MASTER-/DIPLOMARBEIT

Kulturkomplex für die soziale Eingliederung der Randbevölkerung von Callao, Peru

Cultural complex for the social inclusion of the marginalized population of Callao, Peru

ausgeführt zum Zwecke der Erlangung
des akademischen Grades eines
Diplom-Ingenieurs / Diplom-Ingenieurin
unter der Leitung von

Manfred Berthold
Prof Arch DI Dr

E253 - Institut für Architektur und Entwerfen

eingereicht an der Technischen Universität Wien
Fakultät für Architektur und Raumplanung

Vanessa Anamilé Minhuey Espinoza
Matr. Nr. 12034166

Wien, am 30.09.2024
Datum

Unterschrift

ABSTRAKT

Der Kulturkomplex für die soziale Eingliederung der Randbevölkerung von Callao, Peru zielt darauf ab, das negative soziale Stigma zu bekämpfen, das den südlichen Bereich von La Punta, Callao, beeinträchtigt hat, und durch die Schaffung eines dynamischen und ansprechenden Kulturzentrums für Jugendliche das sozioökonomische Wachstum zu fördern. Das Projekt ist darauf ausgelegt, innovative Räume für Kunst, Bildung und Gemeinschaftsaktivitäten zu bieten, die Erholungs- und Lernbereiche integrieren und die Teilnahme von Jugendlichen fördern.

Das Gebäude soll ein positives skulpturales Wahrzeichen werden, das die Jugend dieser Küstenregion repräsentiert, mit einer architektonischen Hülle, die von lokalen Tieren wie der Möwe, dem Mantarochen und der Qualle inspiriert ist und die natürliche Umgebung der Region widerspiegelt. Ein Schlüsselelement des Designs ist das Konzept eines verteilten Museums, mit Ausstellungsräumen, die über den gesamten Komplex verteilt und durch eine große Rampe verbunden sind, was die kulturelle und soziale Integration zwischen Besuchern – einschließlich Touristen, Einwohnern anderer Bezirke und lokalen Jugendlichen, die die Einrichtungen regelmäßig nutzen – fördert.

Die Architektur des Komplexes umfasst Merkmale wie vertikale Lamellen an der Fassade, um anpassungsfähige und energieeffiziente Räume zu schaffen, die für das warme Klima von Callao geeignet sind, und die natürliche Belüftung, Lichtsteuerung und die ästhetische Gesamterscheinung des Gebäudes verbessern. Im Inneren sind einige Klassenzimmer mit beweglichen Wänden ausgestattet, die eine vielseitige Nutzung der Räume ermöglichen, während eine Metallstruktur auf dem Dach große Flächen überspannt, dem Design einen ikonischen Charakter verleiht und den Luftstrom sowie die natürliche Beleuchtung in den oberen Ebenen erleichtert, wo sich mehr Menschen aufhalten.

Zusätzlich zum verteilten Museum umfasst das Projekt Einrichtungen wie Coworking-Spaces, Sportbereiche, Werkstätten, Klassenzimmer, Lese- und Entspannungsräume, ein Beratungszimmer für berufliche und psychologische Unterstützung sowie Kinderbereiche, unter Berücksichtigung der hohen Geburtenrate und der Tatsache, dass viele junge Menschen früh Eltern werden.

Durch die Förderung gesunder Lebensstile, die Unterstützung von Unternehmertum und die Schaffung von Möglichkeiten zur Kompetenzentwicklung zielt der Komplex darauf ab, den sozialen Zusammenhalt zu stärken, Isolation zu verringern und eine inklusivere und wohlhabendere Gemeinschaft in Callao aufzubauen.

ABSTRACT

The Cultural Complex for the Social Inclusion of the Marginalized Population of Callao, Peru aims to help combat the social negativ stigma that has affected the southern area of La Punta, Callao, and promote socioeconomic growth through the creation of a dynamic and engaging youth cultural center. The project is designed to offer innovative environments dedicated to art, education, and community activities, integrating recreational and learning spaces that encourage youth participation.

The complex aspires to become a positive sculptural landmark representing the youth of this coastal area, with an architectural envelope inspired by local animals such as the seagull, manta ray, and jellyfish, reflecting the natural surroundings of the region. A key element of the design is the concept of a distributed museum, with exhibition spaces spread throughout the complex and connected by a large ramp, promoting cultural and social integration among visitors, including tourists, residents from other districts, and local youth who regularly use the facilities.

The architecture of the complex incorporates features such as vertical louvers on the facade to create adaptable and energy-efficient spaces suitable for the warm climate of Callao, enhancing natural ventilation, light control, and the building's overall aesthetic. Inside, some classrooms are equipped with movable panels to allow versatile use of the spaces, while a metal structure on the roof spans large areas, giving the design an iconic character and facilitating airflow and natural lighting on the upper levels where there is a higher concentration of people.

In addition to the distributed museum, the project includes facilities such as coworking spaces, sports areas, workshops, classrooms, reading and relaxation rooms, a job and psychological counseling room, and children's areas, considering the high birth rate and the fact that many young people are parents at an early age.

By promoting healthy lifestyles, supporting entrepreneurship, and creating skill development opportunities, the complex aims to strengthen social cohesion, reduce isolation, and build a more inclusive and prosperous community in Callao.

TABLE OF CONTENTS

1. INTRODUCTION

Social barriers not only limit and discriminate, but also deteriorate the quality of life of communities facing marginalization or stigma. In response to these challenges, the "Cultural Complex for the Social Inclusion of the Marginalized Population of Callao, Peru" aims to create an inclusive and transformative space. This project envisions a vibrant youth cultural center that promotes social integration and socioeconomic growth through artistic, educational, and community-driven initiatives. By embracing the natural surroundings and fostering a sense of belonging, the complex aspires to become a symbol of positive change for the region.

2. SITUATIONS ANALYSE

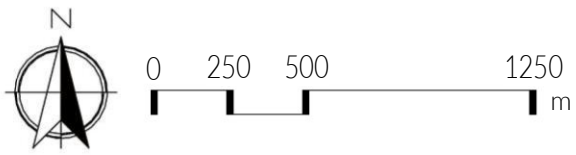
The zone of the Barracones of Callao, located towards the south side of „La punta„ in Callao-Peru, is the only area that currently suffers from a lack of accessibility along the coast. In addition to carrying the social stigma of being a dangerous place, since for a long time it has housed criminal centers: drug distribution centers, extortion bases, among other criminal problems, dysfunctional families and young people with drug addiction problems, who repeat the cycle for generations. All this means that the area remains on the margins of development, becoming a social island or as some call it social cancer, a place where nobody wants to go and where the population lives in the worst conditions of health, poverty, insecurity, violence, exclusion social, segregation and insufficient access to social rights.

However, this area has great tourist and scenic potential, just like the green coast (to the east) and the north side „La Punta“. It is also expected that the Costanera avenue, one of the main ones on the Peruvian coast, will soon connect the entire coastline to „La Punta“ passing through the barracones.

It is also observed that the population is mostly young, they like to dance and sing in the streets, and they spend a lot of time in the streets with family and friends.

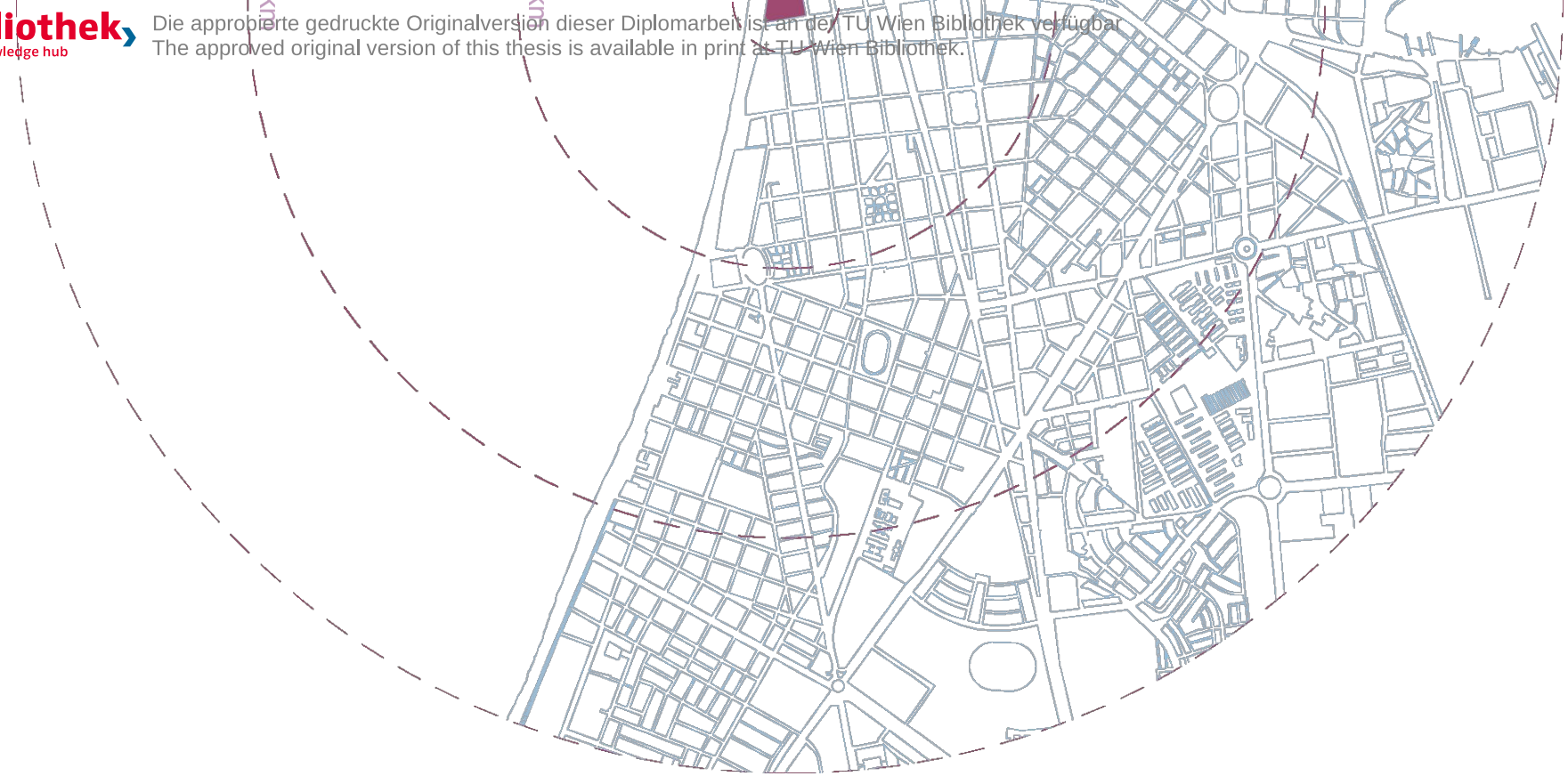
Fig. 1: Street view of Barracones, Callao, featuring its current landmark, an old water tower. Retrieved from Pinterest (Fernández, n.d.).

2.1 LOCATION



Peruvian port Callao: La Punta
Coordinates:12°04’00”S 77°08’24”W

Map 1: Location map



Views of the site

Fig. 2: Satellite view of the land. Retrieved from Google Maps (2024).

Fig. 3: View of Coastal Road with the land on the left and the sea on the right. Retrieved from Google Maps (2024).

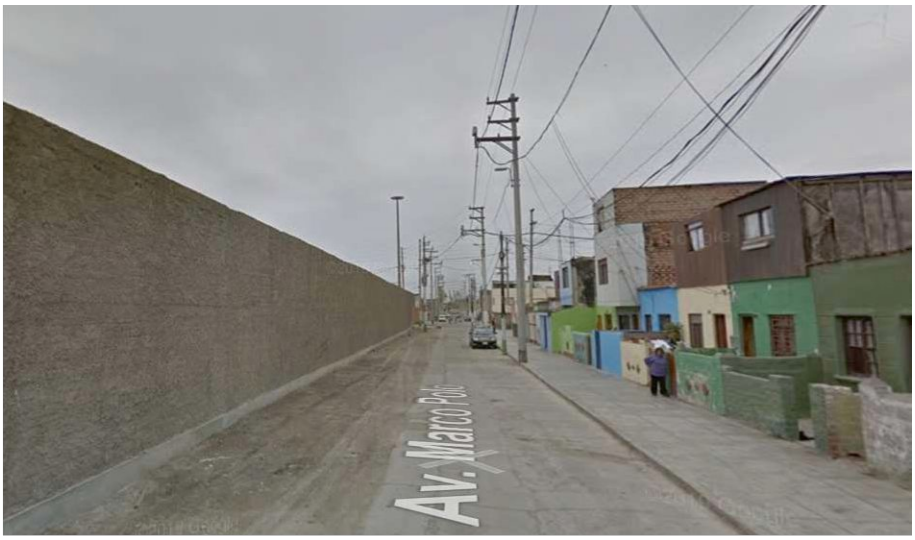
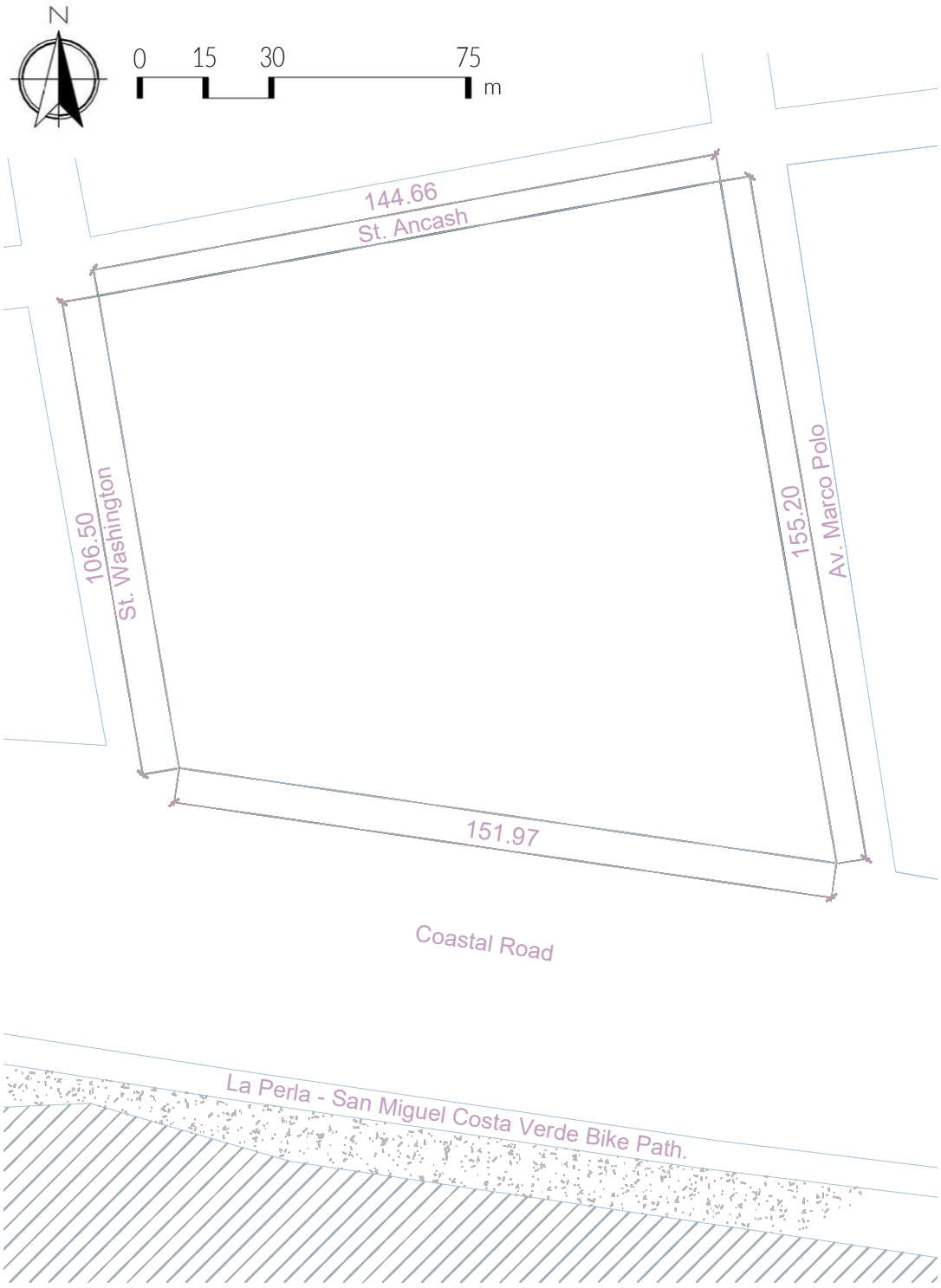


Fig. 4: Street view of Avenida Marco Polo adjacent to the land. Retrieved from Google Maps (2024).

Fig. 5: View of the corner of the land from Av. Marco Polo and Coastal Road. Retrieved from Google Maps (2024).

Fig. 6: View of the corner of the land from the intersection of St. Ancash and St. Washington. Retrieved from Google Maps (2024).

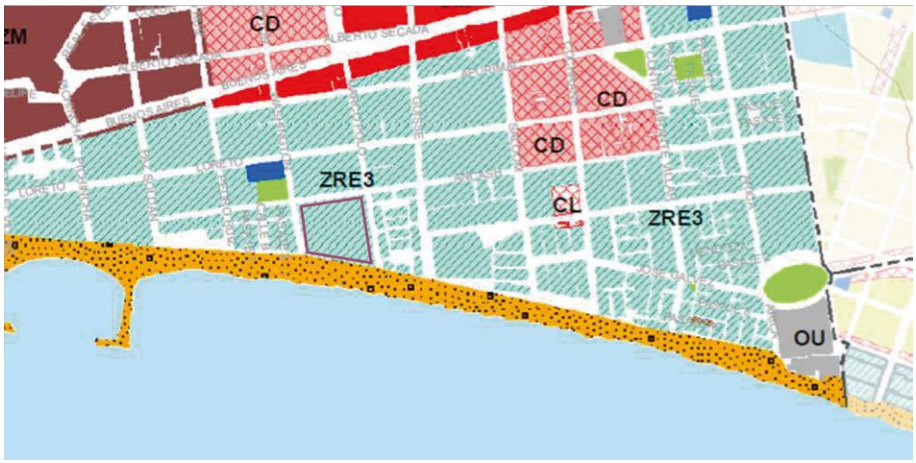
2.2 SITE DIMENSIONS AND AREA



Map 2: Perimeter plan of the land. Created by the author.

The land, located in front of the Coastal Road, has an area of 18,923.7 m²

2.3 ZONING



Map 3: Zoning Map of Callao, indicating permitted land uses. Retrieved from the Municipality of Callao (2024).

COMMERCIAL USE

- Metropolitan Commerce (CM)
- District Commerce (CD)
- Local Commerce (CL)
- Specialized Commerce (CE)

USE WITH SPECIAL REGULATION

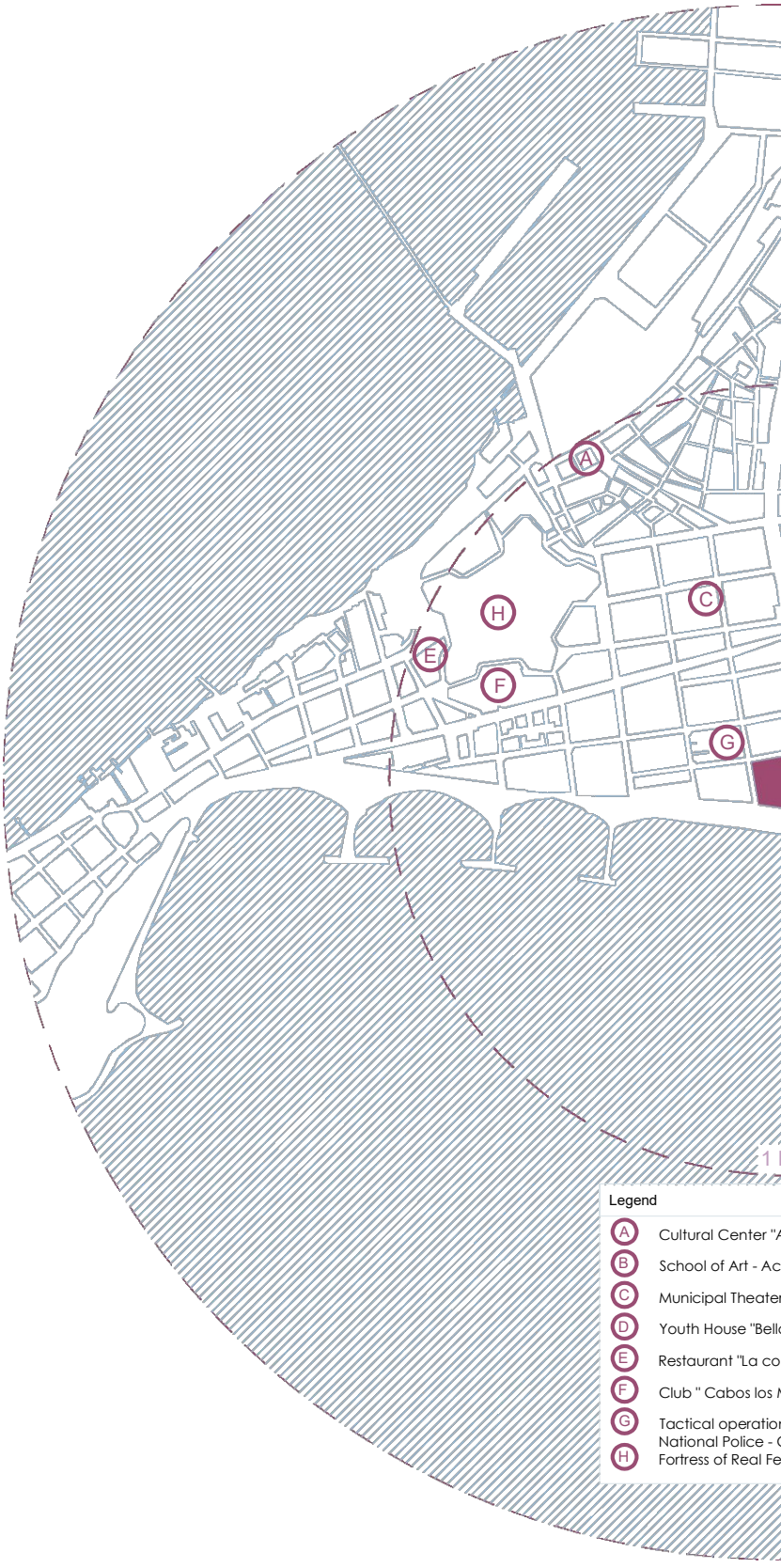
- Special Regulation Zone for studies of regeneration and promotion of private investment (ZRE1)
- Special Regulation Zone for studies related to the environment and physical security (ZRE2)
- Special Regulation Zone for studies with Housing Problems and Integrated Urban Renewal Program (ZRE3)
- Special Regulation Zone for studies on Public Spaces Integration (ZRE4)

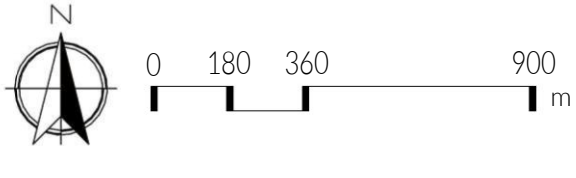
URBAN EQUIPMENT - RECREATION

- Education (E)
- Health (H)
- Public Recreation Zone (ZRP)
- Public Beach Recreation Zone (ZRPP)

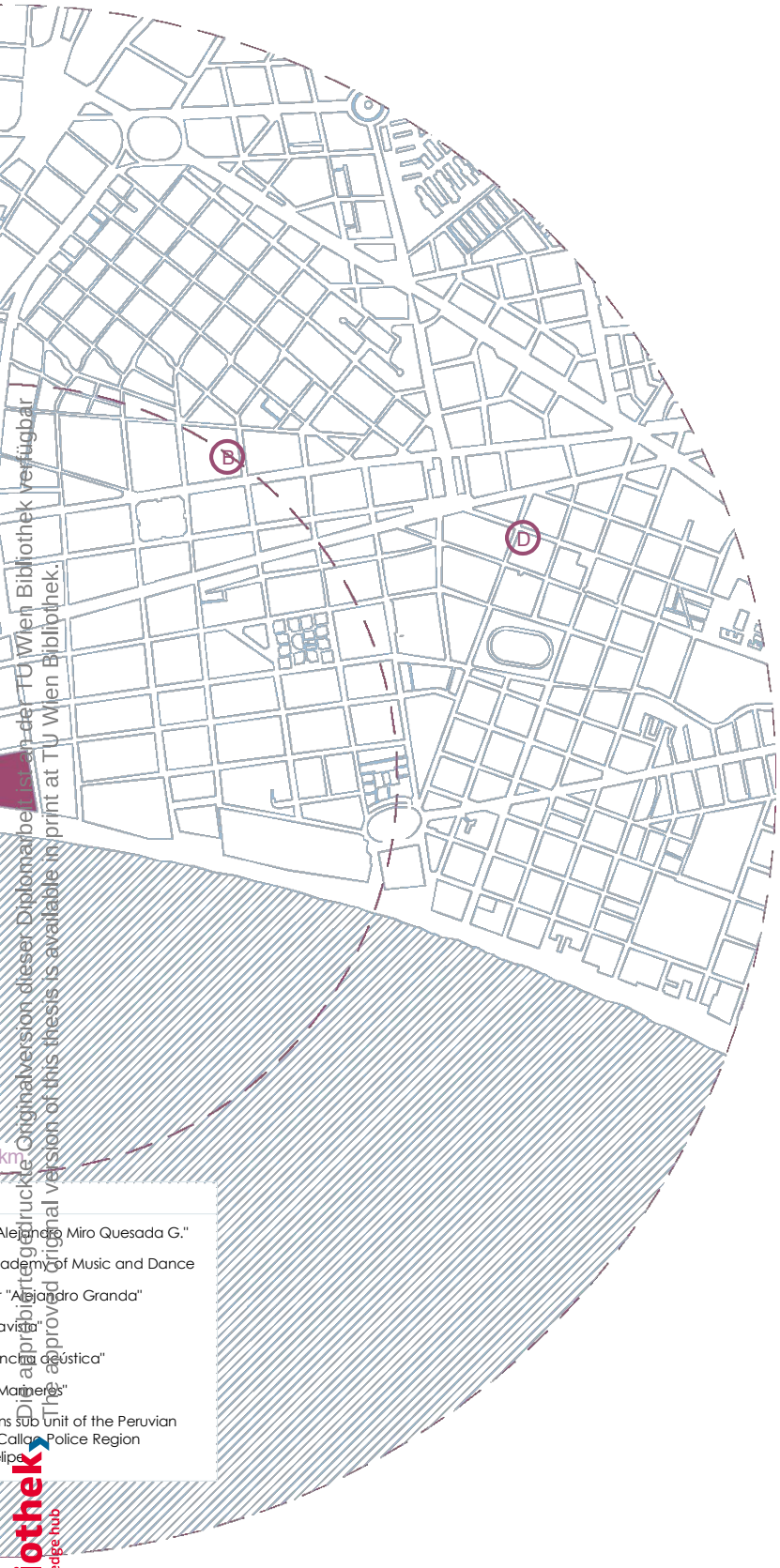
The land is zoned as a Special Regulation Zone. These areas, due to their specific characteristics, require special treatment, making them suitable for projects like a cultural complex, which would align with the need for urban regeneration and improvement.

2.4 SURROUNDINGS



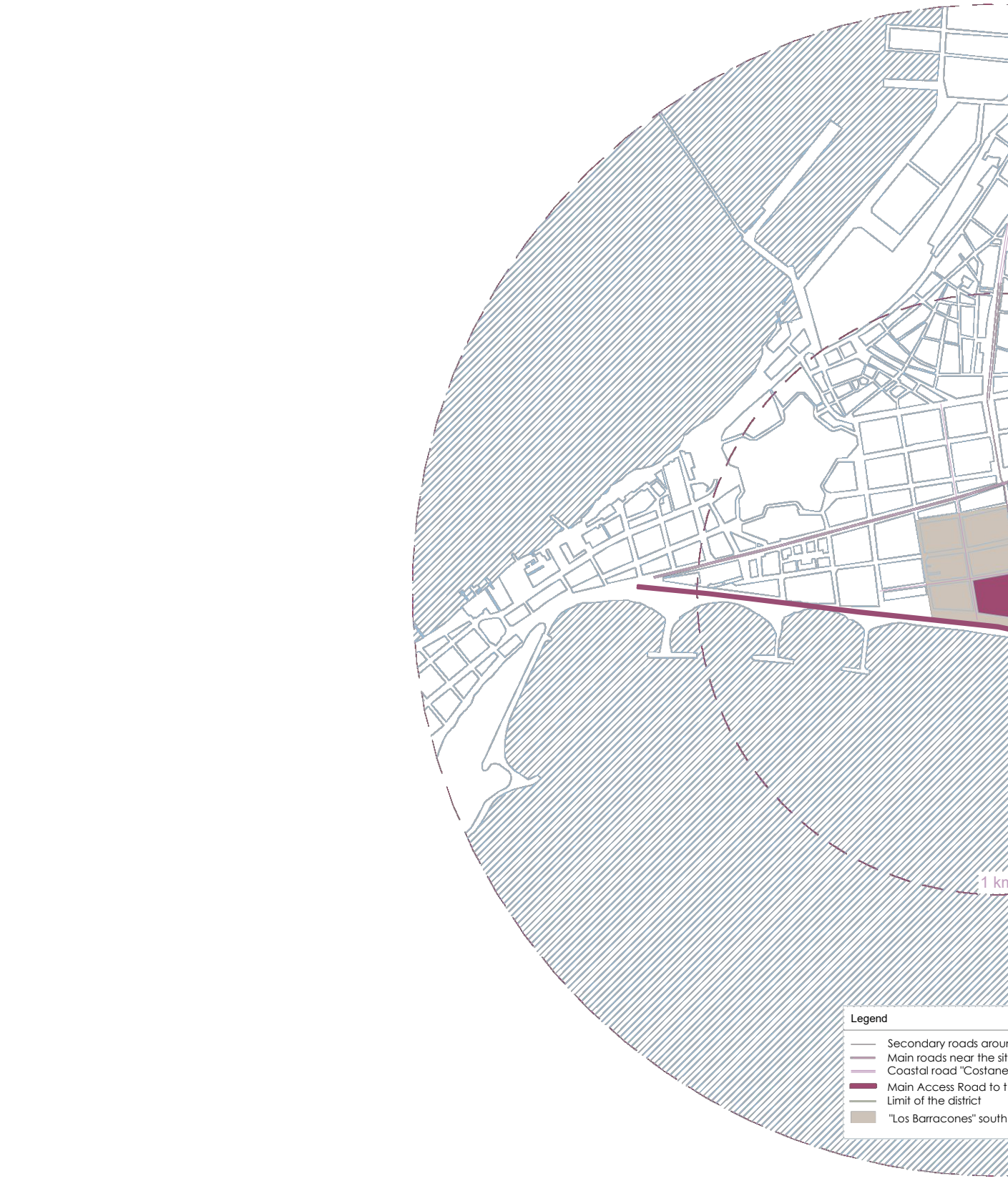


Map 4: Surrounding map

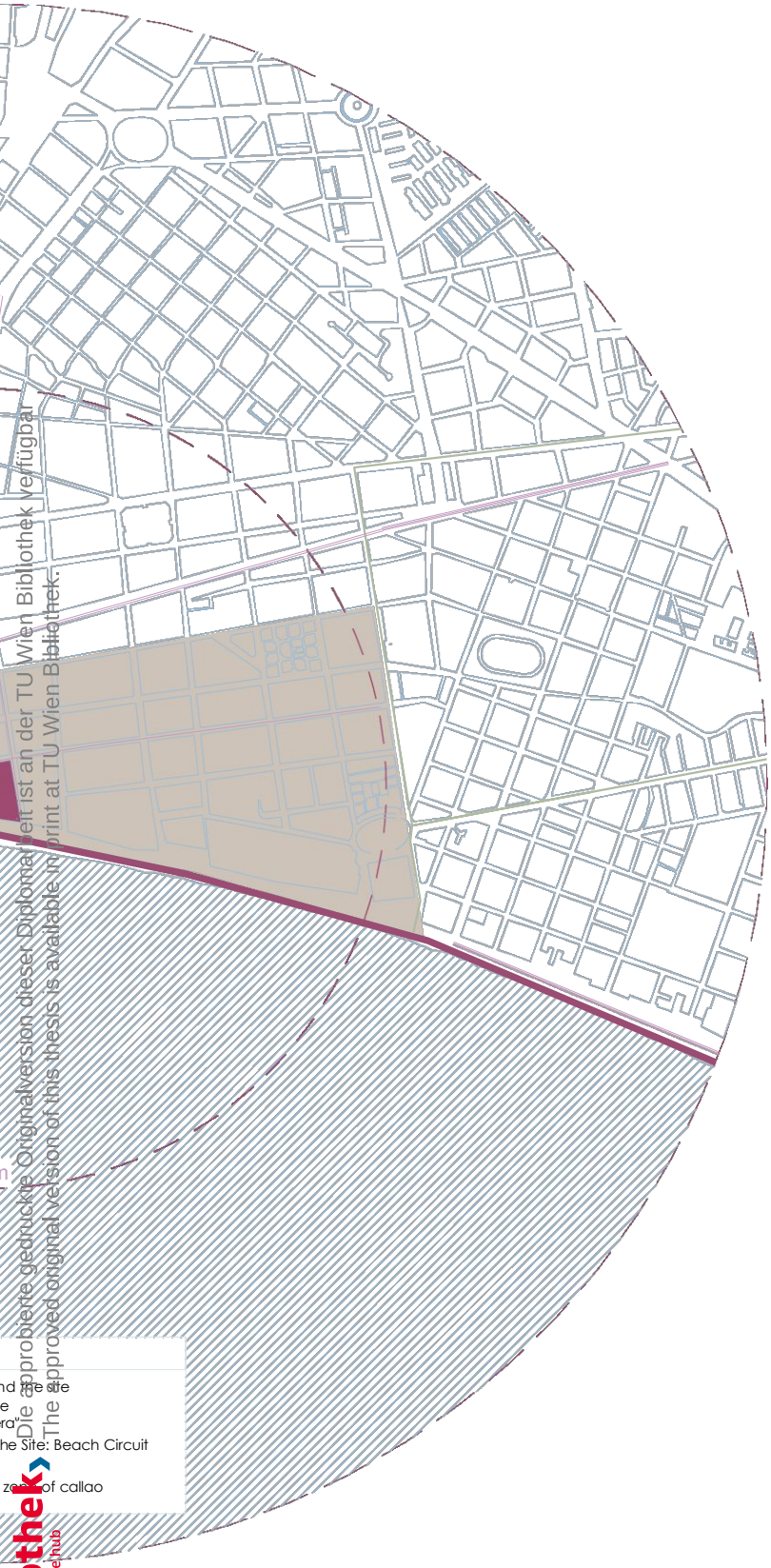


created by the author.

2.5 MAP OF CALLAO ROAD INFRASTRUCTURE AND DEVELOPMENT



Map 5: Map of Callao road infrastruct
autl



t and development. Created by the

2.6 CALLAO-MIRAFLORES CONNECTION: REGIONAL INTEGRATION AND DEVELOPMENT THROUGH THE COSTANERA COASTAL ROAD

Just a 19-minute drive from the project area is the popular and well-developed tourist district of Miraflores in Lima. Miraflores is known for its modern infrastructure, upscale shops, vibrant nightlife, and scenic coastal views, making it a major attraction for both locals and tourists.

In contrast, the Callao area has not experienced the same level of development. Despite its rich cultural heritage and historical significance, Callao faces challenges such as social stigma and economic underdevelopment.

However, the Costanera highway now connects Callao to Miraflores, significantly improving accessibility. This connection has the potential to foster greater social and economic integration, enhancing opportunities for Callao's residents and boosting the overall

Fig.7: JW Marriott Hotel Lima in Miraflores. Retrieved from Condé Nast Traveler (n.d.).

Fig. 8: Centro Comercial Larcomar in Miraflores. Retrieved from Inkan Milky Way (n.d.).

Fig. 9: View of the Malecón in Miraflores district. Retrieved from Peru Hop (n.d.).

2.7 SOLAR TRAJECTORY

The proximity of Peru to the equator significantly influences its climate, solar trajectory, and biodiversity. Peru is located in the tropical region of South America, very close to the equator, which passes to the north of the country at a latitude of approximately -5°. This places Peru in the equatorial zone, affecting solar exposure and seasonal patterns.

Due to this proximity to the equator:

Solar trajectory: The sun follows a relatively high path in the sky, providing more uniform solar exposure throughout the year. The sun does not exhibit extreme inclinations toward the north or south, as seen in regions farther from the equator.

Climate: Seasons are not as pronounced as in higher latitudes, resulting in more stable temperatures throughout the year, especially along the coast and in the Peruvian rainforest.

Day and night: The duration of day and night remains relatively constant year-round compared to regions further from the equator. In cities like Callao, located near the coast, sunlight has a significant impact on architectural projects, where the solar trajectory is almost from east to west, with the sun reaching its peak to the north around midday.

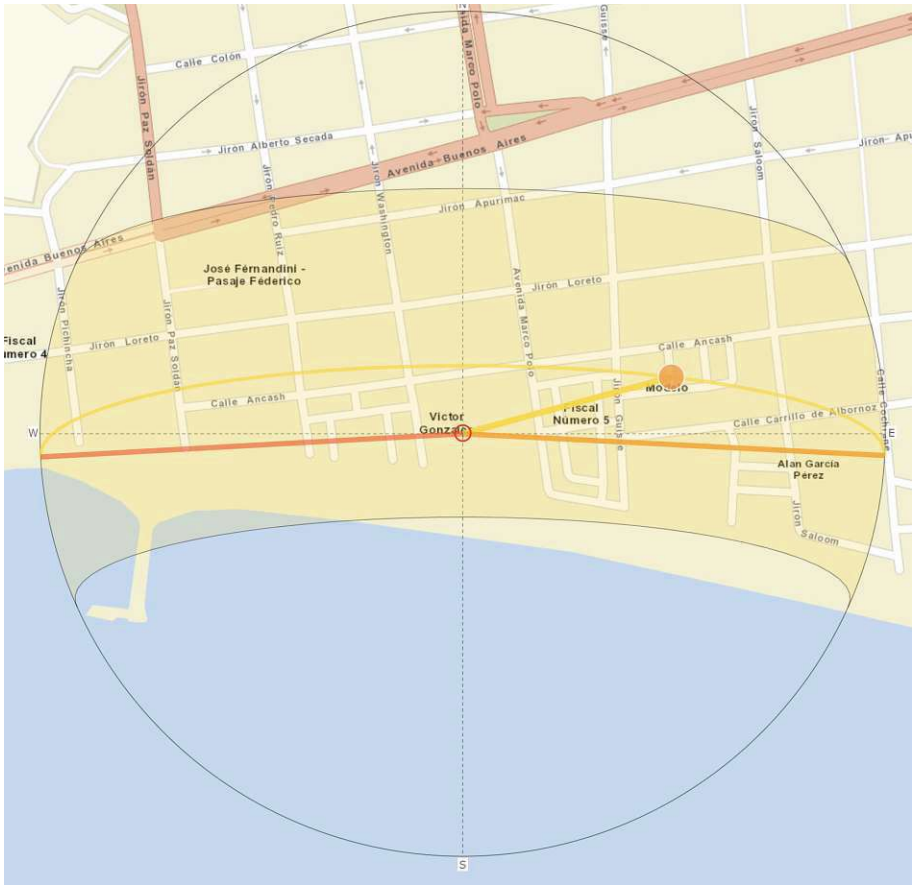


Fig. 10: Solar trajectory for Callao, Peru. Retrieved from SunCalc (2024).

2.8 TEMPERATURE STATISTICS FOR LA PUNTA CALLAO

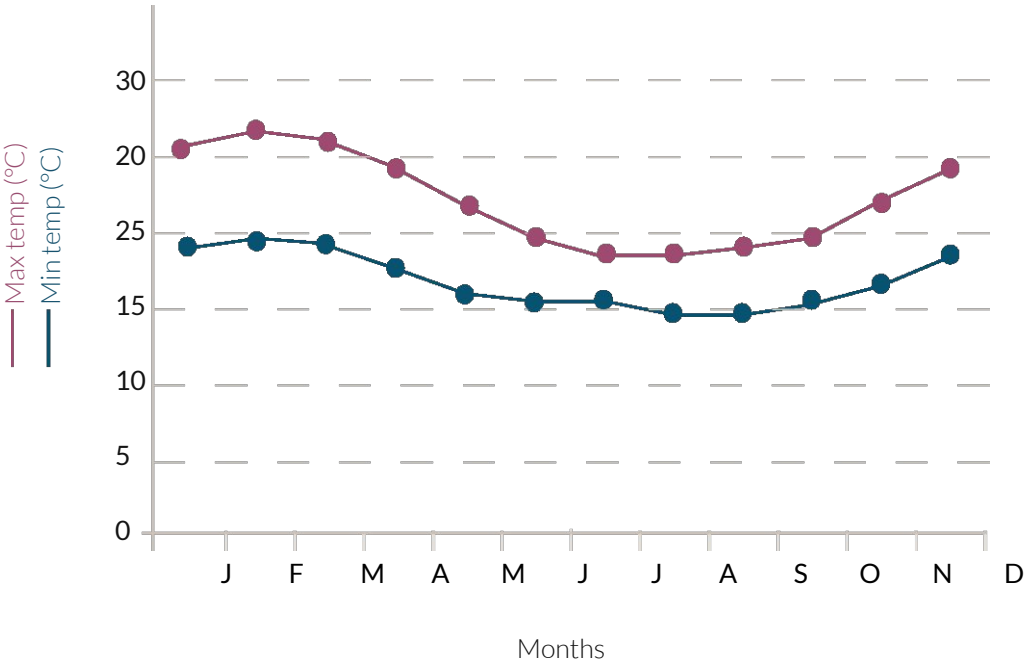


Chart 1: Temperature Statistics for La Punta Callao. Created by the author with data from Windfinder (n.d.).

La Punta, Callao/Lima experiences a warm and mild climate year-round, with average daytime temperatures ranging from 17°C to 25°C and nighttime temperatures from 16°C to 22°C. The region sees higher peaks in temperature during March, which may indicate occasional heat waves. The overall temperature profile suggests a comfortable and stable climate, making it a suitable location for outdoor and maritime activities.

2.9 MONTHLY WIND SPEED AND DIRECTION STATISTICS FOR LA PUNTA CALLAO

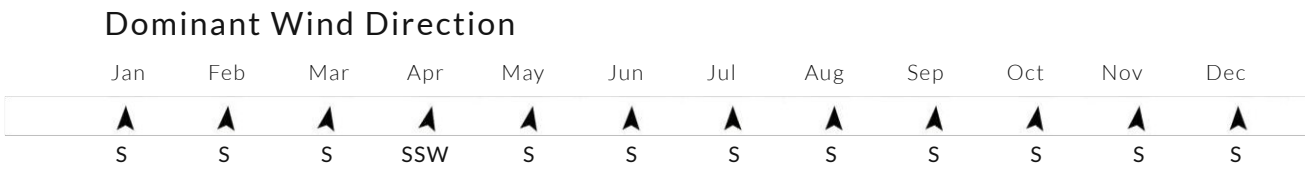


Chart 2: Dominant Wind Direction for La Punta Callao. Retrieved from Windfinder (n.d.).

In the area of La Punta, Callao, the predominant wind direction comes from the south and southwest, mostly oriented towards the north and northeast.

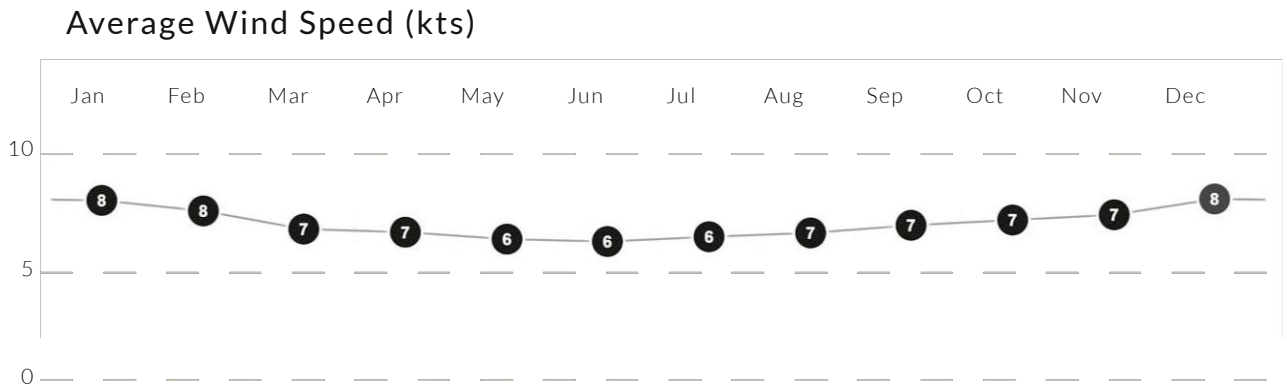
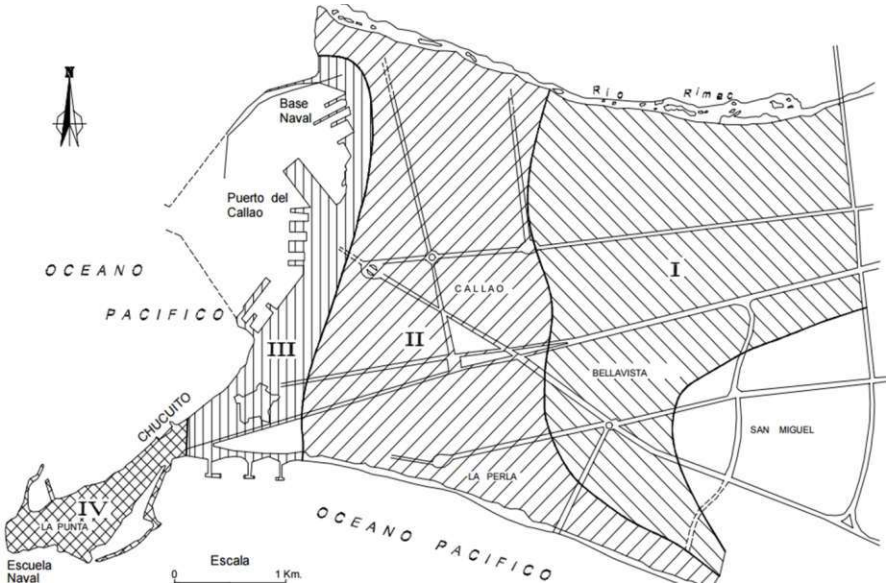


Chart 3: Average Wind Speed (kts) for La Punta Callao. Retrieved from Windfinder (n.d.).

The graph shows that wind speeds in La Punta remain relatively steady throughout the year, ranging from 6 to 8 knots on average. Wind speeds of 6 to 8 knots are considered moderate, with 6 knots representing a light breeze and 8 knots corresponding to a moderate breeze.

2.10 SOIL TYPE



Map 6: Soil type based on the Microzonification Map of La Punta, Callao. Retrieved from Huamán (1991).

Soil type:The project will be located in zone II.

Characteristics of Zone II:

Zone II: This zone includes the low-lying areas of Callao, Bellavista, and La Perla, with elevations between 2 and 15 meters. The stratigraphic profile is characterized by soft soils reaching an average depth of 10 meters, extending up to 15 meters near the mouth of the Rímac River to the north. The soft strata are mainly composed of low-plasticity silt-clay soils (CL-ML), overlying silty sands (SM), with intercalations of peat (Pt) or possibly high-plasticity soils (CH and OH). The base is sandy gravel from the Rimac ejective cone.

To the south, near Mar Brava, there is a slight predominance of sandy soils (SM), while to the north, silty and clayey soils are more common. The presence of superficial and saturated organic soils leads to settlements in buildings and subsidence in runways, exacerbated by groundwater levels between 1.0 and 2.5 meters below the surface. (Huamán, 1991).

Foundation Recommendations:

Reinforced footings connected by foundation beams for lightly loaded buildings. Foundation plates for structures with more than 2 floors. Piles for heavy structures or buildings with more than 4 floors. Recommended foundation depths for shallow foundations range from 1.0 to 3.0 meters, with load capacities typically less than 1 kg/cm^2. (Huamán, 1991).

2.11 FLORA

Huarango (Prosopis pallida)

1. Characteristics: Leguminous tree native to the coastal region of Peru.
2. Height: Up to 20 meters.
3. Canopy spread: Up to 10 meters.
4. Uses: Hard wood for firewood and construction; medicinal properties.
5. Benefits: Provides extensive shade and improves soil quality by fixing nitrogen.

Molle (Schinus molle)

1. Characteristics: Evergreen tree known as “false pepper tree.”
2. Height: Up to 15 meters.
3. Canopy spread: Up to 8 meters.
4. Uses: Fruits used as a spice and in traditional medicine.
5. Benefits: Aromatic and ornamental tree, ideal for recreational areas.

Totora (Schoenoplectus californicus)

1. Characteristics: Aquatic plant that grows in wetlands and lagoons.
2. Height: Up to 3 meters.
3. Canopy spread: N/A (aquatic plant).
4. Uses: Traditional material for building rafts and roofs.
5. Benefits: Stabilizes wetlands and is essential for sustainable construction in wet areas.

Algarrobo (Prosopis pallida)

1. Characteristics: Leguminous tree highly resistant to drought.
2. Height: Up to 15 meters.
3. Canopy spread: Up to 9 meters.
4. Uses: Wood, food (pods), and forage.
5. Benefits: Reforestation and erosion control.

Molle (Schinus molle)

1. Characteristics: Herbaceous plant with very showy yellow flowers.
2. Height: Approximately 30 cm.
3. Canopy spread: Small, suitable for decoration.
4. Uses: Ornamental and cultural, symbol of Lima.
5. Benefits: Adds beauty and cultural significance to projects.

Cactus de San Pedro (Echinopsis pachanoi)

1. Characteristics: Columnar cactus that grows in Andean regions.
2. Height: Up to 6 meters.
3. Canopy spread: Small.
4. Uses: Ritual and medicinal, contains mescaline.
5. Benefits: Ideal for xerophytic gardens and sustainable landscaping.

2.12 FAUNA

Peruvian Pelican (Pelecanus thagus)

1. Characteristics: Large seabird with a long beak and gular pouch.
2. Height: Approximately 1.5 meters.
3. Envergadura: Hasta 3 metros.
4. Habitat: Costas y humedales.
5. Benefits: Attracts tourism and promotes biodiversity. Indicator of a healthy ecosystem.

Gray Gull (Leucophaeus modestus)

1. Characteristics: Medium-sized seabird with gray plumage.
2. Height: 40 cm aproximadamente.
3. Envergadura: 100 cm.
4. Habitat: Playas y costas rocosas.
5. Benefits: Indicator of a healthy marine environment. Ideal for coastal conservation projects.

Chorlo ártico (Pluvialis squatarola)

1. Characteristics: Migratory bird that visits coasts during winter.
2. Height: 30 cm aproximadamente.
3. Envergadura: 70 cm.
4. Habitat: Playas y marismas.
5. Benefits: Contributes to biodiversity and is attractive for birdwatching.

Manta Ray (Mobula birostris)

1. Characteristics: Large cartilaginous fish known for its wing-like pectoral fins.
2. Dimensiones: Envergadura de hasta 7 metros.
3. Habitat: Aguas costeras y oceánicas.
4. Benefits: Attracts divers and tourists. Promotes marine conservation.

Anchoveta (Engraulis ringens)

1. Characteristics: Small pelagic fish of great commercial importance.
2. Dimensiones: Hasta 20 cm de longitud.
3. Habitat: Aguas superficiales de la corriente de Humboldt.
4. Benefits: Fundamental in the marine food chain. Supports sustainable fishing projects.

South American Sea Lion (Otaria flavescens)

1. Characteristics: Robust marine mammal known for its large size and dense fur.
2. Dimensiones: Los machos pueden alcanzar 2.5 metros y pesar hasta 300 kg.
3. Habitat: Islas y costas rocosas, como las Islas Palomino frente al Callao.
4. Benefits: Major tourist attraction. Promotes conservation and responsible tourism.

3. OBJECTIVES

General objective

The present investigation aims to collaborate through the tools of architecture to a comprehensive intervention model aimed at deconstructing the social stigma of the South Zone of Callao (Barracones del Callao) as an essential and parallel step for its socio-economic development and its gradual integration into society.

Specific Objectives

1. Creation of Educational and Recreational Spaces: Establish workshops and classes to help participants gain recreational and employment skills; include coworking spaces to foster entrepreneurship.

2. Promotion of Healthy Lifestyles: Develop sports, music, dance, yoga, and art activities to promote good habits.

3. Community Engagement and Development: Encourage neighborhood participation in various social, cultural, and civic activities.

4. Economic Self-Sufficiency: Provide areas for selling art and crafts to support financial self-sustainability.

5. Job Opportunity Center: Assist in employment by offering a dedicated job opportunity center.

6. Childcare Facilities: Create a baby care area to support families and community involvement.

7. Iconic Architecture: Design iconic structures, including a dispersed museum showcasing local art and culture.

8. Social Integration and Connectivity: Link the Lima coast to “La Punta” to foster social interaction and reduce isolation through recreational and educational architectural solutions.

9. Convention Facilities: Build a convention room for regional agreements and important discussions in Callao.

These objectives aim to transform the South Zone of Callao into a vibrant, inclusive, and economically viable community through impactful architectural interventions.

4. USER DESCRIPTION

User Categories According to the Area

1. Direct User: The primary beneficiaries of the project, consisting of residents of the South Zone of Callao. These users will directly benefit from the new facilities and programs offered by the project.

2. Indirect User: Includes residents of surrounding communities, tourists, and general visitors who can attend as spectators or participants in various activities. These users are key to fostering social interaction and creating links with the South Zone of Callao.

User Categories According to Activity

1. Temporary User: Visitors who come to the complex for specific, pre-scheduled events or activities. Examples include guest performers like singers or dancers invited to concerts, or attendees of urban art events.

2. Frequent User: Individuals who regularly participate in workshops and courses (e.g., dance, music, gym) as students or instructors. They follow a set schedule and are consistent attendees.

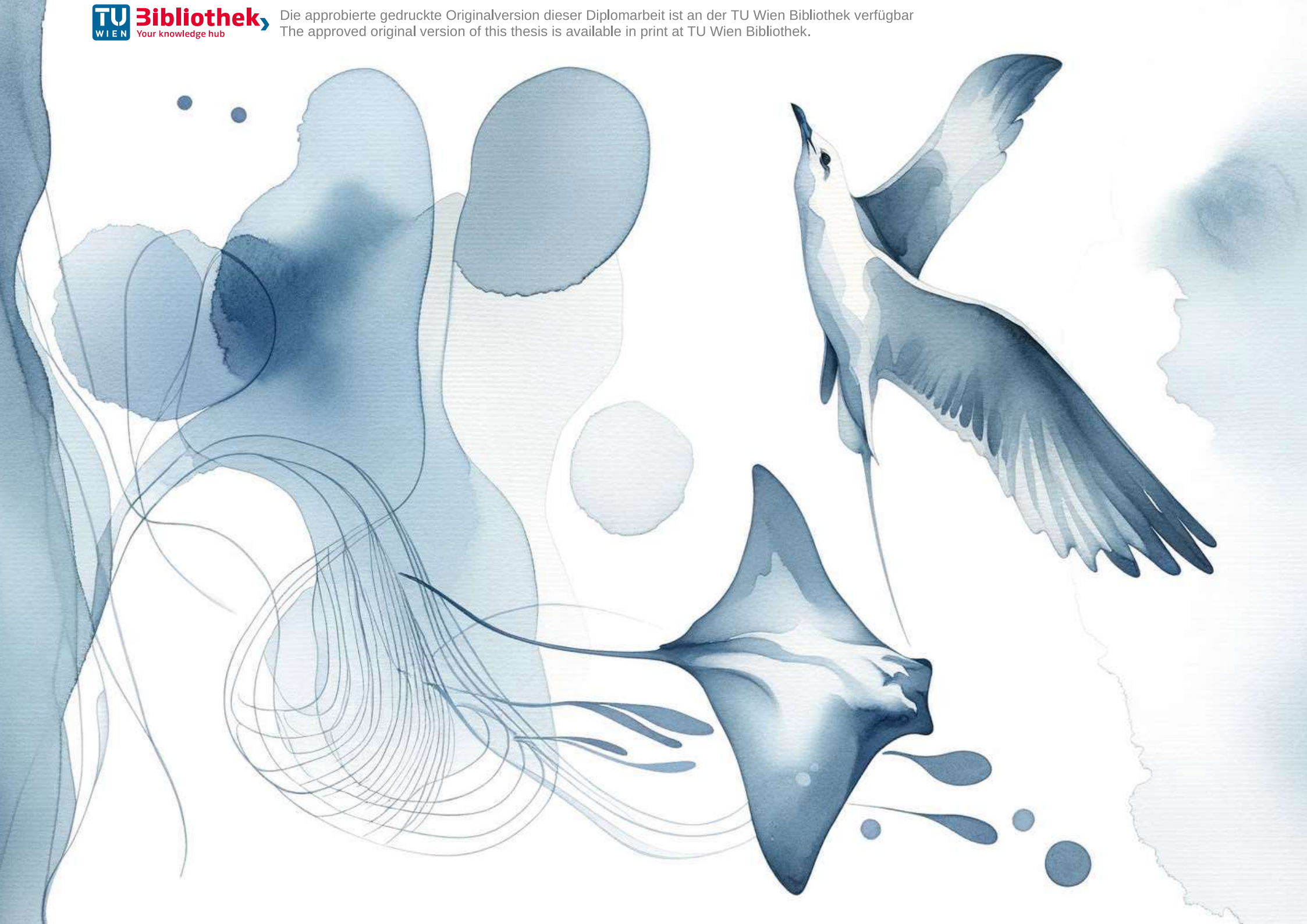
3. Occasional User: This group is further divided into:

3.1 Foreign User: Tourists who visit the complex without a fixed schedule.

3.2 Local User: Local residents who utilize the complex's free spaces without a fixed schedule, such as groups using the skate ramp or soccer field.

4. Permanent User: Includes service and administrative staff who are present in the complex during all operational hours.

5. METHOD



5.1 FORM FINDING

the seagull + the manta ray

The project, located on the Peruvian coast, is inspired by two animals native to the Peruvian sea. The volumetry of the design draws on the abstraction of the bird and the manta ray, symbolizing the aspirations and support that the center provides to the youth. The bird represents the center's role in helping young people "fly" by offering enriching professional and recreational opportunities. Concurrently, the manta ray symbolizes protection, welcoming youth into a safe and nurturing environment within the cultural center.

Additionally, the seagull and manta ray are marine creatures, which highlights the local iconography. These abstract forms not only give the building a unique and symbolic aesthetic but also reinforce the center's mission: to elevate and protect the youth through art and culture. The distinctive architecture turns the building into a local icon, promoting tourism development and generating more opportunities for users and the community. This prominent structure enhances the area's identity and encourages greater interest and participation in the center's cultural and recreational activities.

Fig. 11: Inspiration image. Created by the author.

5.2 DISTRIBUTED MUSEUM CONCEPT

The distributed museum concept for the Cultural Complex in Callao involves creating various exhibit spaces, both indoor and outdoor, that are spread throughout the entire complex. These different rooms and areas are located at various spots and levels within the complex, all connected by a large ramp system. This design encourages exploration and interaction, offering a dynamic and engaging experience for visitors.

Categories

1. Indoor Museum Sections:

History and Heritage of Callao: An exhibition that tells the story of the port and the city, showcasing documents, artifacts, and multimedia highlighting historical events and the cultural evolution of Callao.

Art and Culture of Callao: A space dedicated to displaying traditional and contemporary works by local artists, highlighting their cultural heritage with sculptures, paintings, and crafts that represent Callao's identity.

Innovation and Science Gallery: An interactive museum where visitors can explore technological and scientific advances through dynamic exhibits that stimulate learning and curiosity.

Temporary Exhibition Hall: A flexible area for rotating exhibitions of art, culture, or science, including showcases of local and international artists, allowing for continuous content renewal.

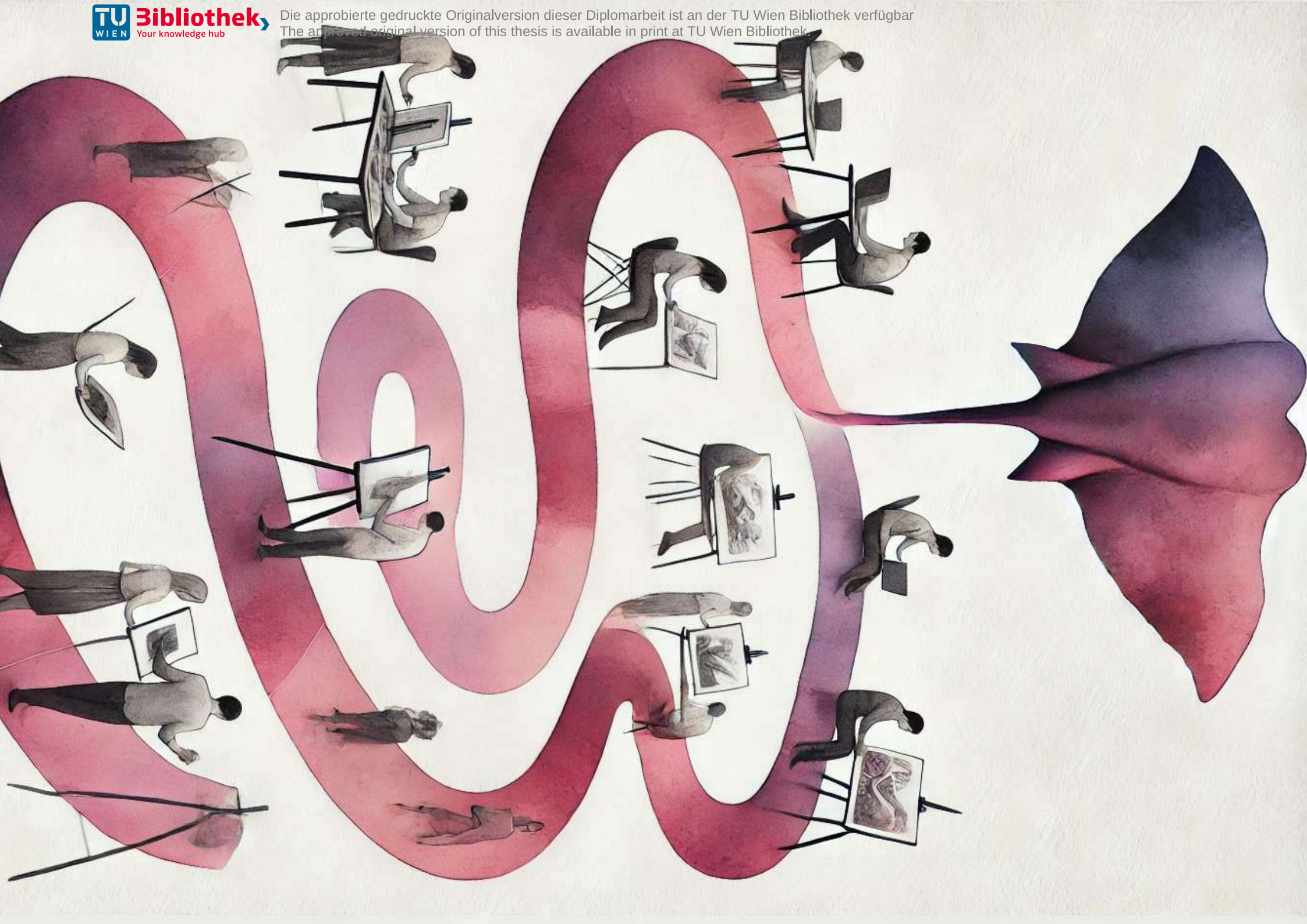
2. Outdoor Museum Sections:

Sculpture Garden: An outdoor space for large-scale sculptures, both permanent and temporary, where art blends with nature, providing a unique aesthetic experience.

Urban Art and Mural Exhibitions: A space dedicated to Callao's urban art, featuring murals and graffiti that reflect the local culture. These large-scale works highlight the creativity of urban artists and their cultural impact on the area.

Oceanview Art Terrace: An open-air terrace where artists create live works, allowing visitors to observe and interact, all set against the backdrop of the ocean.

Fig. 12: Inspiration image representing the concept of a disaggregated museum. Created by the author.



Sculpture Garden: Outdoor space for large-scale permanent and temporary sculptures.

History and Heritage of Callao: Exhibits documents, artifacts, and multimedia on the history and cultural evolution of Callao.

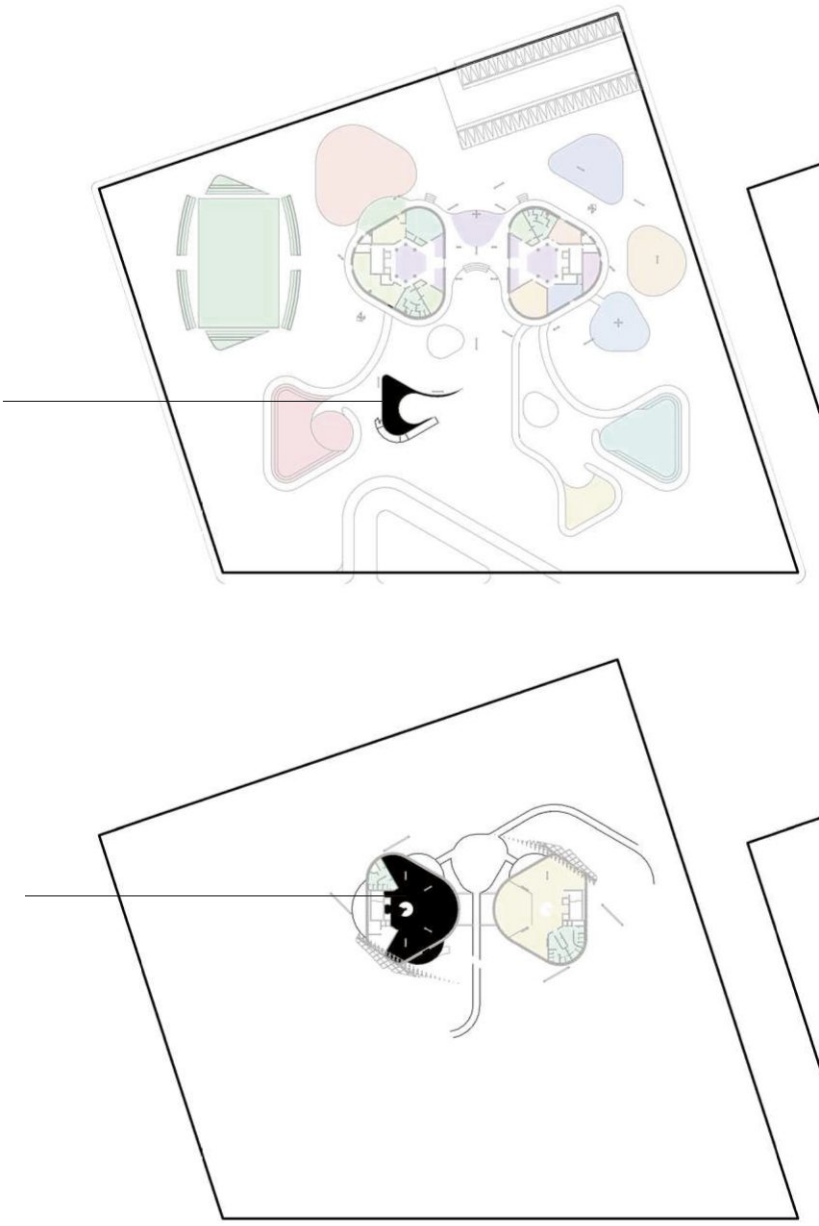
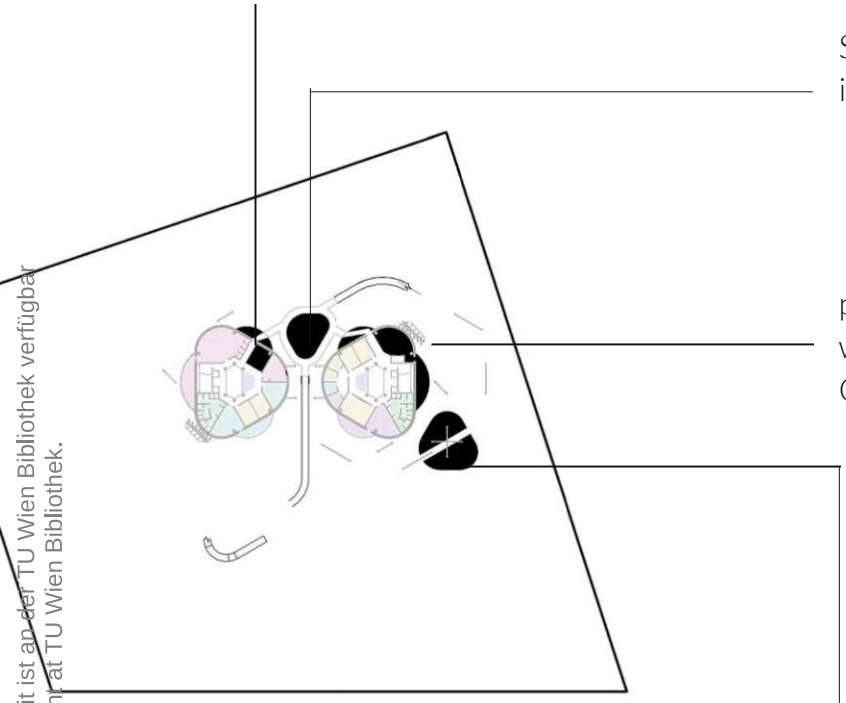


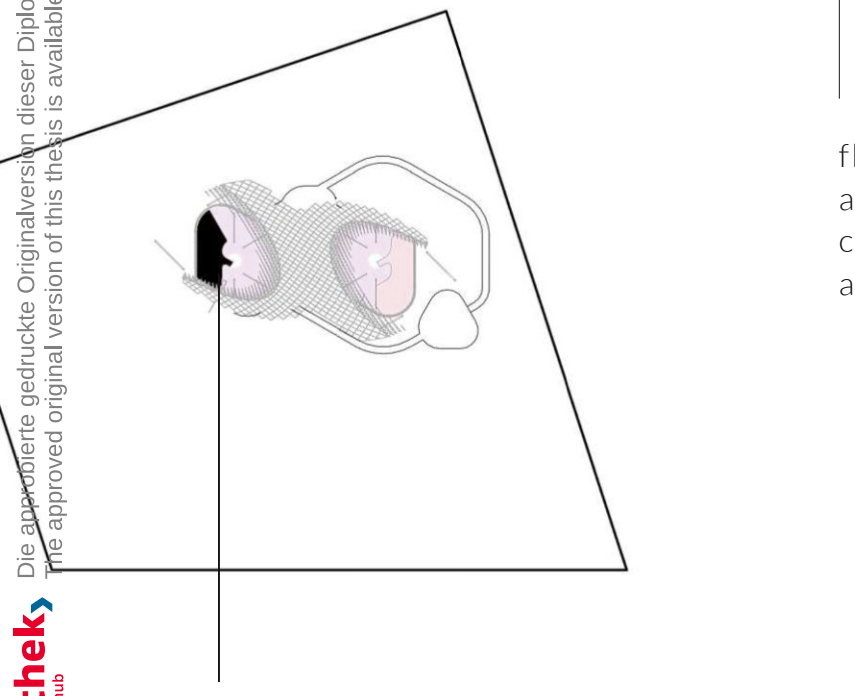
Fig. 13: Distribution of the museum within the cultural complex. Created by the author.

Temporary Exhibition Hall: Flexible space for rotating exhibitions of art, culture, or science.

Urban Art and Mural Exhibitions: Showcases murals and graffiti reflecting Callao's urban culture.



Art and Culture of Callao: Displays traditional and contemporary works by local artists, emphasizing Callao's cultural heritage.



Temporary Exhibition Hall: A flexible area for rotating exhibitions of art, culture, or science, including showcases of local and international artists, allowing for continuous content re-

Oceanview Art Terrace: An open-air terrace where artists create live works, allowing visitors to observe and interact, all set against the backdrop of the ocean.

5.3 THE ENVELOPING STRUCTURE

Roof Structure of the Project:

The roof consists of a three-dimensional steel mesh, based on a triangulated system that evenly distributes loads, providing stability and resistance to wind and seismic forces. A lightweight fiberglass-reinforced polyester (GRP) covering is installed on this structure. GRP was chosen for its adaptability to complex curves, as well as its strength, lightness, and durability.

The GRP panels are coated with a white finish that reflects light, creating a smooth, continuous appearance in line with the building's fluid design. This opaque covering effectively blocks direct solar radiation, reducing interior heat and enhancing energy efficiency by minimizing the need for artificial cooling, all while maintaining the architectural integrity of the design.

The roof is supported structurally by two key points where the curves extend down to the ground, anchoring the structure. Additionally, eight V-shaped columns rise from ground level to provide further support, along with four additional columns that begin from the third level, further distributing the loads and ensuring the stability of the curved roof.

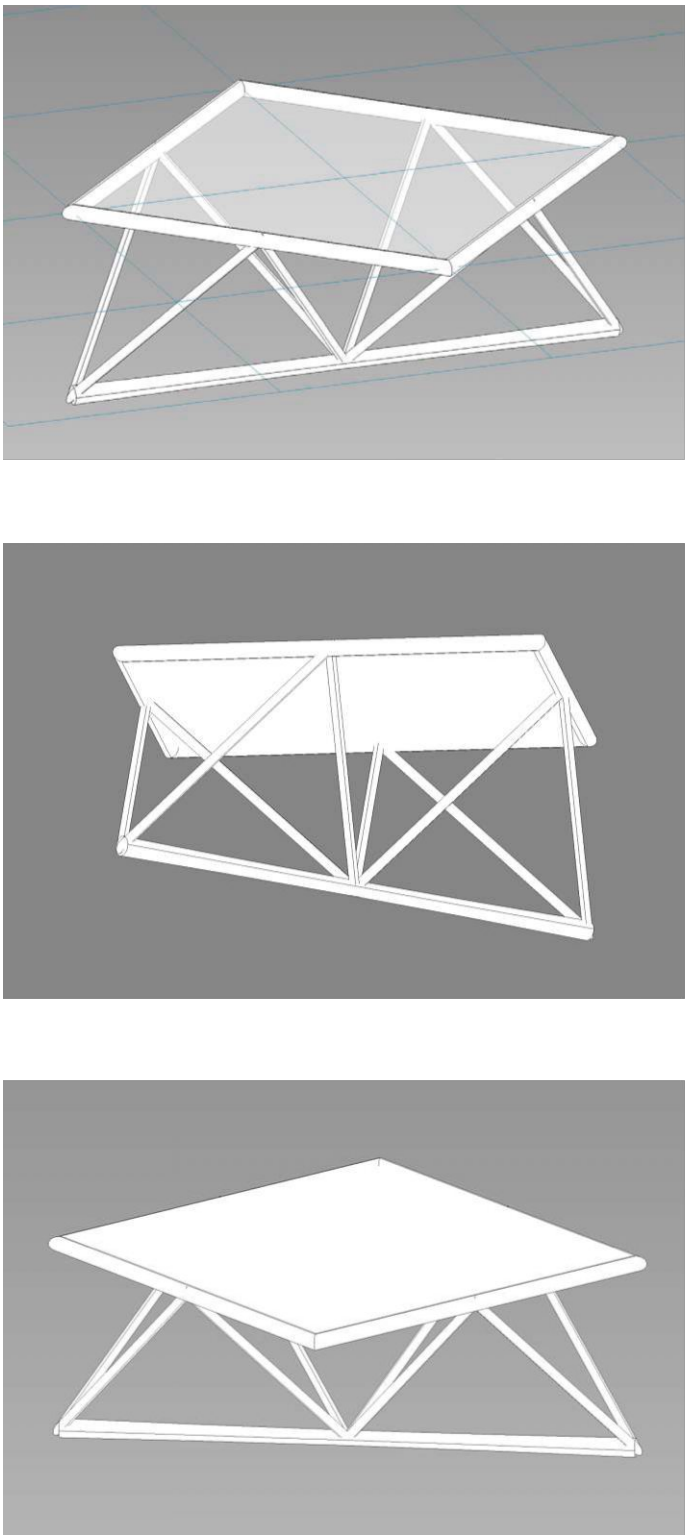


Fig. 14: Basic module for the structural mesh. Created by the author.

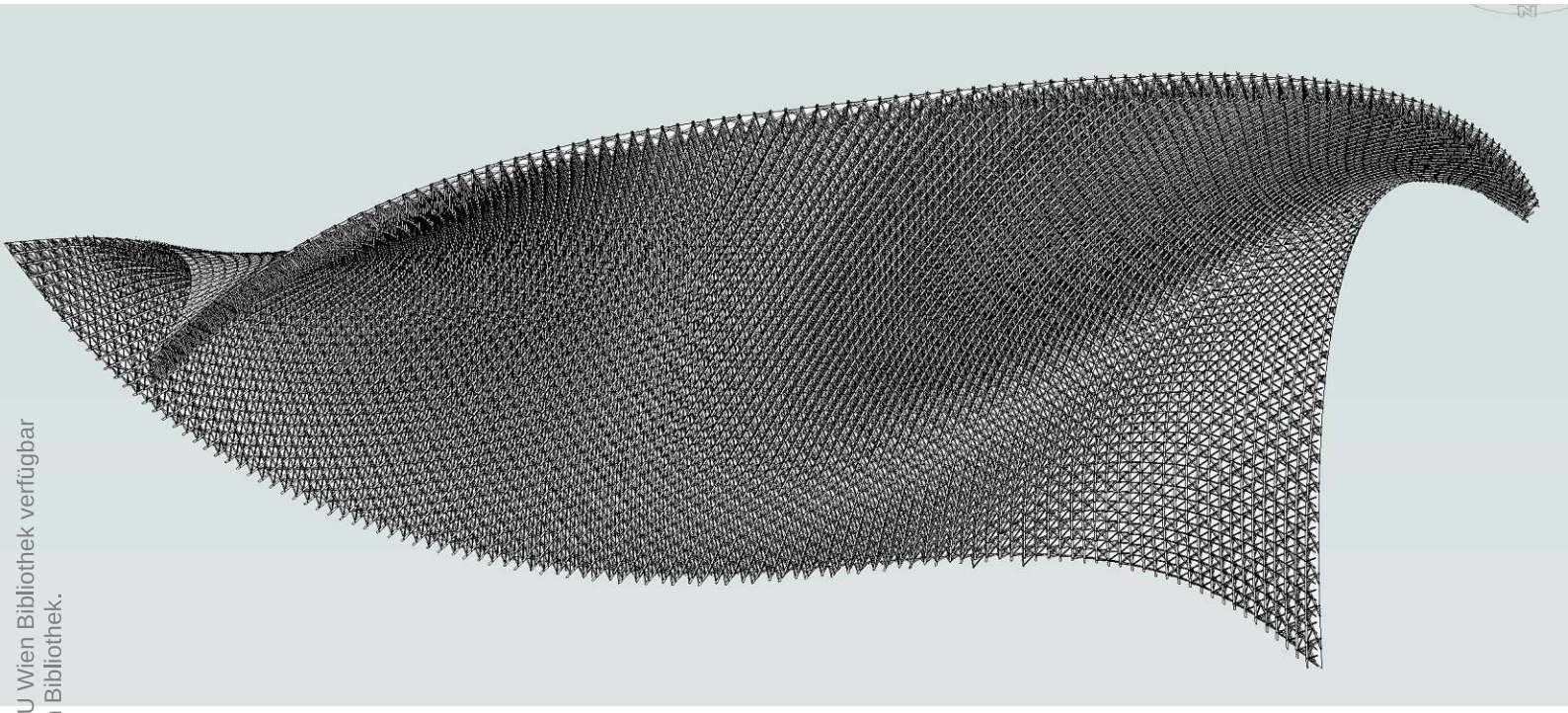


Fig. 15: Structural mesh created from the basic module. Created by the author.

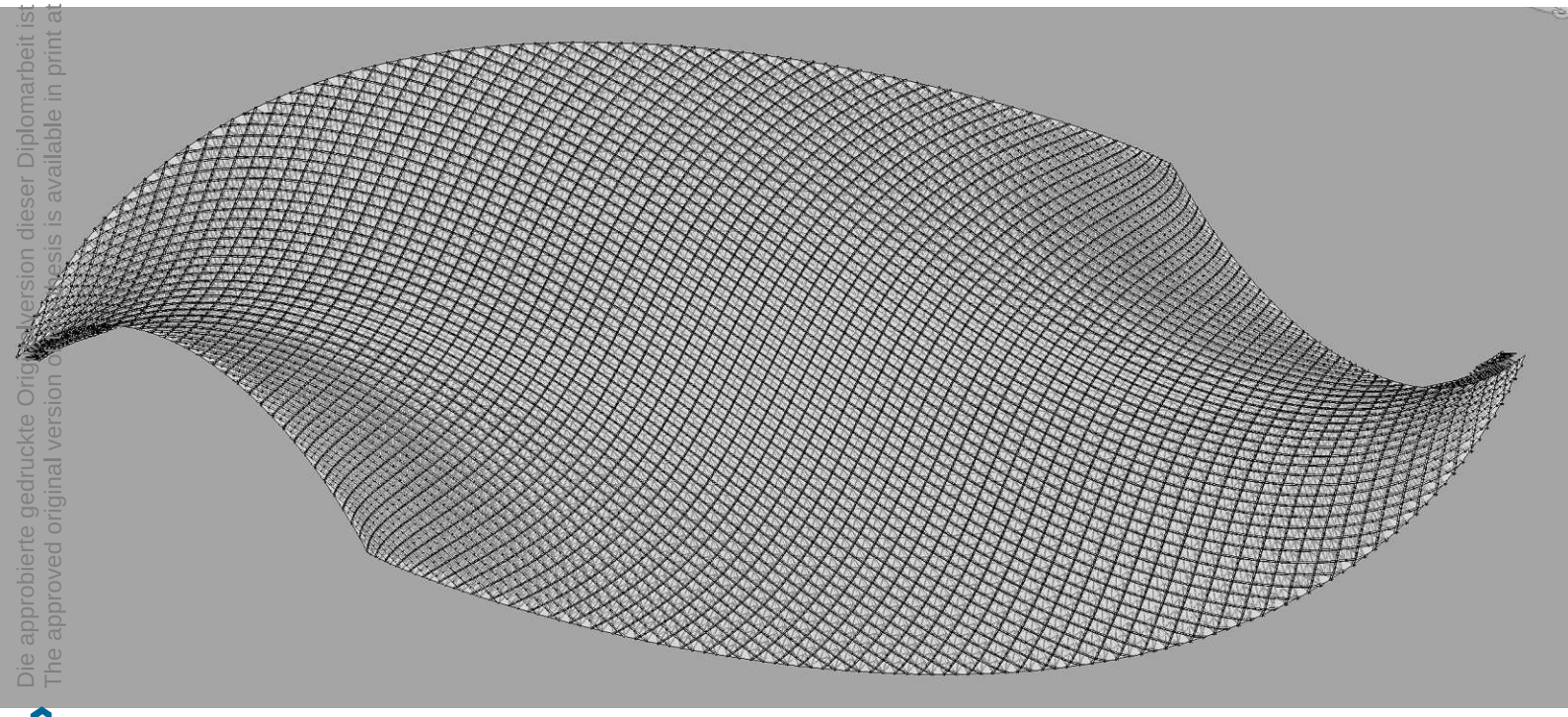
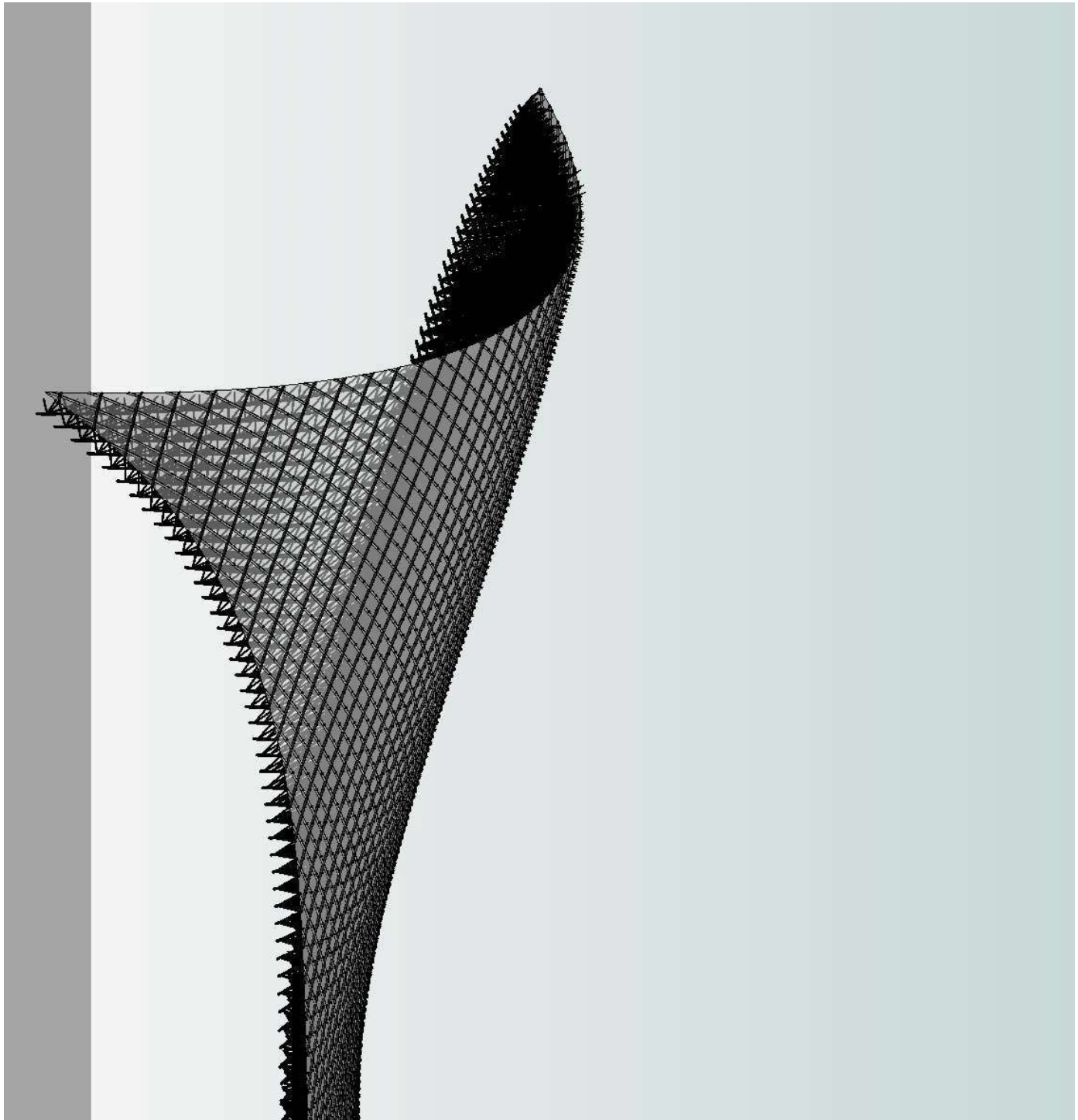


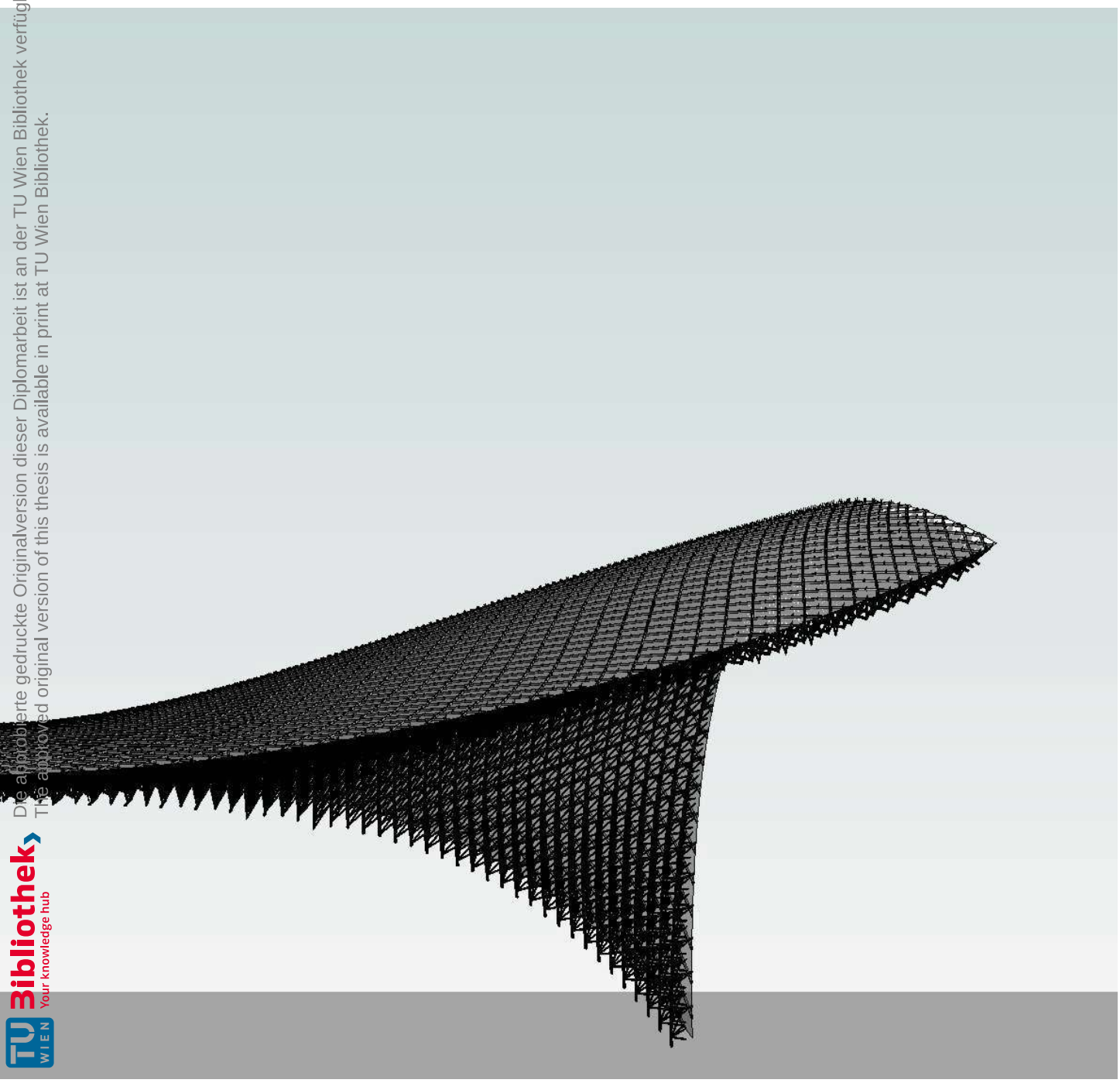
Fig. 16: Orthogonal top view of the structural mesh created from the basic module. Created by the author.



Architectural Inspiration:

The roof design features a curved and dynamic shape, inspired by natural elements such as ocean waves or bird wings. This modern and fluid aesthetic gives the architectural complex a distinctive identity.

Fig. 17: Orthogonal front view of the structural mesh. Created by the author.



5.4 TOWERS STRUCTURE

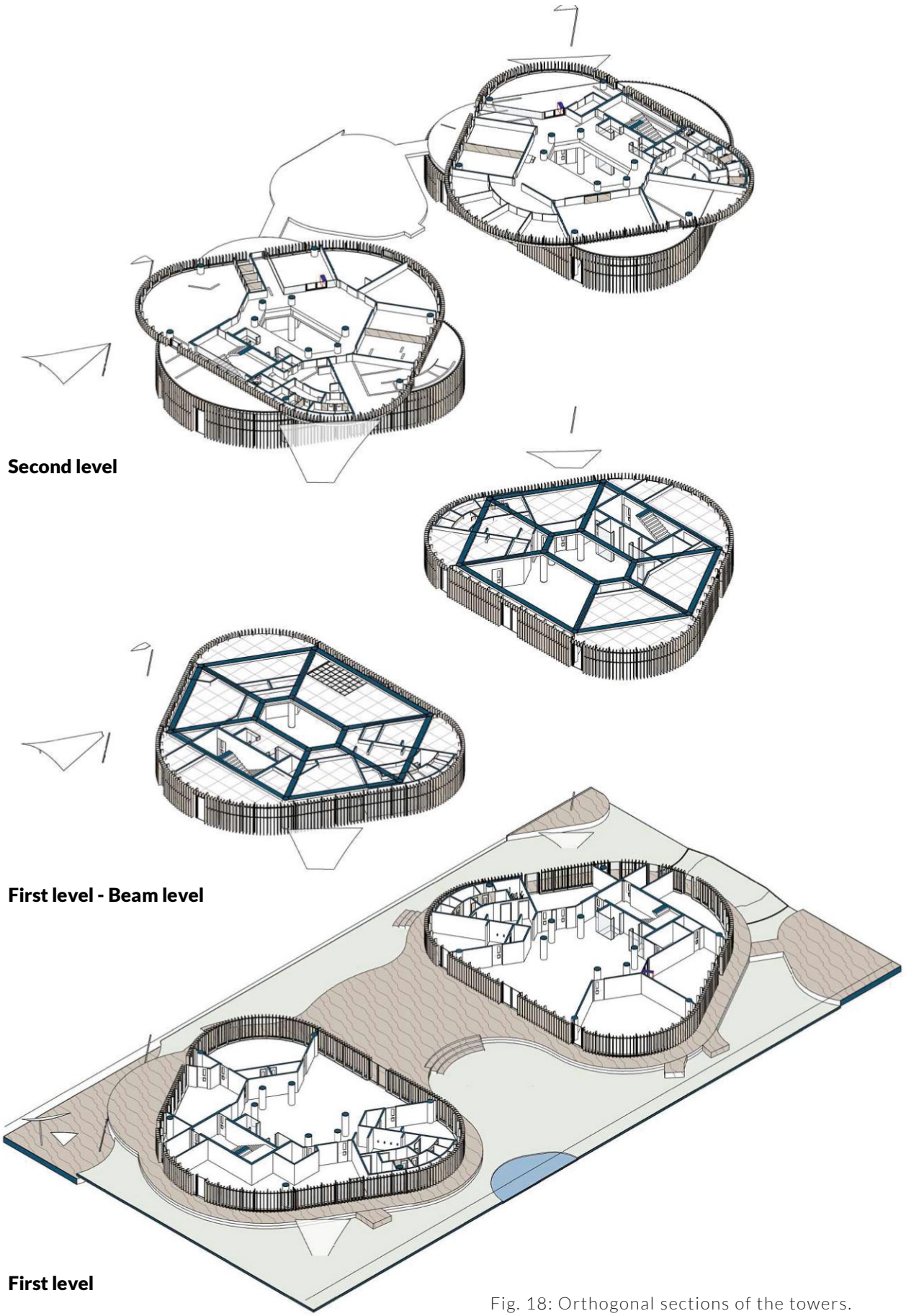
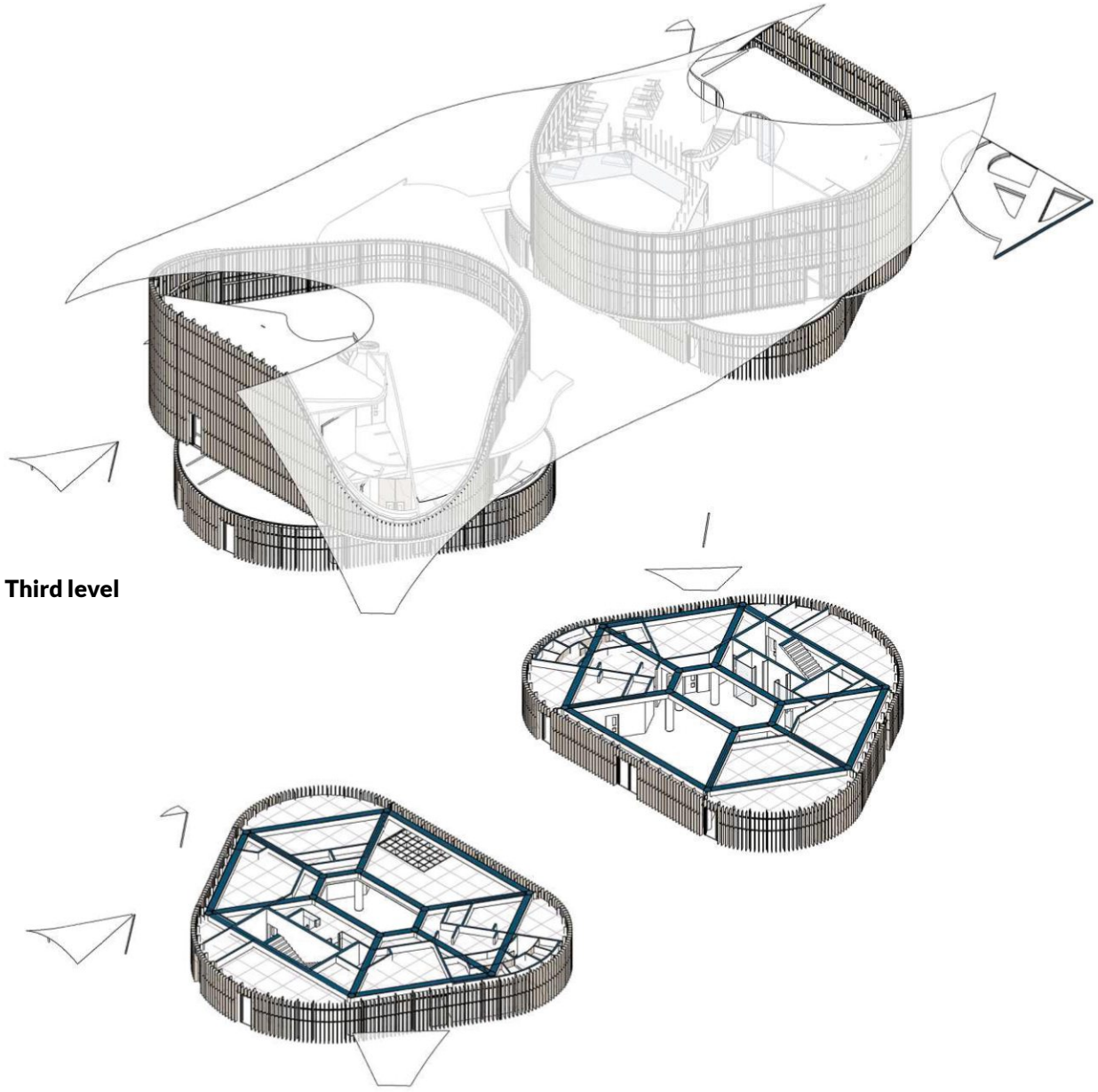


Fig. 18: Orthogonal sections of the towers.



Third level

Second level - Beam level

ORTHOGONAL SECTIONS OF THE TOWERS

0 5 10 25 m

5.5 ACCESSIBILITY

The accessibility of the project is designed with an inclusive and efficient approach, ensuring that all individuals can comfortably and safely enjoy the space. A key feature is the large ramp that wraps around the twin towers, providing continuous, fluid access throughout the building and to the open exhibition areas distributed along certain sections of the ramp.

Each tower is equipped with a closed emergency staircase, classified as a protected stairway (B4), in accordance with the Peruvian National Building Code (Consejo Regional de Lima, 2022, p. 224). This ensures a safe and efficient evacuation in emergencies, offering a controlled and secure environment.

Additionally, the towers feature two glass elevators that enhance vertical accessibility. These elevators allow easy movement between floors and offer the option to directly connect with the ramp from the upper levels, enabling visitors to comfortably descend and continue their journey through the museum's various areas.

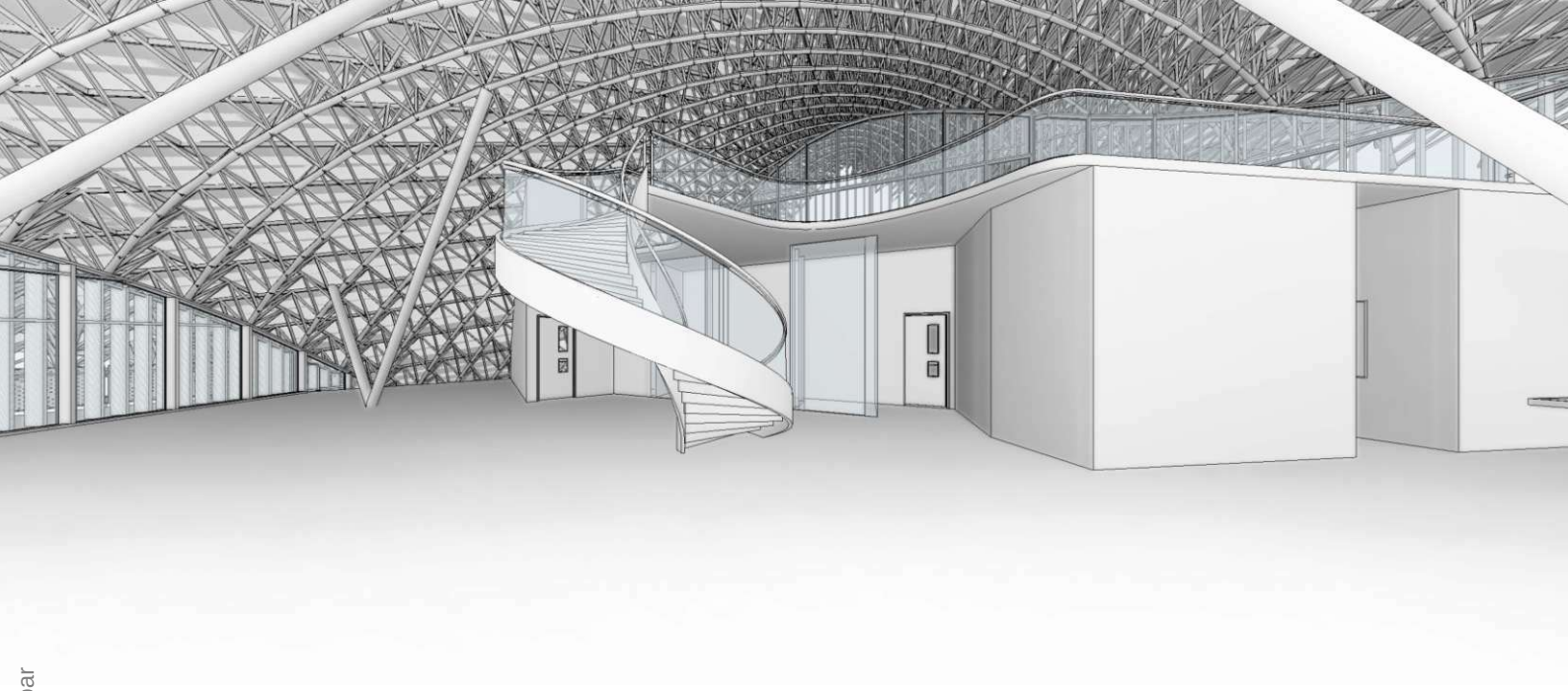


Fig. 19: Circular staircase of the museum

On the third level of each tower, a central spiral staircase connects the main floor with a mezzanine, adding dynamism to the internal circulation. This mezzanine is also accessible via a freight elevator, ensuring that everyone, regardless of mobility, can easily access this level, meeting the highest standards of inclusion and safety.

5.6 THE RAMP

The ramp, measuring 1.8 meters in width, is conceived as a fundamental architectural element within the project, not only addressing accessibility standards but also enhancing the spatial experience. With a gentle 6% incline and strategically placed rest areas every 9 meters, it ensures seamless mobility for wheelchairs, strollers, and other mobility devices.

Beyond its functional role, the ramp integrates into the landscape as a defining feature, creating a fluid connection between levels while framing expansive views of the coastline and the cultural complex, thus merging form and function in a way that elevates both the architectural narrative and the user's experience.

Fig. 20: The Grand Ramp. Created by the author.

5.7 MOVABLE PANELS

The incorporation of movable panels in certain spaces within the project will provide flexibility and greater efficiency in space utilization, allowing areas to be adapted for various activities and needs without permanent modifications. These panels will enable the division or expansion of spaces as required, optimizing functionality and enhancing the ability to accommodate different types of events or uses within the same area. Additionally, by offering a high level of acoustic insulation and a harmonious aesthetic integration, they will help maintain privacy and comfort, ensuring an appropriate environment for each situation.

5.8 SOLAR-POWERED CHARGING BENCH

The solar-powered charging bench combines sustainability with modern convenience, offering seating in outdoor environments like parks, plazas, or campuses, while providing charging capabilities for mobile devices. These benches are designed with integrated solar panels that power USB ports or wireless charging pads, enabling users to charge their phones or tablets while enjoying the outdoors.

The bench structure is primarily crafted from wood, aligning with the natural surroundings and creating a harmonious aesthetic that complements green spaces. This approach ensures the benches blend seamlessly into parks while maintaining their eco-friendly focus. The use of wood not only enhances the visual appeal but also supports the idea of sustainable urban furniture, as wood is a renewable resource.

5.9 VERTICAL LOUVERS

The incorporation of vertical louvers into the facades of the project in Callao, Peru, will allow for effective control of natural light, providing enhanced shading during sunny periods, which is crucial in the region's warm climate. These louvers will help mitigate the impact of intense sunlight, reducing glare and heat gain within the building, thus contributing to a more comfortable indoor environment and lowering the need for artificial cooling.

Additionally, the vertical louvers will offer continuous aesthetic appeal, blending harmoniously with the architectural design while also enhancing the building's environmental performance. The adjustable nature of these louvers allows for dynamic interaction with the natural surroundings, ensuring optimal light control and ventilation throughout the day. This not only improves energy efficiency but also adds a modern, elegant touch to the building's exterior, making it both functional and visually appealing in the warm, coastal climate of Callao.

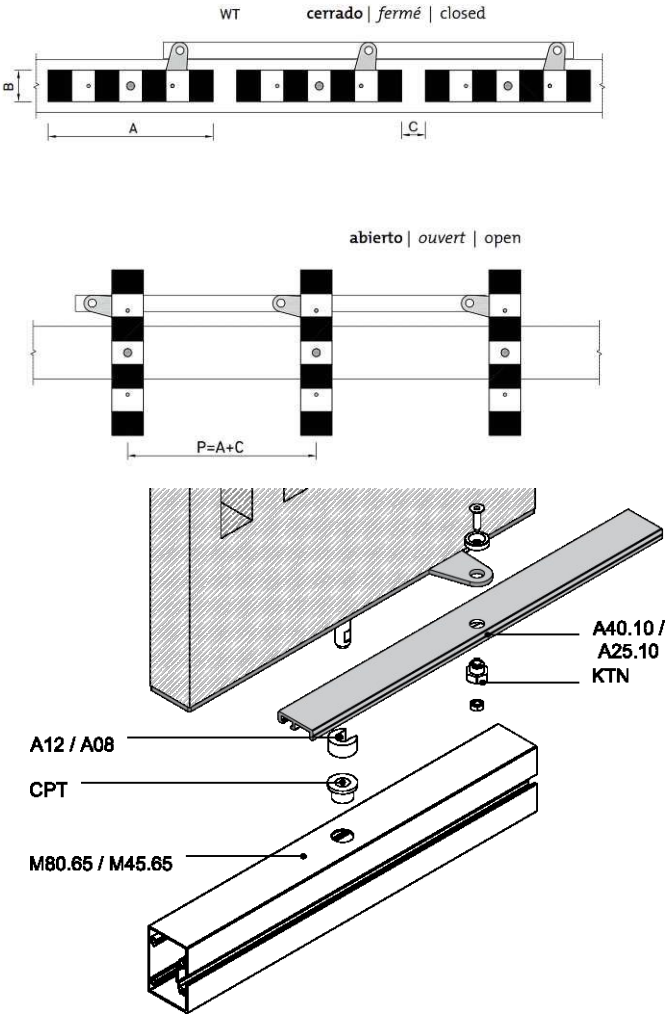
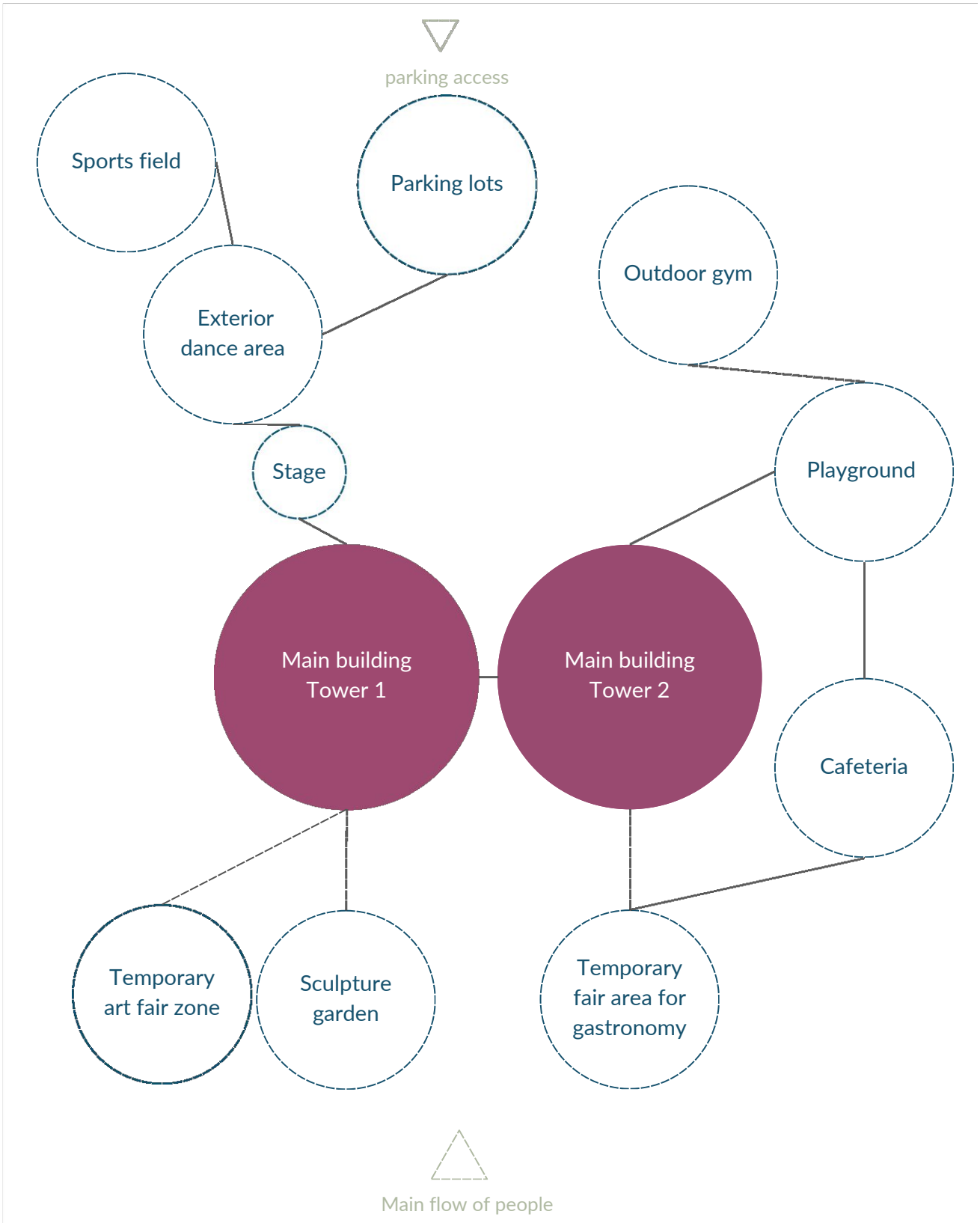


Fig. 21: Movable solar shading louvers in timber. Retrieved from Tamiluz (n.d.).

Fig. 22: View of the project showing the vertical louvers system. Created by the author.

5.10 ADJACENCY DIAGRAM

First level - Surroundings of the towers



The fair zone and the sculpture garden are some of the areas designed to welcome visitors, showcasing some of the art created within the complex and offering a warm and inviting atmosphere. Additionally, they will help enhance the sales experience.

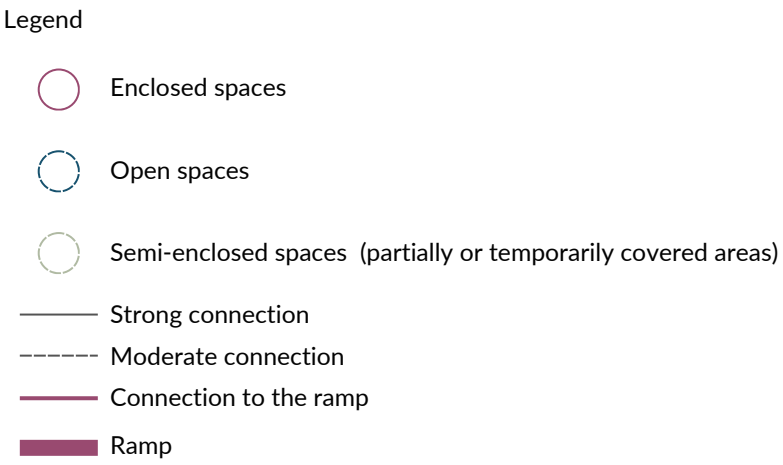
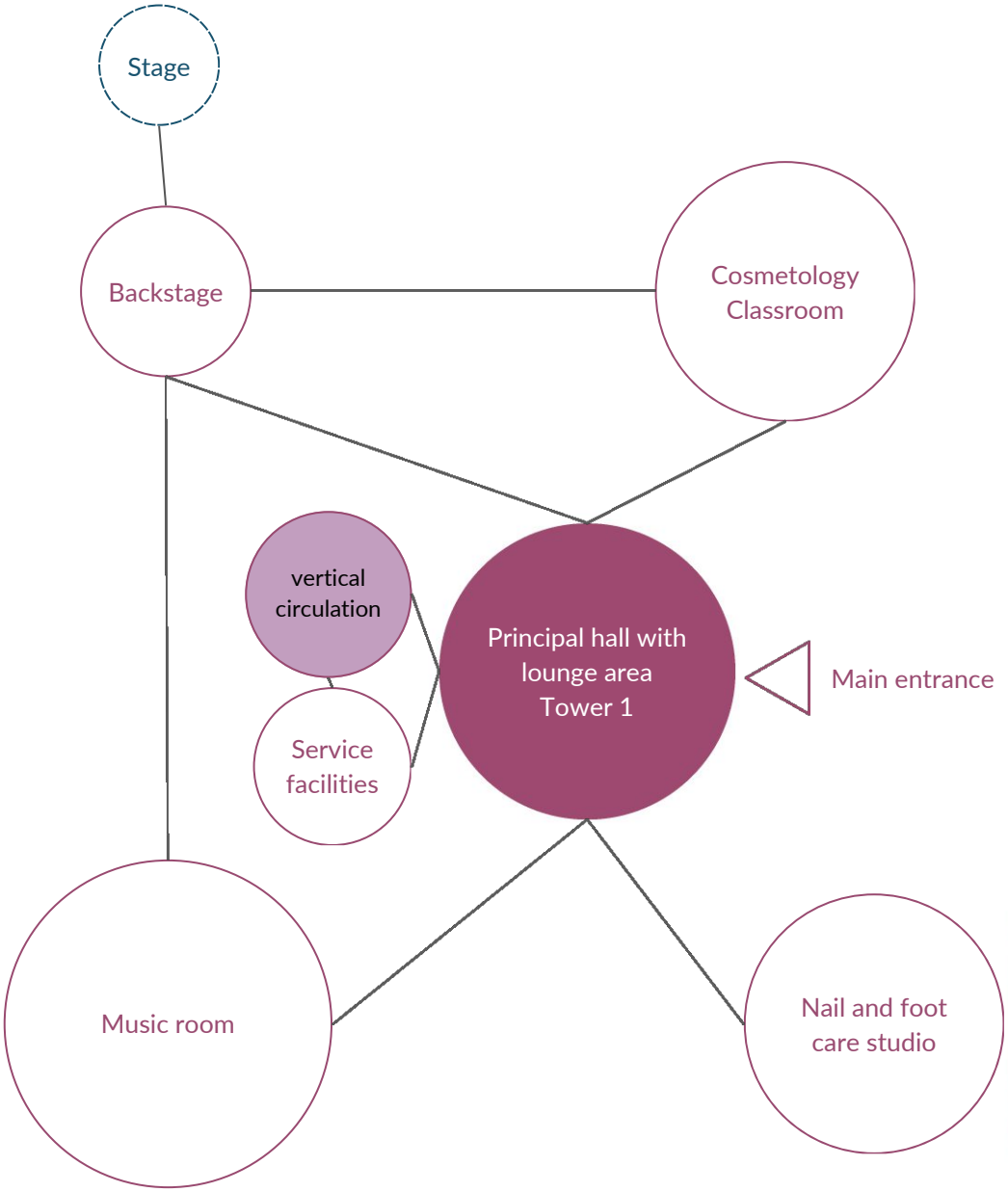


Fig. 23: First level adjacency diagram showing the surroundings of the towers. Created by the author.

First level



The Cosmetology Classroom should be directly connected to the backstage area, allowing it to serve as a functional space for makeup and styling during performances. Meanwhile, the Music Room should be located nearby to ensure quick access for musicians, facilitating a seamless and efficient transition for both roles during events.

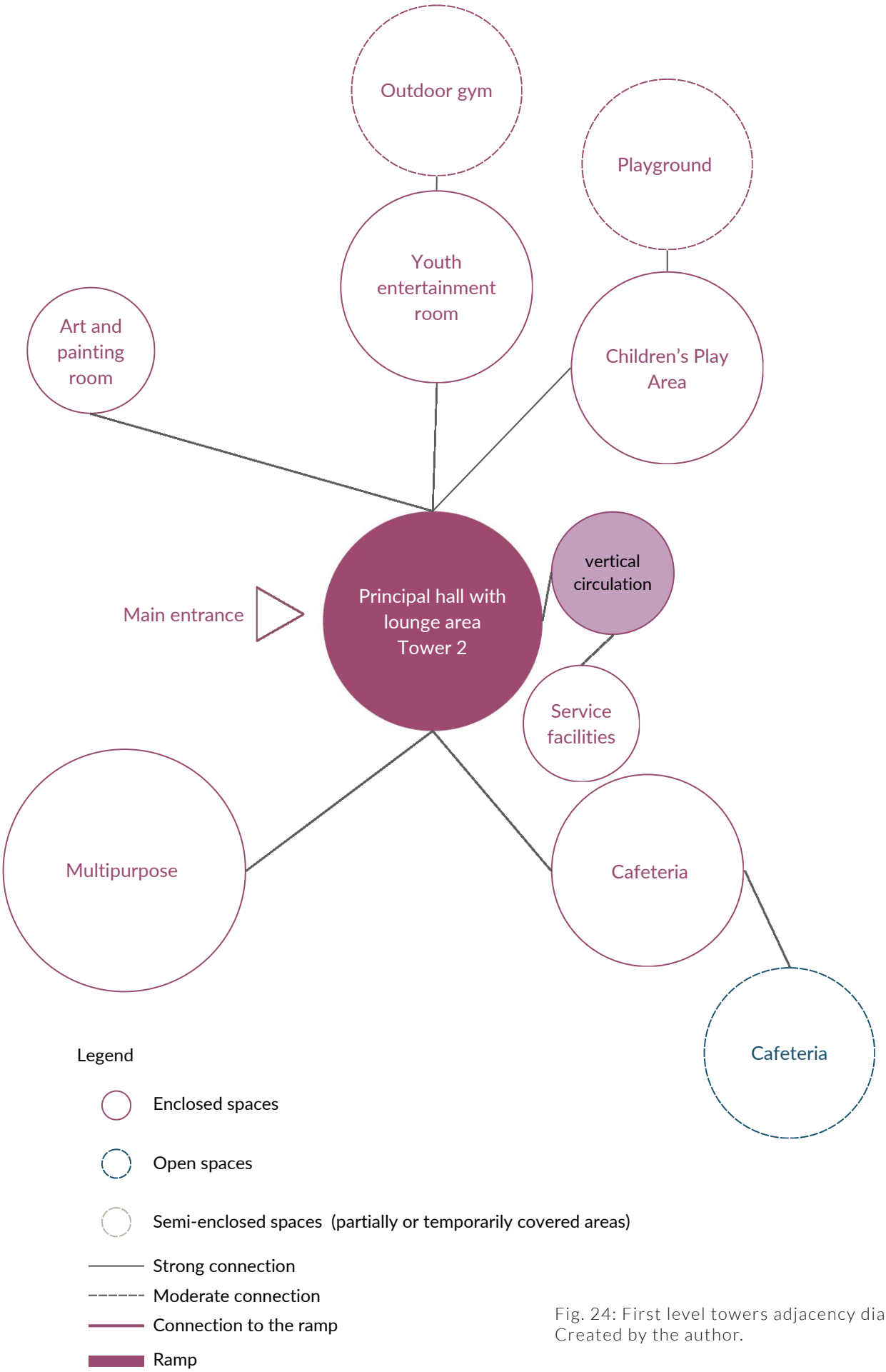
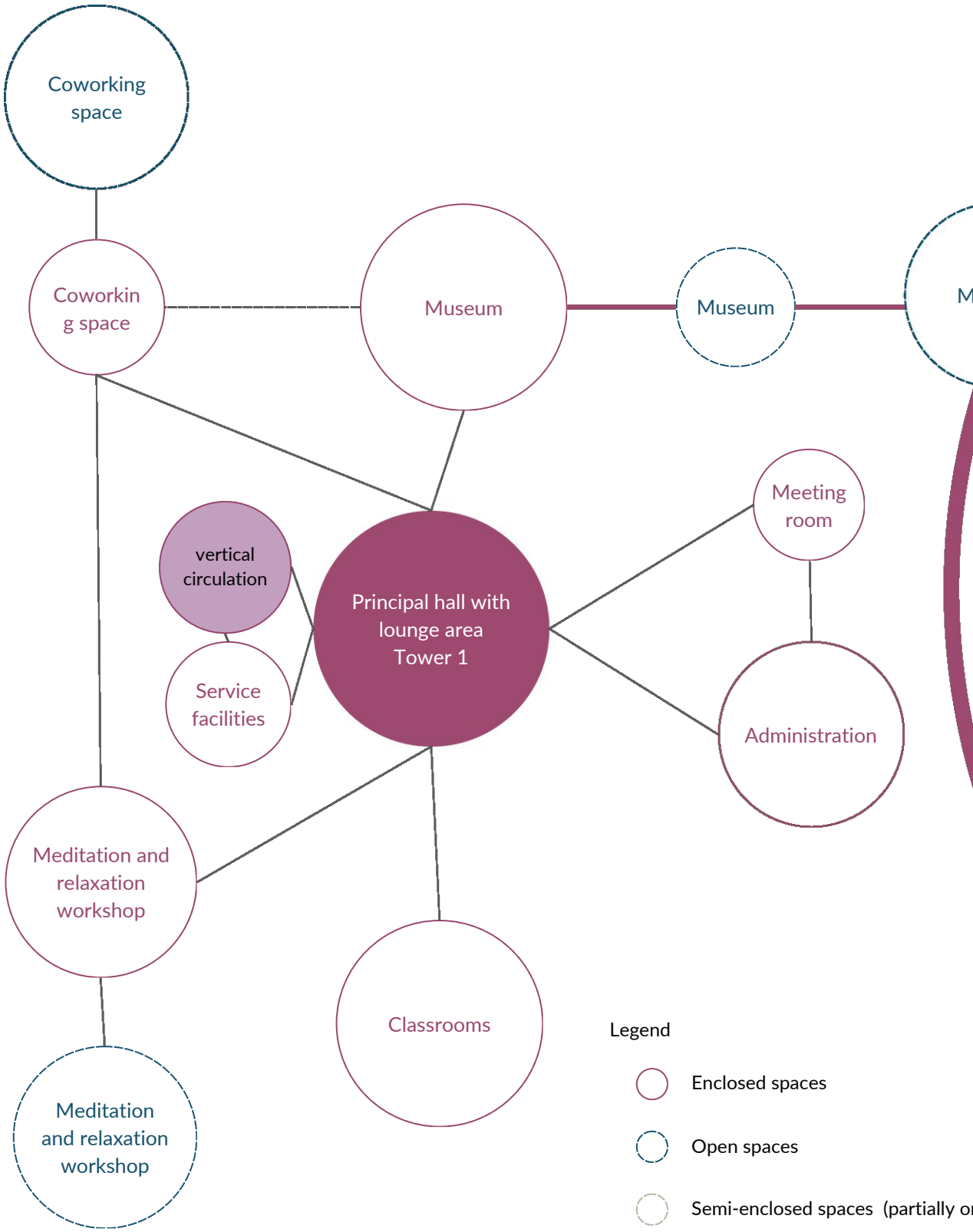
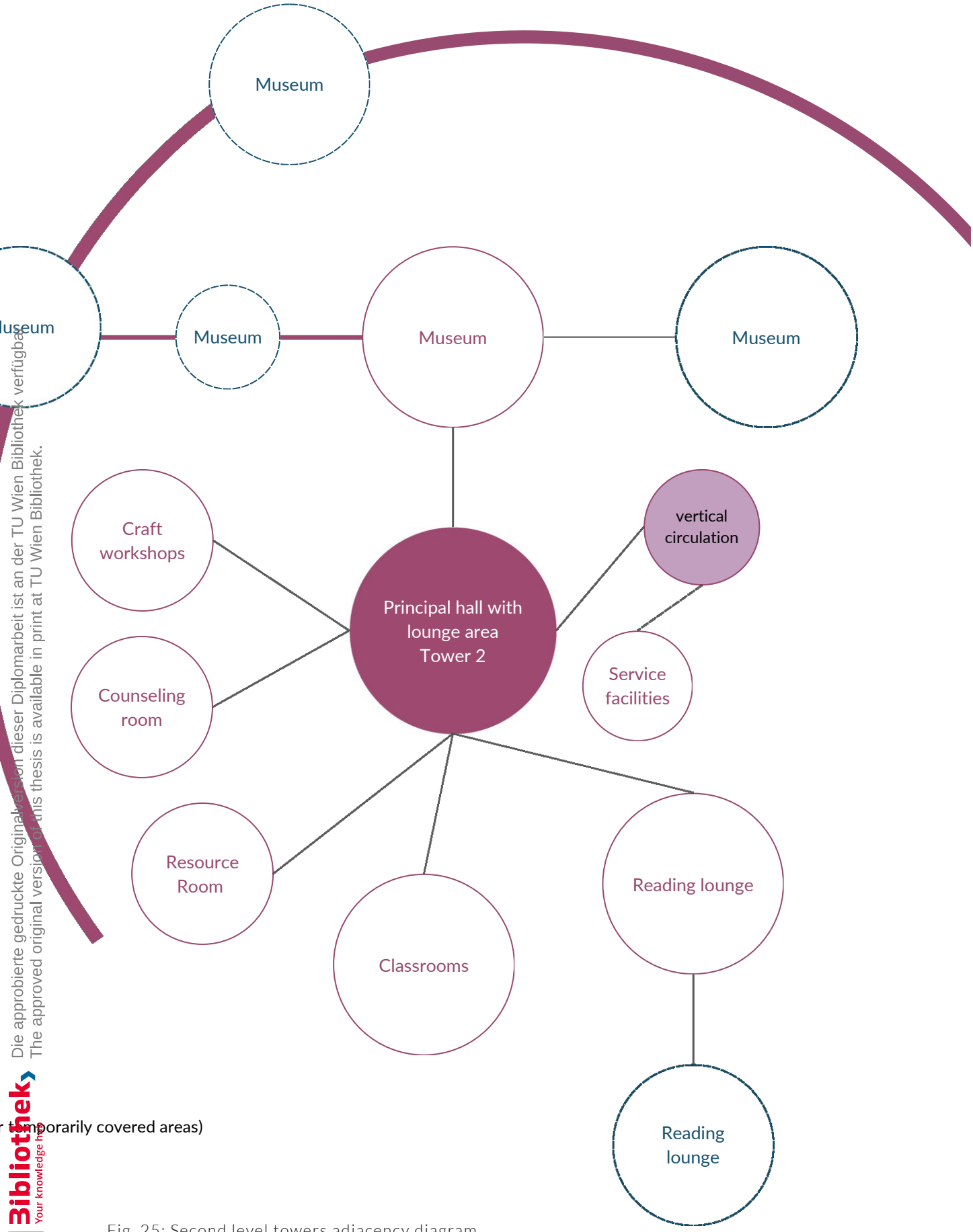


Fig. 24: First level towers adjacency diagram. Created by the author.

Second level





r temporarily covered areas)

Fig. 25: Second level towers adjacency diagram.
Created by the author.

Third level

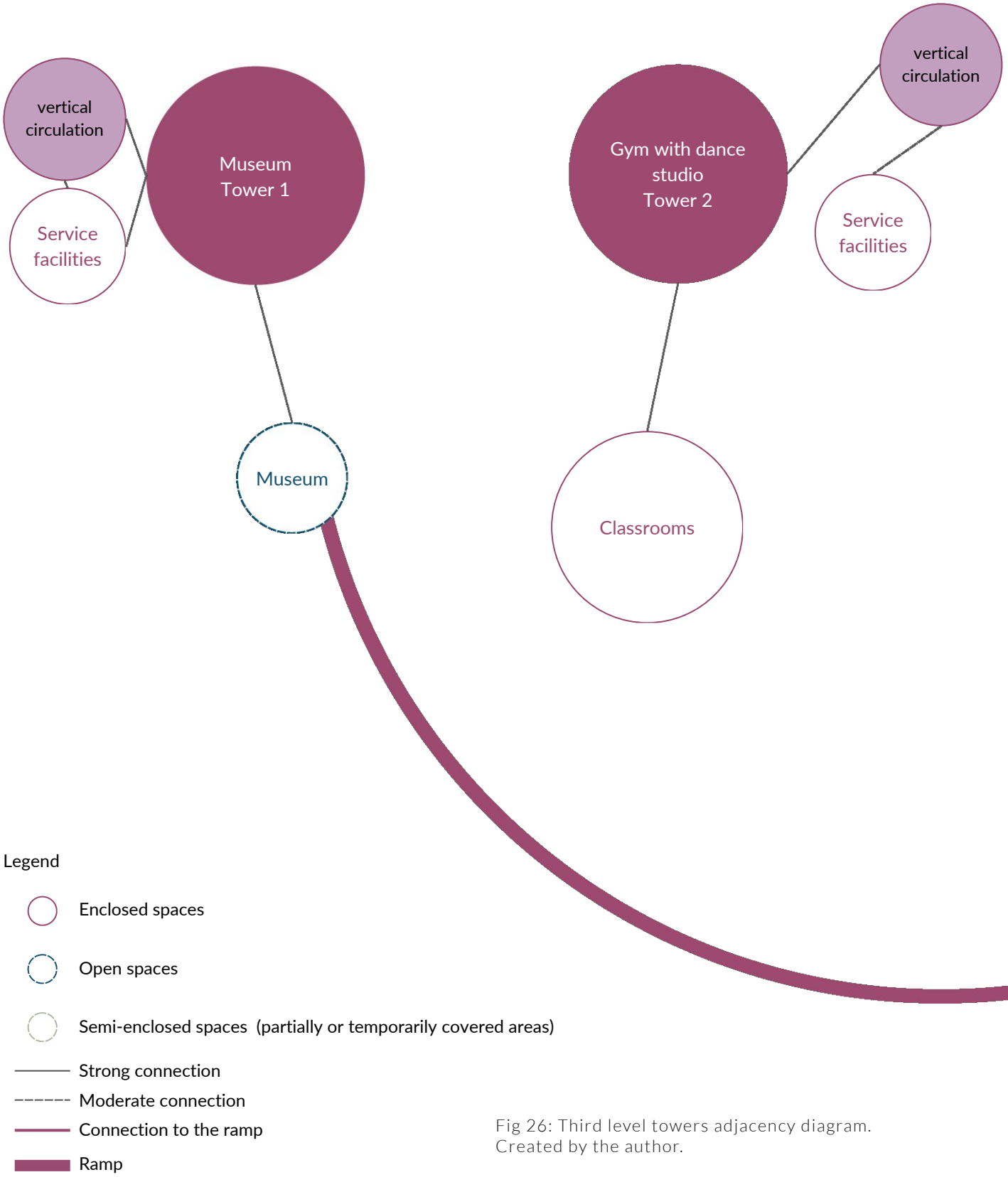


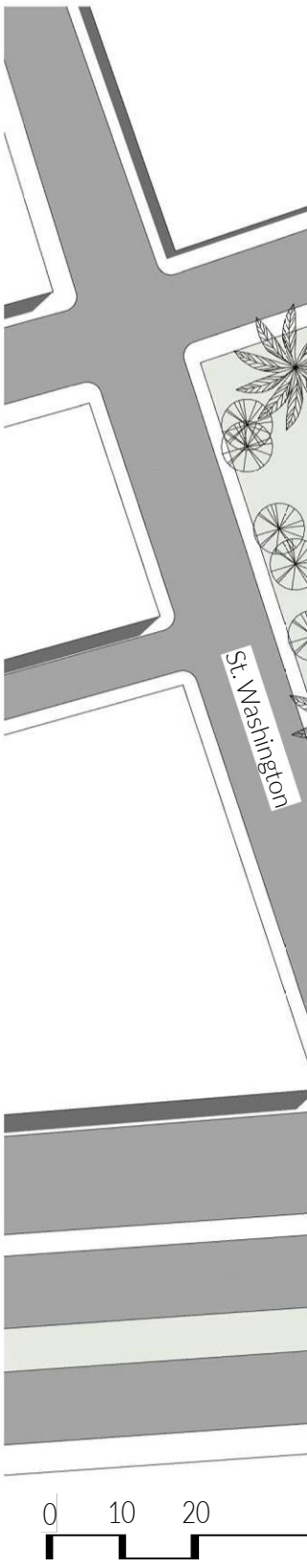
Fig 26: Third level towers adjacency diagram. Created by the author.

On the third level of Tower 1, you'll find the largest area of the dispersed museum. This level connects directly to the ramp, as well as to the stairs and elevators coming from the first level. This allows visitors the option to explore the museum from top to bottom, rather than the traditional bottom-to-top route.

6. RESULTS

Fig. 27: Side view of the project showing the ramp. Created by the author.

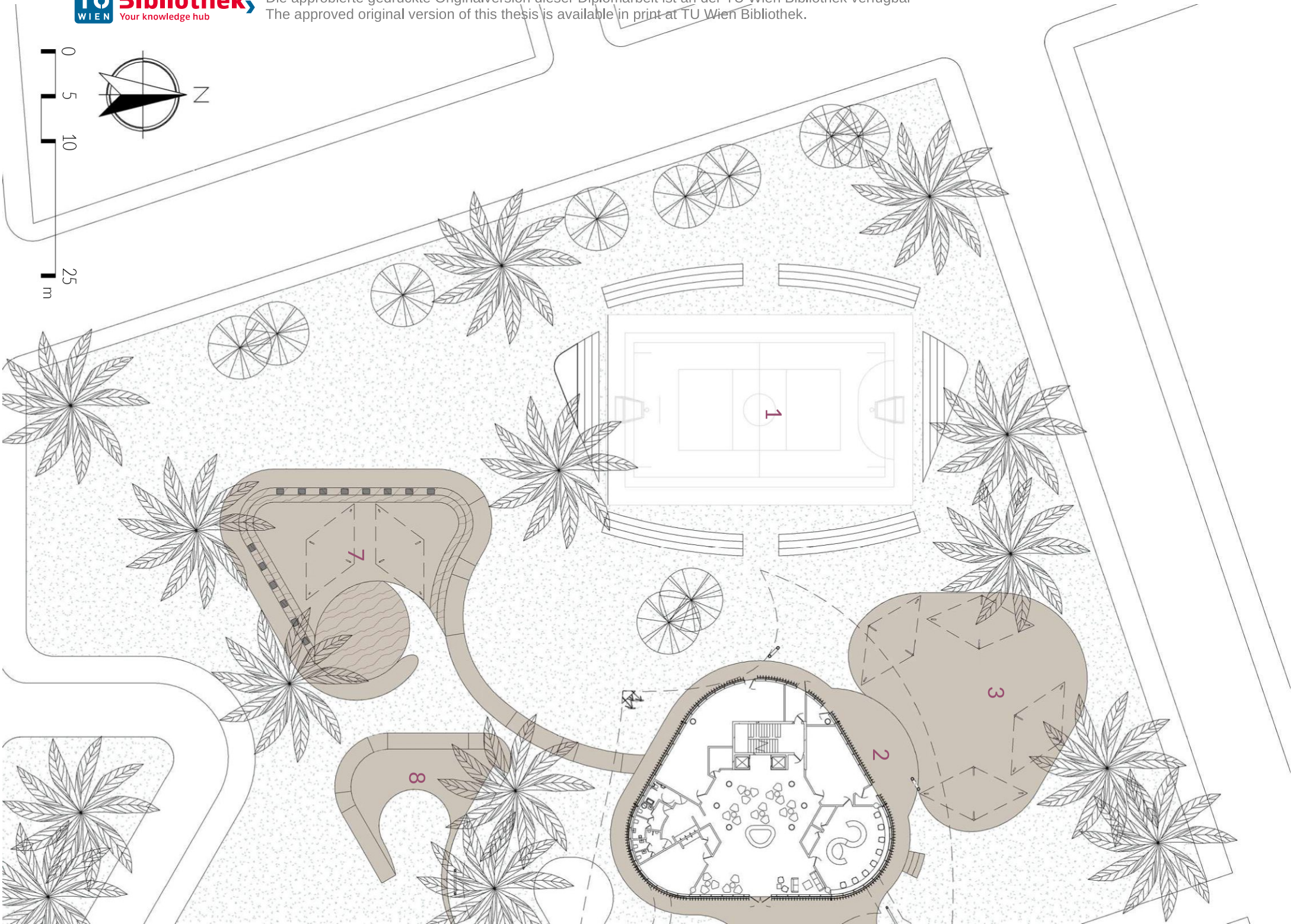
6.1 SITE PLAN



Site plan
Sc. 1:1000

6.1 FLOOR PLANS

Fig. 28: Aerial view of the entire project.
Created by the author.

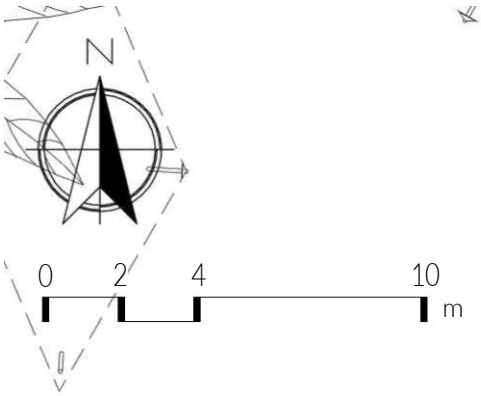


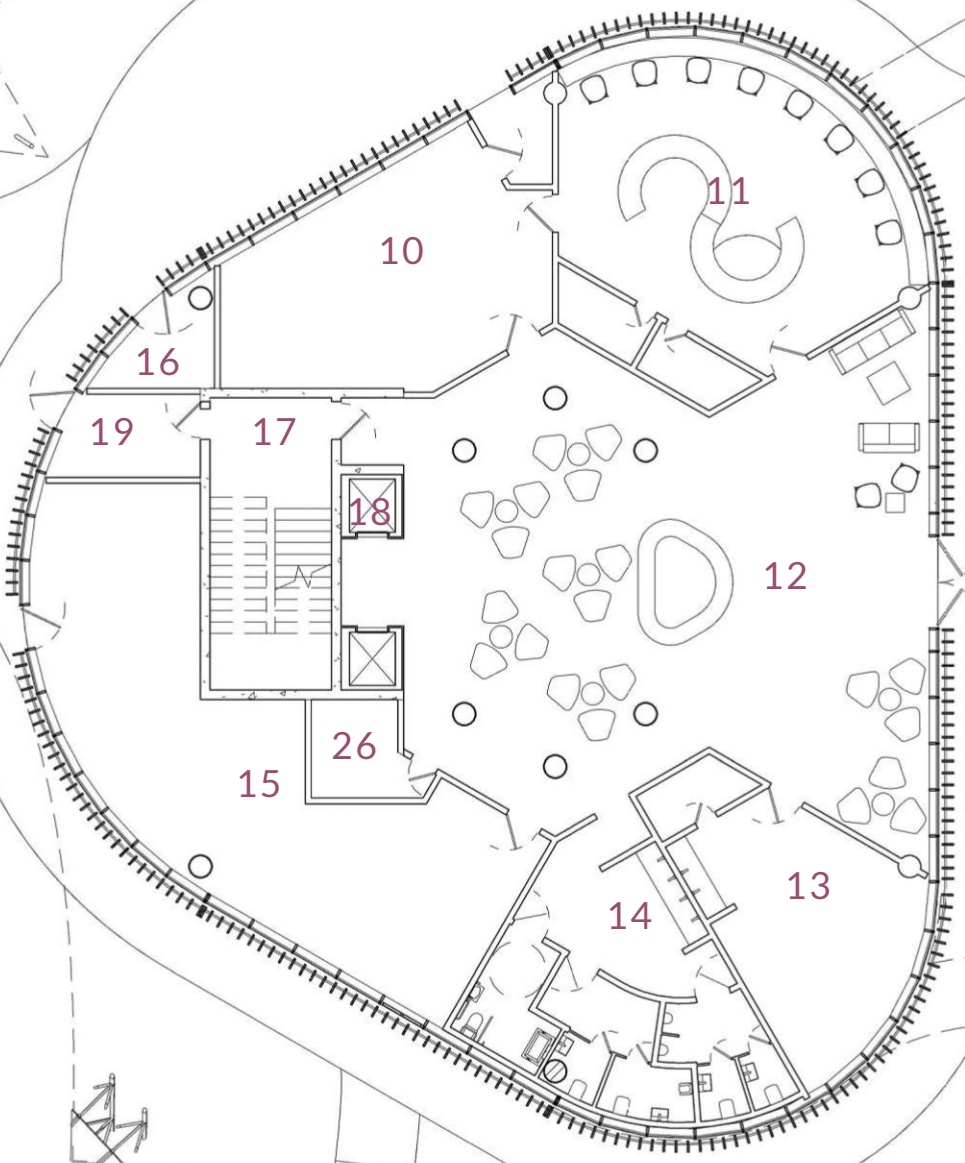
1. Multipurpose sports field 962.57 m²
2. Stage 68.93 m²
3. Exterior dance area 499.54 m²
4. Outdoor gym 244.61 m²
5. Playground 230.26 m²
6. Cafeteria terrace 185.49 m²
7. Street performance area 388.81 m²
8. Museum 100.70 m²
9. Temporary fair zones 464.70m²

First Floor

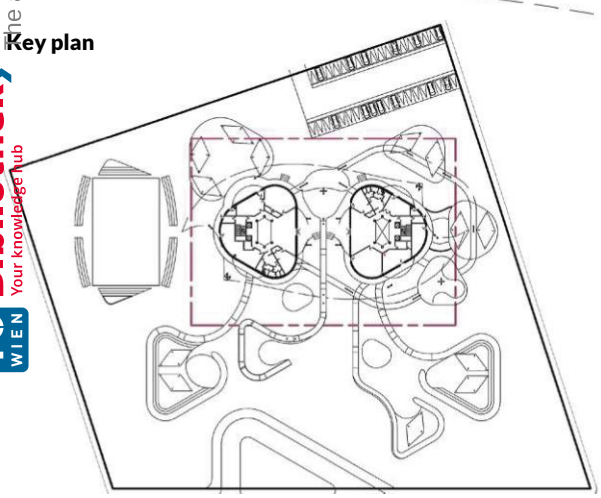
FFL. + 0.60 m. Sc. 1:500

10. Backstage 43.99 m²
11. Cosmetology Classroom 71.39 m²
12. Principal hall with lounge area 332.96 m²
13. Nail and foot care studio 35.08 m²
14. Restrooms 81.20 m²
15. Music room 80.89 m²
16. Waste management room 6.31 m²

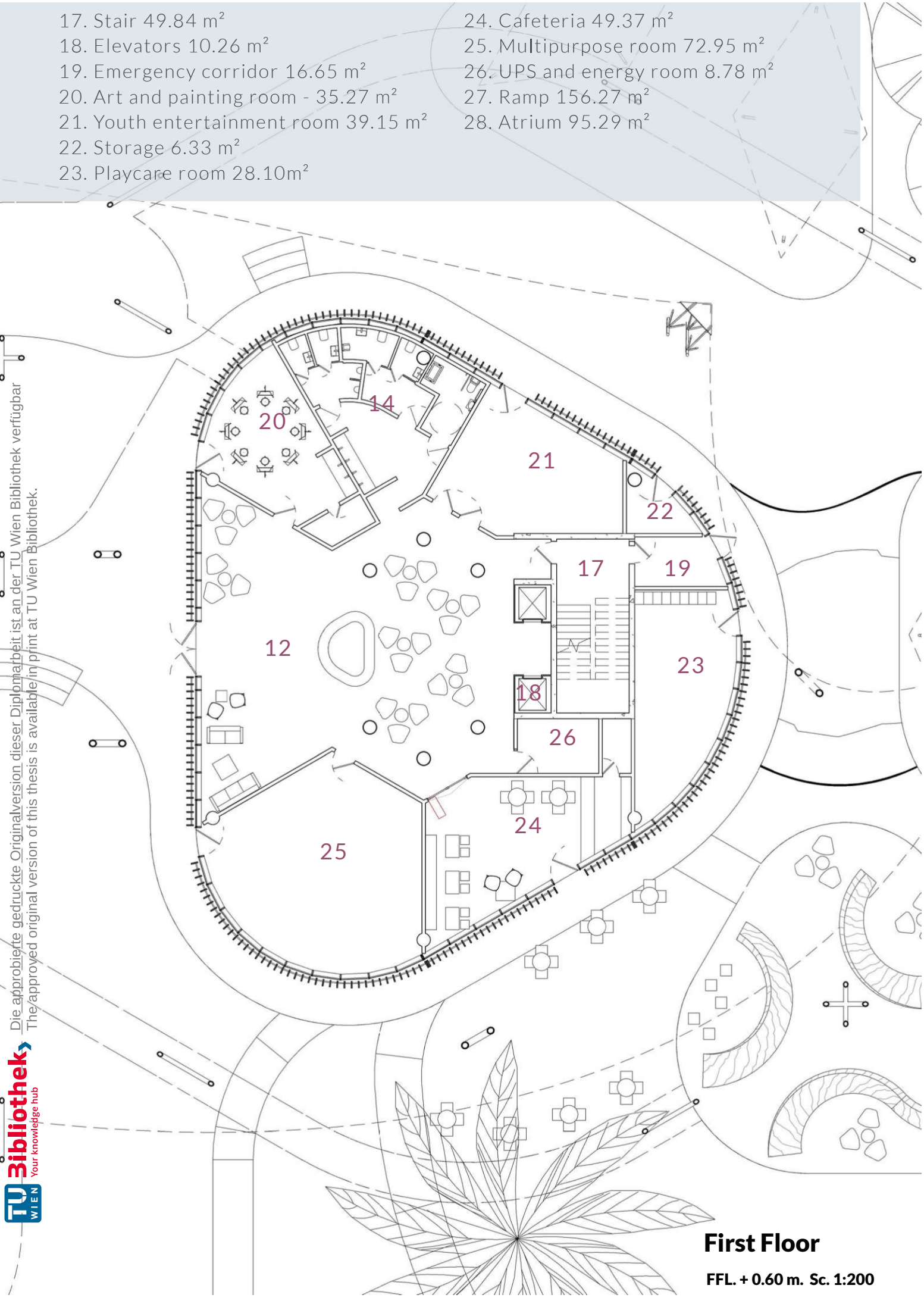




Key plan

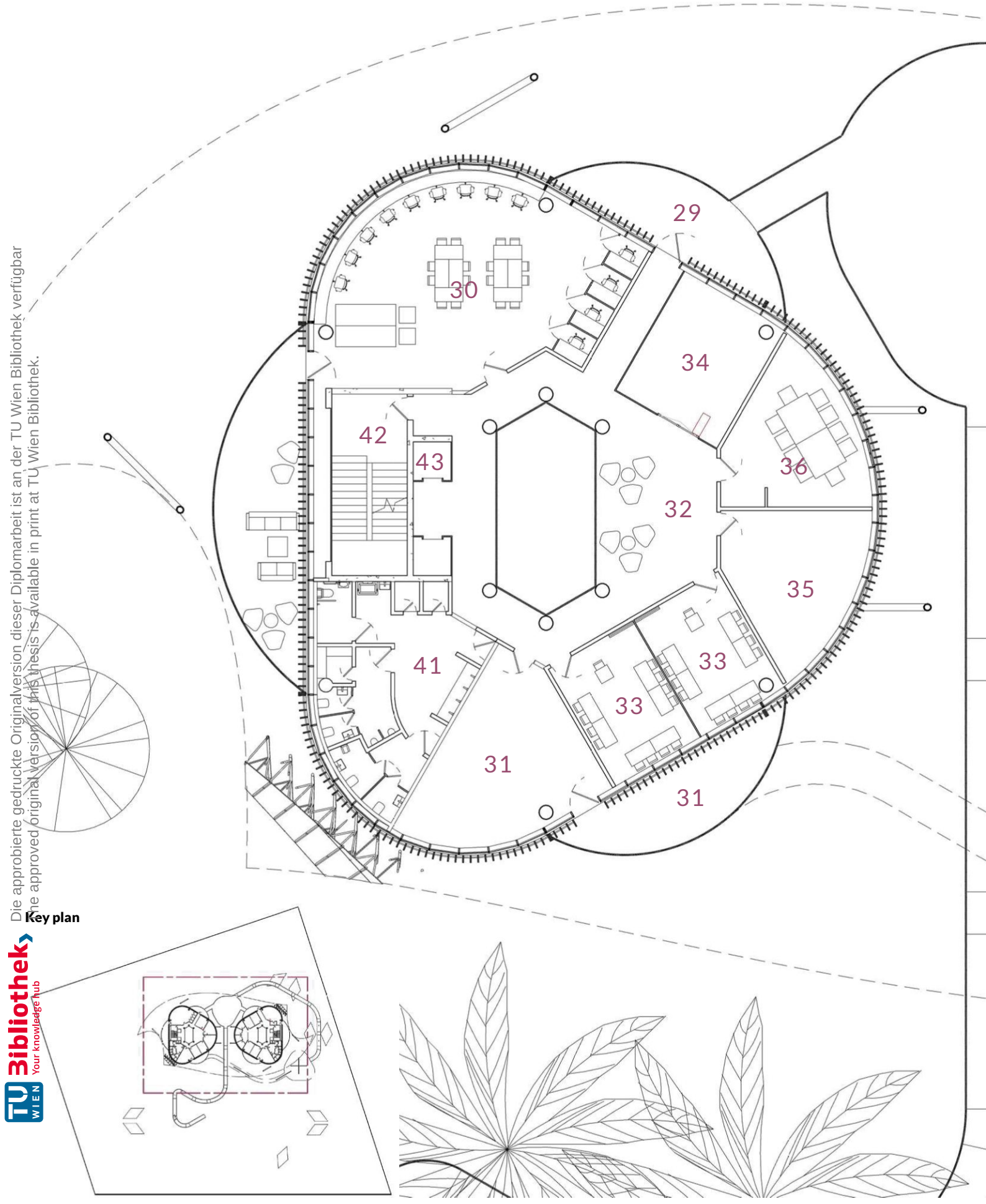


17. Stair 49.84 m²
18. Elevators 10.26 m²
19. Emergency corridor 16.65 m²
20. Art and painting room - 35.27 m²
21. Youth entertainment room 39.15 m²
22. Storage 6.33 m²
23. Playcare room 28.10m²
24. Cafeteria 49.37 m²
25. Multipurpose room 72.95 m²
26. UPS and energy room 8.78 m²
27. Ramp 156.27 m²
28. Atrium 95.29 m²



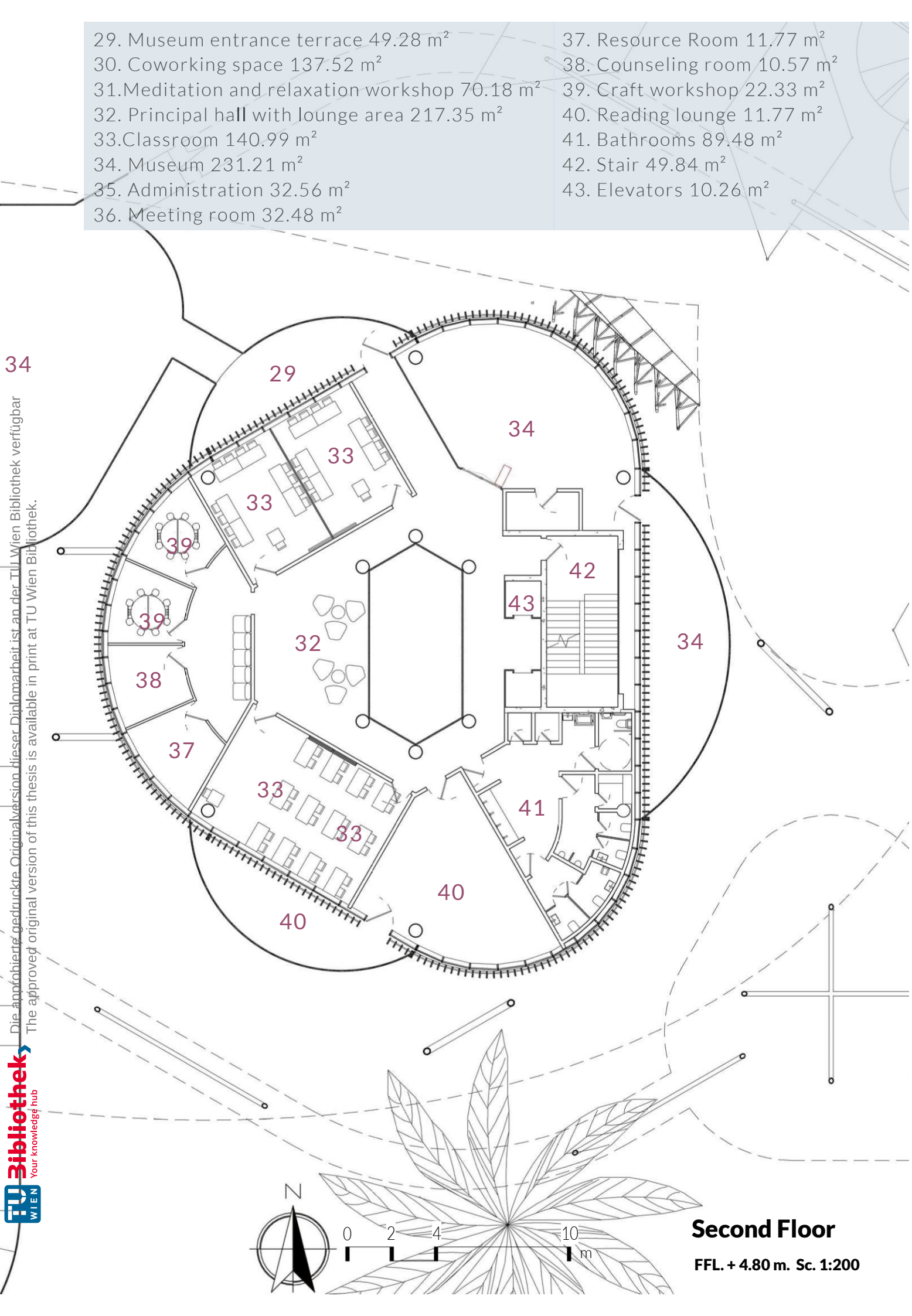
First Floor

FFL. + 0.60 m. Sc. 1:200



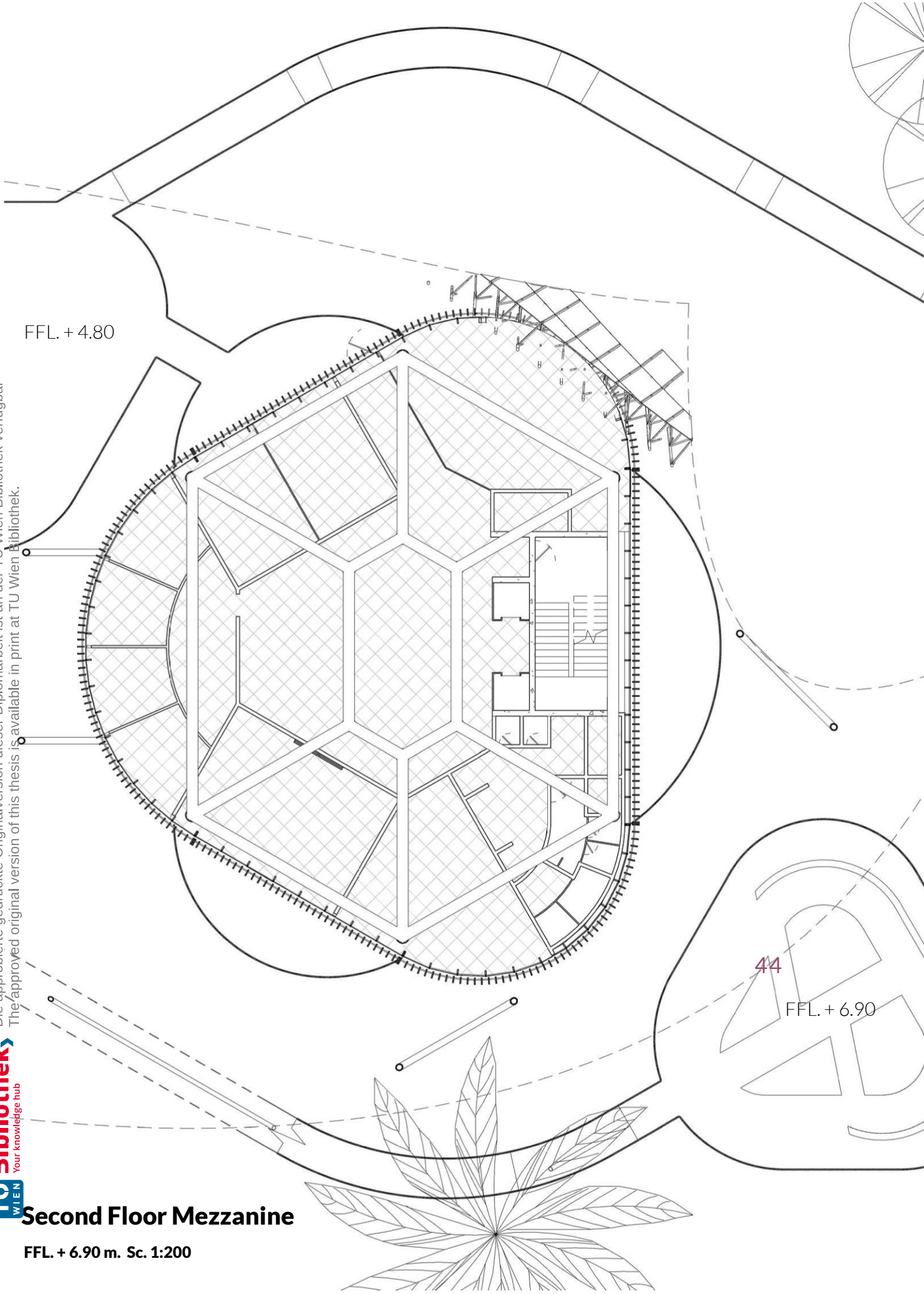
Key plan

29. Museum entrance terrace 49.28 m²
30. Coworking space 137.52 m²
31.Meditation and relaxation workshop 70.18 m²
32. Principal hall with lounge area 217.35 m²
33.Classroom 140.99 m²
34. Museum 231.21 m²
35. Administration 32.56 m²
36. Meeting room 32.48 m²
37. Resource Room 11.77 m²
38. Counseling room 10.57 m²
39. Craft workshop 22.33 m²
40. Reading lounge 11.77 m²
41. Bathrooms 89.48 m²
42. Stair 49.84 m²
43. Elevators 10.26 m²



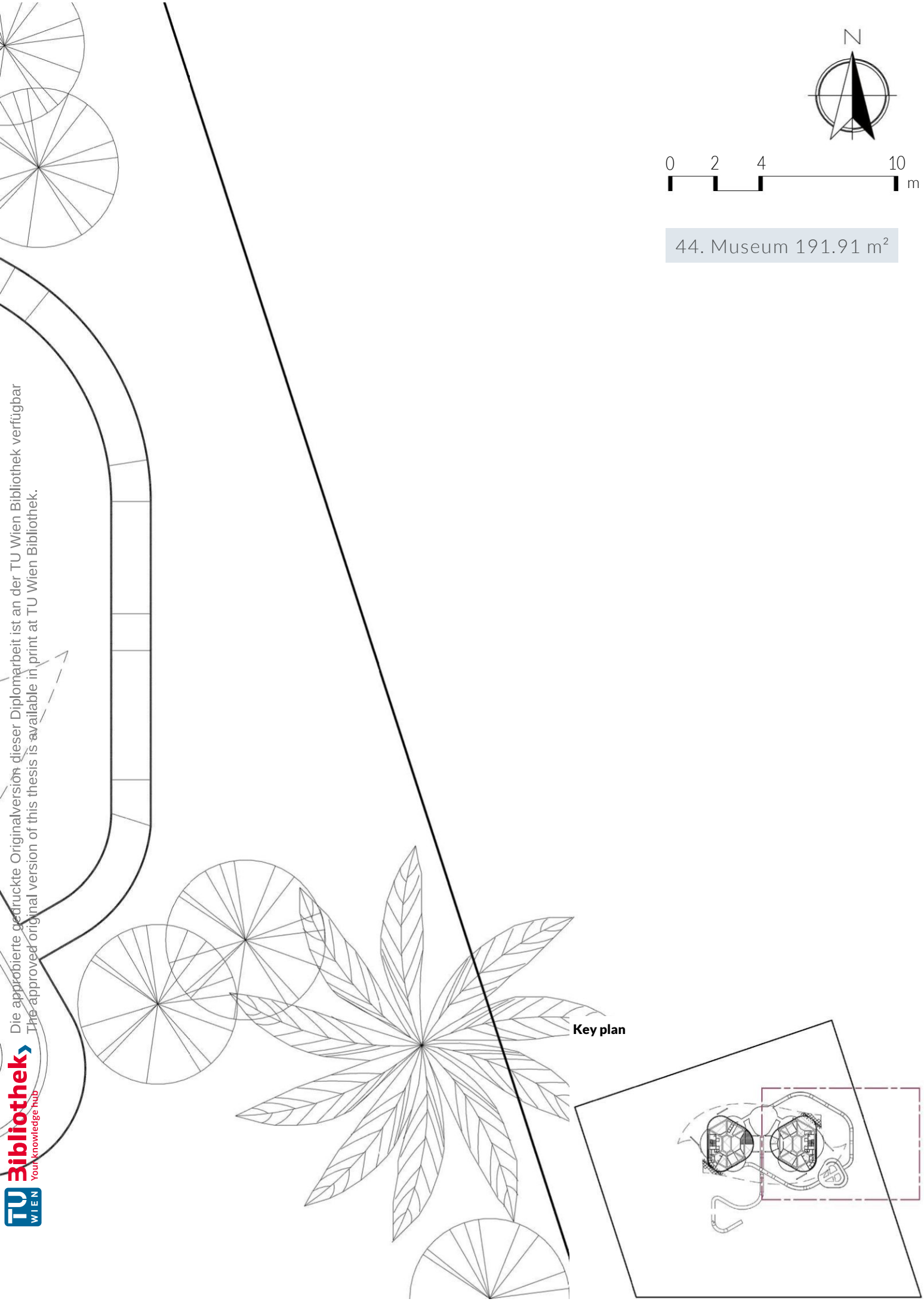
Second Floor

FFL. + 4.80 m. Sc. 1:200



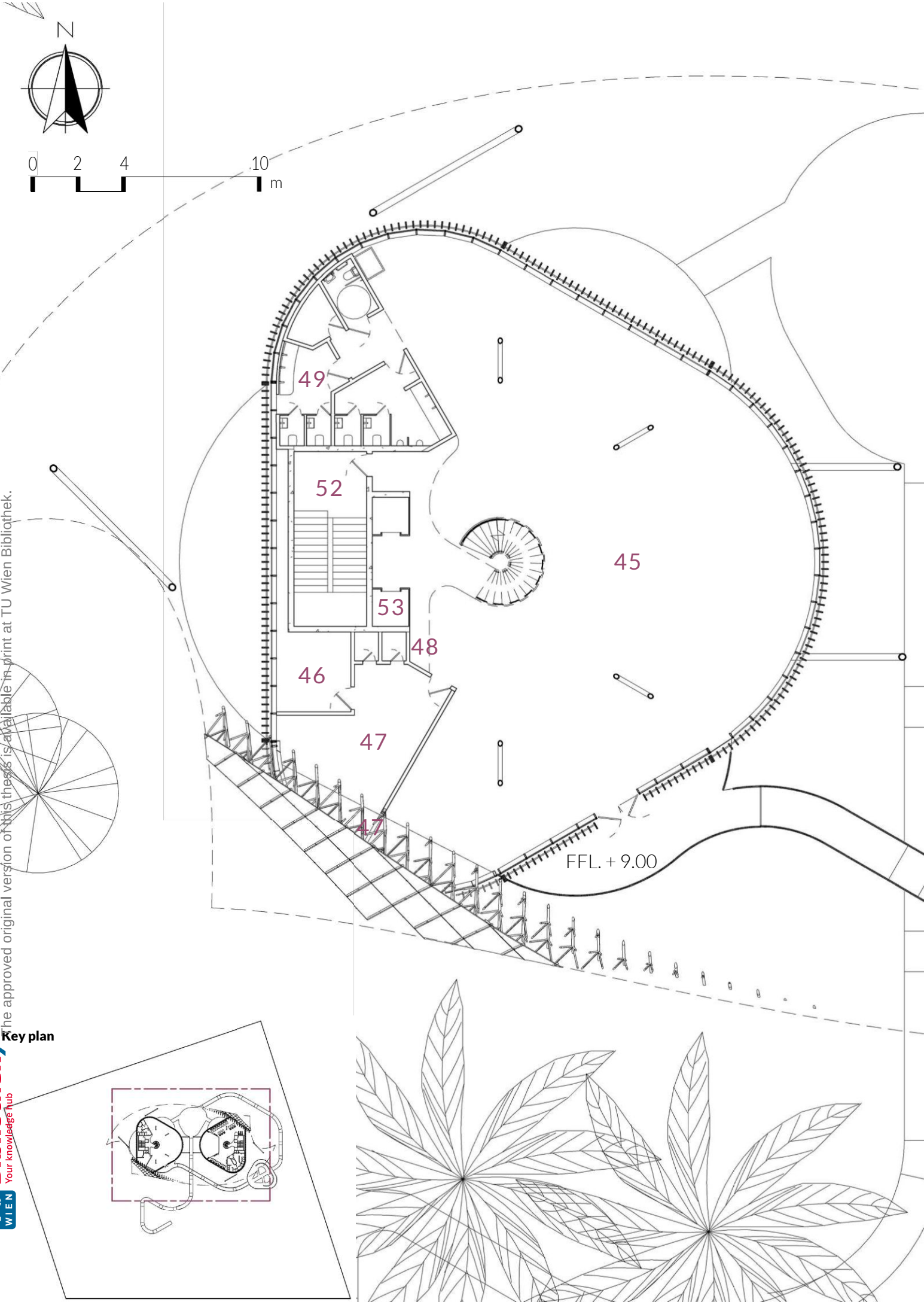
Second Floor Mezzanine

FFL. + 6.90 m. Sc. 1:200



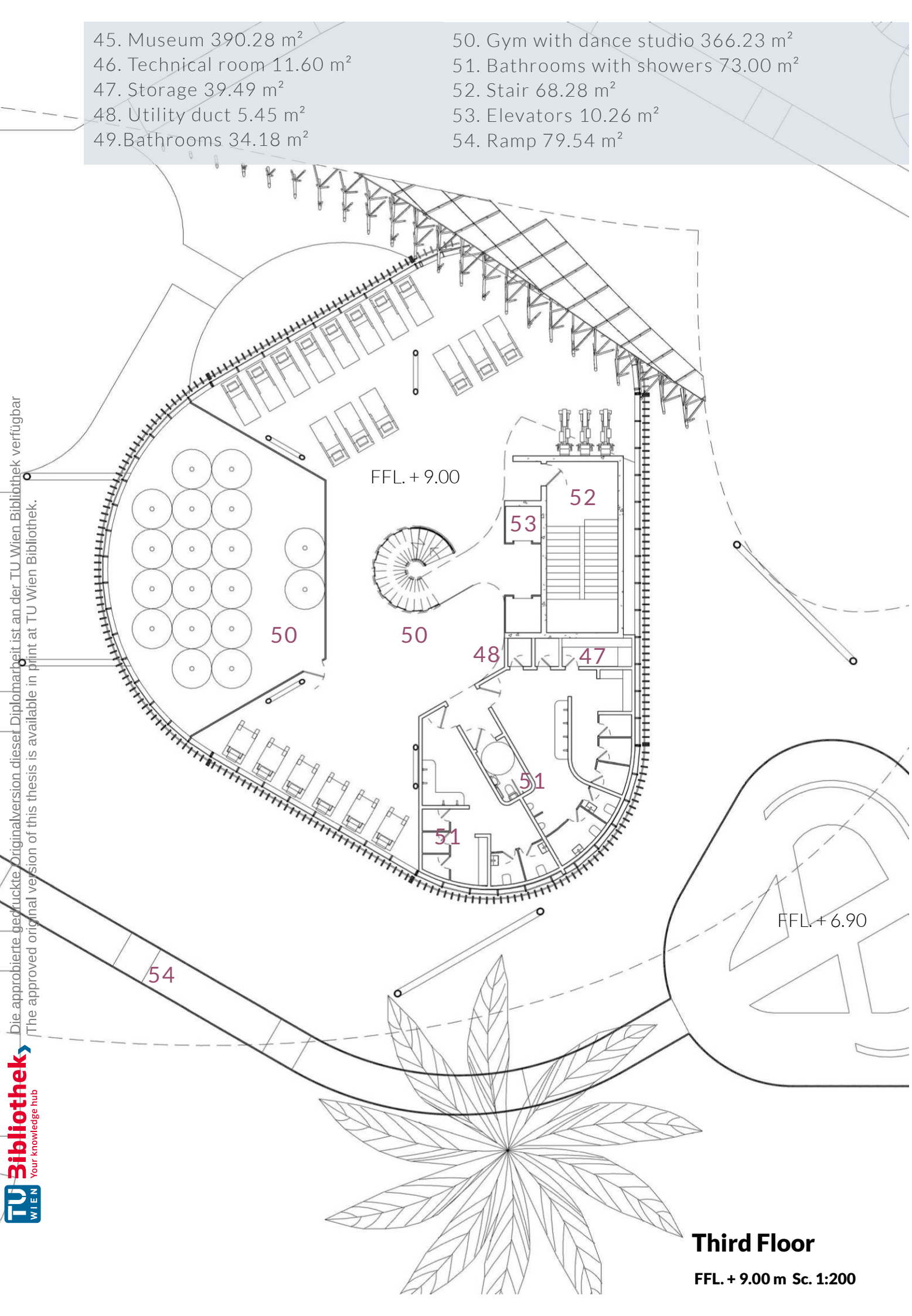
44. Museum 191.91 m²

Key plan



Key plan

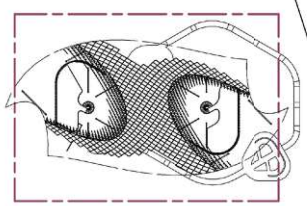
45. Museum 390.28 m²
46. Technical room 11.60 m²
47. Storage 39.49 m²
48. Utility duct 5.45 m²
49.Bathrooms 34.18 m²
50. Gym with dance studio 366.23 m²
51. Bathrooms with showers 73.00 m²
52. Stair 68.28 m²
53. Elevators 10.26 m²
54. Ramp 79.54 m²



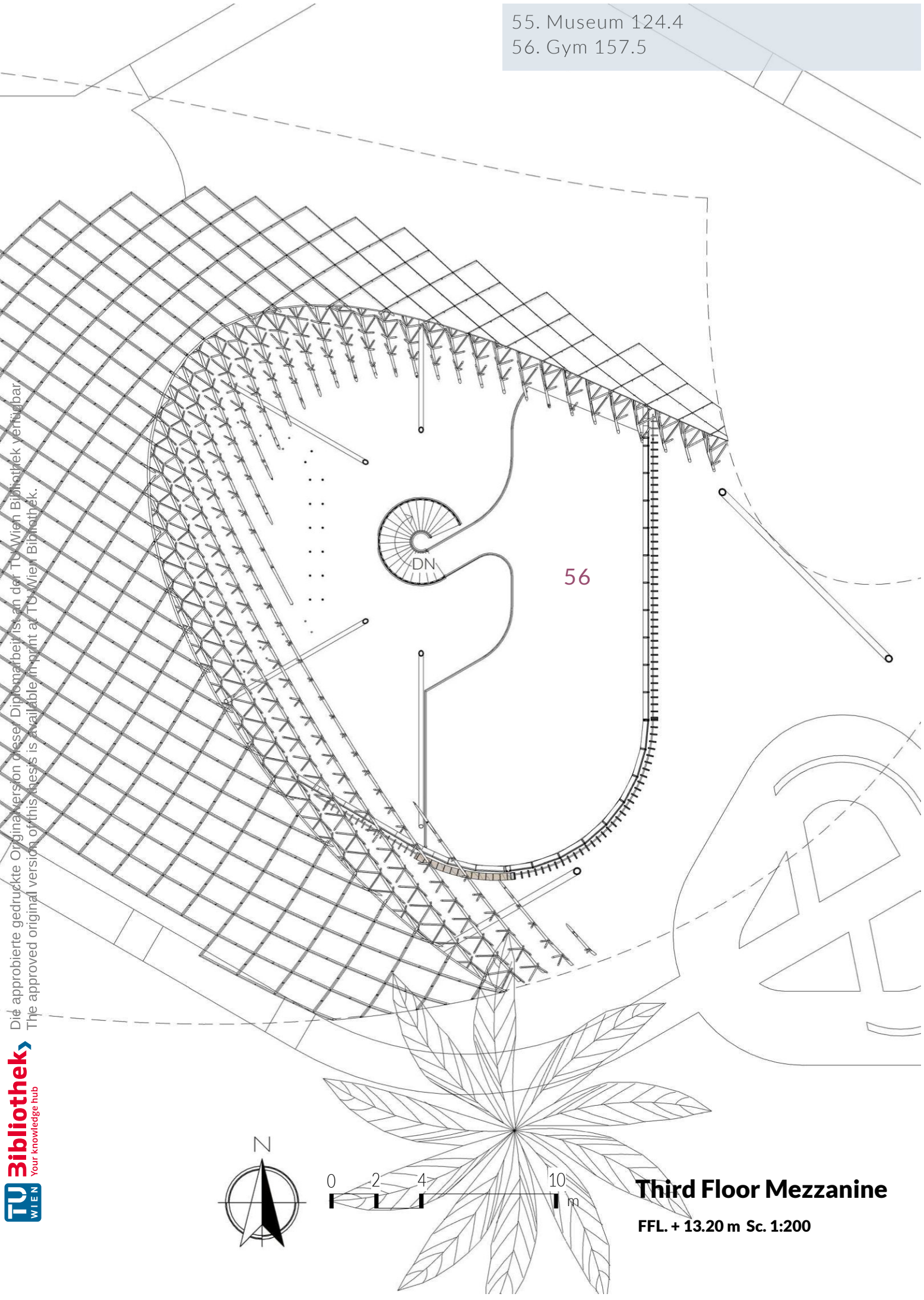
Third Floor

FFL. + 9.00 m Sc. 1:200

Key plan



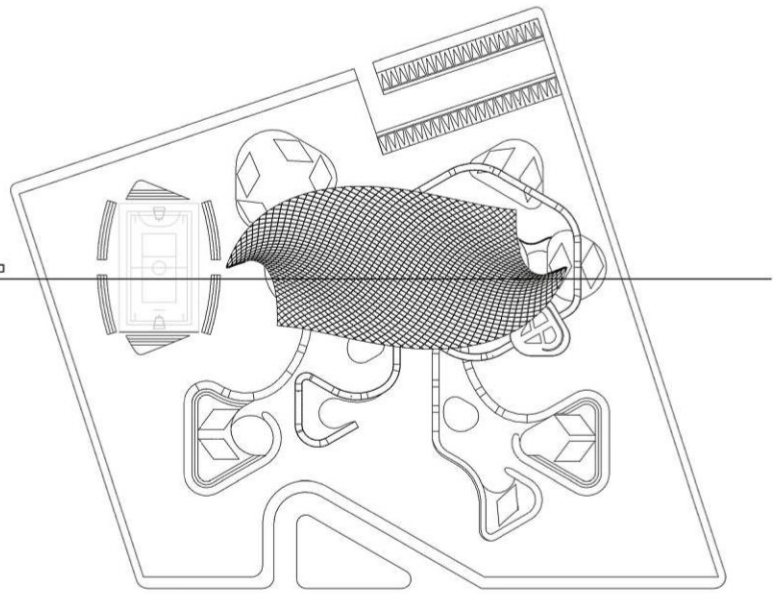
55. Museum 124.4
56. Gym 157.5



Third Floor Mezzanine

FFL. + 13.20 m Sc. 1:200

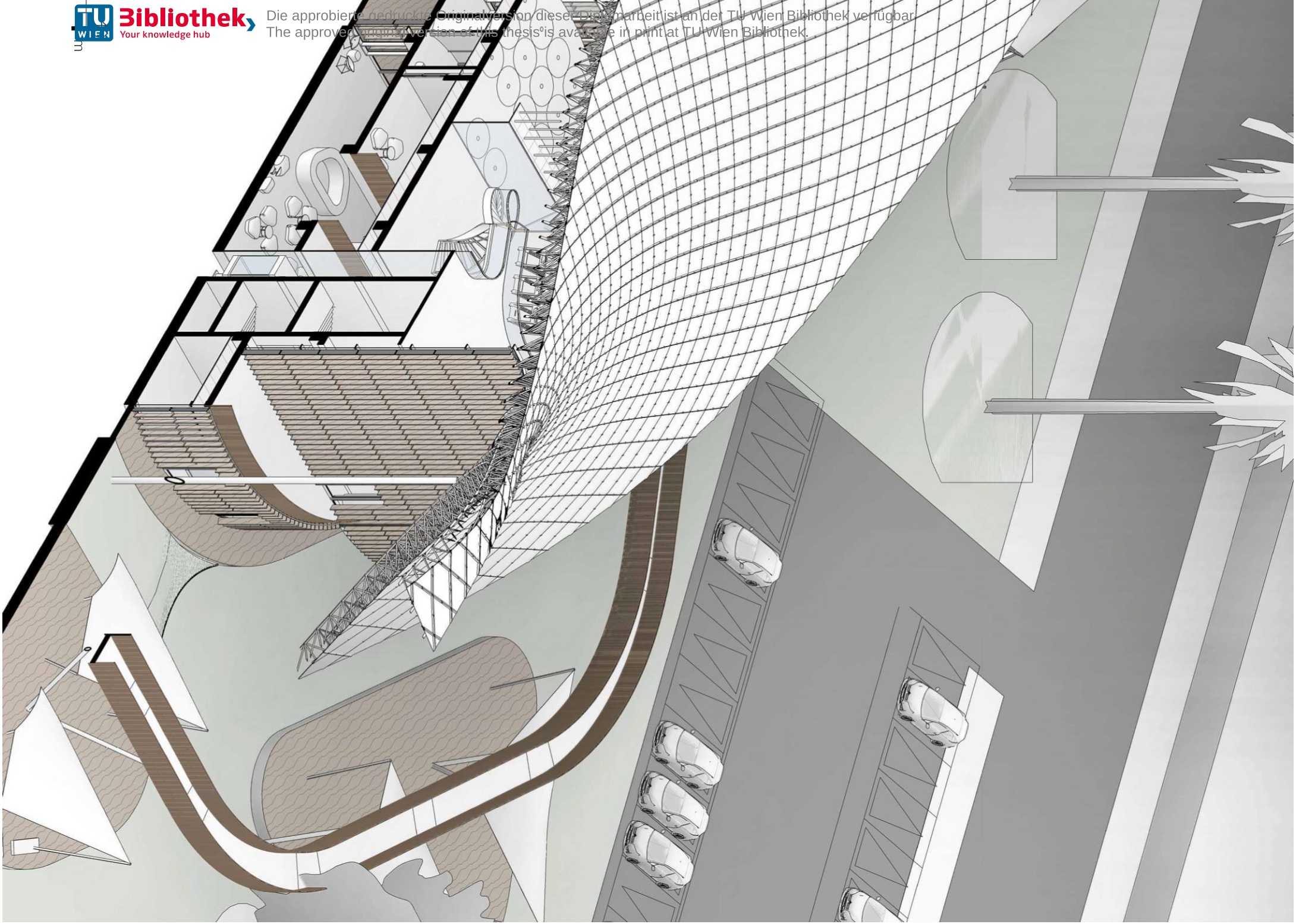
6.3 AXONOMETRY

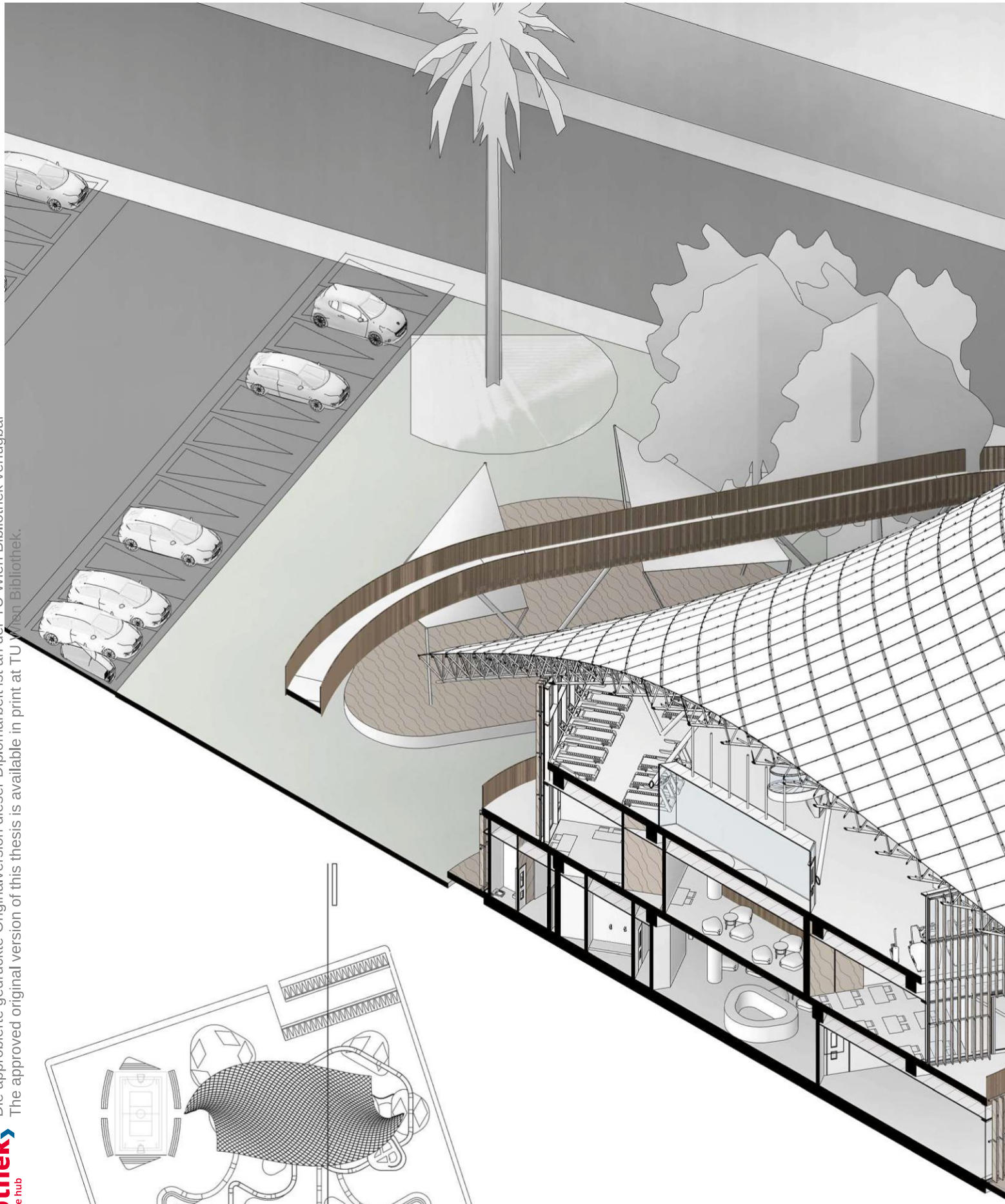


Key plan

Axonometry 1

0 2 4

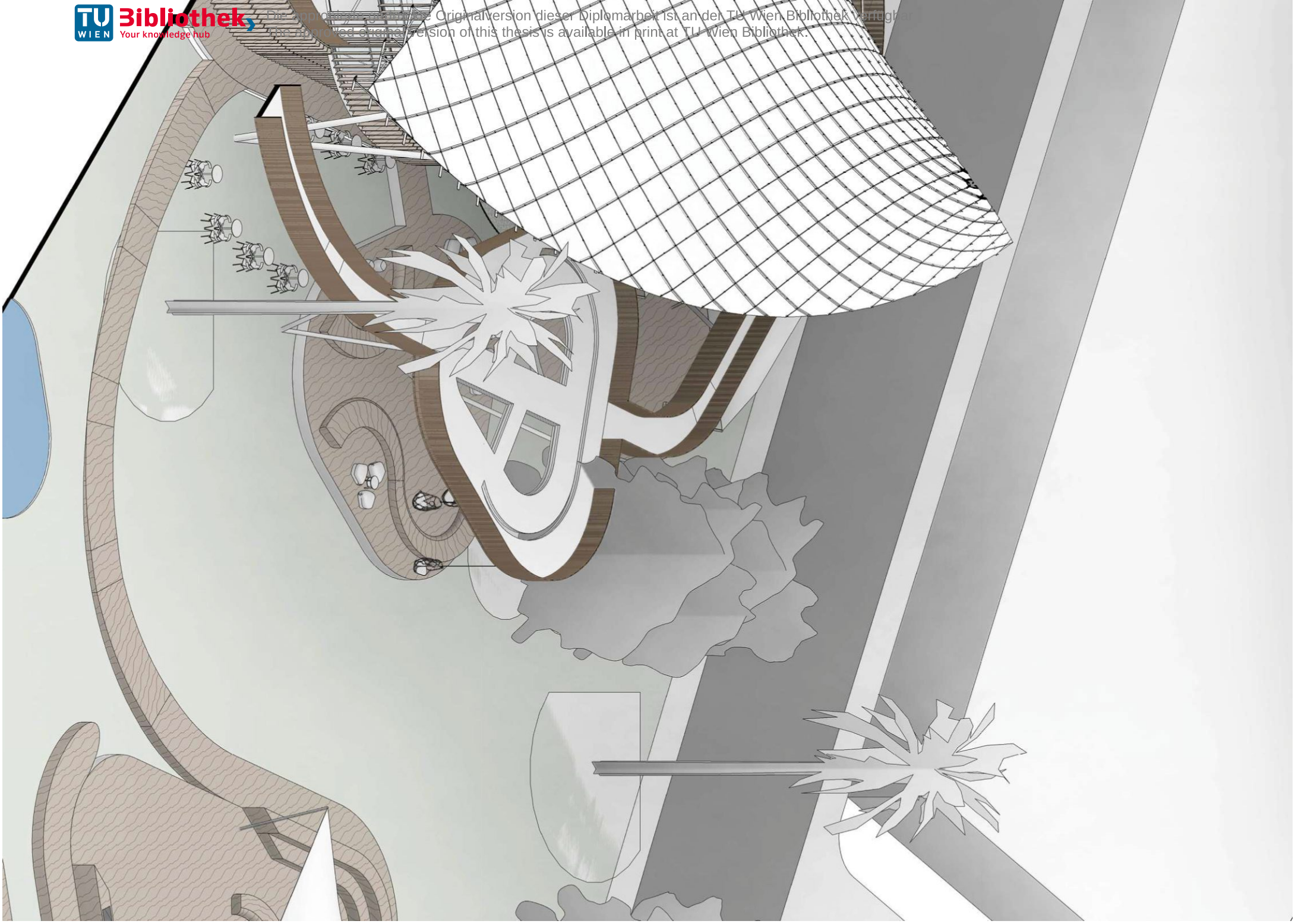


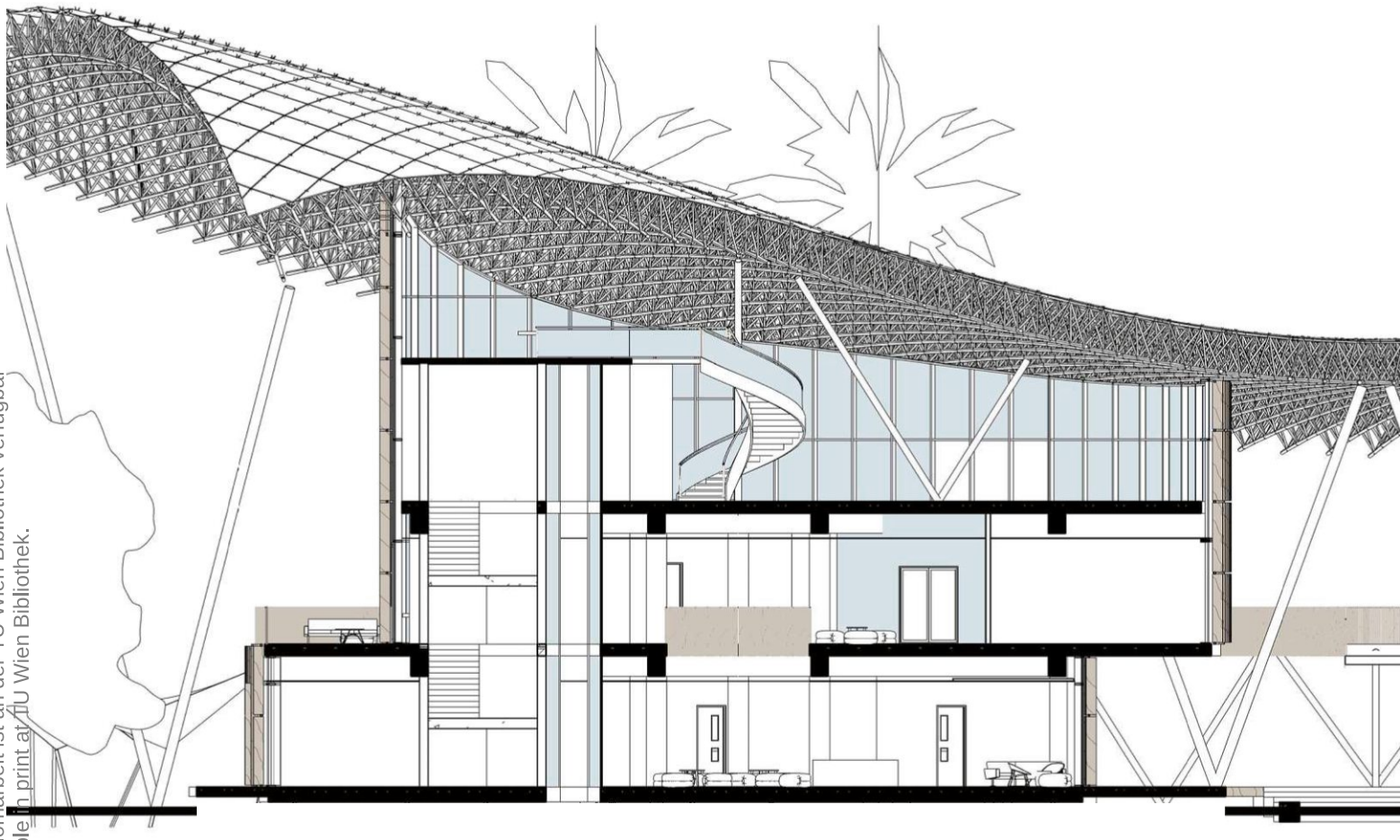


Key plan

Axonometry 2

0 2 4 10 m

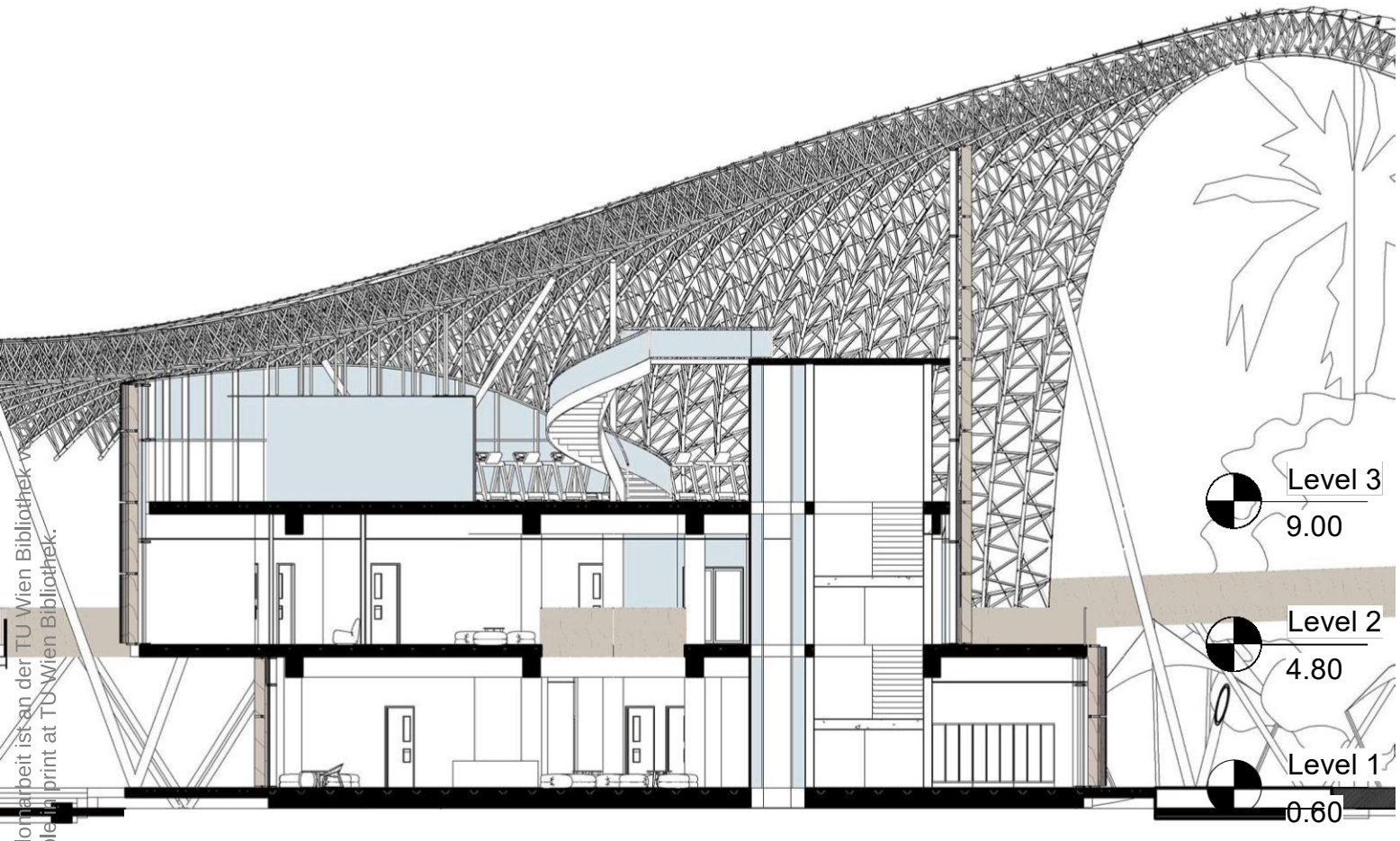


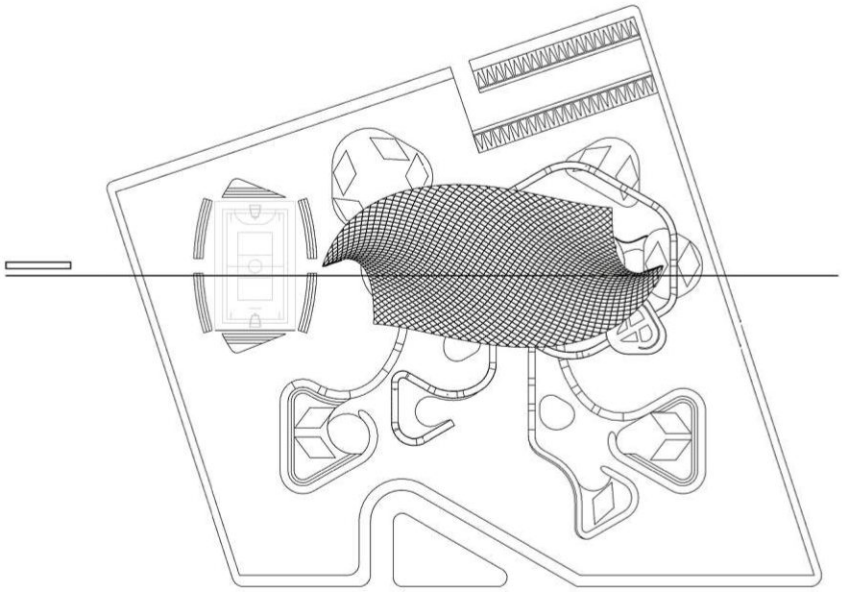


Section 1

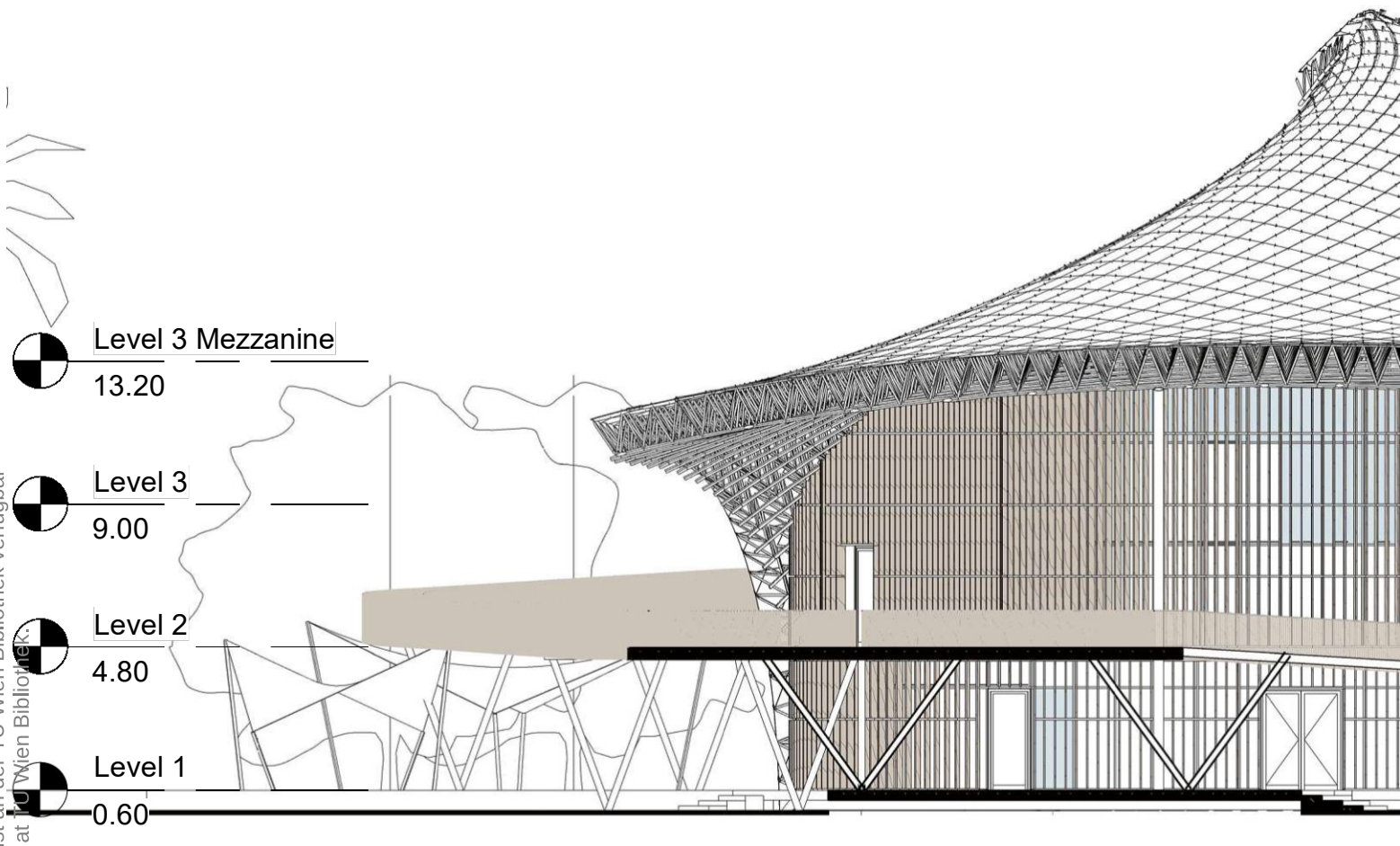
Sc. 1:200

0 2 4 10 m





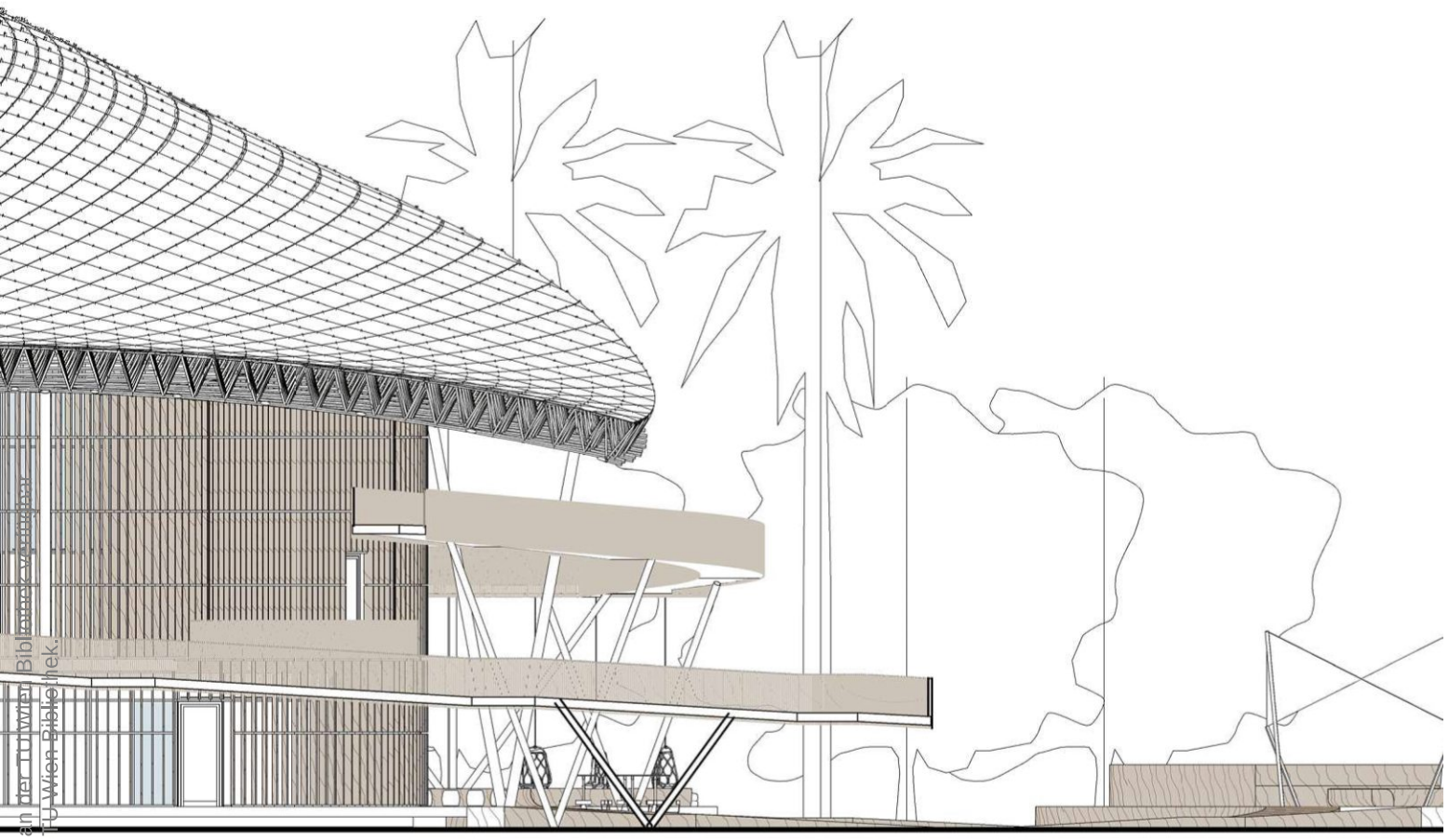
Key plan

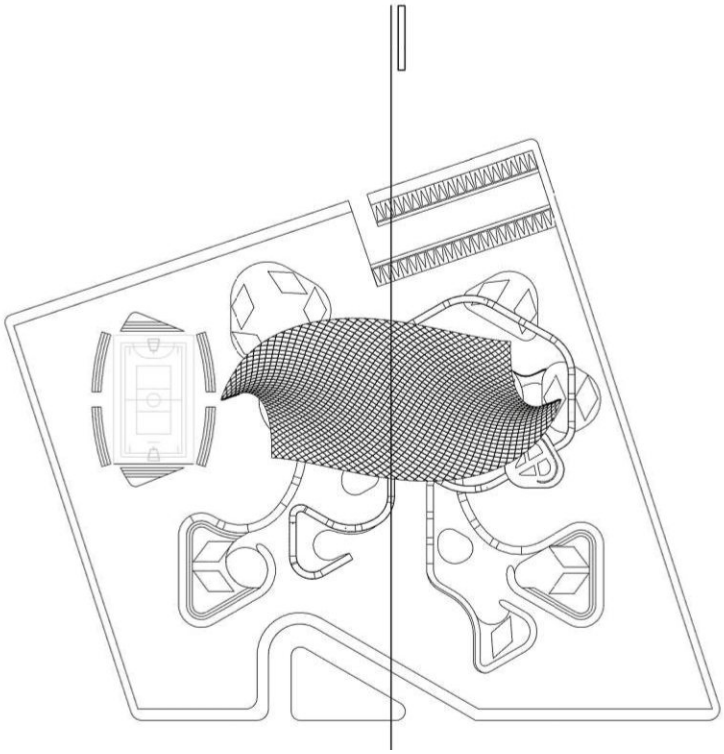


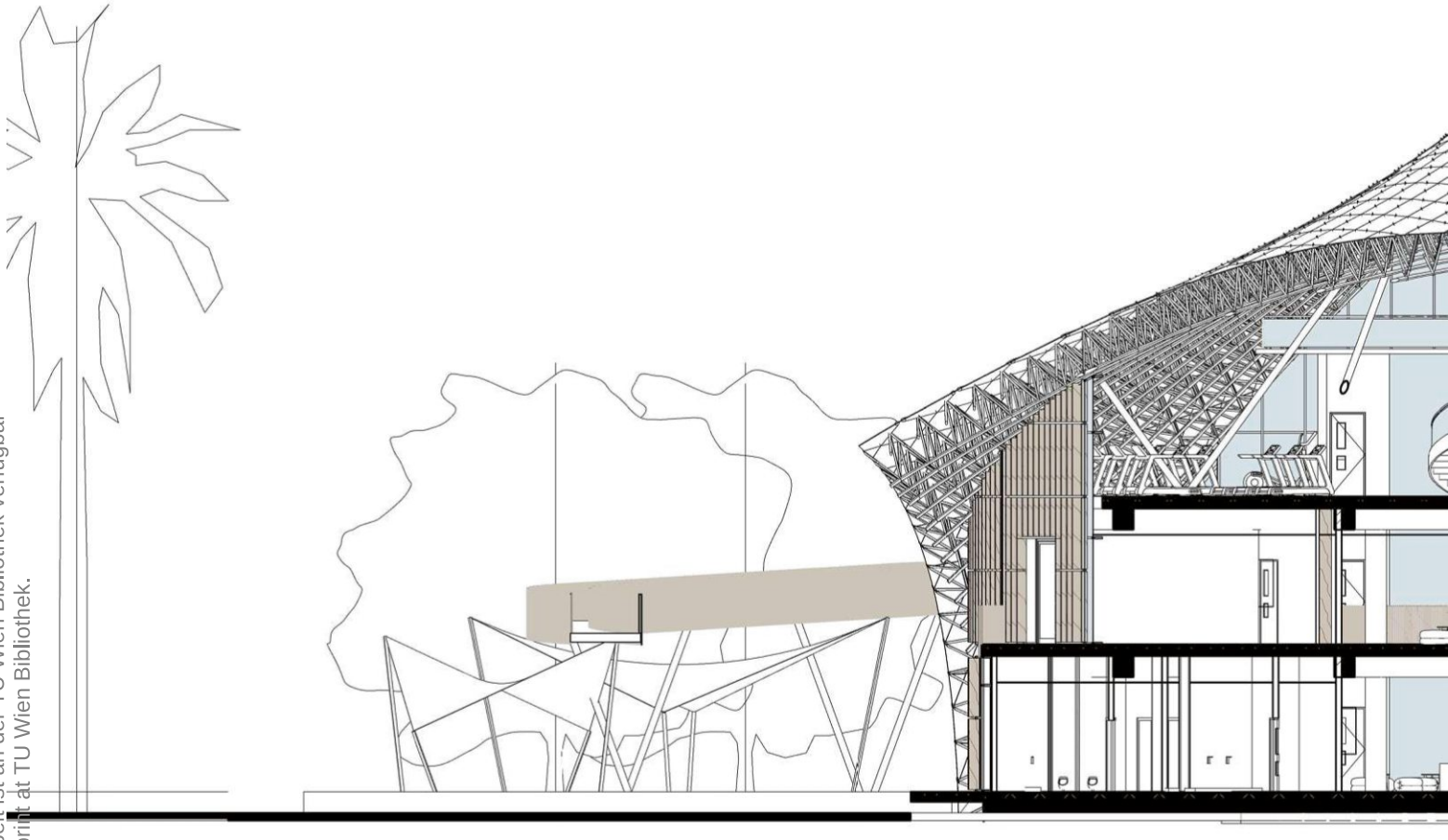
Section 2

Sc. 1:200

0 2 4 10 m



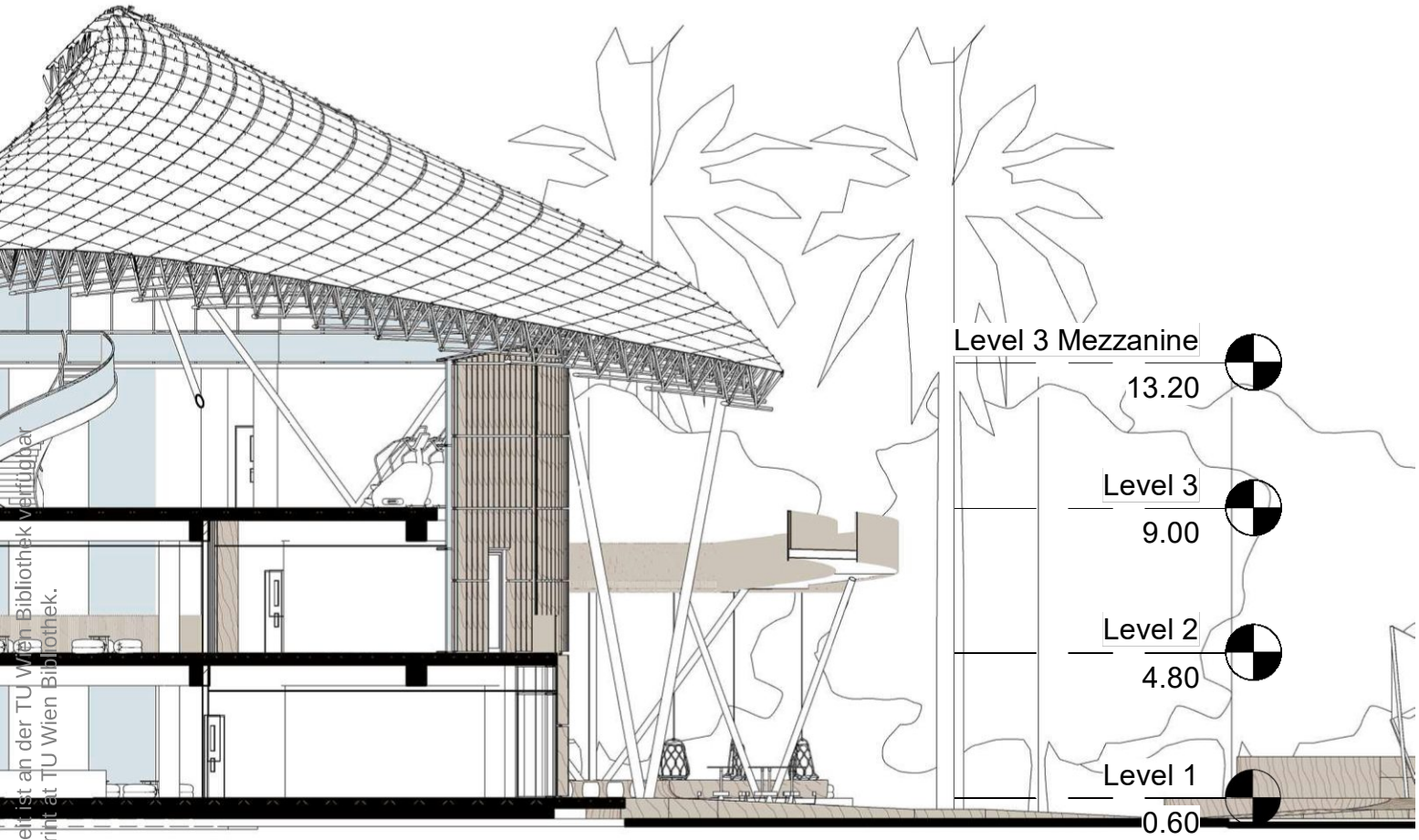


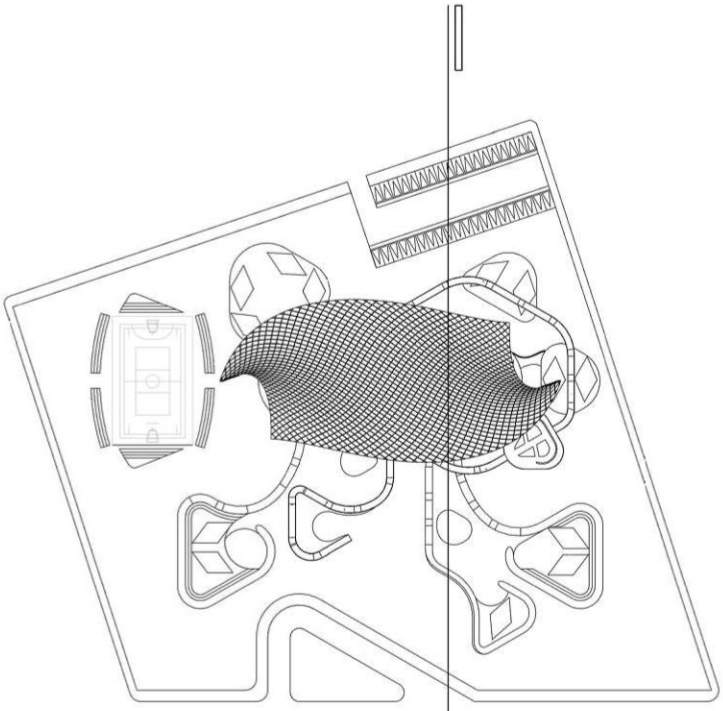


Section 3

Sc. 1:200

0 2 4 10 m





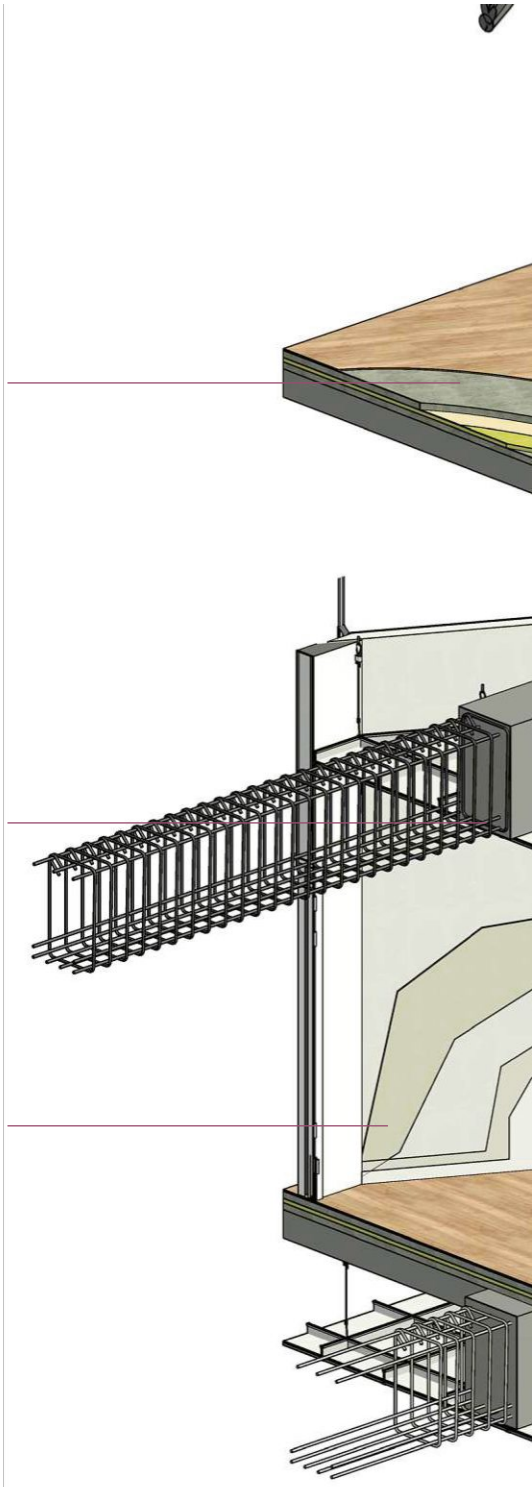
Key plan

6.5 3D FACADE SECTION

Interior Slab
Floor covering 1.0 cm
Floating self-leveling screed 5.0 cm
Separation layer, 0.2 mm PE film
MW-T insulation board, compression strength <17 MN/m³, e.g., TDPT 30, 3.0 cm
EPS granulate, cement-bonded (installation layer) 5.0 cm
Reinforced concrete slab (solid deck) 20 cm

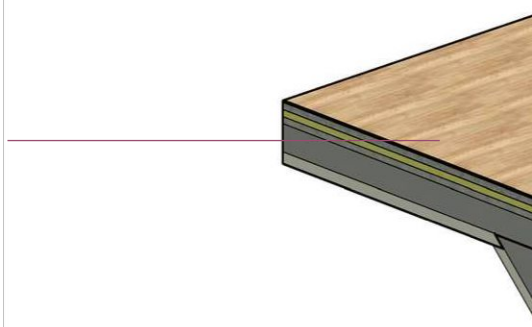
Reinforced concrete beam

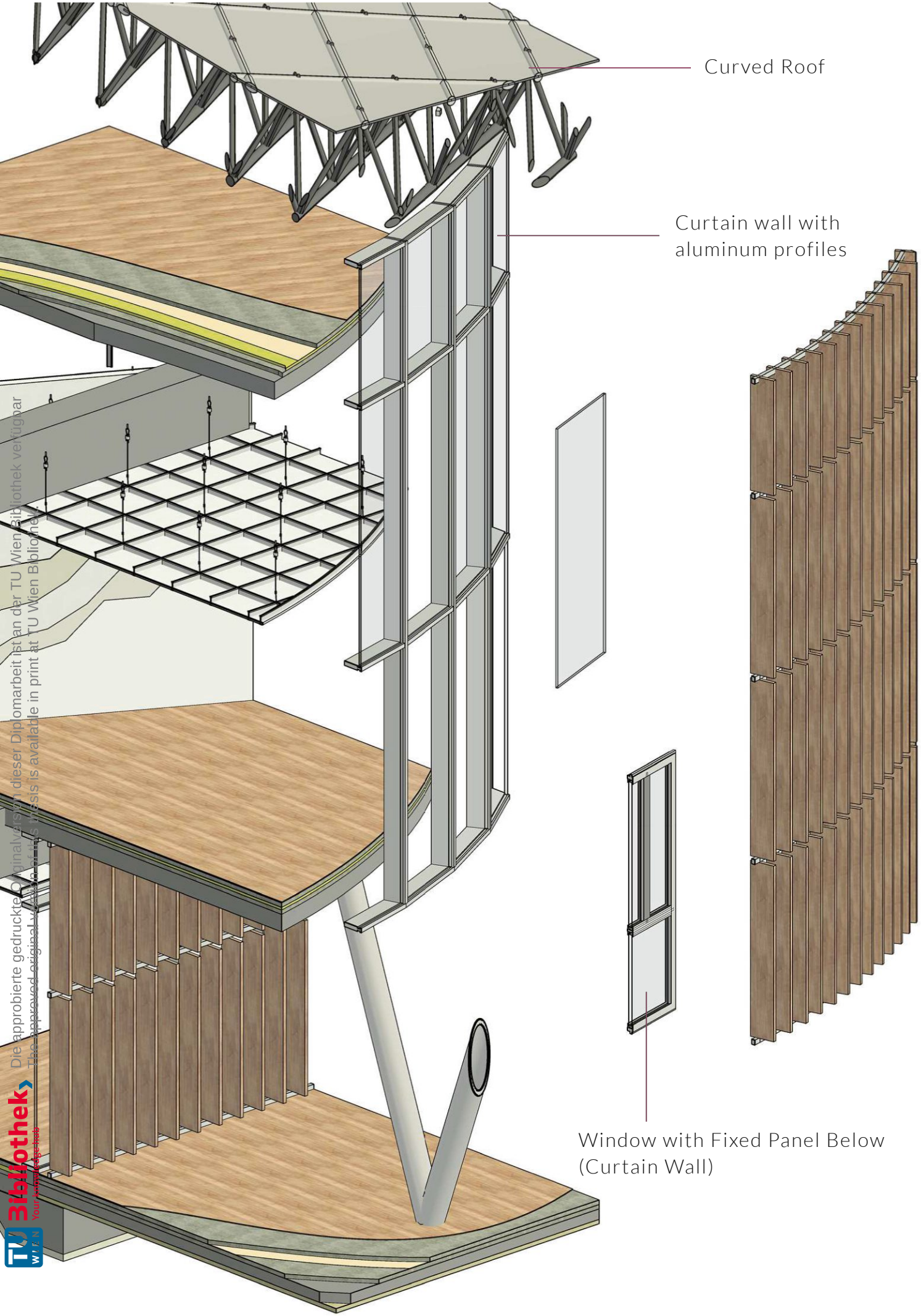
Paint acrylic or latex
Acrylic or latex-based primer
Fine plaster lime, gypsum, and sand (MAR: 1-1/8-3) 0.5 cm
Rough plaster cement, lime, and sand (MHR: 1-¼-3) 1.5 cm
standard brick, 11cm
Rough plaster cement, lime, and sand (MHR: 1-¼-3) 1.5 cm
Fine plaster lime, gypsum, and sand (MAR: 1-1/8-3) 0.5 cm
Acrylic or latex-based primer
Paint acrylic or latex

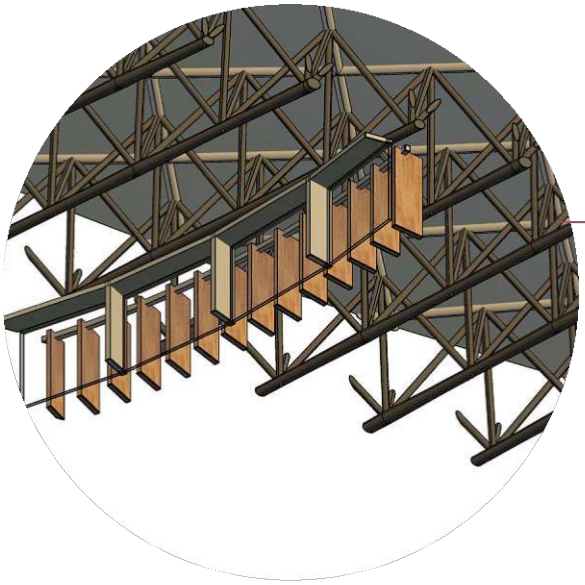


Interior first floor

Floor covering 1.0 cm
Floating self-leveling screed 5.0 cm
Separation layer, 0.2 mm PE film
Acoustic insulation board made of mineral wool or fiberglass 5cm
EPS granulate, cement-bonded (installation layer) 5.0 cm
Reinforced concrete slab (solid deck) 20 cm
Cleaning layer 8 cm







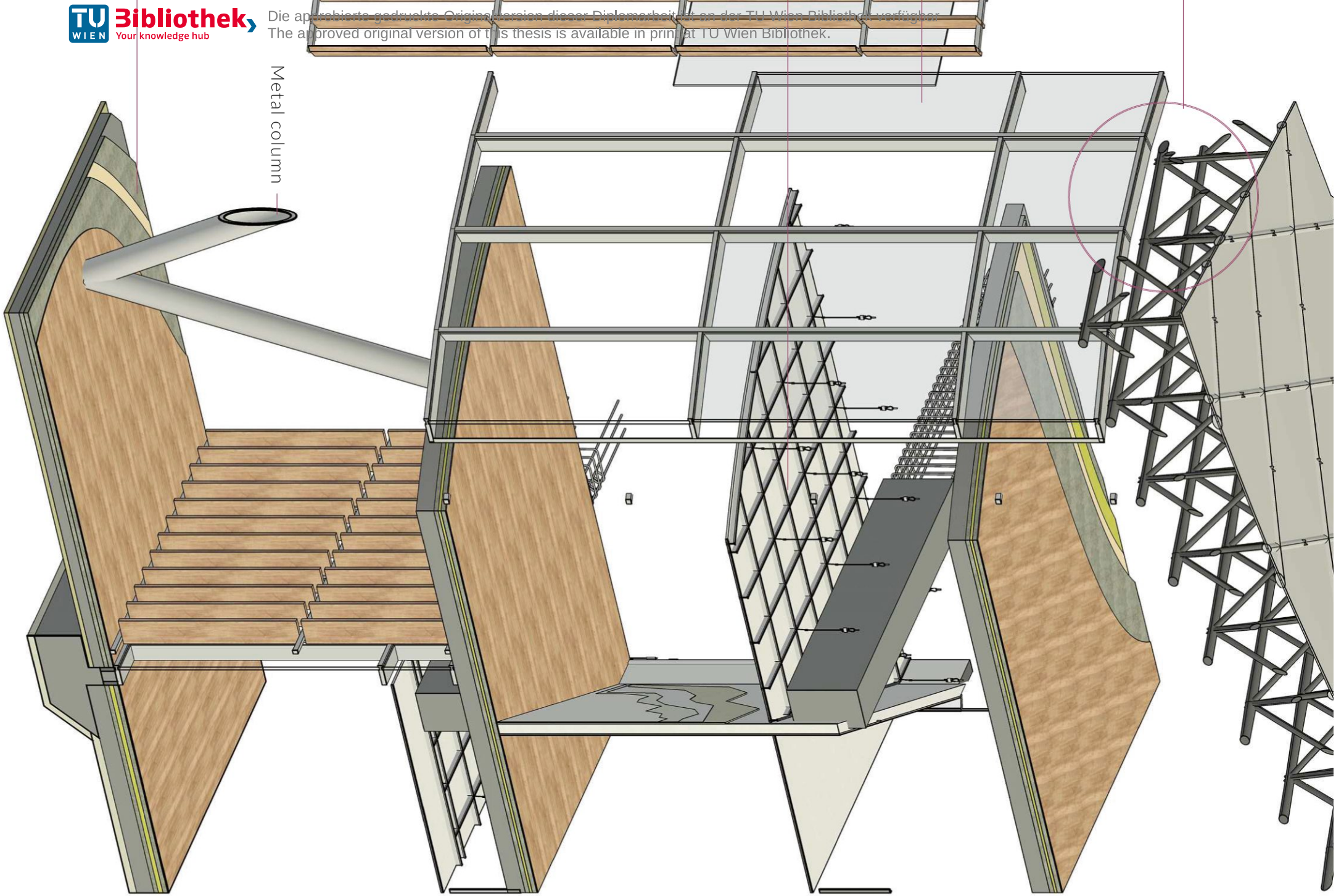
Glass Panel (Curtain Wall)

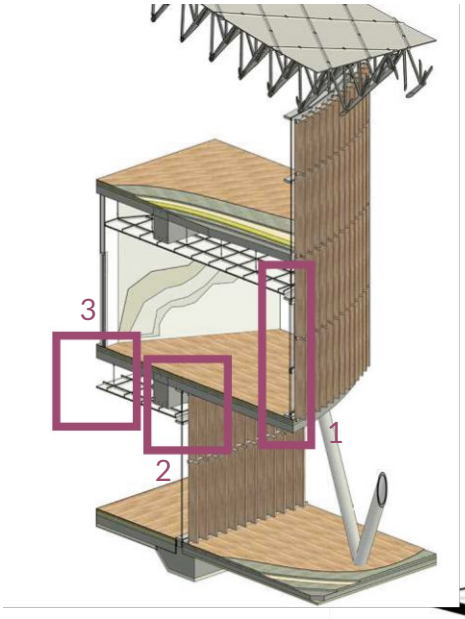
Ceiling Gypsum Board with Metal Framing

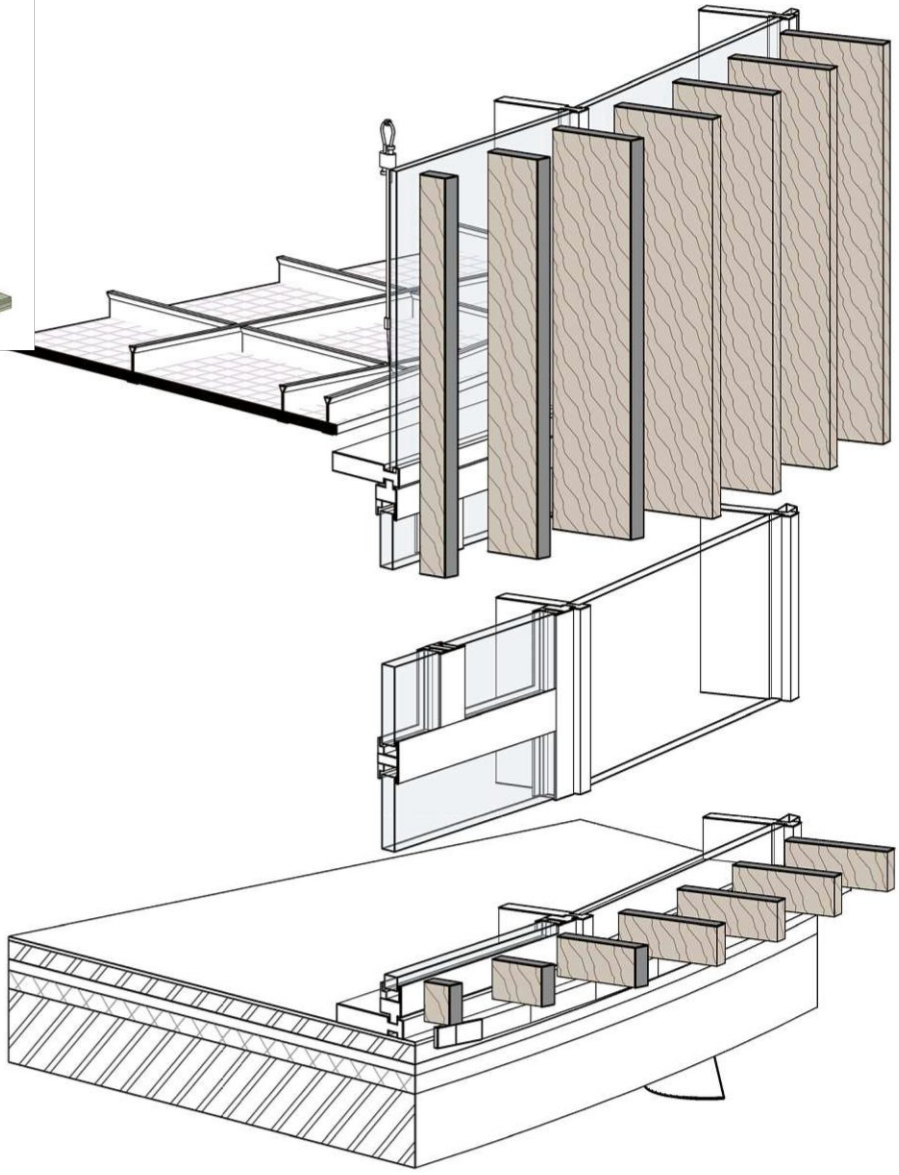
Vertical louvers system

Exterior first floor

Floor covering 1.0 cm
Floating self-leveling screed 5.0 cm
Separation layer, 0.2 mm PE film
EPS granulate, cement-bonded (installation layer) 5.0 cm
Reinforced concrete slab (solid deck) 12 cm
Gravel layer 5 cm

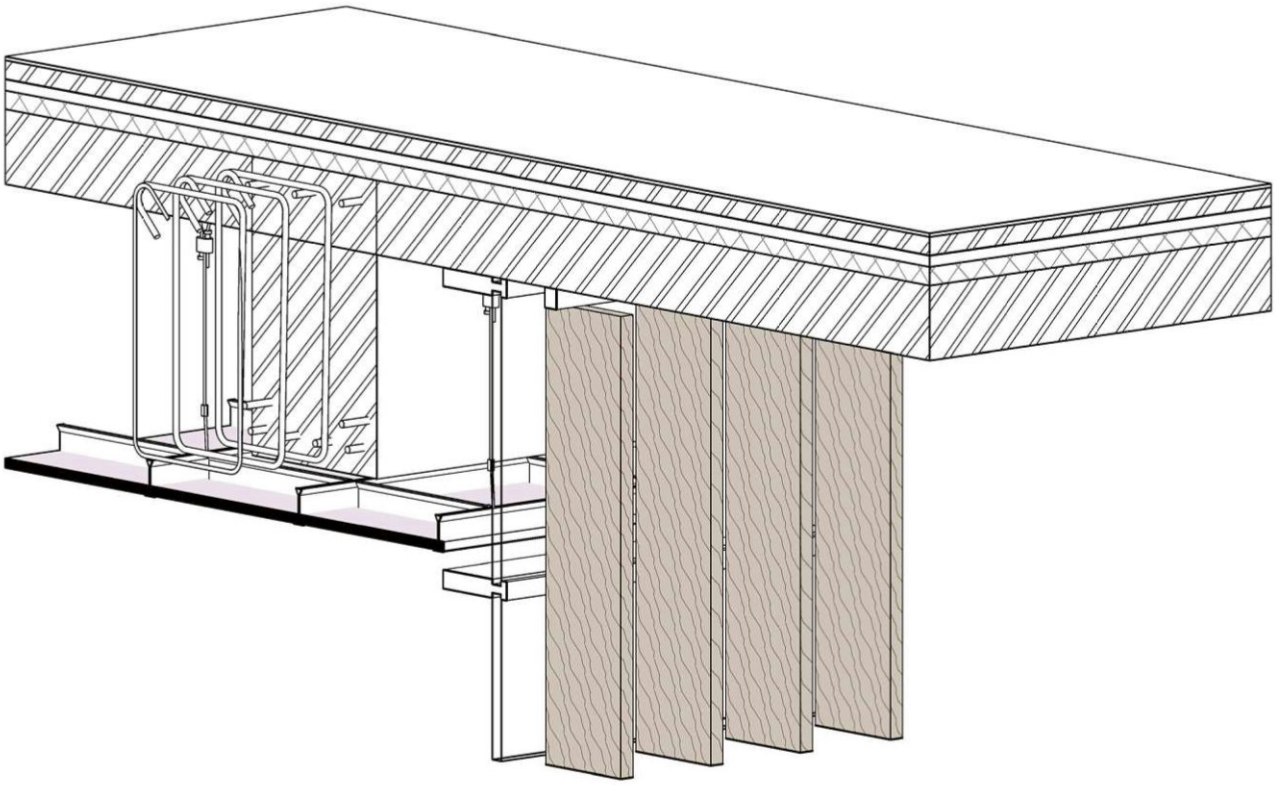






Detail 1

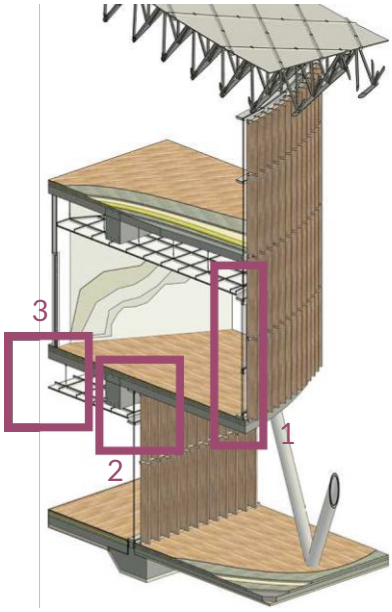
Sc. 1:20

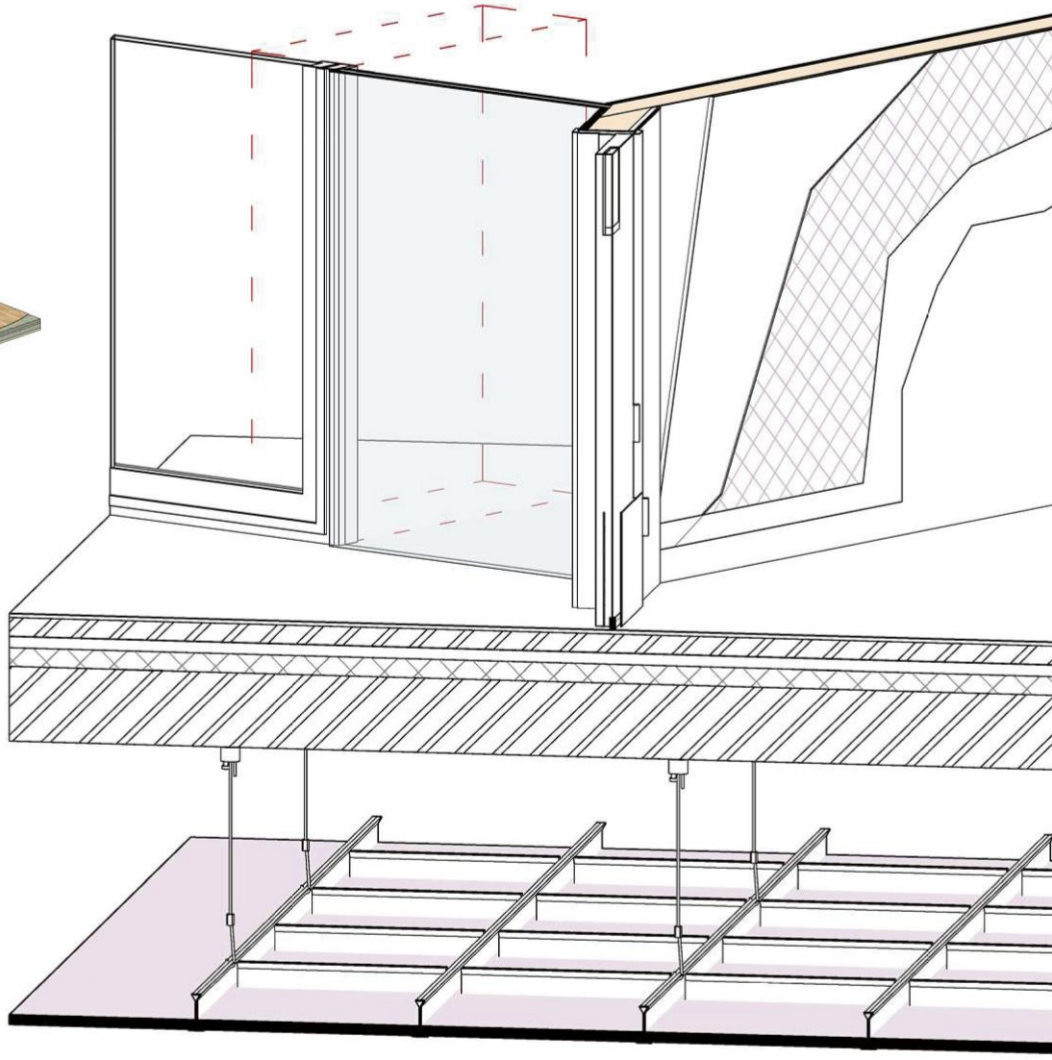


0 20 40 100 cm

Detail 2

Sc. 1:20

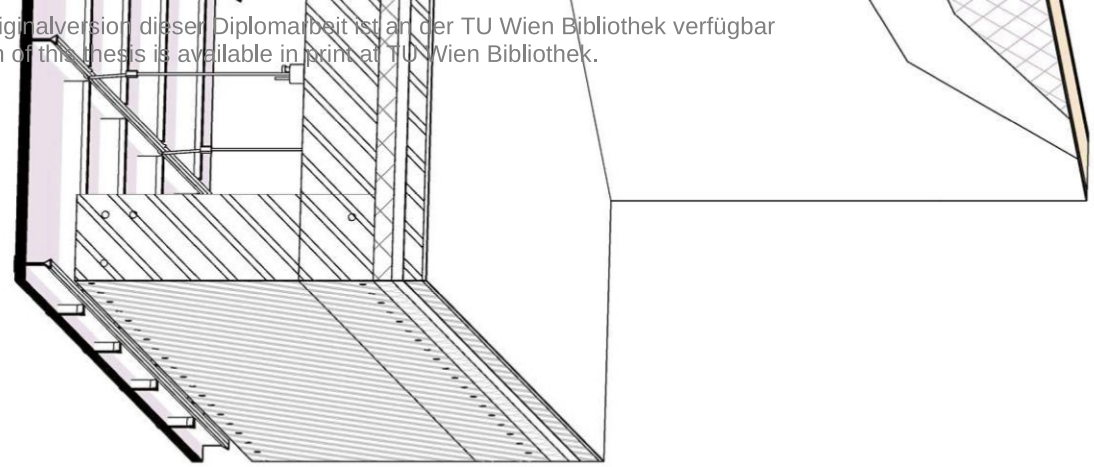




Detail 3

0 20 40 100 cm

Sc. 1:20



6.6 3D VISUALIZATIONS

Fig. 29: Side view of the project showing the café terrace. Created by the author.

Fig. 30: Main front view of the project. Created by the author.

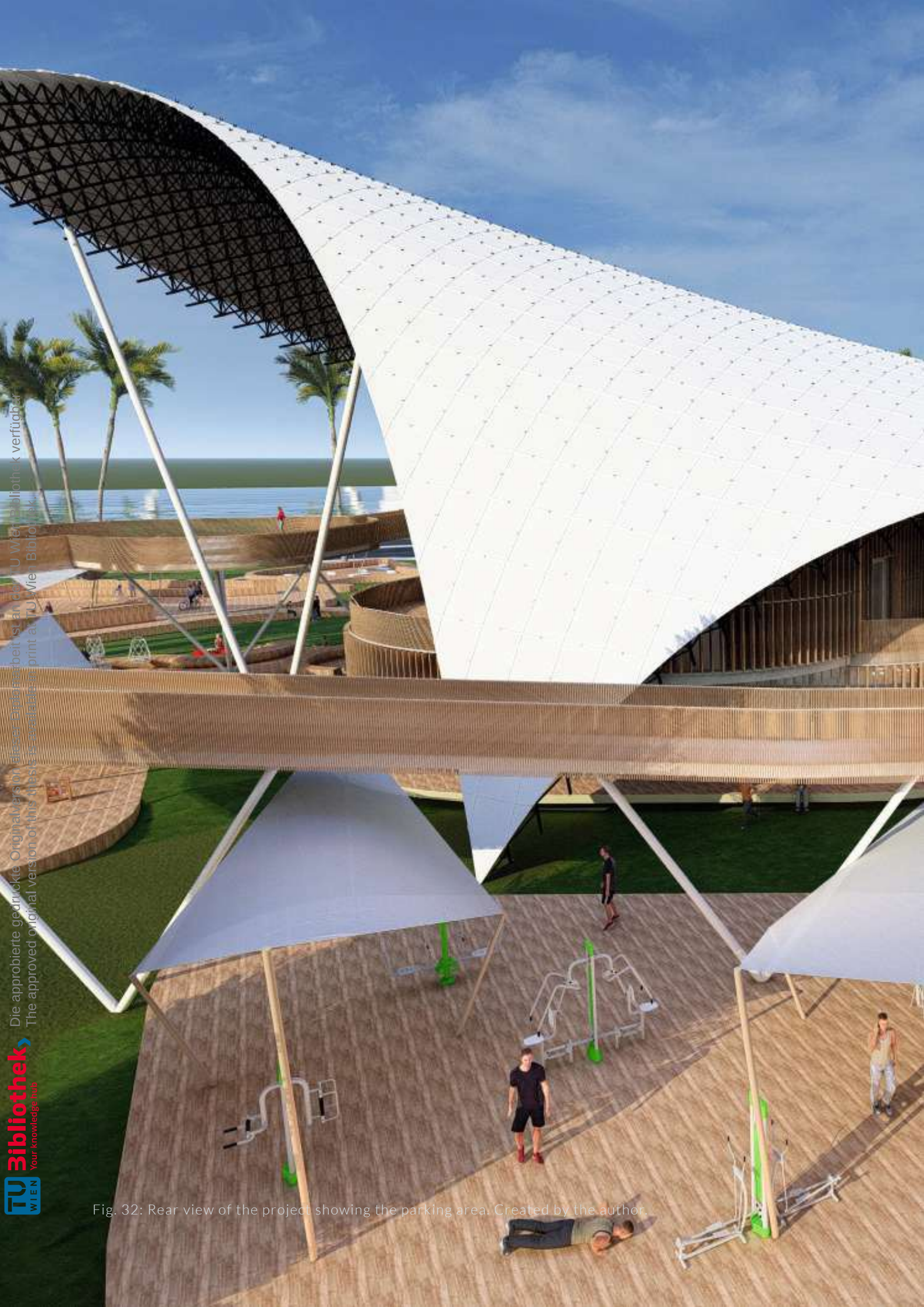


Fig. 32: Rear view of the project showing the parking area. Created by the author.

Fig. 33: Rear facade and dance area. Created by the author.

Fig. 34: Side view of the project. Created by the author.

Fig. 35: Ramps and terraces. Created by the author.

Fig. [illegible] view of the atrium. Created by the author.

Fig. 37: View from the central museum area. Created by the author.

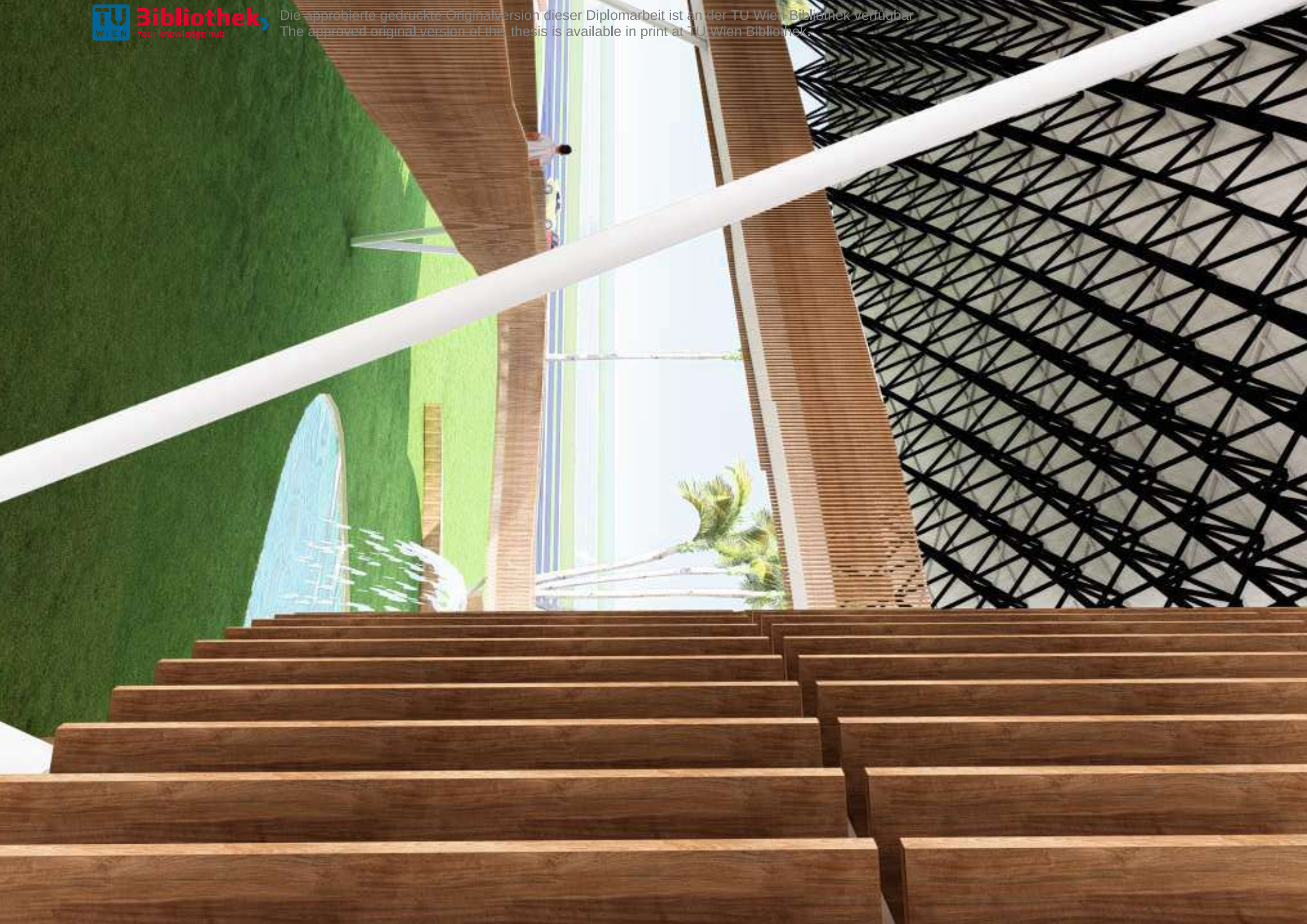


Fig. 38: Exhibition space. Created by the author.

Fig. 39: Main museum area with mezzanine. Created by the author.

Fig. 40: Interior view of the main hall on the first floor. Created by the author.

Fig. 41: View of the hallway on the second floor. Created by the author.

Fig. 42: View of the temporary exhibition area of the museum. Created by the author.

6.7 VIDEO LINK

Scan to watch video

Video
https://www.youtube.com/playlist?list=PLOpz-byrO17fa1rci8_OhBUF3NEbDVhyq9

Fig. 43: View of the project from the football field. Created by the author.

7. EVALUATION
7.1 GROUND AREA ANALYSIS BY LEVEL

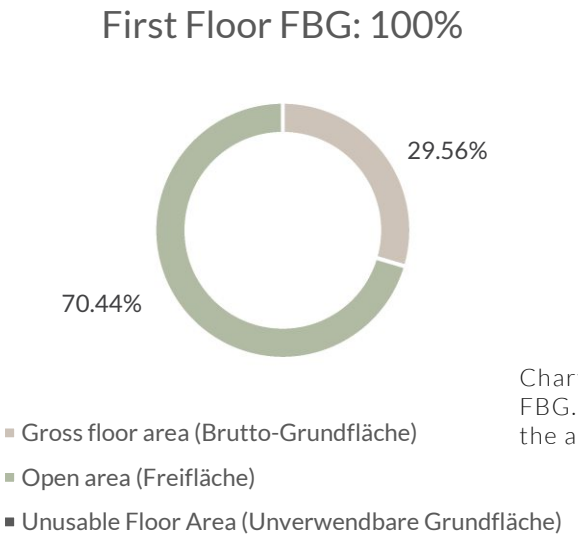
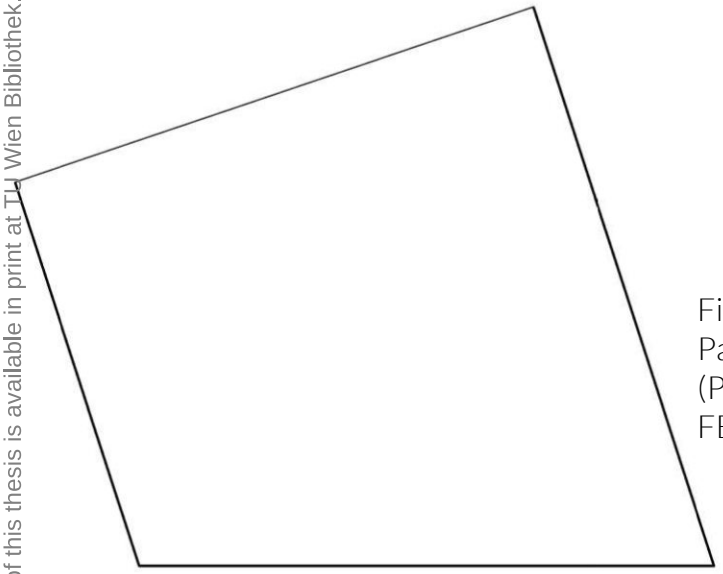
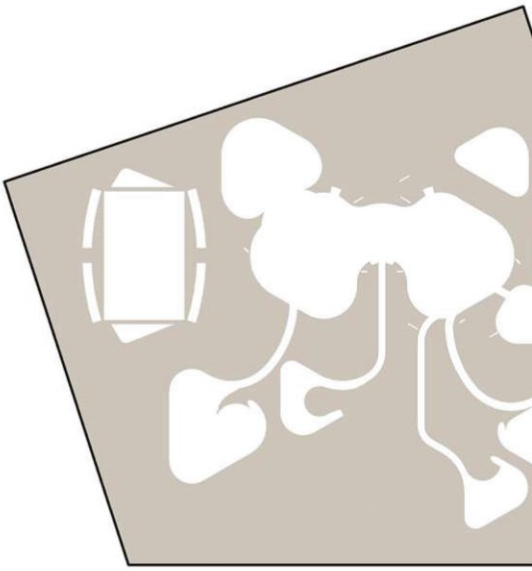


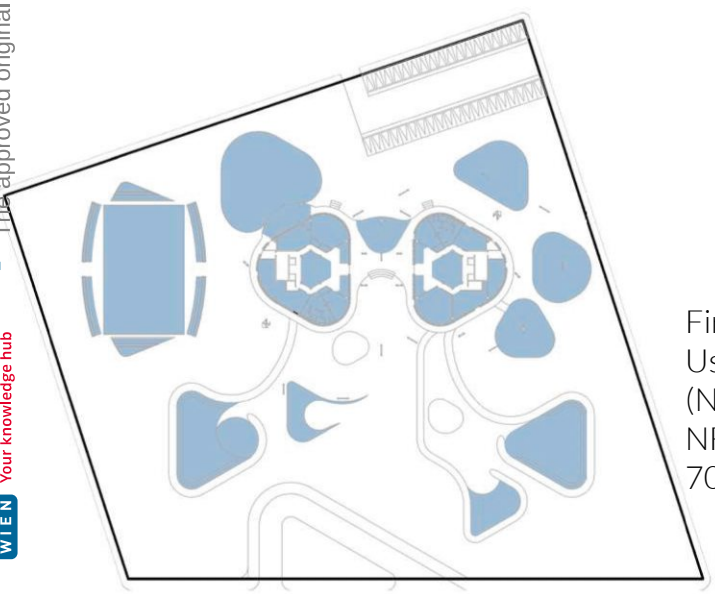
Chart 4: First Floor FBG. Created by the author



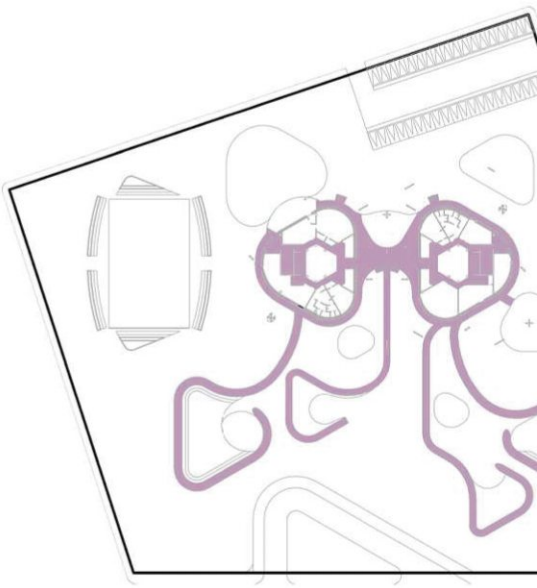
First Floor
Parcel
(Parzelle)
FBG: 18923.71 m^2



Obs. Unusable Floor Area (Unverwendbare Grundfläche)
UGF: 0 m^2 0% of the FBG



First Floor
Usable area
(Nutzungsfläche)
NF: 3965.07 m^2
70.88% of the BGF



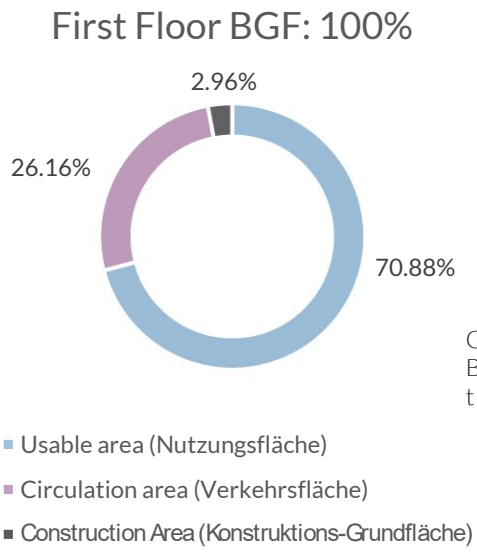
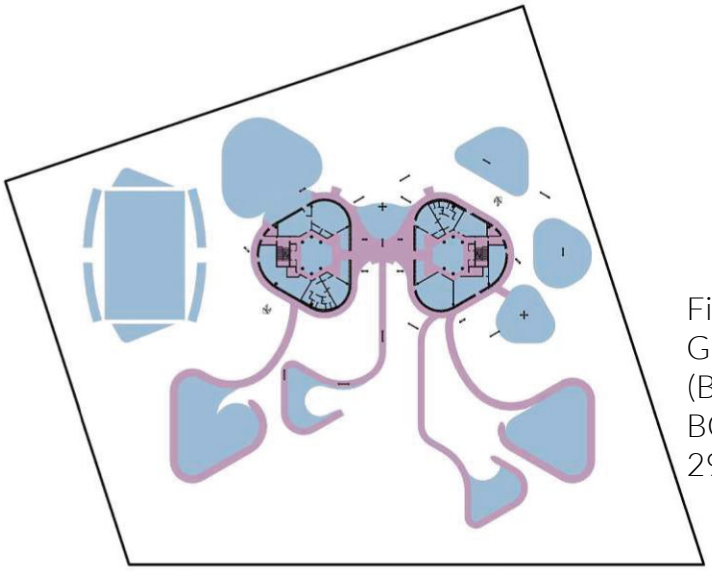


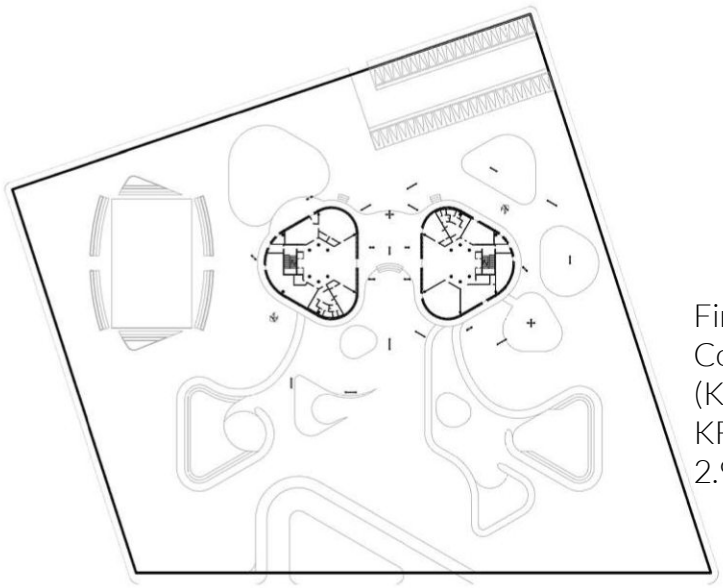
Chart 5: First Floor BGF. Created by the author

First Floor
Open Area
(Freifläche)
FF:13329.61 m^2
70.44% of the FBG



First Floor
Gross Floor Area
(Brutto-Grundfläche)
BGF: 5594.10 m^2
29.56% of the FBG

First Floor
Circulation Area
(Verkehrsfläche)
VF: 1463.36 m^2
26.16% of the BGF



First Floor
Construction Area
(Konstruktionsgrundfläche)
KF: 165.67 m^2
2.96% of the BGF

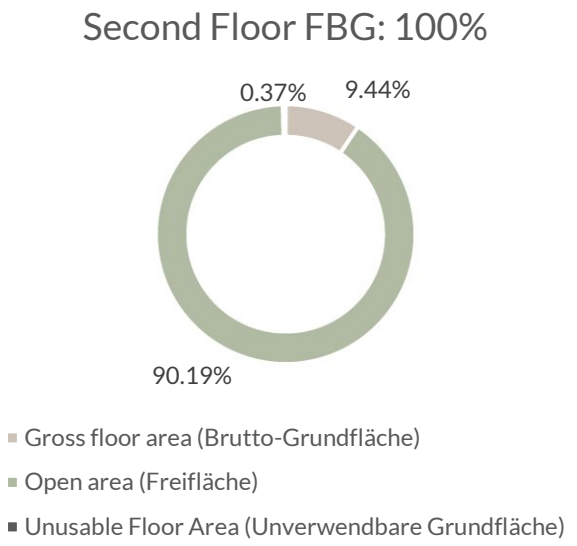
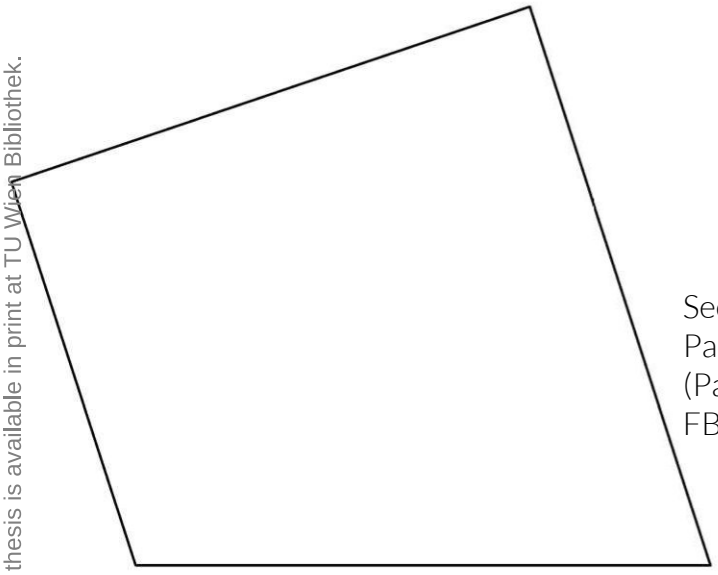
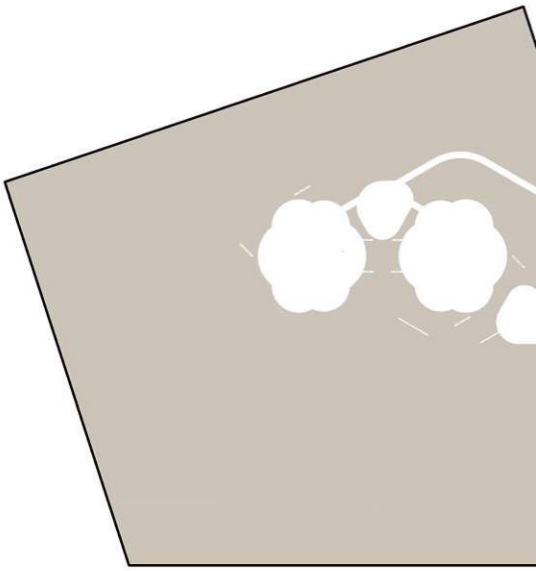


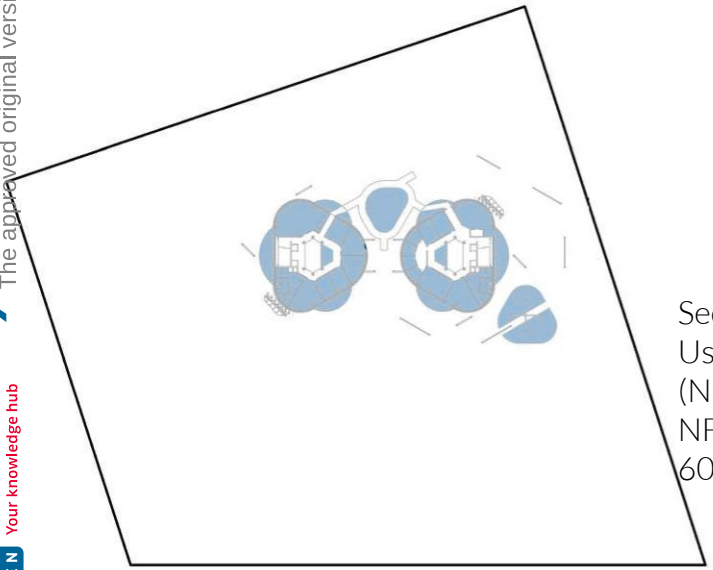
Chart 6: Second Floor FBG. Created by the author



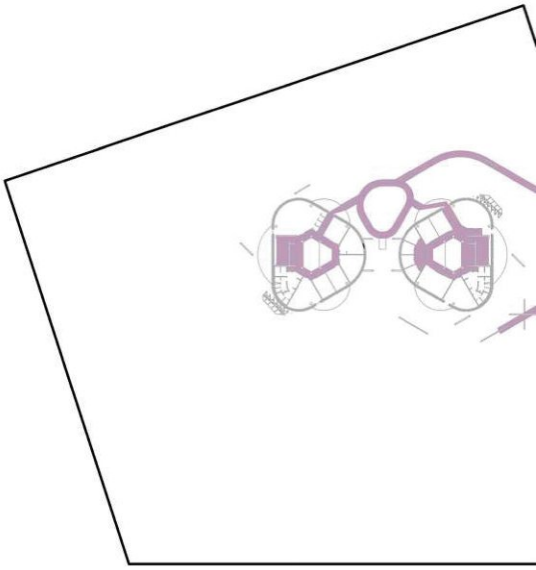
Second Floor
Parcel
(Parzelle)
FBG: 18923.71 m^2



Obs. Unusable Floor Area (Unverwendbare Grundfläche)
UGF: 70.41 m^2 0.37% of the FBG



Second Floor
Usable area
(Nutzungsfläche)
NF: 1075.54 m^2
60.20% of the BGF



Obs: Second Floor includes mezzanine

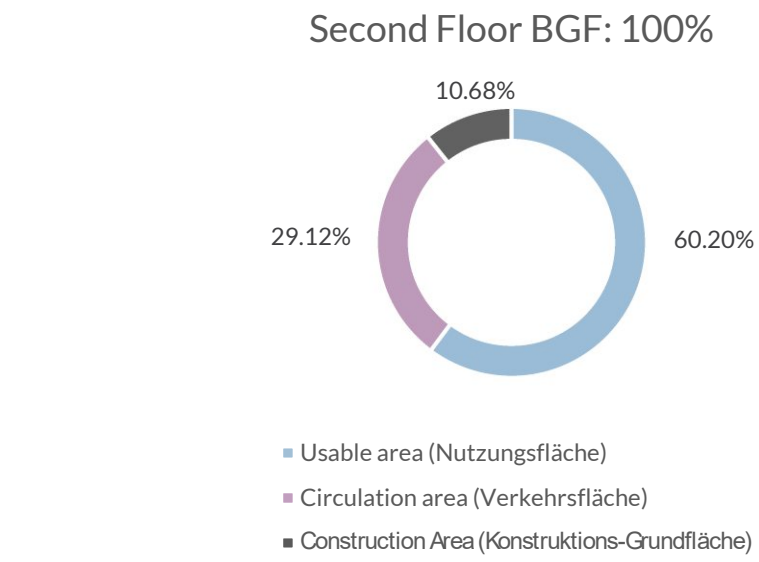
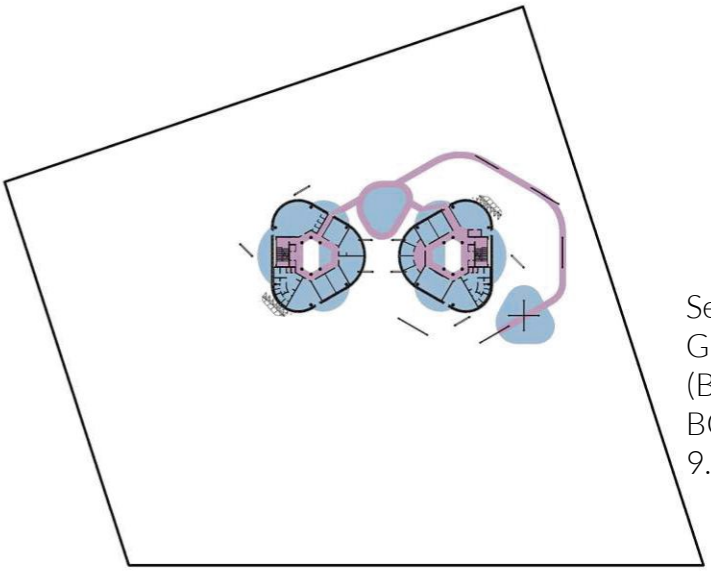
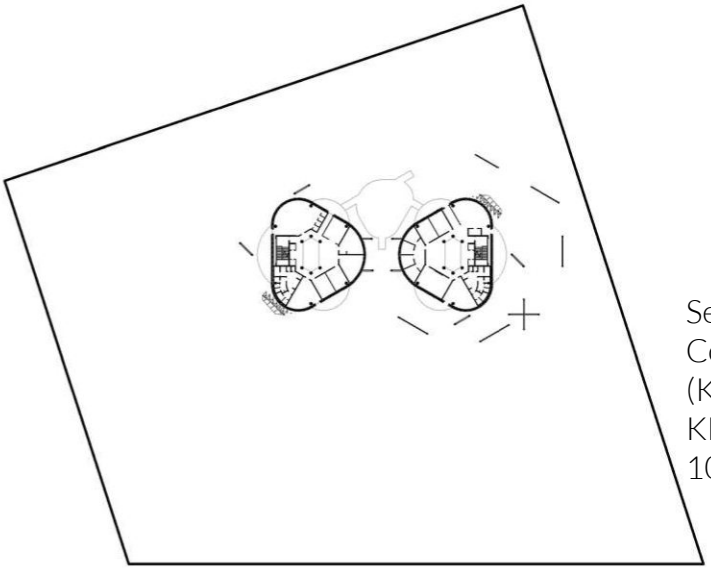


Chart 7: Second Floor BGF. Created by the author



Second Floor
Open Area
(Freifläche)
FF: 17066.68 m^2
90.19% of the FBG

Second Floor
Gross Floor Area
(Brutto-Grundfläche)
BGF: 1786.62 m^2
9.44% of the FBG



Second Floor
Circulation Area
(Verkehrsfläche)
VF: 520.28 m^2
29.12% of the BGF

Second Floor
Construction Area
(Konstruktionsgrundfläche)
KF: 190.80 m^2
10.68% of the BGF

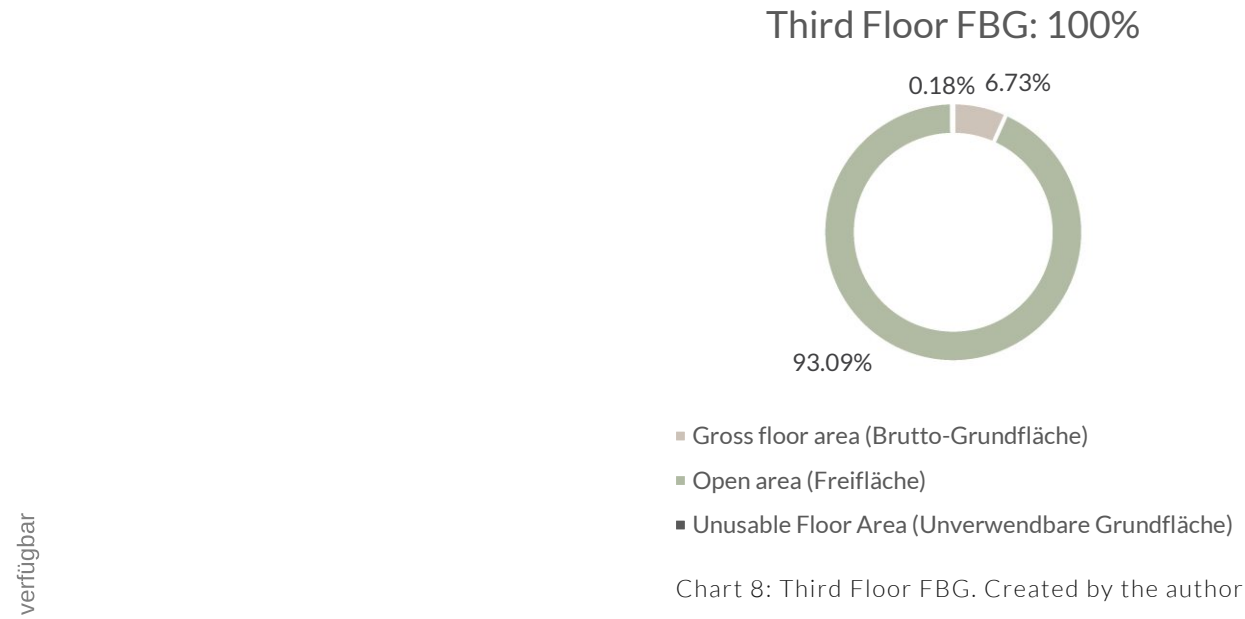
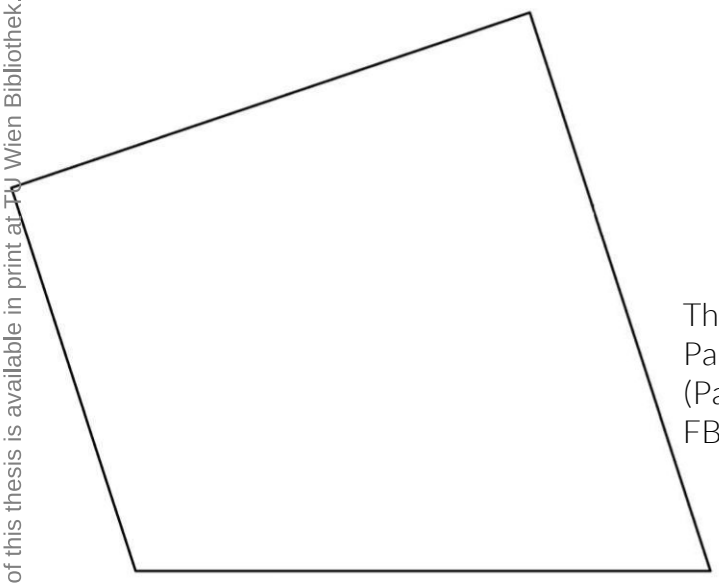
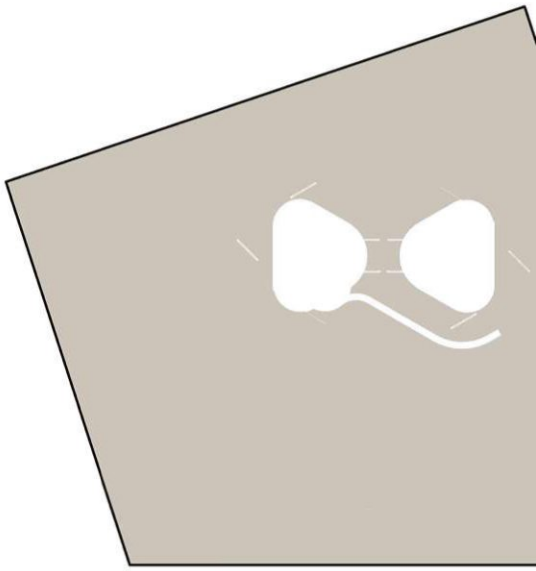


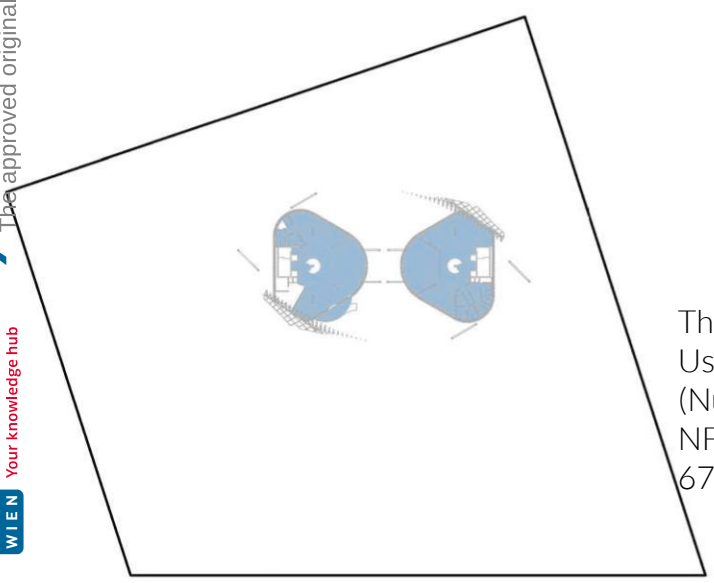
Chart 8: Third Floor FBG. Created by the author



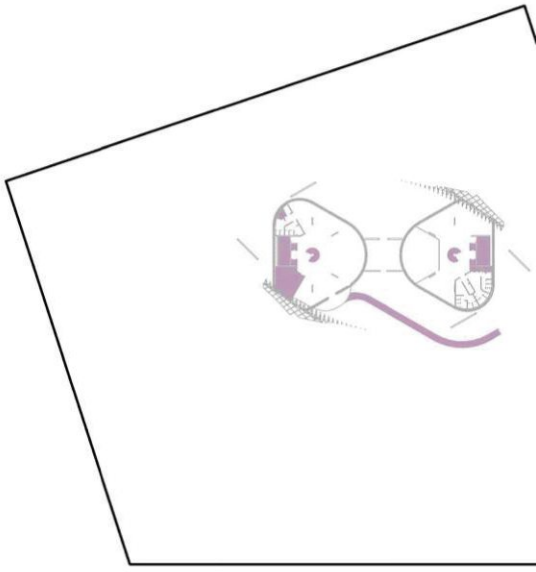
Third Floor
Parcel
(Parzelle)
FBG: 18923.71 m^2



Obs. Unusable Floor Area (Unverwendbare Grundfläche)
UGF: 33.73m^2 0.18% of the FBG



Third Floor
Usable area
(Nutzungsfläche)
NF: 863.70 m^2
67.85% of the BGF



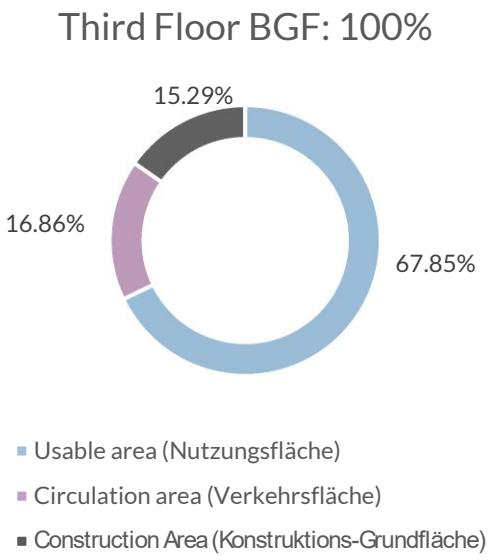
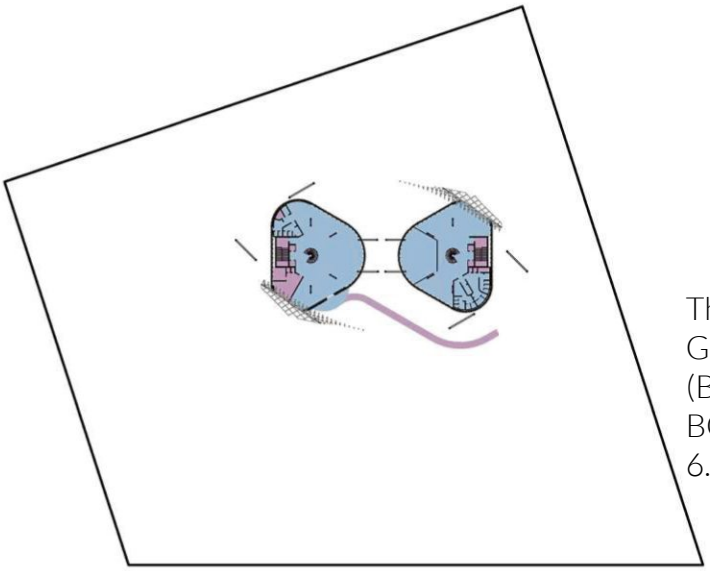
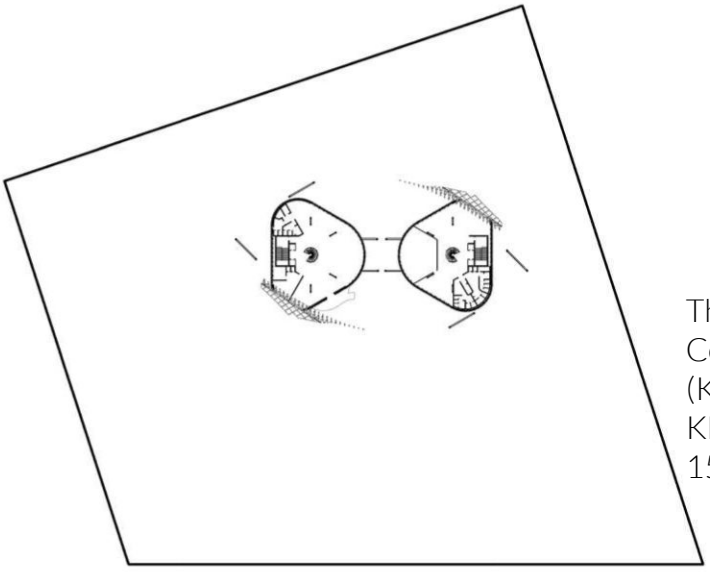


Chart 9: Third Floor BGF. Created by the author



Third Floor
Open Area
(Freifläche)
FF: 17617.01 m^2
93.09% of the FBG

Third Floor
Gross Floor Area
(Brutto-Grundfläche)
BGF: 1272.97 m^2
6.73% of the FBG



Third Floor
Circulation Area
(Verkehrsfläche)
VF: 214.62 m^2
16.86% of the BGF

Third Floor
Construction Area
(Konstruktionsgrundfläche)
KF: 194.65 m^2
15.29% of the BGF

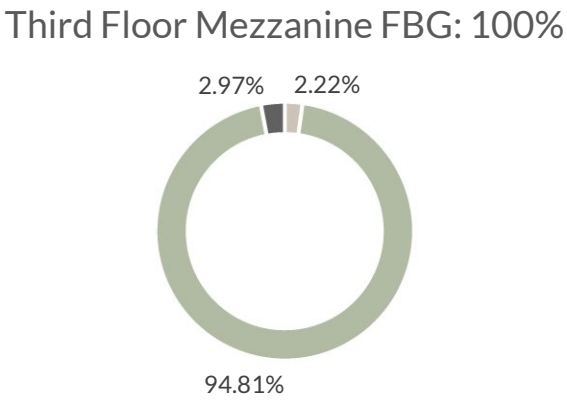
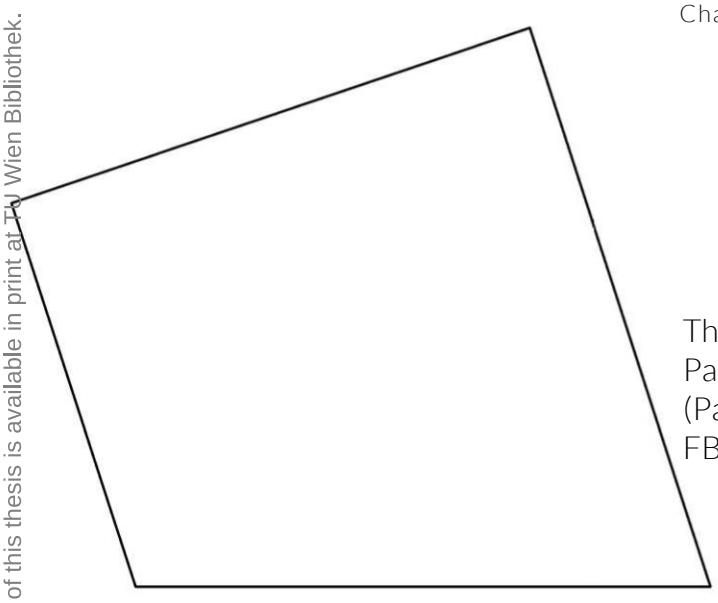
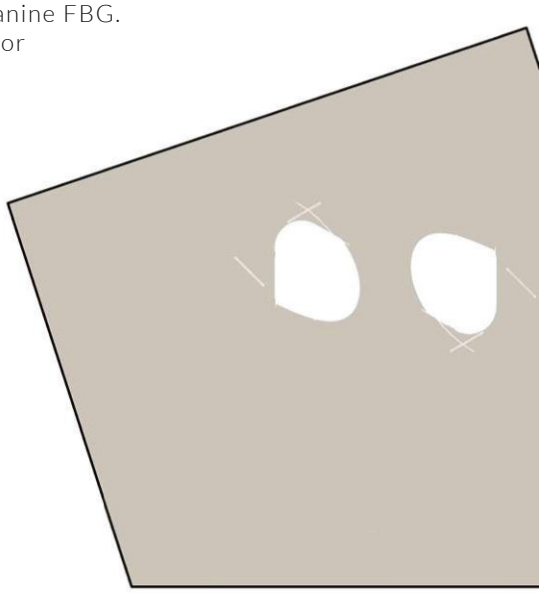


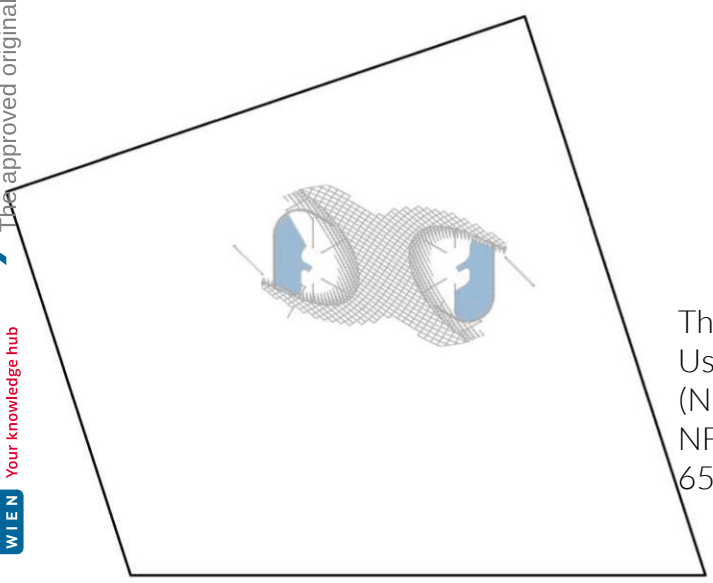
Chart 10: Third Floor Mezzanine FBG.
Created by the author



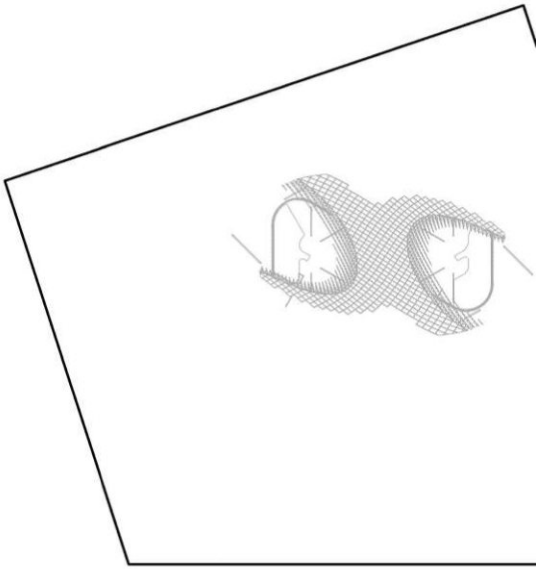
Third Floor Mezzanine
Parcel
(Parzelle)
FBG: 18923.71 m^2



Obs. Unusable Floor Area (Unverwendbare Grundfläche)
UGF: 561.91 m^2 2.97% of the FBG



Third Floor Mezzanine
Usable area
(Nutzungsfläche)
NF: 275.44 m^2
65.64% of the BGF



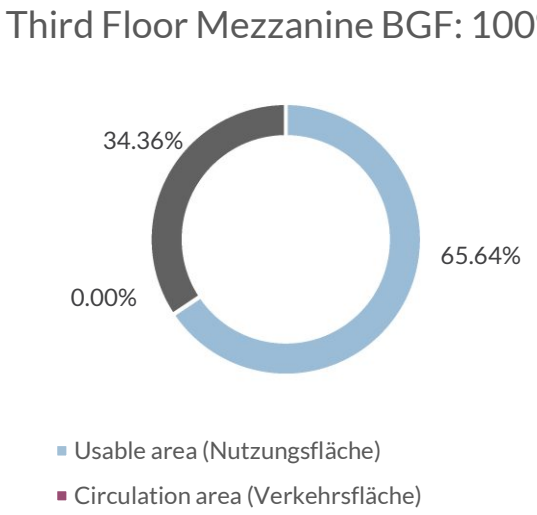
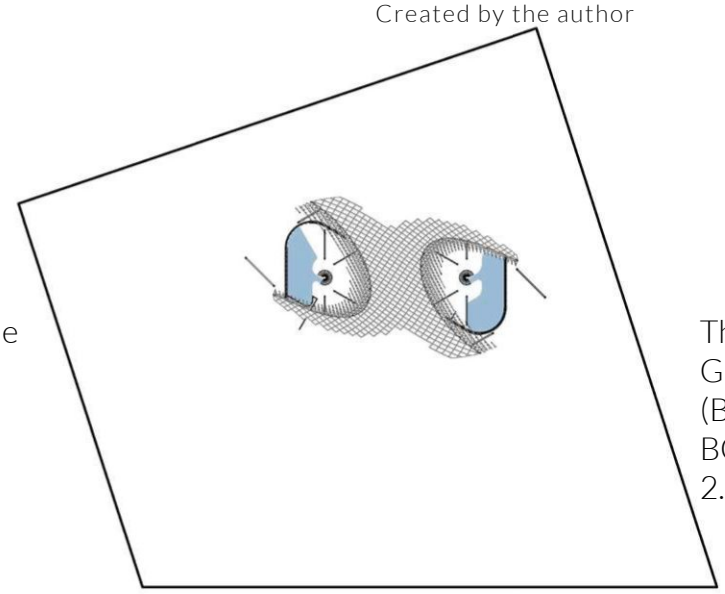
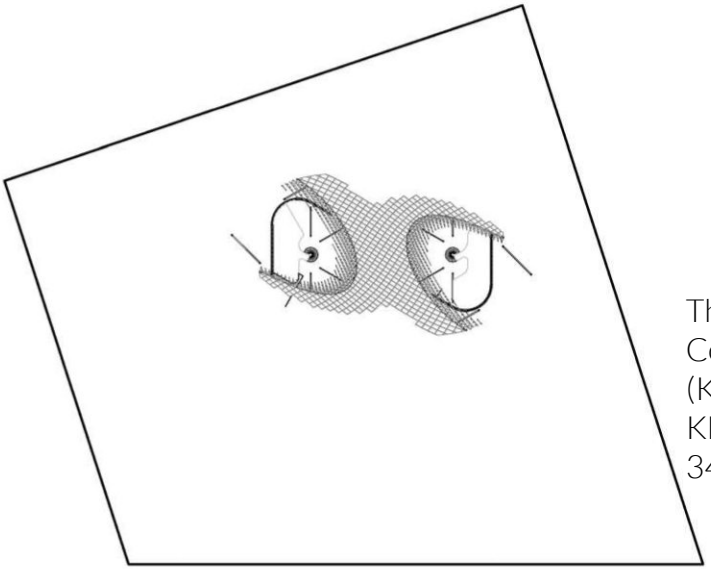


Chart 11: Third Floor Mezzanine BGF.
Created by the author



Third Floor Mezzanine
Open Area
(Freifläche)
FF: 17942.15 m^2
94.81% of the FBG

Third Floor Mezzanine
Gross Floor Area
(Brutto-Grundfläche)
BGF: 419.65 m^2
2.2% of the FBG



Third Floor Mezzanine
Circulation Area
(Verkehrsfläche)
VF: 0 m^2
0% of the BGF

Third Floor Mezzanine
Construction Area
(Konstruktionsgrundfläche)
KF: 144.21 m^2
34.36% of the BGF

7.2 GENERAL GROUND AREA ANALYSIS

Cultural complex for the social inclusion of the marginalized population of Callao, Peru

Grundflächen		Ground areas	m²	Fläche/NUF (%)	Fläche/BGF (%)
NUF	Nutzungsfläche	Usable area	6179.8	100.0	68.1
TF	Technikfläche	Technical area			
VF	Verkehrsfläche	Circulation Area*	2198.3	35.6	24.2
NRF	Netto-Raumfläche	Net Room Area	8378.0	135.6	92.3
KGF	Konstruktionsgrundfläche	Construction Area	695.3	11.3	7.7
BGF	BGF Brutto-Grundfläche	Gross Floor Area	9073.3	146.8	100.0

*For practical purposes, circulation area includes technical area.

Table 1: General ground area analysis of the project. Created by the author.

Libraries, museums, and exhibitions

Grundflächen		Ground areas	m²	>	Fläche/NUF (%)	<	>	Fläche/BGF (%)	<
NUF	Nutzungsfläche	Usable area	-		100.0		60.5	65.3	67.9
TF	Technikfläche	Technical Area	-	5.3	6.4	9.9	3.2	4.0	5.4
VF	Verkehrsfläche	Circulation Area	-	19.7	25.1	34.8	12.9	15.5	20.4
NRF	Netto-Raumfläche	Net Room Area	-	125.8	130.7	144.4	80.3	84.3	86.6
KGF	Konstruktionsgrundfläche	Construction Area	-	20.7	23.6	29.3	12.8	15.1	18.9
BGF	BGF Brutto-Grundfläche	Gross Floor Area	-	147.2	155.4	168.2		100.0	

Table 2: General ground area analysis for libraries, museums, and exhibitions. Retrieved from BKI (2019).

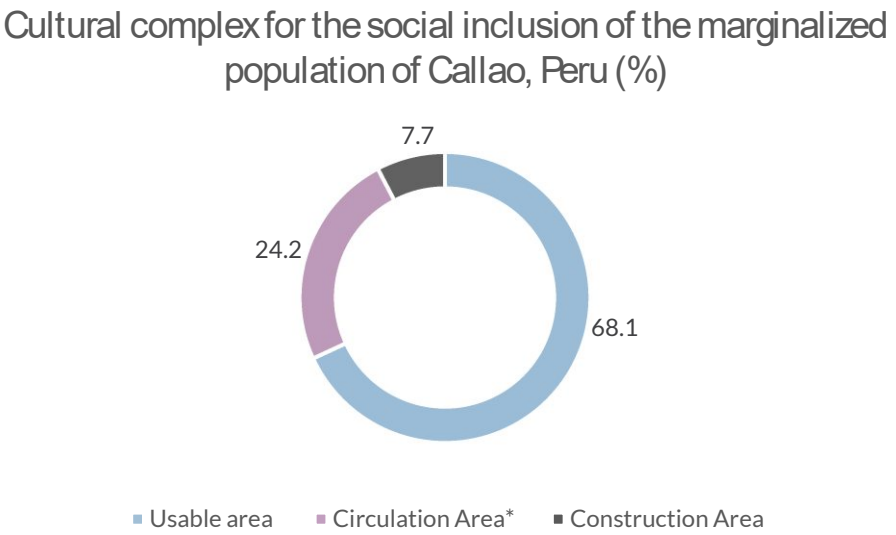


Chart 12: General ground area analysis of the project. Created by the author.

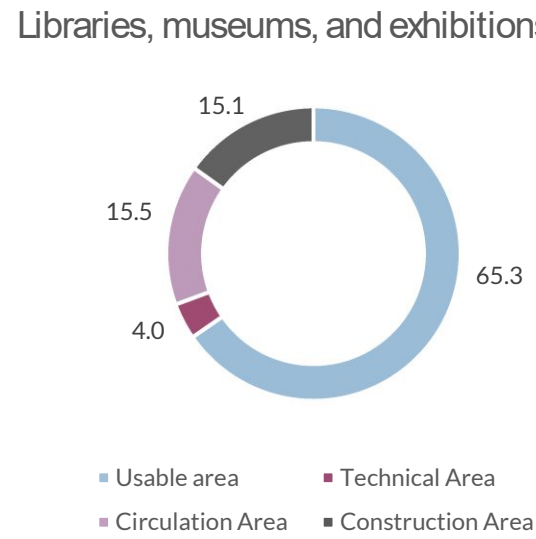


Chart 13: General ground area analysis for libraries, museums, and exhibitions. Retrieved from BKI (2019). Graphic created by the author.

8. CONCLUSION

The Cultural Complex for the Social Inclusion of the Marginalized Population of Callao, Peru represents a bold and innovative approach to urban regeneration and community building in a historically marginalized area, such as the southern part of La Punta, known as "los barracones." By addressing the negative stigma that has kept this area on the sidelines of development for years, the project seeks to transform it into a vibrant, inclusive, and culturally rich environment that promotes social cohesion and economic growth.

The complex is envisioned as a positive sculptural landmark that can help local communities improve their self-esteem and public perception, serving as a symbol of renewal and hope. Socialization plays a crucial role in this process, fostering meaningful interactions between youth and visitors, helping to change the image of the area, and promoting greater social integration. As young people improve their academic and artistic skills and adopt healthy lifestyles, a more promising future for them and society as a whole becomes evident.

The dynamic architectural design of the complex includes features such as a distinctive curved roof, which not only provides shelter and enhances the aesthetic appeal but also symbolizes the center's openness and modernity. The design also incorporates vertical louvers for energy efficiency and a distributed museum concept for continuous cultural exploration, offering a welcoming space for art, education, and community engagement. Additionally, a large ramp that winds through the complex adds dynamism and represents youth, while also providing easy access for families with strollers, wheelchairs, tricycles, and bicycles, turning the journey through the complex into an adventure and a part of the experience. The ramp, with a gentle slope of 6% and rest areas every 9 meters or less, ensures accessibility for people with reduced mobility, making the complex highly inclusive.

The project also includes facilities such as coworking spaces, sports areas, workshops, classrooms, reading and relaxation areas, a job and psychological counseling area, and children's spaces, considering the high birth rate and the fact that many young people are parents at an early age. These facilities not only encourage community

9. REFERENCES

BKI. (2019). Statistische Kennwerte – Flächen und Rauminhalte Gebäude Neubau [Statistical indicators – Areas and volumes of new building constructions] (Section 8.6: Bibliotheken, Museen und Ausstellungen [Libraries, museums, and exhibitions]). Baukosteninformationszentrum Deutscher Architektenkammern GmbH.

Condé Nast Traveler. (n.d.). JW Marriott Hotel Lima [Image]. Retrieved September 29, 2024, from https://www.cntraveler.com/hotels/peru/miraflores/jw-marriott-hotel-lima

Fernández, S. (n.d.). Street view of Barracones, Callao [Photograph]. Pinterest. Retrieved September 29, 2024, from https://i.pinimg.com/originals/9f/dd/81/9fdd818180634684b4536109d5147965.jpg

Google. (2024, February 17). Google Maps: Satellite view of the land [Screenshot]. Retrieved September 29, 2024, from https://maps.app.goo.gl/9d36GfujcEnaGAxP7

Google. (2024, February 17). Google Maps: Street view of Avenida Marco Polo adjacent to the land [Screenshot]. Retrieved September 29, 2024, from https://maps.app.goo.gl/mGzJHwB6BFkNoBe38

Google. (2024, February 17). Google Maps: View of the corner of the land from Av. Marco Polo and Coastal Road [Screenshot]. Retrieved September 29, 2024, from [relevant link]

Google. (2024, February 17). Google Maps: View of the corner of the land from the intersection of St. Ancash and St. Washington [Screenshot]. Retrieved September 29, 2024, from https://maps.app.goo.gl/TRxseM5ZtJVLEbcZ8

Google. (2024, February 17). Google Maps: View of Coastal Road with the land on the left and the sea on the right [Screenshot]. Retrieved September 29, 2024, from https://maps.app.goo.gl/SxmMLGyW545yE31v7

Huamán Egoavil, C. E. (1991). Microzonificación sísmica de La Punta y El Callao [Map]. Retrieved from Mapa de Microzonificación de La Punta Callao.

HUAMÁN EGOÁVIL, C. E., MENESES LOJA, J. F., & ALVA HURTADO, J. E. (1991). Seismic Microzonification of La Punta and Callao [Microzonificación Sísmica de La Punta y el Callao], Mapa de Microzonificación de La Punta Callao.

Inkan Milky Way. (n.d.). Centro Comercial Larcomar [Image]. Retrieved September 29, 2024, from https://www.inkanmilkyway.com/wp-content/uploads/2018/09/que-ver-hacer-miraflores-distrito-lima-larcomar.jpg

Municipality of Callao. (2024). Zoning map of Callao [Map]. Retrieved September 29, 2024, from https://www.municallao.gob.pe/portal-anterior/pdf/licencia-de-funcionamiento/zonificacionmarzo.pdf

Peru Hop. (n.d.). View of the Malecón in Miraflores district showing tourist sports [Image]. Retrieved September 29, 2024, from https://www.peruhop.com/wp-content/uploads/LimaMalecon.png

SunCalc. (2024, September 29). Solar trajectory for Callao, Peru [Image]. Retrieved September 29, 2024, from https://www.suncalc.org/#/-12.067,-77.1429,17/2024.09.29/10:00/1/3

Tamiluz. (n.d.). Movable solar shading louvers / Timber [Image]. Retrieved September 29, 2024, from https://www.tamiluz.es/EN-index.html

Windfinder. (n.d.). Average wind speed for La Punta Callao [Chart]. Retrieved September 29, 2024, from https://www.windfinder.com/windstatistics/la_punta_callao_lima

Windfinder. (n.d.). Dominant wind direction statistics for La Punta Callao [Chart]. Retrieved September 29, 2024, from https://www.windfinder.com/windstatistics/la_punta_callao_lima

Windfinder. (n.d.). Temperature statistics for La Punta Callao [Data]. Retrieved September 29, 2024, from https://www.windfinder.com/windstatistics/la_punta_callao_lima

10. LIST OF VISUALS

10.1 LIST OF FIGURES

10.2 LIST OF MAPS

10.3 LIST OF ARCHITECTURAL PLANS

10.4 LIST OF TABLES

10.5 LIST OF CHARTS

11. CURRICULUM VITAE

Vanessa Anamilé
Minhuey Espinoza
vanessa.minhuey@gmail.com

Education

2021 - 2024 Vienna University of Technology. Master's Program in Architecture

2021 - 2021 Michigan State University. Course on Photography Basics and Beyond: From Smartphone to DSLR

2012 - 2016 Federico Villarreal National University Bachelor's Degree in Architecture

Experience

2020 - present - ARQUP, obrt za dizajn i vizualizaciju. Founder, Designer.

Projects

www.arqup.net/portafolio/

Certifications

2022 Licensed Architect
Certified by the Regional Council of Lima, Colegio de Arquitectos del Perú (CAP). Member ID: CAP 26175

Honors

2015 Universidad Nacional Federico Villarreal
Top Third Certificate. Ranked 1st out of 832 students

Hard Skills

AI tools, Revit, AutoCAD, Archicad, Photoshop, InDesign, Canva, Photography.

Acknowledgements

To my supervisor, Prof. Arch. DI Dr. Manfred Berthold, for his unwavering guidance and invaluable architectural advice, which were fundamental to the development of this project. I am deeply grateful for his steady support throughout this academic journey.

To my family, Ivan, Vesna, and Željko, whose constant support has been the foundation upon which I built this path; without their enduring presence, closing this chapter of my life would not have been possible. And to my parents, Andres and Maria, who, from afar in Peru, did everything to help me embark on this master's journey.

A special thanks to my son, Nick, who fills my heart with joy and serves as my greatest motivation to continue growing and improving.

Danke. Hvala. Gracias.
Vienna, 2024.