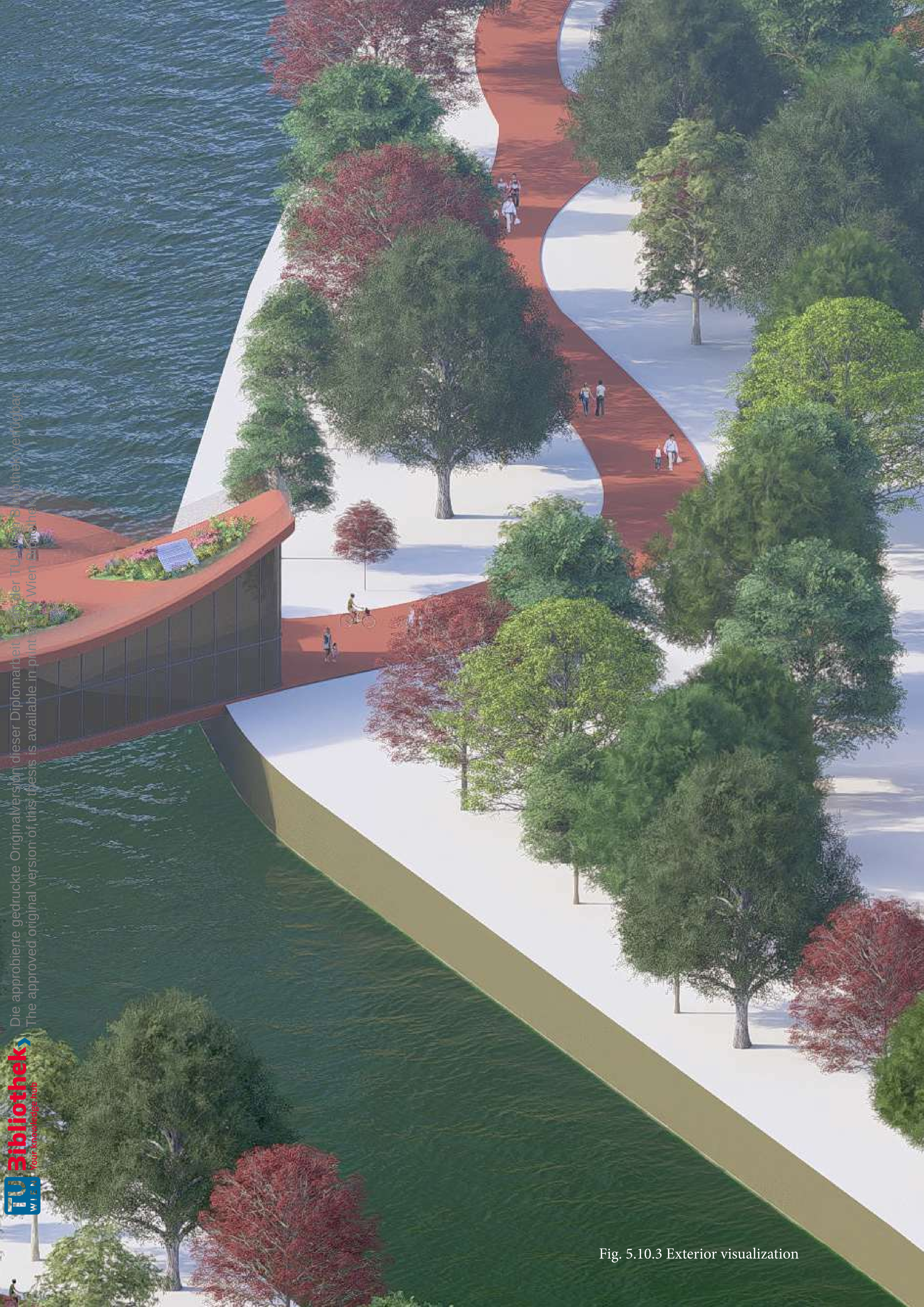


Fig. 5.10.3 Exterior visualization

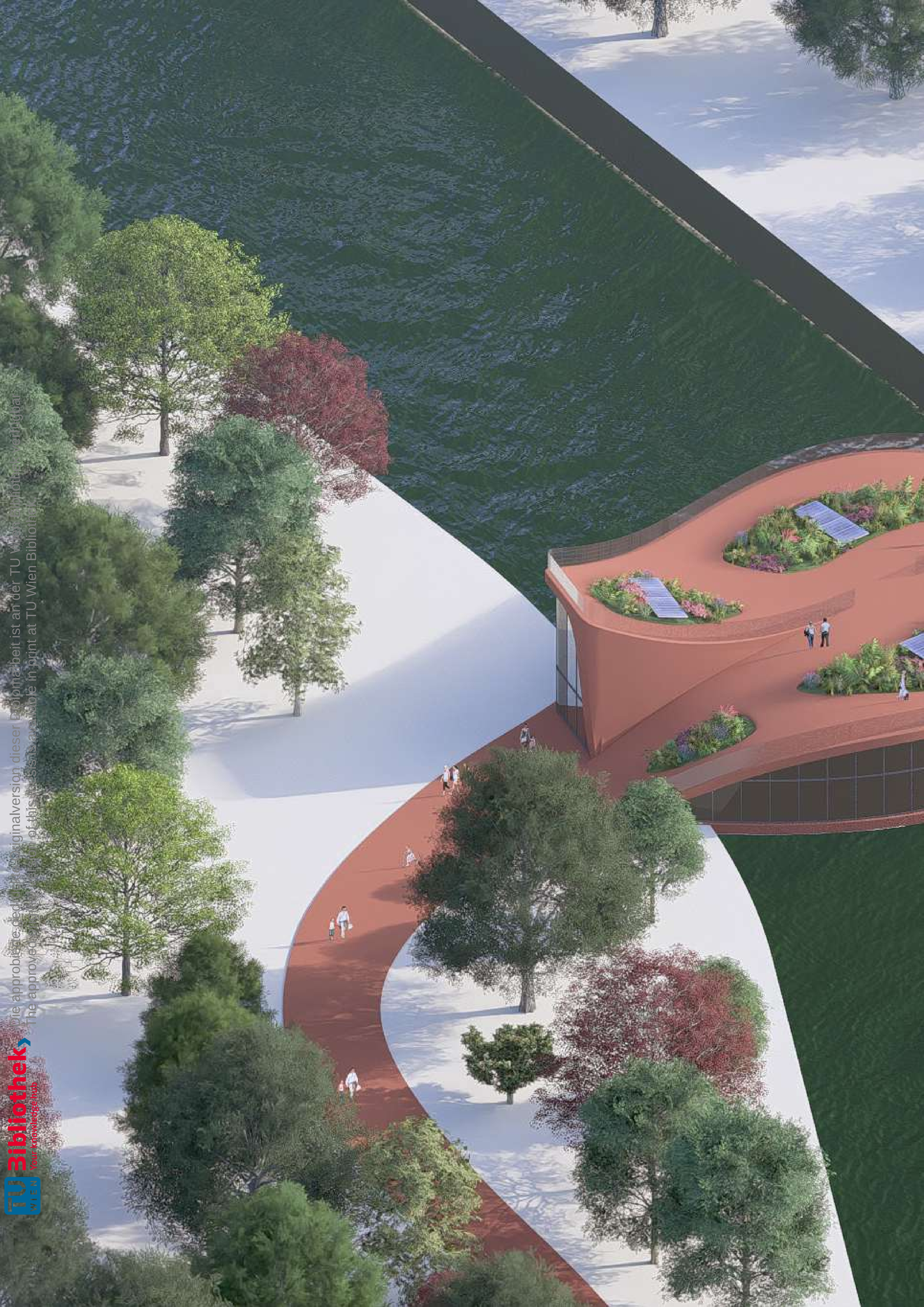


Fig. 5.10.4 Exterior visualization

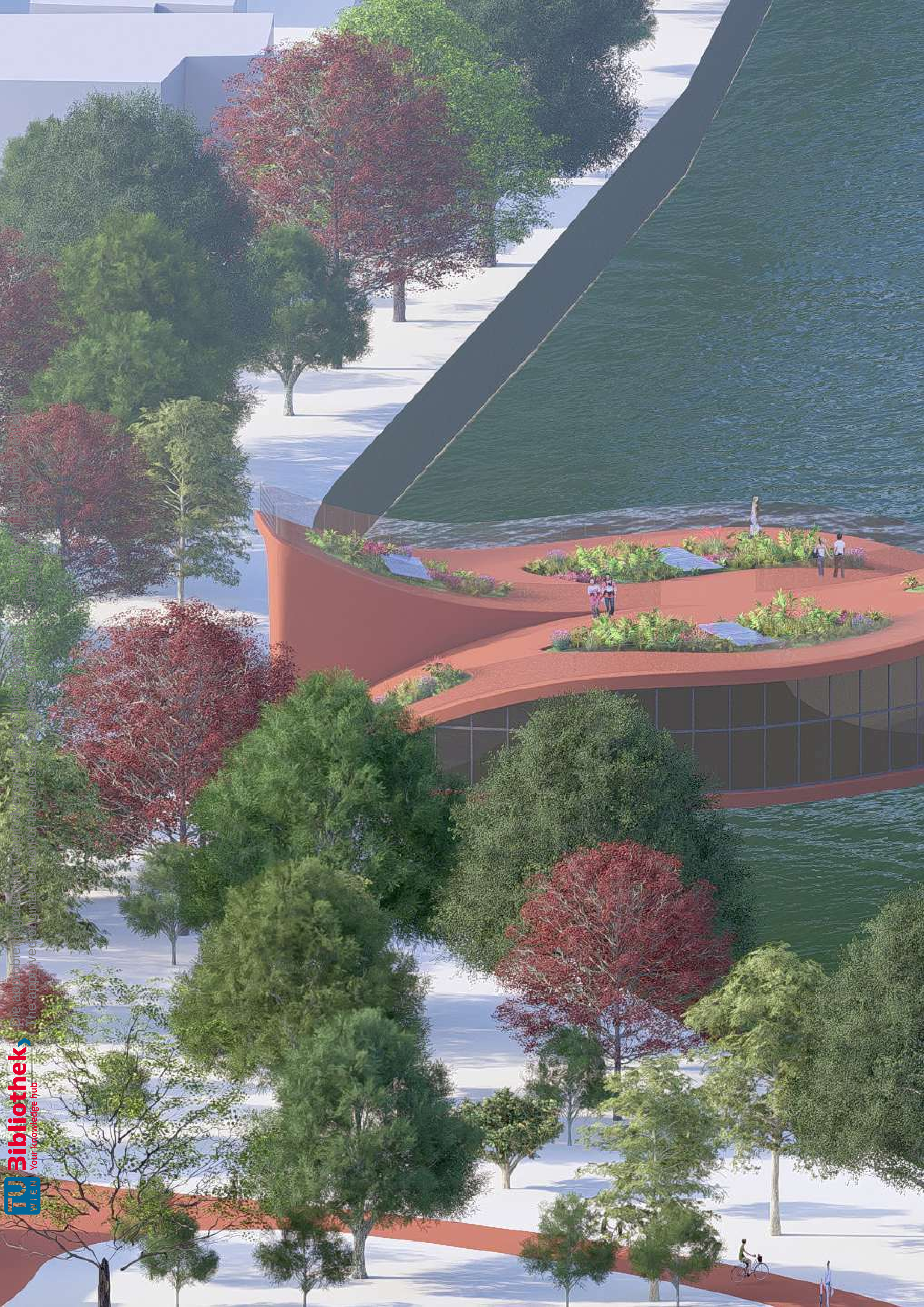


Fig. 5.10.5 Exterior visualization

Fig. 5.10.6 Exterior visualization

Fig. 5.10.7 Exterior visualization

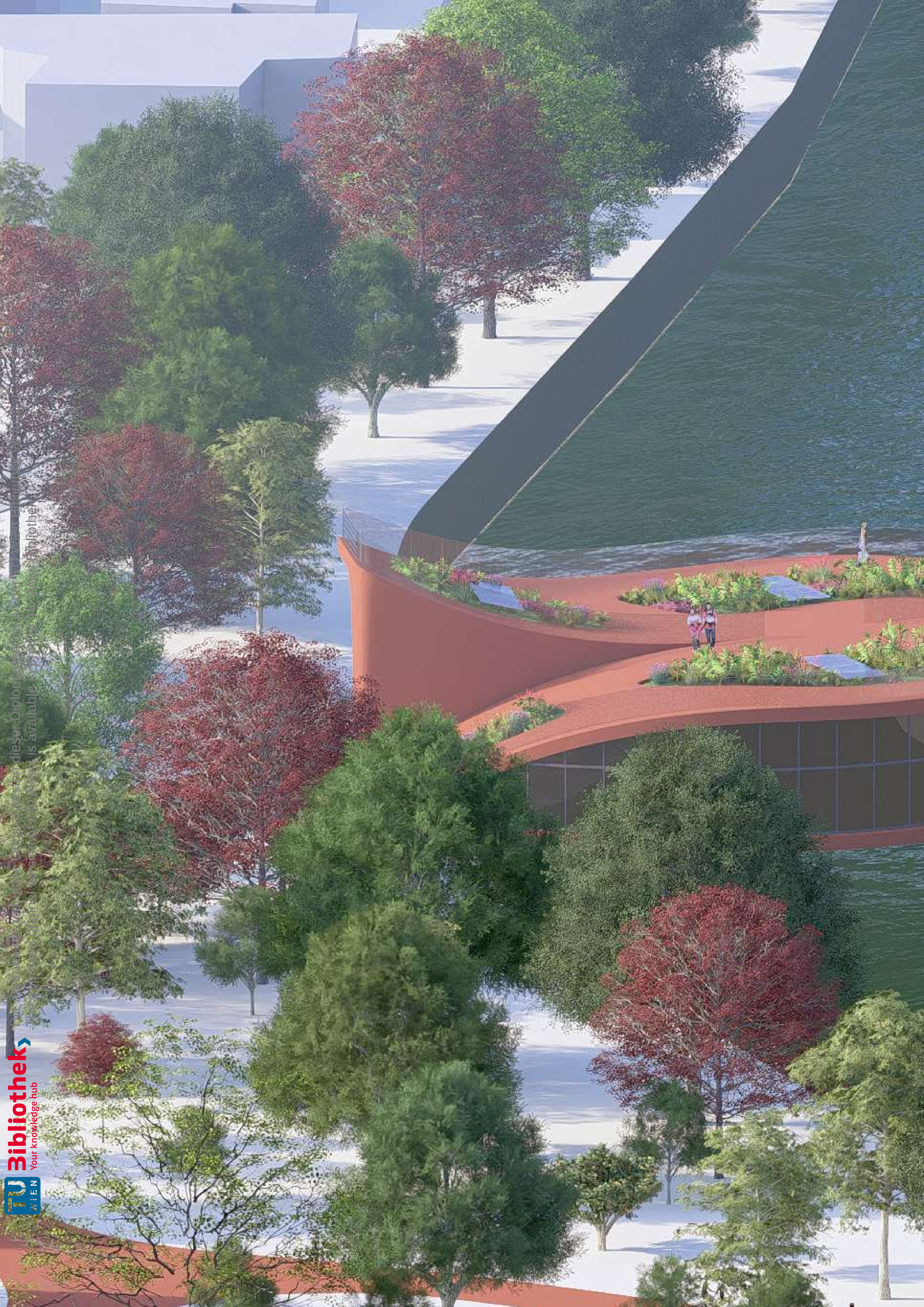


Fig. 5.10.8 Exterior visualization

5.11 Visualizations - Interior

Fig. 5.11.1 Interior visualization

Fig. 5.11.2 Interior visualization

Fig. 5.11.3 Interior visualization

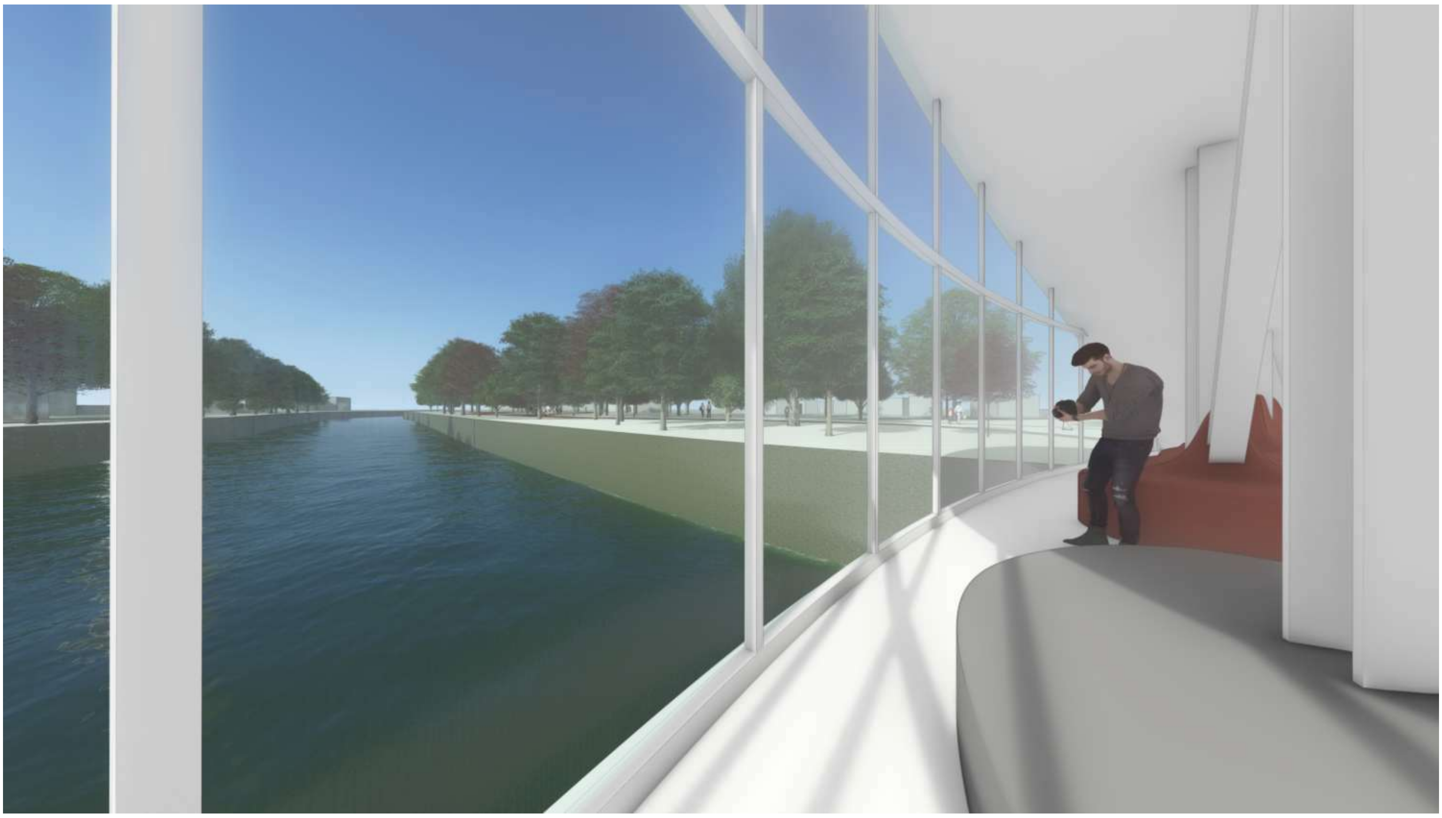


Fig. 5.11.4 Interior visualization

Fig. 5.11.5 Interior visualization

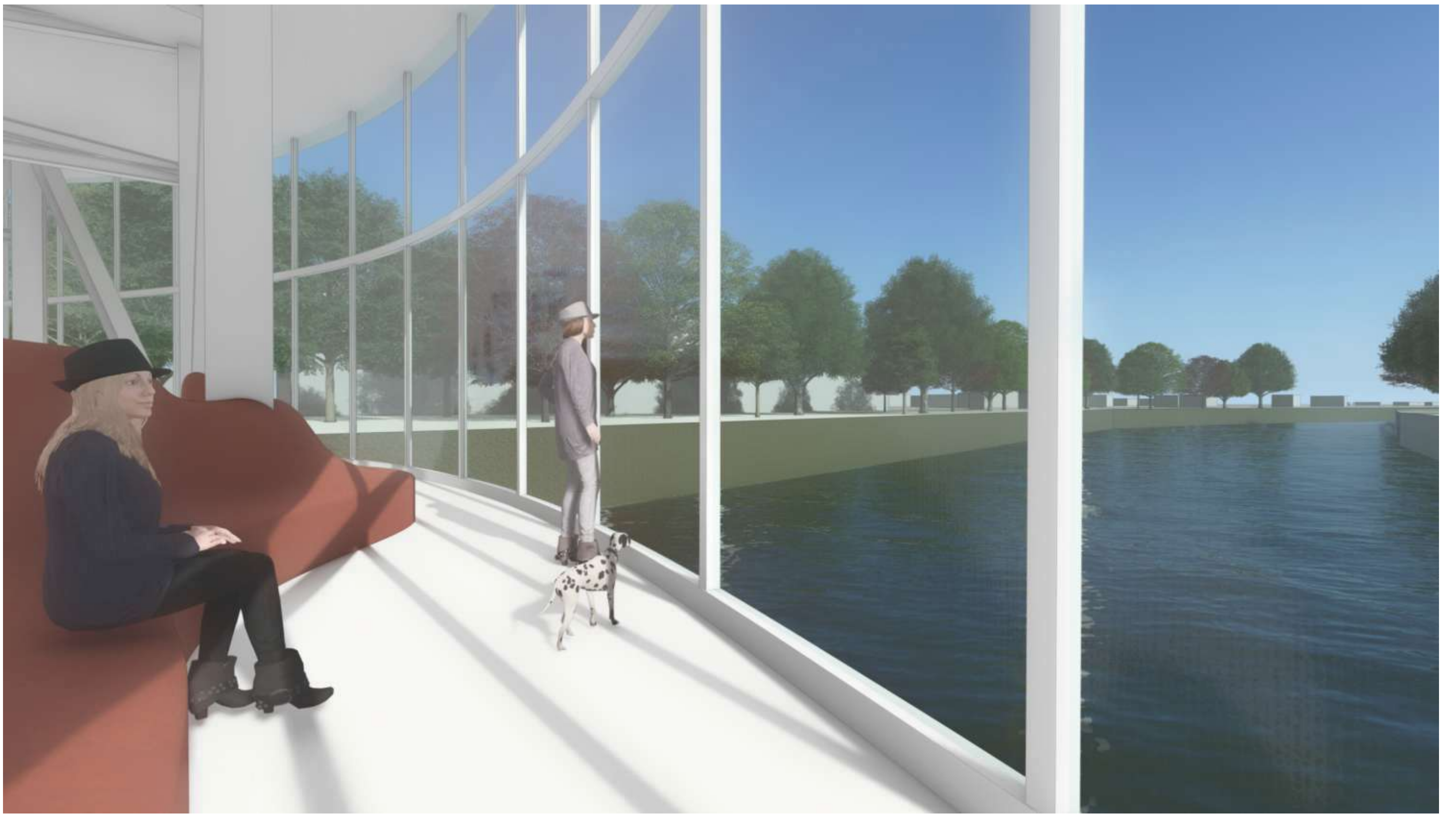


Fig. 5.11.6 Interior visualization

06.

EVALUATION

6.1 AREA EVALUATION - GROUND FLOOR
6.2 AREA EVALUATION - WALKABLE ROOF

6.1 AREA EVALUATION - GROUND FLOOR

GROSS FLOOR AREA
1587m²

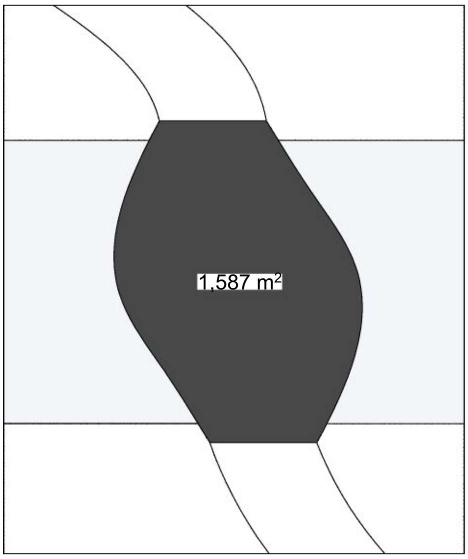


Fig 6.1.1 Gross floor area

NET FLOOR AREA
1522m²
95% of the built area

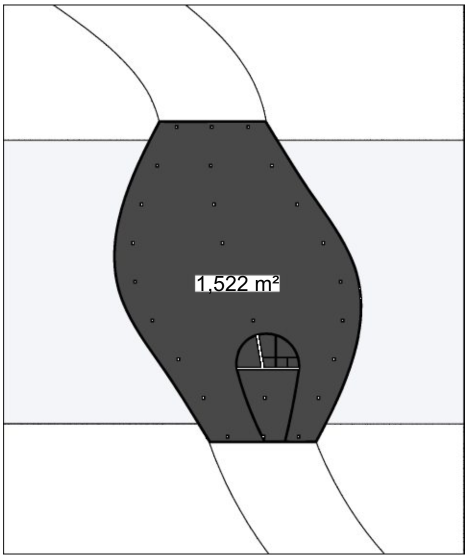


Fig 6.1.2 Net floor area

AREA OF THE STRUCTURE
66.46m²
5% of the built area

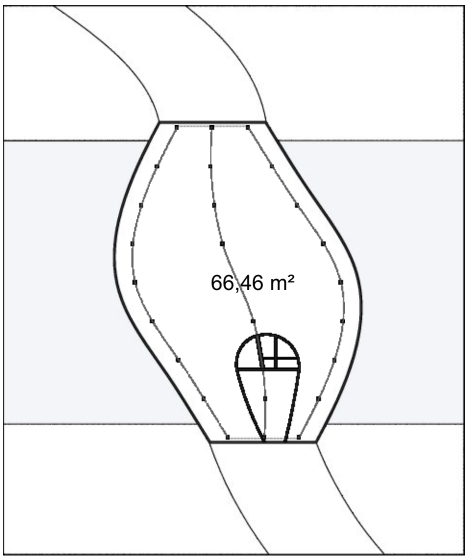


Fig 6.1.3 Area of the structure

6.2 AREA EVALUATION - WALKABLE ROOF

GROSS FLOOR AREA
1587m^2

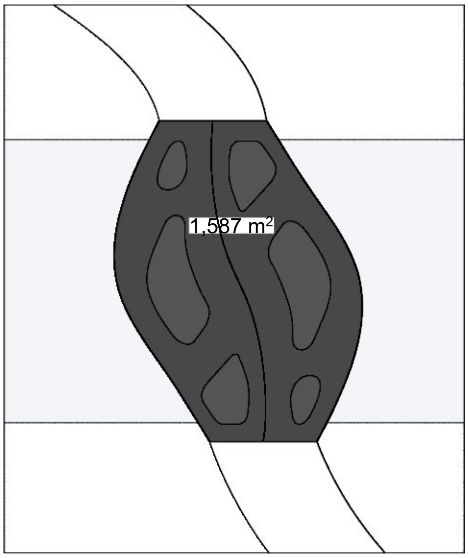


Fig 6.2.1 Gross floor area

GREEN ROOF AREA
424m^2
26.7% of the build area

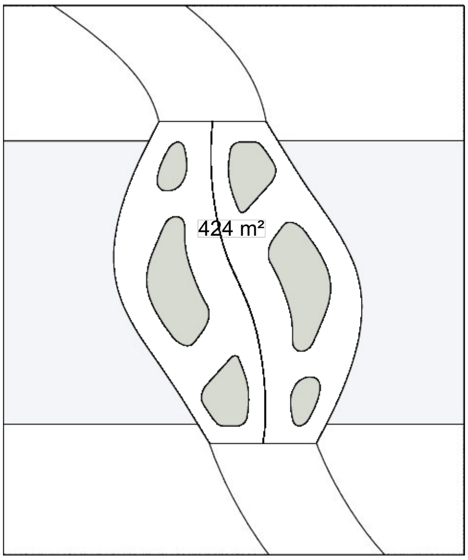


Fig 6.2.2 Green roof area

CIRCULATION AREA
1162m^2
73.3% of the build area

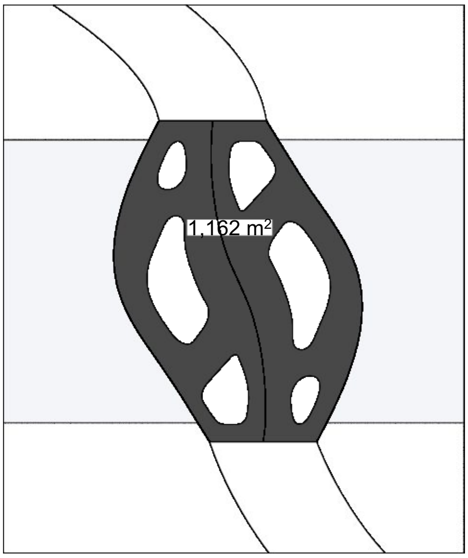


Fig 6.2.3 Circulation area

07.

CONCLUSION

The multifunctional bridge project in Mitrovica isn't just about building a bridge—it's about building connections. For a city long divided by the river Ibër, this project offers a chance to physically and socially bridge the gap between communities. The bridge would improve the daily life of the citizens of Mitrovica, but its real power lies in the community center at its heart—a space where every citizen no matter the background can come together for cultural events, workshops, and conversations. It's about creating a place where trust and opportunitiescan can grow.

The design focuses on accessibility and inclusivity, with pathways, green spaces, and open areas that invite everyone in. In a city where divisions have kept people apart, this open of flexible planning is crucial. It's about breaking down barriers and fostering a sense of belonging.

Looking ahead, the project could spark even bigger changes. The community center could host programs on conflict resolution, cultural education, and engagement, empowering residents to shape their future. Partnerships with local groups could turn it into a vibrant hub of activity, while improved infrastructure could boost the local economy and attract investment.

Sustainability is also key. Green spaces, energy-efficient materials, and eco-friendly practices would ensure the project benefits both current and future generations. But none of this works without the community's input.
Ongoing dialogue with residents will be essential to keep the project aligned with their needs and hopes.
In the end, this project is about more than infrastructure—it's about creating a foundation for a more united, inclusive Mitrovica. By addressing both physical and social divides, it has the potential to transform the city into a place where there are opportunities to thrive. And if it works here, it could inspire similar efforts elsewhere, proving that even the deepest divides can be bridged.

08.

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8.1 List of Figures

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09.
CURRICULUM VITAE

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EDUCATION

Bachelor's degree, Architecture - Technical University of Prishtina / class of 2017
Master's degree, Architecture - Technical University of Vienna / class of 2025

LANGUAGES

Albanian - Native
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Spanish - B1

WORK EXPERIENCE

Freelance Architecture Projects / 2017 - 2019
Gedankensprung Baumanagement & Planung GmbH, Wien / 12.2020 - 07.2021
Edgar Hammerl Architektur, Graz / 08.2021 - continues

SOFTWARE SKILLS

ArchiCAD
Photoshop
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Indesign
Lumion
Rhino
Illustrator