

Embracing Sustainable Living: A Community House near the Mývatn Lake in Iceland



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MASTER-/DIPLOMARBEIT

ausgeführt zum Zwecke der Erlangung des akademischen Grades
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unter der Leitung von

Manfred Berthold

Prof Arch DI Dr

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Fakultät für Architektur und Raumplanung

Embracing Sustainable Living:

A Community House near the Mývatn Lake in Iceland

Nachhaltiges Leben fördern:

Ein Gemeinschaftshaus in der Nähe des Mývatn-Sees
in Island

Andreea Claudia Danciu

Matr. Nr. 01528176

Wien, am _____

Datum

Unterschrift

abstract

KURZFASSUNG

Diese Arbeit untersucht die Überschneidung von Architektur, Nachhaltigkeit und Gemeindeentwicklung im Rahmen eines Wettbewerbs in Island. Der Schwerpunkt liegt auf der Entwicklung eines Gemeindezentrums, das Islands Engagement für den Umweltschutz verkörpert. Durch den Zusammenschluss von Skútustaðahreppur und Þingeyjarsveit zu einer einheitlichen Gemeinde in Island entstand die Notwendigkeit eines gemeinschaftlichen Ortes, an dem die Bewohner beider Regionen zusammenkommen, zusammenarbeiten und sich gegenseitig unterstützen können. Das Zentrum ist eine Antwort auf die Forderung nach einem neuen, nachhaltigen Abfallmanagementsystem und zielt darauf ab, eine Kreislaufwirtschaft zu fördern. Es soll als technisches Zentrum fungieren und Werkzeugverleih, Ressourcenhandel sowie Recycling- und Upcycling-Initiativen erleichtern. Der gemeinsame öffentliche Raum, wie das Gewächshaus, ist eine weitere Unterstützung für ein gemeinsames Engagement für Nachhaltigkeit. Mit dem Mývatn-See und dem Vulkan Hverfjall im Hintergrund erfüllt das Gemeindehaus nicht nur die Bedürfnisse der örtlichen Gemeinde, sondern dient auch als Bildungsziel für Touristen. Besucher können an einer umfassenden Lernerfahrung teilnehmen, in die nachhaltigen Praktiken der Region eintauchen und so sinnvolle Verbindungen zur lokalen Gemeinschaft aufbauen. Das Design umfasst vier Kernfunktionen, die wie folgt zusammengefasst wurden: Treffen & Lernen, Upcycling & Teilen, Sammeln & Recyceln sowie Wachsen & Verkaufen. Jede Funktion basiert auf Prinzipien der Kreislaufwirtschaft.

ABSTRACT

This master's thesis uses a design competition in Iceland as a basis to explore the intersection between architecture, sustainability and community development. The focus lies on the development of a community center that embodies Iceland's commitment to environmental protection. The merging of Skútustaðahreppur and Þingeyjarsveit into a unified municipality in Iceland is what created the necessity for a communal place where the inhabitants of both regions could come together, collaborate and offer each other support. The center stands as a response to the demand for a new, sustainable waste management system, and aims to promote a circular economy. Meant to act as a technical hub, it will facilitate tool lending, resource trading, recycling and upcycling initiatives. The shared public space, such as the greenhouse, represents further encouragement for a joint commitment to sustainability.

With Lake Mývatn and the Hverfjall volcano as a backdrop, the community house not only meets the needs of the local community, but also serves as an educational destination for tourists. Visitors can participate in a comprehensive learning experience, and dive into the region's sustainable practices, building meaningful connections to the local community.

The design includes four core functions that have been summarized as follows: meet & learn, upcycle & share, collect & recycle, and grow & sell. Each function is based on local, circular economy principles.

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Figure 1: View over the lake and volcano



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introduction

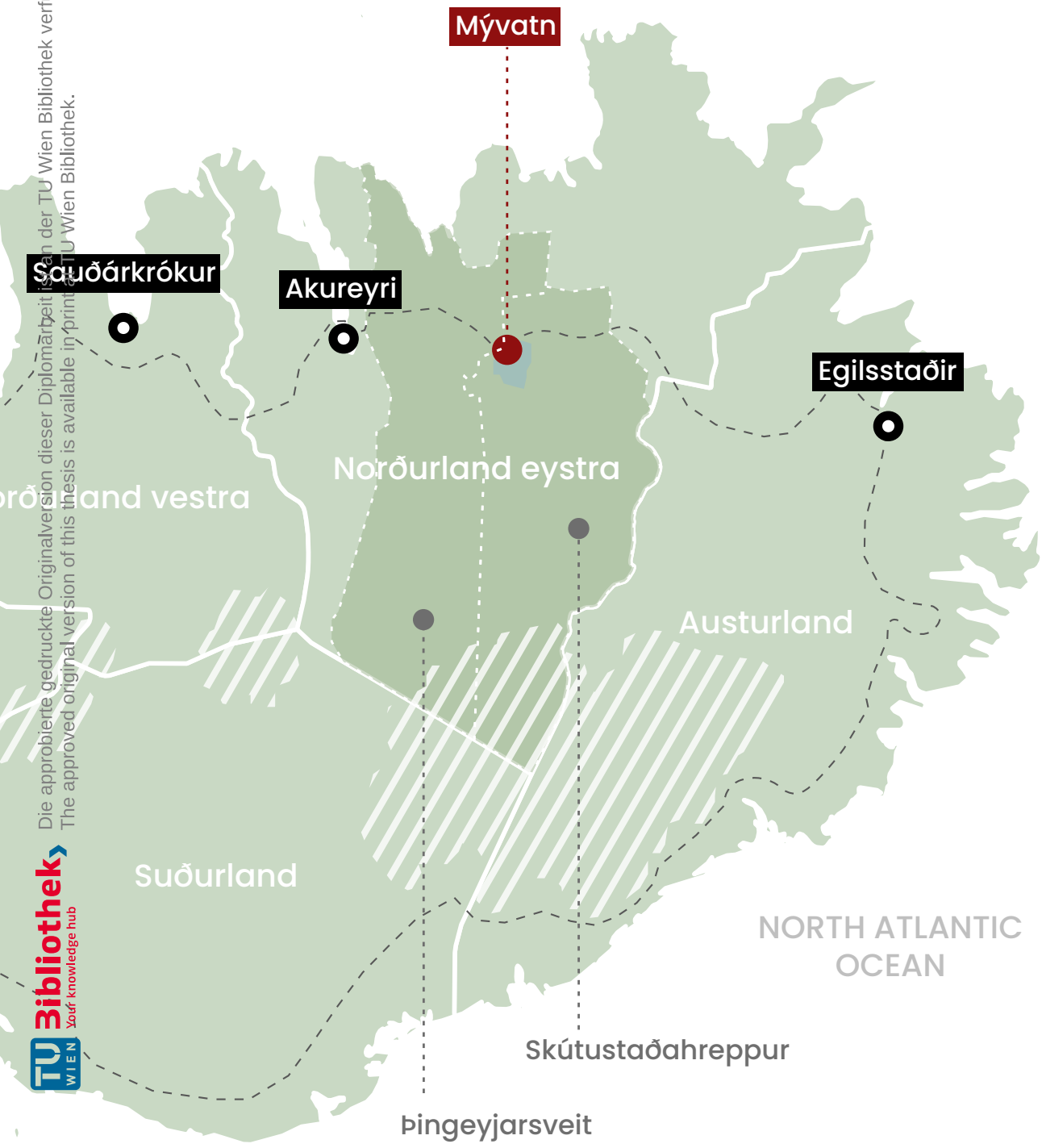
While contemplating topics for my master's thesis, I was drawn to exploring how architecture can help promote sustainability and community development. In my research, I came across an architectural competition in Iceland - its objective was designing a sustainably engineered community center that would serve as a focal point for both locals and visitors. Meant to be a place where the community could come together, it would allow the sharing and exchange of resources, as well as reusing and recycling products for as long as possible. This idea of circular resource management reflects Iceland's fundamental values and traditions, with their strong commitment to the environment and

community having repeatedly demonstrated that they are an example of sustainability. Environmental protection is not only practiced by the people but is also embedded in the structure of their very government, which aims to achieve carbon neutrality by 2040 and be fossil fuel free by 2050. Being aware that climate change is making it necessary for people around the world to implement sustainable lifestyles, this competition was a great way for me to respond and contribute to this ongoing discussion. Through my final proposal, I want to design sustainable architecture that promotes collaboration, mutual support and a circular economy.

analysis



Figure 2. Map of Iceland



2.1

location analysis

Iceland is an island country located between the North Atlantic Ocean and the Arctic Ocean. Most of the population, estimated at 380,000, is concentrated in the capital city of Reykjavik and its surrounding areas, making Iceland the most sparsely populated country in Europe. The Icelandic Ring Road circles the entire country, passing through most major cities and offering breathtaking views of the country's stunning landscapes.

East of the town of Akureyru - Iceland's fourth largest city, often referred to as the capital of northern Iceland - lies the Myvatn region, just 85 km away. This unique location is the building site for the newly planned sustainable community center. What makes the chosen location special is the fact that it lies at the intersection of two municipalities that were recently merged into one: Skútustaðahreppur, which previously included the Myvatn area, and Þingeyjarsveit. The decision to merge these municipalities is a common practice in Iceland, aimed at optimizing resources and enabling economic growth and development in the region. The union of Skútustaðahreppur and Þingeyjarsveit is a prime example of this trend, with the newly formed entity now spanning a vast area of approximately 12,000 km², making it the largest municipality in Iceland.

The community center will be an essential addition to the new municipality, providing residents with a sustainable waste management system and strengthening the community's sense of responsibility for environmental protection.

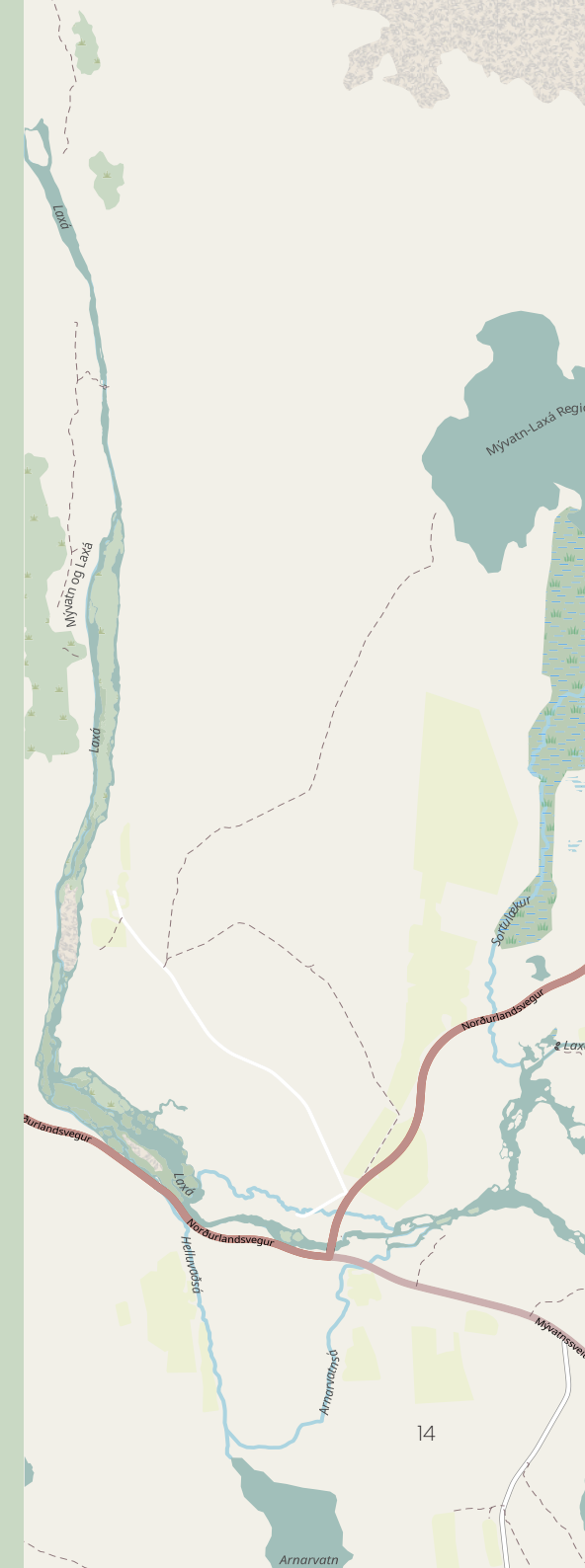
2.2 myvatn region

A region unlike any other, the Myvatn area lies deep in the heart of Iceland. Named after the centerpiece that dominates the landscape, Lake Myvatn, the area is renowned for its stunning views and natural attractions. Thousands of years ago, a volcanic eruption gave birth to the lake, which now features a collection of small islands and peninsulas, each with their unique geological and ecological characteristics.

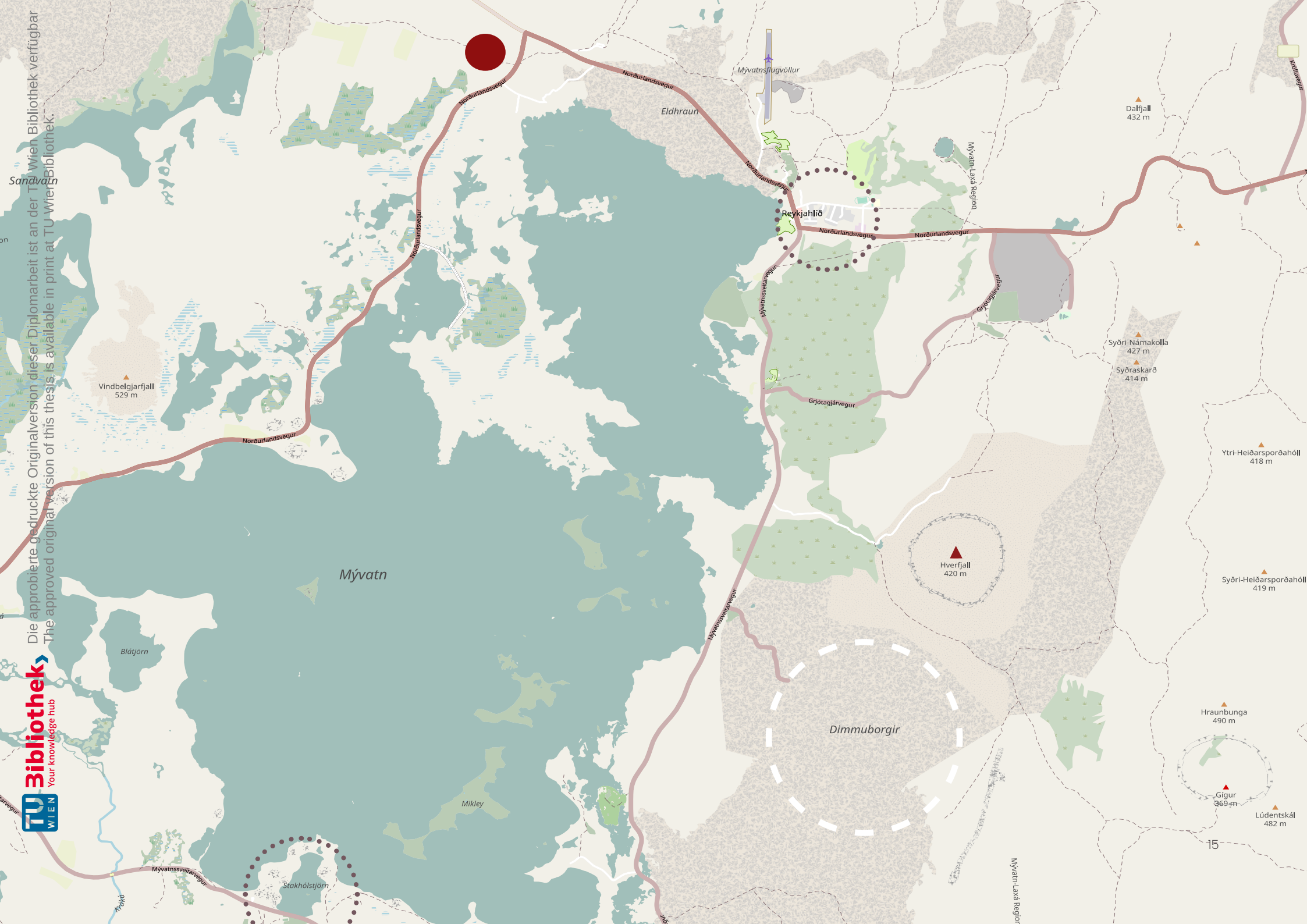
Presently, the region accommodates a modest population of roughly 500 individuals, living in several small towns and villages, such as Reykjahlid, Skutustadir (Stakholstjörn), and Laugar. Despite its low population density, the Myvatn area has managed to maintain its exceptional natural and cultural heritage, which continues to draw a significant number of visitors seeking to explore Iceland's untamed and unaltered landscapes.

-  site location
-  the ring road
-  myvatn lake
-  hverfjall
-  dimmuborgir
-  villages

Figure 3. Situation plan Myvatn area >



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The lake's harsh origins are now concealed beneath lush vegetation, making for a captivating panorama. Beyond its picturesque charm, the lake is also a hub of vitality, mainly due to the abundance of nutrients found within its waters. These are transported to the surroundings by aquatic insects, thus nurturing an ecosystem of flora and fauna. Remarkably, it is home to over 100 bird species, and features unique round formations of green algae, called lake balls. Yet, among all the life forms, it is the midges that stand out the most, this locale representing a haven for more than 40 midge species, which earned the lake its very name, which literally translates to 'midge lake'.

A notable landmark in the Myvatn region is the Hverfjall volcano, a tephra cone or tuff ring volcano, which dominates the skyline with its imposing presence. This massive volcano is over 1 km in diameter and is one of the most famous attractions in the area.



Figure 4. Inside the Hverfjall crater.

The Myvatn area is not only a place of natural beauty – it is also steeped in history. As you make your way through the rugged terrain, you can discover unique, almost otherworldly geological formations. These perfectly shaped pseudo-craters, also known as rootless cones, are the result of gas explosions during volcanic eruptions that took place about 2,300 years ago and are a core feature of the landscape. The craters were the first of their kind to be recognized, as formations like these are very uncommon beyond Iceland.

The geological process of rootless cone formation disrupted the flow of lava in certain regions, giving rise to temporary lava lakes. As the lava eventually drained away, it left behind a landscape of rock pillars, creating what is now known as Dimmuborgir—the largest and most remarkable among these formations. These organic forms, that solidified into stone look frozen in time and have a fascinating story behind them: according to Icelandic folklore, Dimmuborgir is thought to be a connection between our world and a place within which elves and trolls are believed to reside. The name itself translates to “Dark Castles,” which aligns perfectly with the site's striking silhouettes.

Tourism in Iceland has experienced significant growth over the years, but among all the attractions, the Myvatn area with its natural sites emerged as a prime destination for tourists. Strategically situated, the future community center will offer a platform for both locals and tourists to learn about and actively engage in the sustainable recycling practices specific to the region.





Figure 5. Pseudocraters of the surrounding area

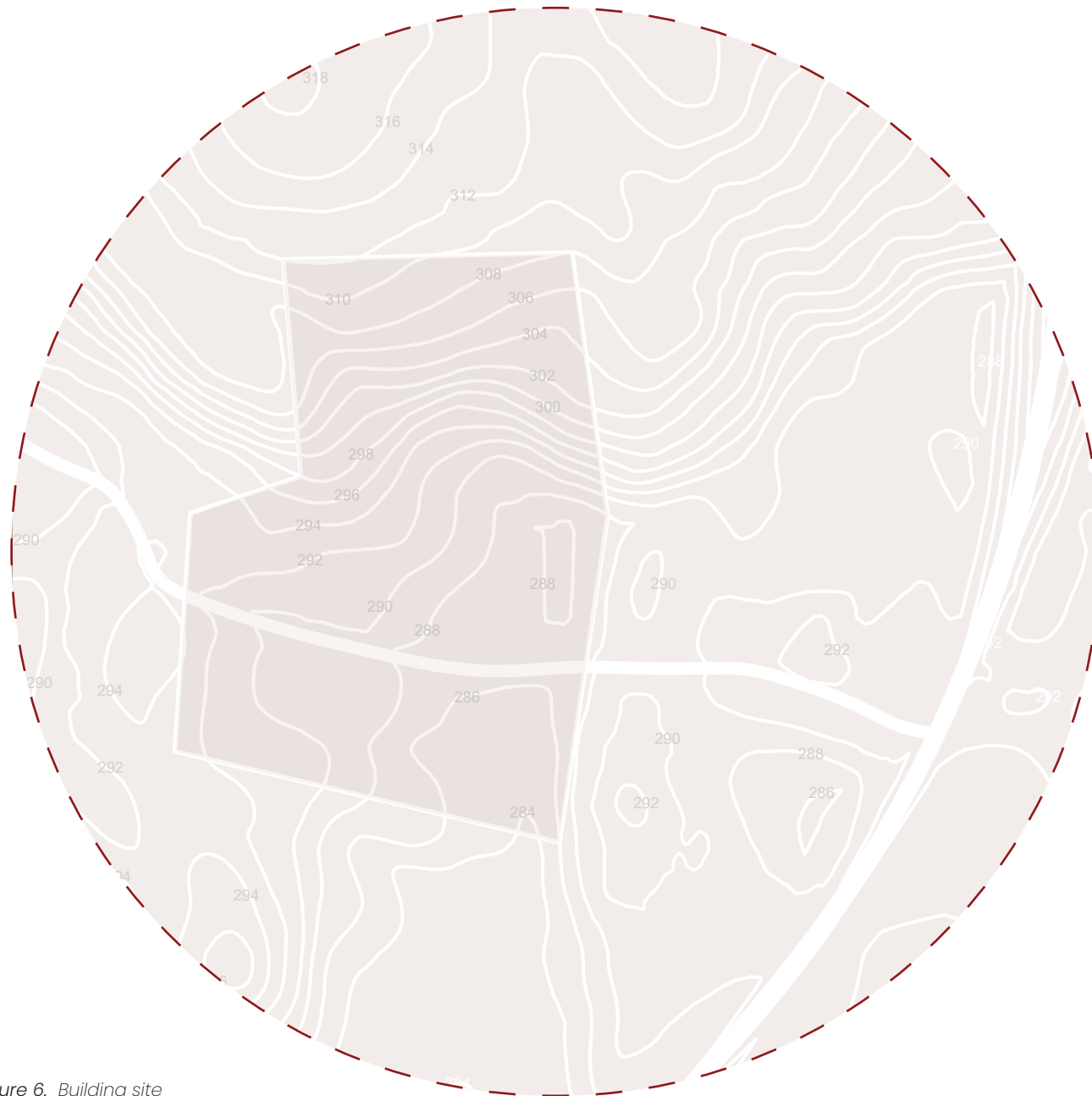


Figure 6. Building site

0 m 50 m 100 m



2.3

building site

The location of the building site lies on the border of the newly merged municipalities, with the Lake Myvatn and the imposing Hverfjall volcano in proximity. This makes it an ideal spot for visitors to the region, offering the potential to create a landmark structure that blends in with the surrounding nature.

Occupying a substantial surface area of approximately 37,500 sqm, the site is divided by a small road that branches off from the famous Icelandic Ring Road. The topography of the site is characterized by sloping terrain, with a 2-meter elevation difference between each contour line.

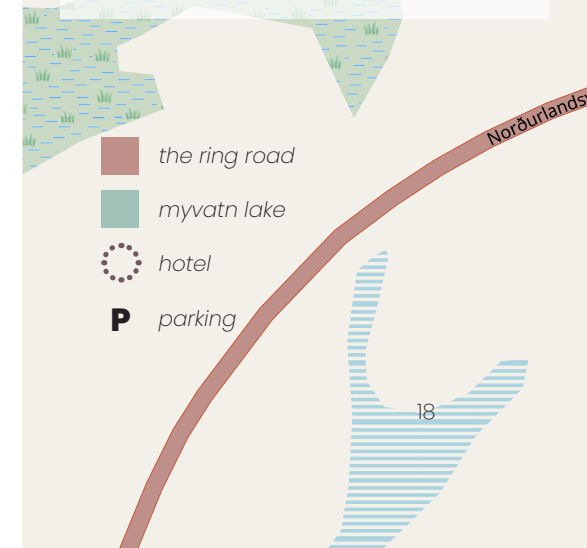
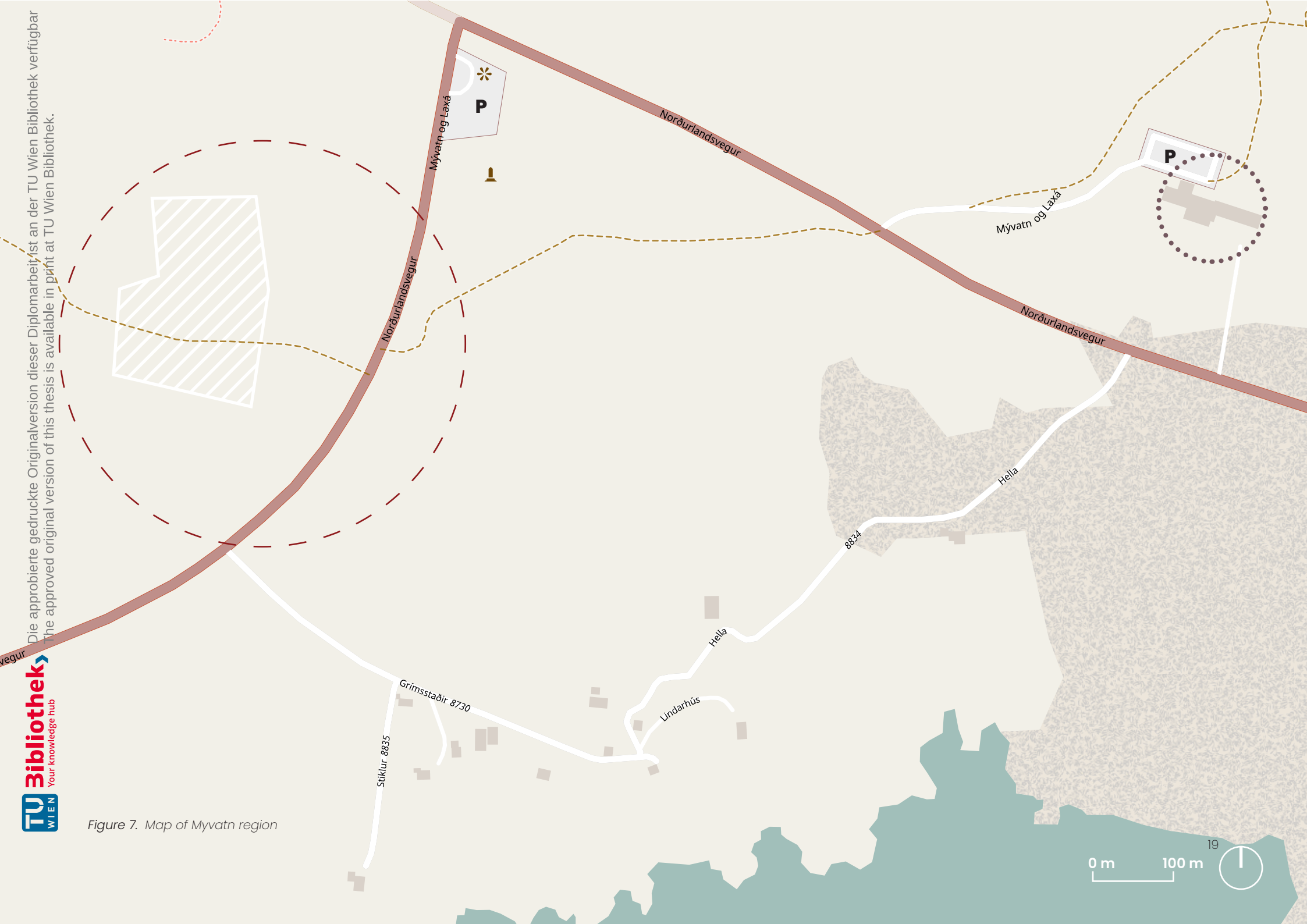


Figure 7. Map of Myvatn region



3 objective

design competition

The consolidation of Skútustaðahreppur and Þingeyjarsveit into a single municipality calls for the establishment of a new meeting point for all its residents. The Iceland Lake Mývatn Community House competition was launched in partnership with the Sveinn Margeirsson, the mayor of Skútustaðahreppur, to create a community center that would foster a sense of unity and would bring together its two diverse communities.

The new community house aims to promote a circular economy, where waste is turned into resource. Due to new local policies, a sustainable waste management plan is needed, aiming to recycle 100 tons of organic waste per year into fertilizer and other forms of soil. In this new technical hub, that will store and lend out tools and equipment, the locals will be trading, sharing

and recycling materials and resources, actively assisting the municipality to achieve its goal of becoming a leading example of sustainability. To make use of the recycled organic waste, a shared public space for a greenhouse or garden is to be planned within the building. This space would allow the community members to come together and collectively grow plants and food, promoting a sense of shared responsibility towards sustainability.

The center's site location offers amazing views of the Mývatn lake and the Hverfjall volcano, which also makes it an appealing destination for tourists and other guests. By including public areas for visitors, the community house would provide them the opportunity to learn about the sustainable recycling practices that are being implemented in the area.

3.1

building programme

The community center will serve as a hub for the promotion of circular economy within the region. By fostering a culture of exchange and collaboration, the center will encourage residents to actively participate in resource sharing, thus helping to reduce waste, promoting resource efficiency, and strengthening the local economy. The building program has been categorized into four main functions: *meet & learn*, *upcycle & exchange*, *collect & recycle*, and *grow & sell*.

.meet & learn

The building will feature a dynamic community room, designed to adapt to its users' diverse needs. This multipurpose area will provide space for meetings and various events, while the foyer will serve as an entrance and central meeting point, boosting communication and bringing people together. Additionally, essential amenities such as toilets and shower facilities will be integrated into the space. An information area will also be incorporated, allowing visitors to learn more about the area and the local culture.

.upcycle & exchange

One of the key functions of the building will be to facilitate the sharing of both resources and ideas. It will provide an exchange point for locals to trade secondhand resources like timber, clothes, and furniture, cultivating a strong sense of community and promoting a sustainable economy. Furthermore, the design incorporates

small workshop areas, where old furniture and other resources can be creatively upcycled and exchanged. Another feature will be a designated children's zone, which offers opportunities for play, educational activities, and lessons.

.collect & recycle

The center will emphasize the importance of recycling and proper waste management through dedicated spaces and facilities for sorting, recycling, and repurposing various materials. An organic collection and management zone will focus is on the transformation of organic waste into fertilizer and other soil amendments. To meet the needs of the community, the center will allocate additional space for storage of house tools, paints, traps, and other necessary equipment.

.grow & sell

At the heart of the center lie the greenhouse and the community gardens. These spaces offer locals the opportunity to engage in cultivation activities, growing plants and vegetables using composted fertilizer derived from organic waste. These areas also serve as platforms for locals to showcase and sell their creations, strengthening local commerce. Visitors will have the opportunity to unwind and enjoy the breathtaking views of the neighboring lake and volcano, as the building will also feature a cozy cafe as part of the greenhouse.

competition building programme



multipurpose community room

highly versatile and able to run different events like community meetings, workshops and educational seminars



kids room / zone

an area where up to 5 kids can play or take lessons



waste/ resource collection zone

8 large containers for oversized waste: iron, plastic, paper, timber, mixed oversized, general, batteries, household electronic appliances



organic waste and management zone

area for collecting recycling, storage and redistribution



secondhand resource exchange point

area for locals to exchange second hand resources - timber, clothes, furniture, etc.



storage room

area for tools, paints, traps, etc



depo

parking area for 5 trucks, 2-3 rescue squad cars, 2 snow cleaning trucks, zone for one fireman car



public/ shared greenhouse or garden

for the use of the recycled organic waste



information zone/ room for tourists

educational/ informative sport for the guests of the area

3.2

circular economy

.what is it?

Circular economy (CE) principles lie at the heart of the new community house. The concept of CE originated during the 1970s with the aim of moving away from the conventional linear model of “take-make-dispose”, and instead focusing on designing products and processes that allow materials to be reused, repaired or recycled. The goal is to minimize waste and establish a self-sufficient resource use cycle that operates in a closed loop system.

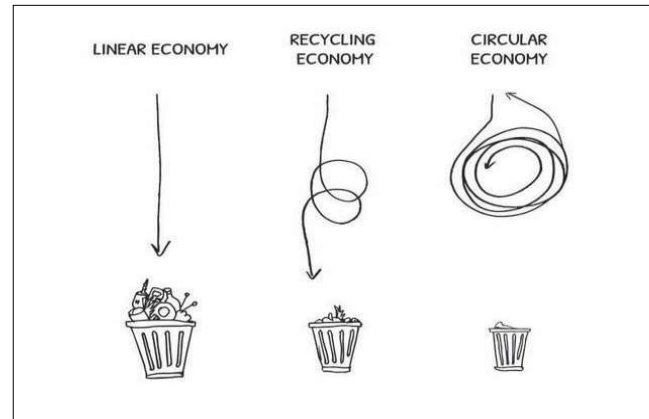


Figure 8. Circular economy illustration

.why do we need it?

In the face of the current global challenges, it is imperative to shift our approach to the economy and environment. The current model, marked by

excessive consumption and waste generation, has put a strain on our finite resources and worsened our environmental issues, such as pollution and ecosystem degradation. By embracing a circular economy, we can address these concerns effectively, designing products for durability, repairability, and recyclability. This approach ensures that most materials can be reused or repurposed at the end of their life cycle, effectively reducing waste production. By maintaining resources in a continuous loop of use, we not only ease the pressure on ecosystems and conserve energy, but also secure resource availability for future generations.

Our current model relies on constant material extraction, leading to resource depletion and habitat disruption. Embracing a circular approach can help minimize landscape and habitat disruption by emphasizing the reuse and recycling of products. By reducing our dependence on raw materials, we promote sustainable resource management and contribute to the preservation of biodiversity.

.what is Iceland sustainability model?

Iceland stands out as a country that has wholeheartedly embraced the principles of the circular economy, demonstrating notable progress, particularly in its waste management system.

The nation's commitment to minimizing waste and maximizing resource efficiency is evident in its recycling practices, with a specific emphasis on municipal waste.

One of Iceland's key ambitions is to achieve carbon neutrality by 2040 and be fossil-fuel-free by 2050, and recycling plays a crucial role in this attempt. The country's waste management system is designed to ensure that waste is sorted, recycled, and recovered to the greatest extent possible. Both households and businesses are mandated to sort their waste into various categories, such as paper, glass, metal, plastic, and biowaste. This process enhances the efficiency of waste processing, resulting in higher recycling rates and reducing the amount of waste sent to landfills.

In addition to recycling, Iceland places strong emphasis on composting and energy recovery. Biowaste, which is collected separately, undergoes composting processes, transforming it into fertilizer suitable for agricultural purposes. To further maximize resource utilization, non-recyclable waste is directed towards waste-to-energy facilities, where waste is incinerated to generate heat and electricity, offering a viable alternative to fossil fuels. By utilizing this energy to power homes and businesses, Iceland reduces its reliance on non-renewable energy sources and takes significant steps towards achieving its carbon neutrality goals.

.upcycling towards a circular economy

The concept of upcycling has become a crucial component of the circular economy in recent years. Unlike traditional recycling, which involves breaking down materials to create new products, upcycling takes a more creative and innovative path, taking discarded or unused items and transforming them into higher-value products, thereby extending their lifecycle and minimizing the demand for new resources.

Upcycling can manifest in various ways: unused wooden pallets can transform into imaginative furniture, while outdated industrial machinery can be reborn as captivating tables, shelves, or decor, demonstrating its ability to elevate the ordinary into the extraordinary.

An advantage of upcycling lies in its ability to promote active participation, with community centers effectively functioning as hubs where people come together to learn, share, and engage. The benefits extend beyond waste and emission reduction: cultivating creativity, education, and a sense of shared purpose that strengthens social bonds within the community. Visitors and tourists alike will have the opportunity to witness the potential hidden within waste, inspiring them to explore their own creativity and adopt more environmentally conscious behaviors.

3.3

community composting

An important goal of both the center and of the municipality in general is to become a prime example of community-centered composting initiatives, highlighting the creative and productive possibilities that can arise when efforts are directed towards diverting waste away from landfills. At its essence, community composting, also known as decentralized composting, operates on a scale greater than individual household composting, yet does not reach the level of impact seen in conventional commercial composting practices. This approach presents multiple advantages: transportation costs are minimized, new disposal facilities reduced, local organic reuse promoted, small-scale businesses nurtured, and expenses for commercial fertilizers diminished.

.what is compost?

Compost, often referred to as “black gold,” represents decomposed organic matter, enriched with essential nutrients. The composting process occurs by combining water, brown materials (dead leaves, branches, twigs) and green materials (grass clippings, fruit and vegetable scraps).

.composting process

The composting process follows a defined structure, encompassing four distinct phases with changing temperature dynamics:

1. sorting & mixing

Starting with the sorting and mixing of organic

materials, this phase sets the foundation for effective composting. Brown and green materials are blended to create the optimal carbon-to-nitrogen ratio.

2. mesophilic phase (25–45°C)

As temperatures gradually climb to around 45°C, the mesophilic phase unfolds. Mesophilic microorganisms enter the stage, initiating the gradual breakdown of organic matter.

3. thermophilic phase (35–65°C)

At this stage, mesophilic activity slows down and is replaced by thermophilic microorganisms. Temperatures of 60–70°C are reached, leading to pasteurization, which eliminates pathogens and invasive seeds, ensuring the final product’s safety and quality.

4. cooling phase

Cooling begins due to the consumption of readily degradable materials. This leads to a return to mesophilic conditions, highlighting the cyclical nature of composting.

5. maturation phase

In the final phase, complex chemical reactions lead to mature compost. This phase’s duration ensures the compost’s stability and suitability for agricultural application.

6. storing & bagging

Quality is maintained through careful storage and practical bagging for local use.

.composting technologies

Composting can be undertaken either manually or automatically. Manual methods often bring advantages such as cost-effectiveness, adaptability, community engagement, and a reduced environmental footprint. These involve hands-on operation and mechanical assistance without automation, including techniques like windrow, passively aerated windrow, bin, in-vessel, and vermicomposting methods.

Community composting systems are usually carried out through manual methods and thus can show a certain level of simplicity compared to centralized setups. Plastic bins of varying configurations, including rectangular, cylindrical, hexagonal and conical shapes, are usually at the core of these community composting reactors. Their typical capacity spans from 100 to 1000 liters, but can be considerably larger, depending on the specific requirements. In many instances, perforations are integrated either at the base or along the edges to facilitate aeration. Additionally, the turning and mixing of the composting material are typically carried out manually.

The municipality of Þingeyjarsveit is home to approximately 1393 residents (as depicted in Fig. 9). With an estimated average of 4 individuals per household, this translates to around 348 households.

Typically, in the context of a small-scale community composting setup, a common

guideline suggests dedicating one composting bin, capable of containing 1000 liters, for every 15 households. Consequently, the project would necessitate around 24 composting bins (1000 l).

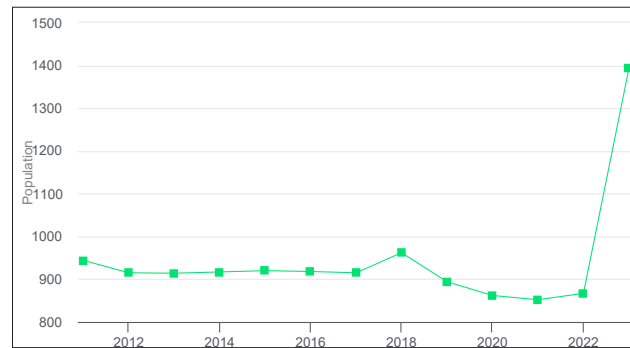


Figure 9. Population development in the municipality of Þingeyjarsveit

.designing a composting site

To ensure functionality, sites should have sufficient space for three key components:

1. receiving | staging (20-30%):

where inputs are gathered and filtered.

2. processing (50-60%):

where physical composting occurs.

3. curing | storage (10-20%):

where the final stages of decomposition and maturation occur.

3.4

community upcycling

.upcycling vs. recycling

Much like recycling, upcycling aims to reduce the amount of waste created, thus leading to more sustainable community practices. Where recycling involves breaking down products, transforming them into new items altogether, upcycling refers to reusing or repurposing the items into higher-value products. That makes upcycling a key component of a circular economy, where the goal is to promote the continuous use and reuse of resources.

Besides reducing the environmental impact, upcycling encourages creativity and innovation

in local communities. Their members come together to find new and unique ways to turn waste into something useful and valuable.

.how was upcycling implemented in the project?

There are various approaches to upcycling. In this project, diverse methods have been utilized, including the restoration and repurposing of aged furniture, transforming of clothing, and the reimagination of jewelry. Dedicated spaces have been created for the exchange of secondhand resources, the revitalization of old items, and the crafting of smaller items. Within these spaces, community members not only acquire repair and crafting skills, but also form stronger social bonds.



Figure 10. Upcycled items

.Gabarage & Kellerwerk

The upcycling methods used in this project have been inspired by two innovative Viennese companies, Gabarage and Kellerwerk, each at the forefront of the innovative field of upcycling.

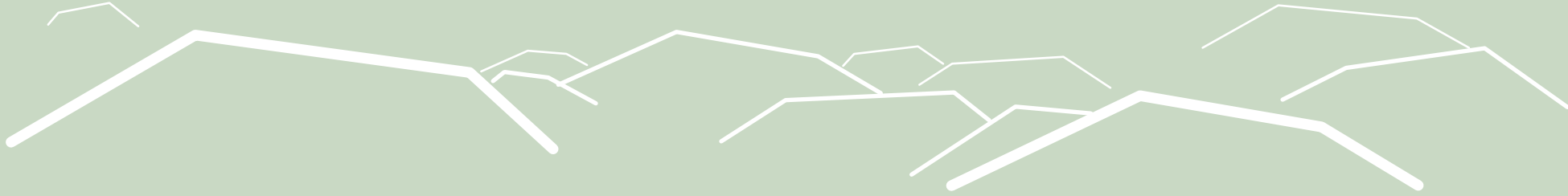
Gabarage specializes in transforming materials such as tarpaulins, books, and escalators into chic consumer goods and design products. Beyond their creative endeavors, Gabarage offers training and development programs for individuals facing challenges in the job market, thus promoting a sense of purpose and inclusivity.

Meanwhile, Kellerwerk focuses on giving new life to aging furniture. They also excel in repurposing discarded items into one-of-a-kind lamps, bags, jewelry, and accessories. The store serves as a hub, not only for showcasing their creations but also the artistic endeavors of emerging talent. Notably, Kellerwerk also customizes its services to meet the individual needs of its clients, providing a personal touch to each revitalization project.

Together, these companies serve as inspiration for the community center, promoting the transformative potential of upcycling in both aesthetic innovation and social impact.



4 a p p r o a c h



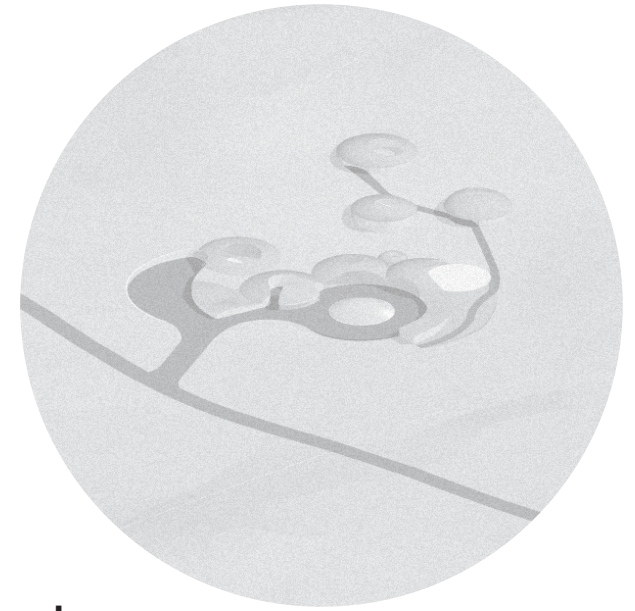
4.1

form development

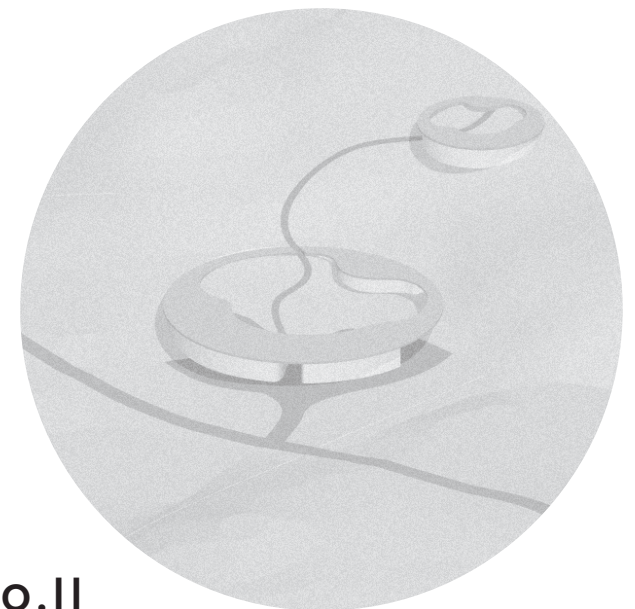
Developing the concept began with four different iterations, each featuring unique characteristics and design elements. However, they all retained the same core principles, which served as guides for the entire project, and were essential in shaping the final design:

Firstly, it was important that the community stood in harmony with its natural environment. This was achieved by incorporating organic shapes and elements inspired by the landscape, thus creating a cohesive, visually pleasing structure. Aiming to instill a sense of unity, the center was integrated into its surrounding landscape. Not only did this serve to highlight the natural beauty of the location, but it also provided a functional space for the community. What's more, this ensured that the structure didn't intrude or clash, but rather grew as an extension of the environment. Secondly, the concept ideas prioritized the use and accessibility of the rooftop. The thought behind it was allowing visitors to enjoy panoramic views of the area, while providing an additional gathering space. By strengthening the collective connection to nature, this feature contributed to the main goal of the center and provided a platform for various activities and interactions.

Figure 11-16. Concept variations >

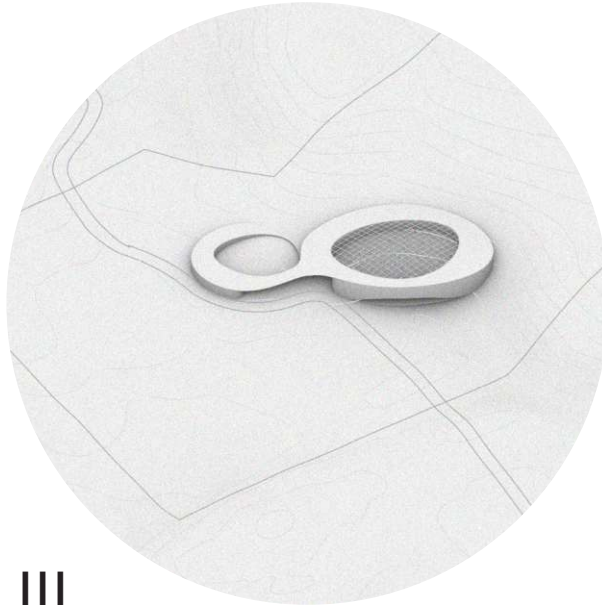


o.i



o.ii

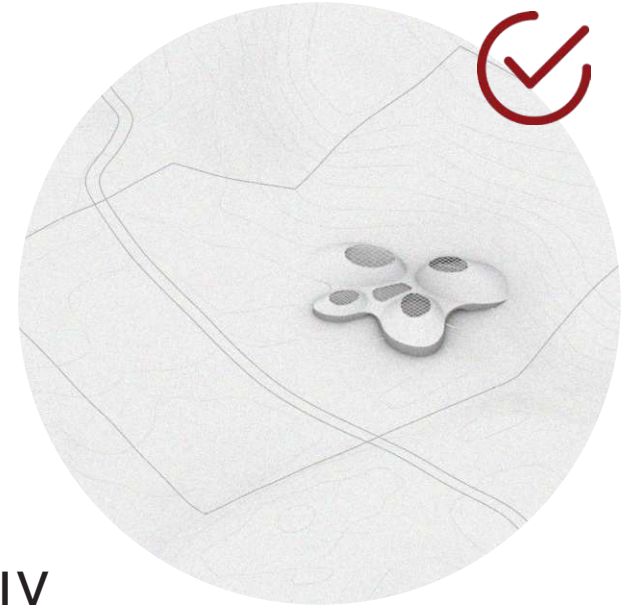
III



I



IV



II



variation 0.1

In the initial stages of conceptualizing the project, I embarked on a creative journey that resulted in a set of ideas which, while flawed, played a pivotal role in the evolution of my final design. Variations 0.1 and 0.11 were my very first iterations and they eventually became the core of the final concept. Using the roof as a functional platform and drawing inspiration from the surrounding natural environment were two such integral ideas.

The design concept uses the simplicity of a circle as its foundation, thus embodying the principles of the circular economy and community care. Each main function is allocated its own “circle” within the construction, characterized by a green dome-like roof. Through the deliberate flattening of the roof, these circular units merge harmoniously with the terrain, becoming almost indistinguishable from it. Furthermore, these ensuing ‘huts’ were intended as a tribute to traditional Icelandic turf houses. The order of the circular units has been thought through, with the core functions placed in sequence. This deliberate positioning allows the units to touch and overlap, weaving a network of interconnected spaces. The result is a cohesive ensemble where (almost) each distinct function contributes to the larger whole.



Figure 17. Variation 0.1 top view

Figure 18. Variation 0.1 axonometric view

variation 0.II

The design for this variation began with a simple yet powerful concept: a circular viewing platform. The shape not only serves as a vantage point, but it also symbolizes the project's principles – a circular economy, community, and a sense of belonging. Here too are the functions arranged in sequence, following the flow of the circle. An intriguing element comes into play in the form of an organic cut that opens into an outdoor space, becoming a community garden. Access to the platform is designed to be pedestrian-friendly, ensuring that both tourists and locals can enjoy a remarkable 360-degree view of the stunning Lake Myvatn and the volcano.



Figure 19. Variation 0.II top view

Figure 20. Variation 0.II axonometric view

variation I

The concept is based on a sloping circular design, where the roof is shaped as a ramp, ensuring complete accessibility throughout the structure. Oriented towards the lake and the volcano, the roof transforms into an observation deck, offering breathtaking panoramic views. The building's form instills a strong sense of community by crafting a spacious central open-air courtyard, drawing people together in the outdoor space.

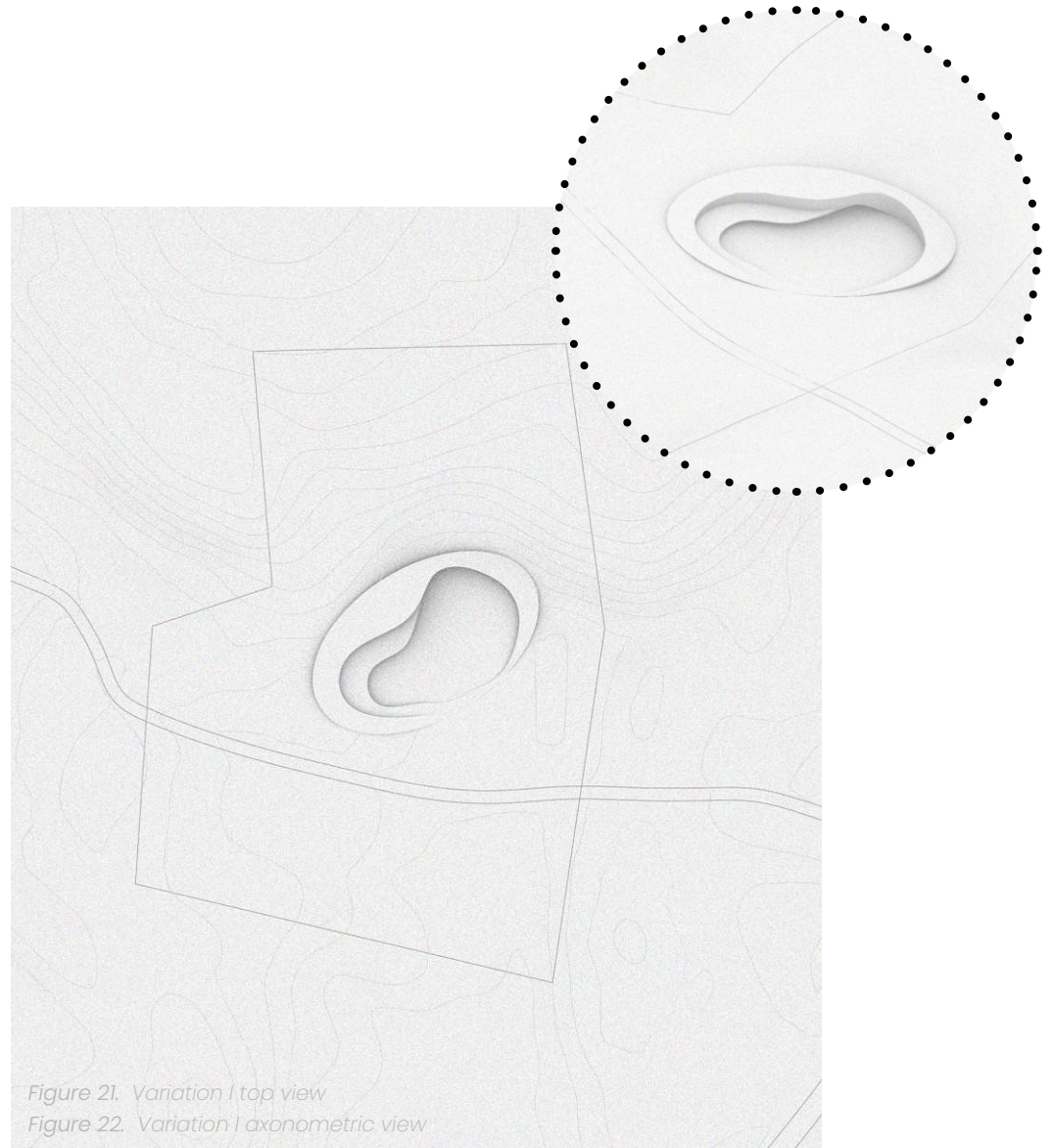


Figure 21. Variation I top view

Figure 22. Variation I axonometric view

variation II

Expanding upon variation I, this design integrates a suspended structure that comprises both the greenhouse and the public amenities of the center. Access to this new space is facilitated either by ascending the hill or by traversing the block that links the two structures. The roofs of both sections take on the form of gently sloping ramps, ensuring accessibility and beautiful views of the surroundings. The lower portion of the complex accommodates the recycling center itself. Within this section, zones are allocated for efficient waste collection and management, supplemented by spaces for secondhand exchanges. The interplay between these two structures generates open-air courtyards that function as gathering spaces and communal gardens.

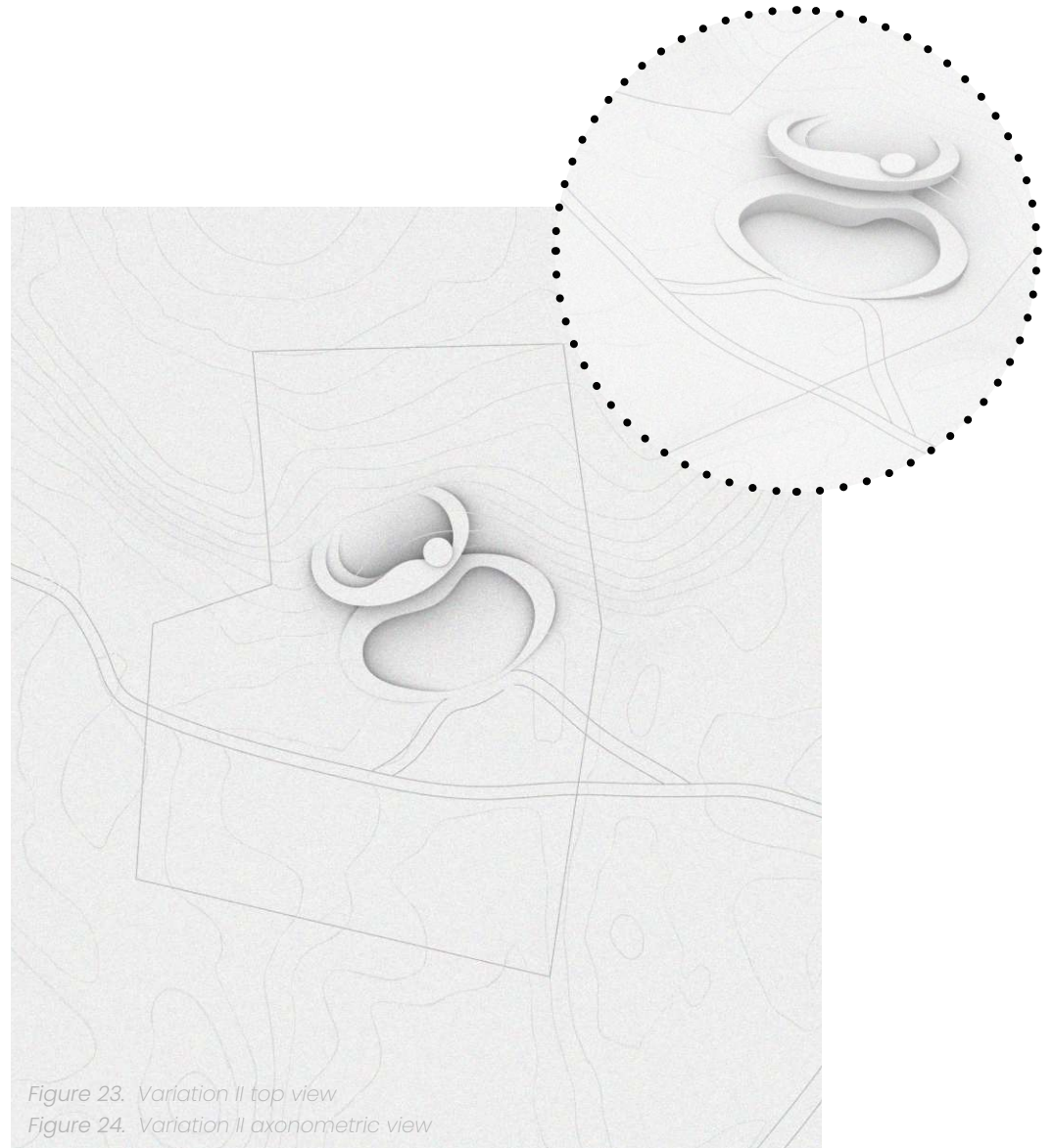


Figure 23. Variation II top view

Figure 24. Variation II axonometric view

variation III

This design draws inspiration from the infinite loop, a representation of the values upheld by the circular economy. The two key structures are united through a bridging roof, creating a link that embodies harmony and uninterrupted flow. Functionally, one of the structures is dedicated to waste collection and storage, while its counterpart stands as the heart of waste management activities. This latter structure also hosts public spaces, with a central greenhouse as the focal point. A notable feature lies in the fully accessible green roof, designed to facilitate pedestrian movement. Beyond its practical purpose, it invites individuals to stroll through, granting glimpses into the greenhouse.

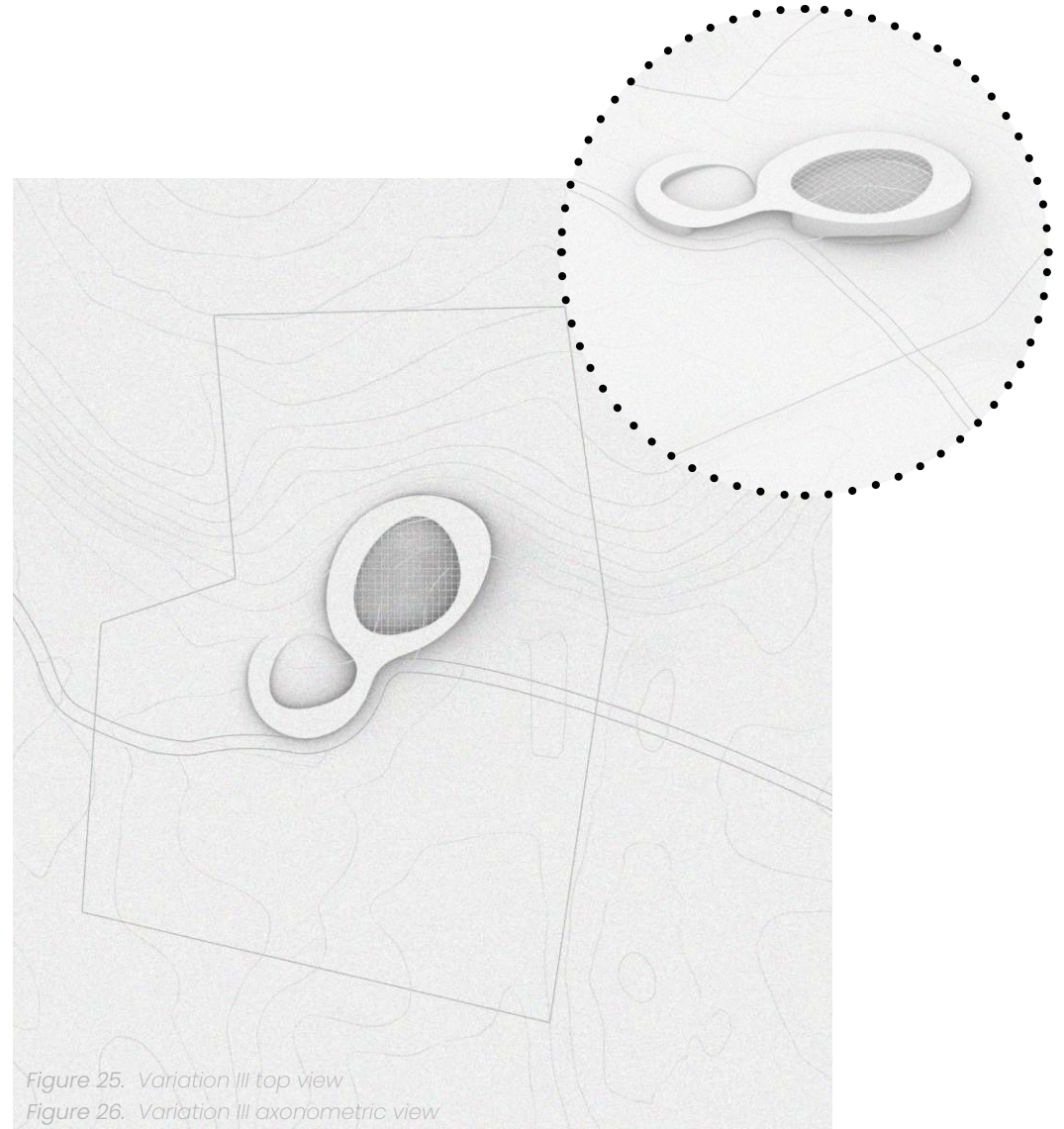


Figure 25. Variation III top view

Figure 26. Variation III axonometric view

variation IV

The final and 'winning' variation draws inspiration from the unique pseudo-craters found in the surrounding landscape. Given the area's limited development, my objective was to design a building that melds with its surroundings, integrating within the natural backdrop while still capturing attention through its distinctive presence. The center is designed as a cluster of structures reminiscent of the craters, each dedicated to the main functions of the building. These are unified by an organic, fluid space that serves as a central point for communal gatherings, inviting individuals to connect and share experiences. Furthermore, this zone accommodates the information center, restroom facilities, and storage rooms.

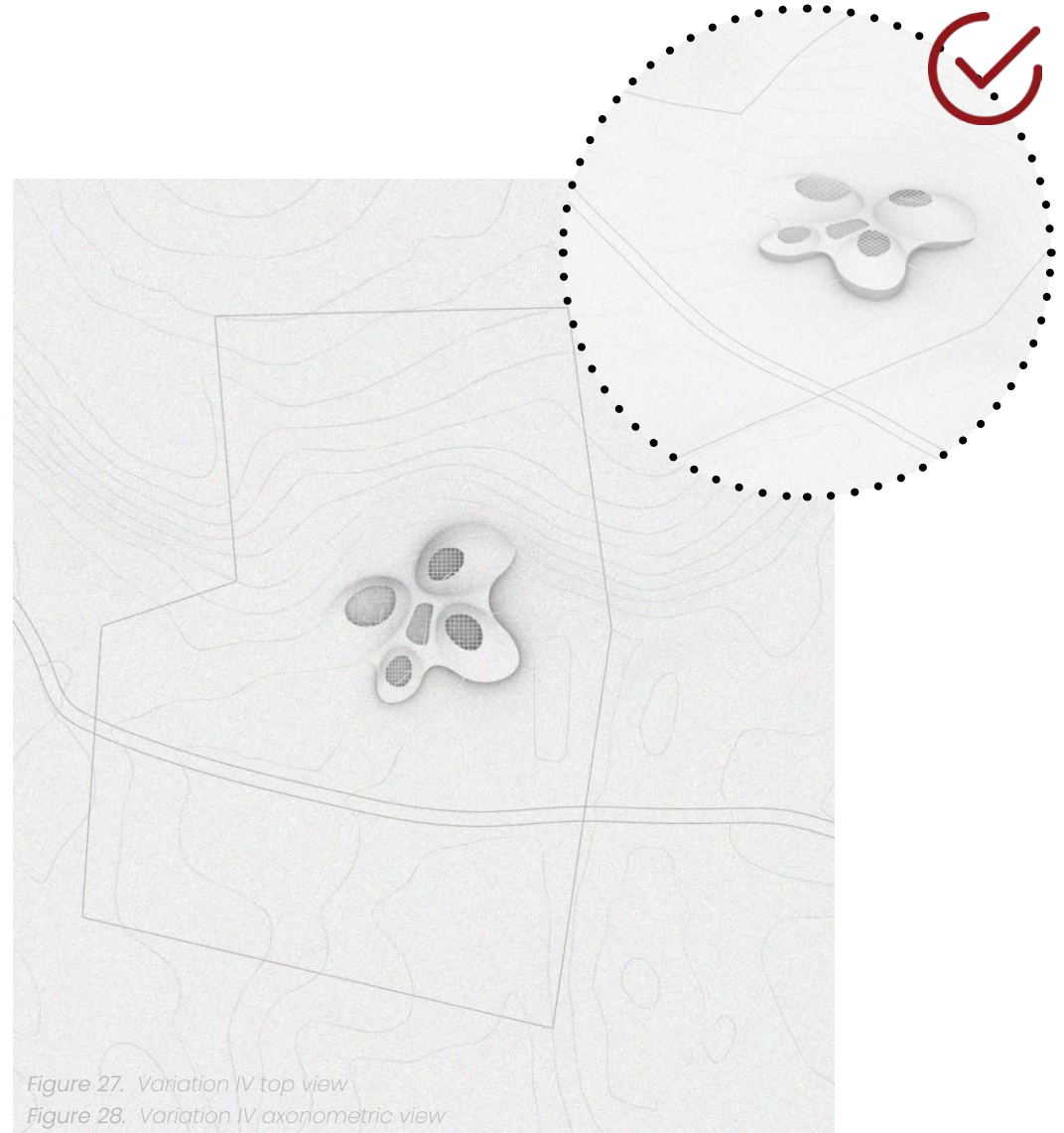


Figure 27. Variation IV top view

Figure 28. Variation IV axonometric view

4.2

concept development

Variation IV has undergone further development, with significant modifications implemented to accommodate the required functionalities and to optimize the utilization of the space. Even in its evolution, variation IV has maintained its core of drawing inspiration from the surrounding craters to shape the structure of the building.

Noteworthy changes include an expansion of the spaces between the craters, resulting in a more substantial central area that serves as

both a connecting “tissue” and a communal meeting point. This space has facilitated the transformation of the roof into a walkable green platform, providing visitors with an engaging and scenic environment. A distinct crater, although partially separated from the others, is now connected through the roof and dedicated to organic waste management. This addition has been complemented by the incorporation of a depot and the necessary infrastructure, ensuring to the overall functionality of the center.

Figure 5. Pseudocraters in the surrounding area

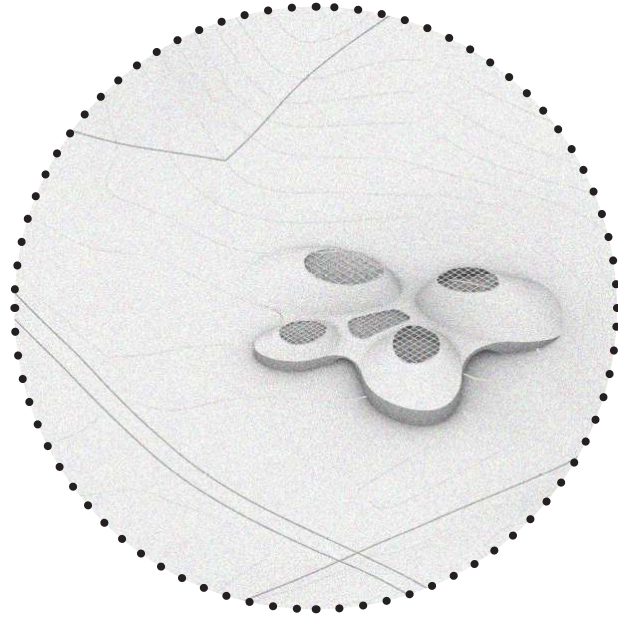


Figure 29. Variation IV first draft

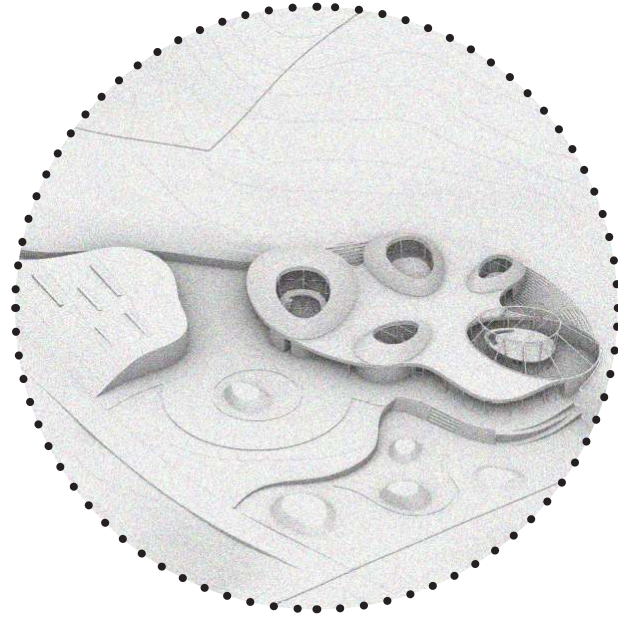
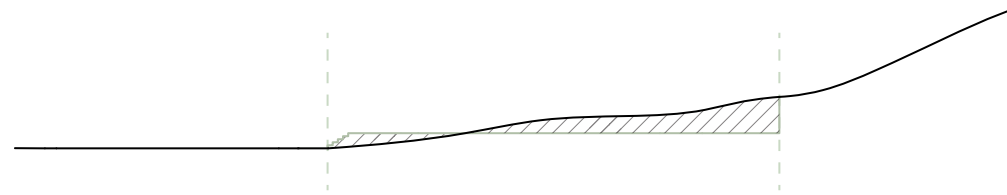


Figure 30. Variation IV development

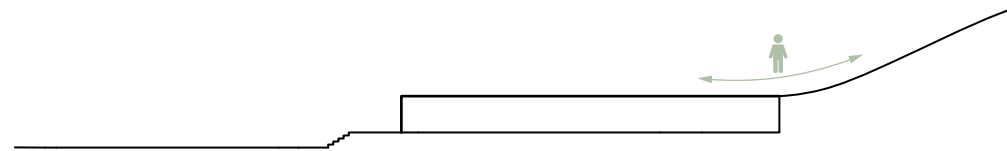


Figure 5. Pseudocraters in the surrounding area

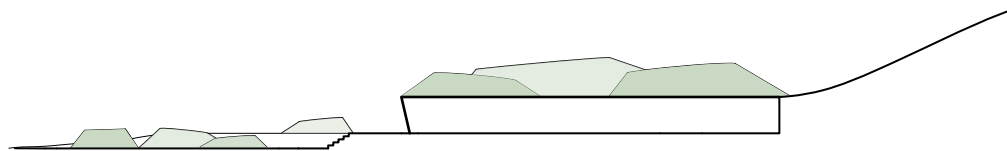




Minimizing alterations to the terrain was a primary consideration, and it influenced the building's placement on the site plan. The project was carried out in proximity to the existing street, taking advantage of the lowest point on the slope.



The building acts as an organic extension of the natural landscape, blending harmoniously with its surroundings. The structure thus become part of the environment and incorporates a roof that serves as a viewing platform, adding a functional aspect to the design.



The most remarkable feature of the design is the crater-shaped structures on the roof, which are intended to mimic the nearby surroundings. To create a sense of continuity, the site plan also incorporates several "artificial" craters into its landscape.

Figure 31. Concept development

4.3

structure development



Figure 5. Pseudocraters in the surrounding area

In Figure 32, the illustration reveals the structure of a crater-shaped volume. A robust steel framework supports the green roof, providing both structural integrity and a distinctive aesthetic to the overall design. The building, comprising six distinct volumes varying in size and height, is not just a structure but a

thoughtful integration that becomes one with its environment. A connection is created between the street side and the hill, ensuring a blend of urban and natural elements. Careful consideration is given to the exterior planning, guaranteeing not only aesthetic appeal but also efficient access to the building.



Figure 32. Structure of a crater

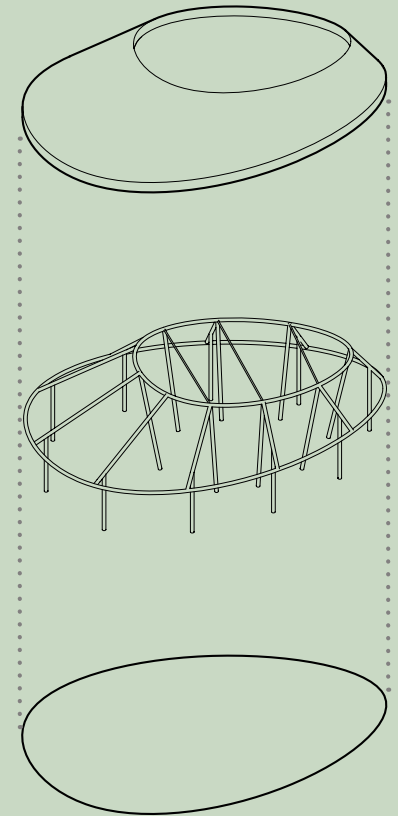
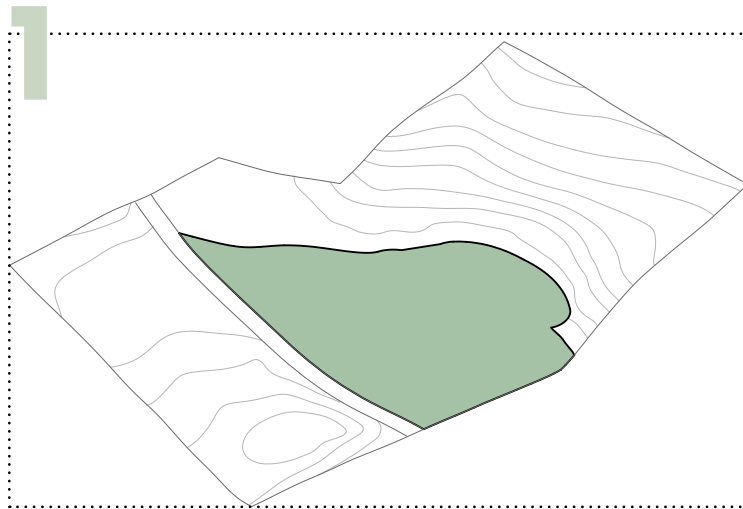
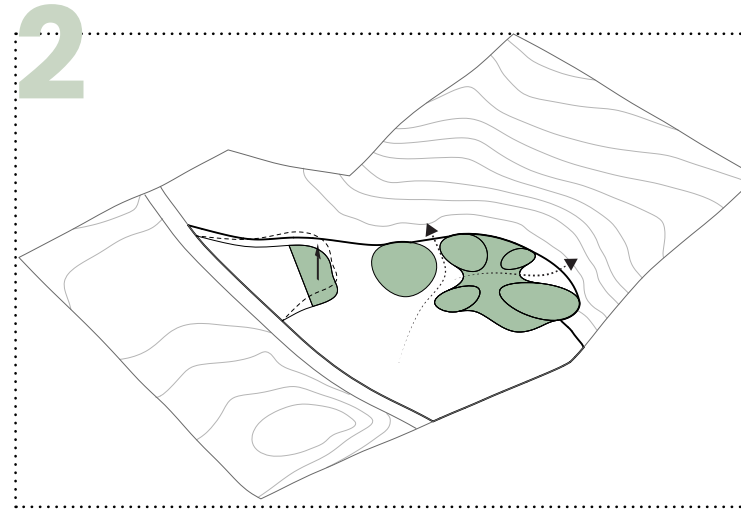


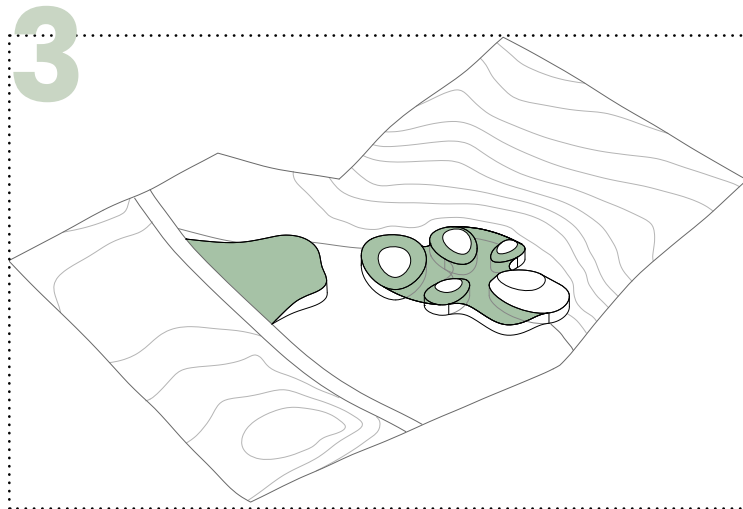
Figure 33. Structure development



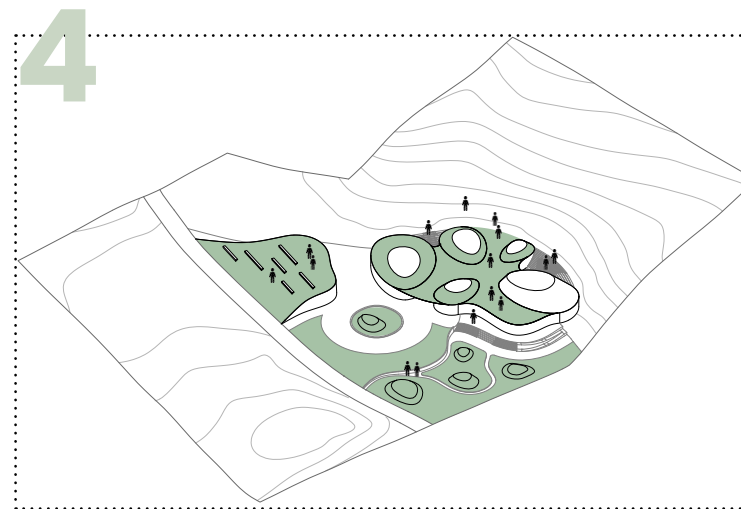
The site area that is undergoing changes.



Planning of the centre as a part of the landscape. Maintaining connection between street side and hill.

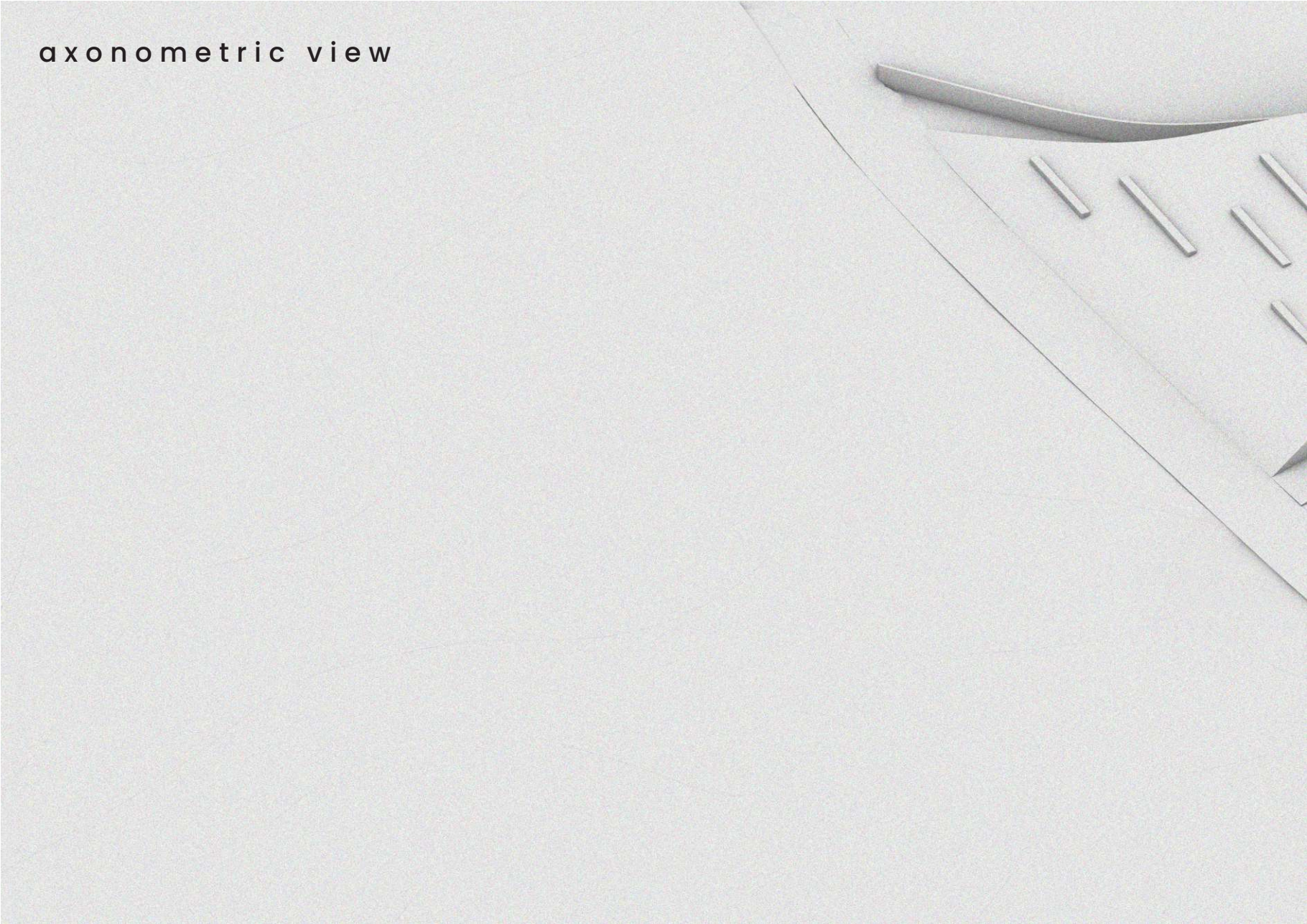


The resulting building volume integrates seamlessly into the landscape.



Incorporating the exterior planning to ensure effective building access.

axonometric view

The image shows a 3D axonometric view of a curved, light-colored surface. The surface is covered with a grid of rectangular holes, which are arranged in a pattern that follows the curvature of the object. The perspective is from an angle, showing the depth and curvature of the structure. The text 'axonometric view' is printed in the upper left corner of the image area.

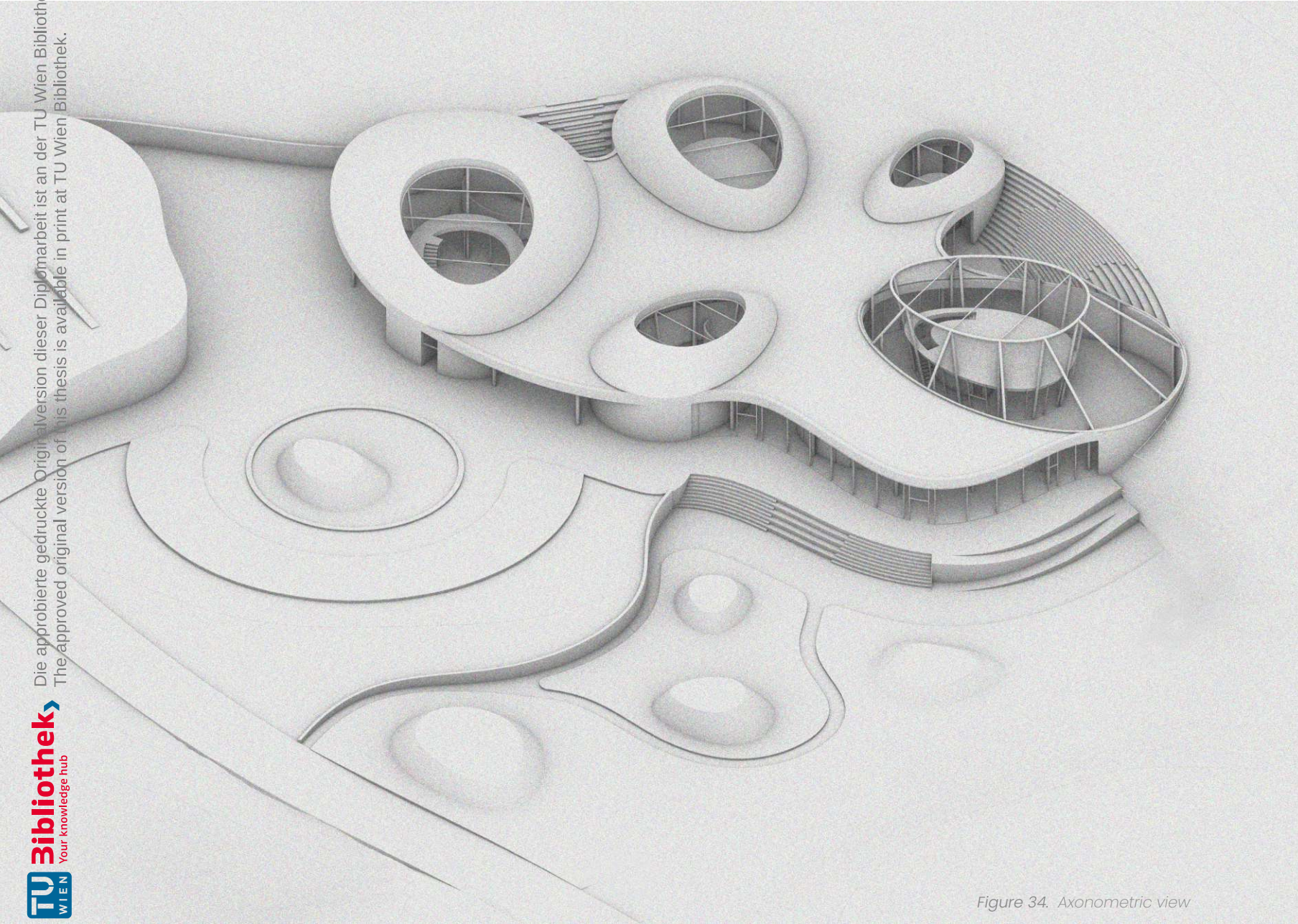
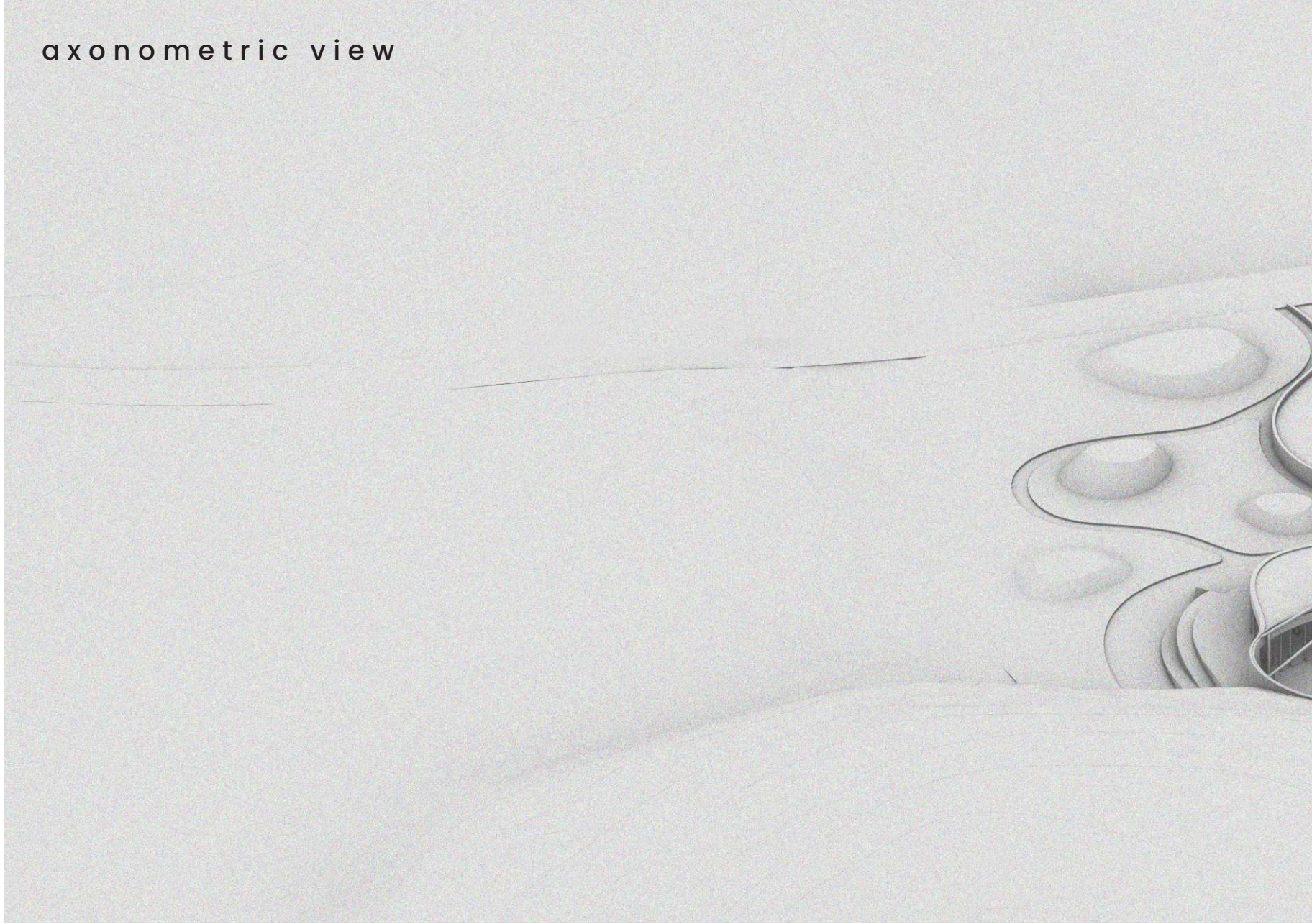


Figure 34. Axonometric view

axonometric view



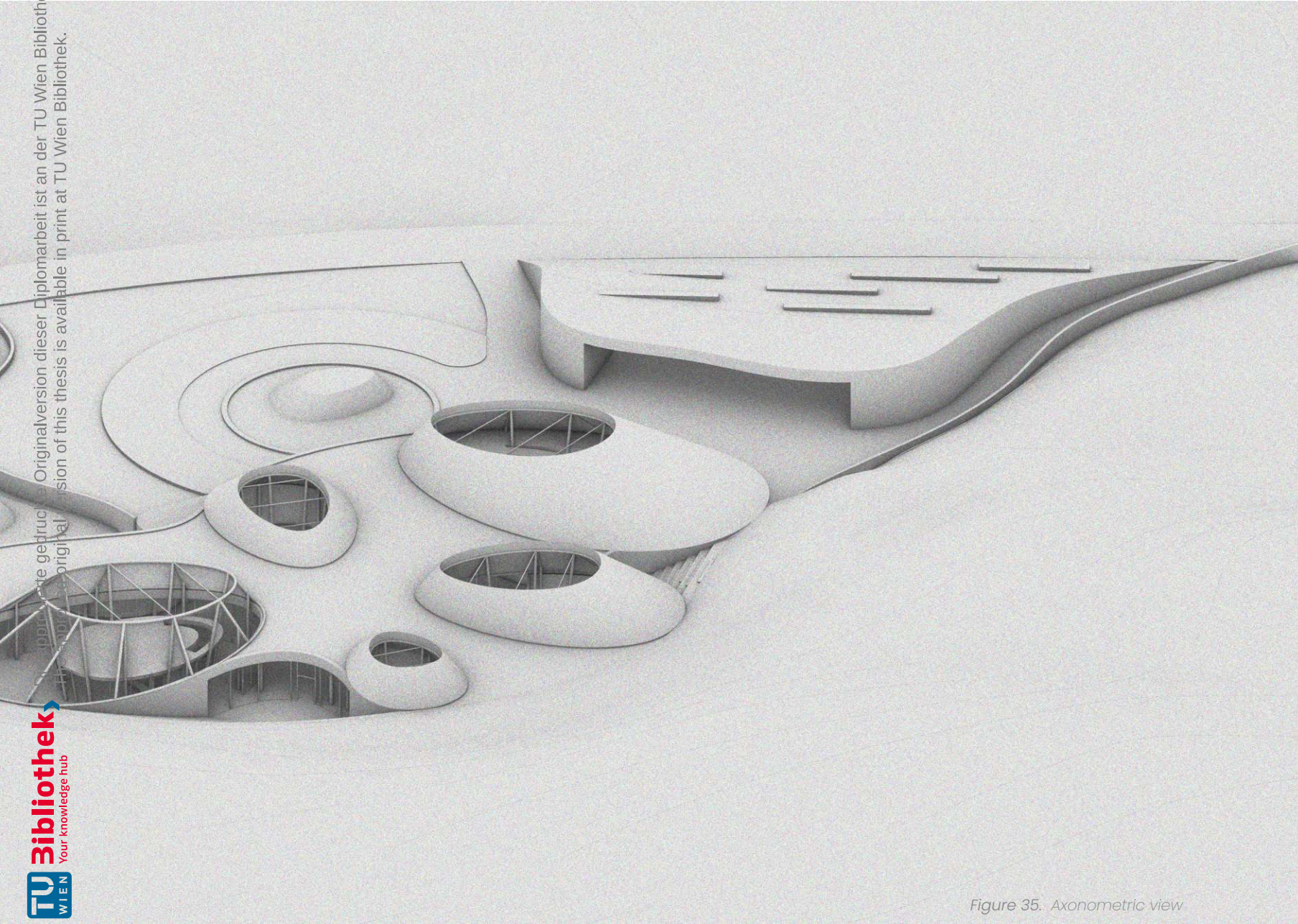


Figure 35. Axonometric view

4.4

programmatic concept

The building program has been categorized into four main groups that encapsulate the core functions of the building:



At the heart of the programmatic concept lies the principle of circularity, which shapes the organizational structure of the building. In this arrangement, all main functions orbit around a central point, creating a dynamic, interconnected layout and ensuring fluid interior circulation. An intentional departure from this circular orbit is evident in the placement of the depot, strategically situated near the outskirts. This structure, positioned near the organic waste management area, enhances logistical efficiency related to waste handling.

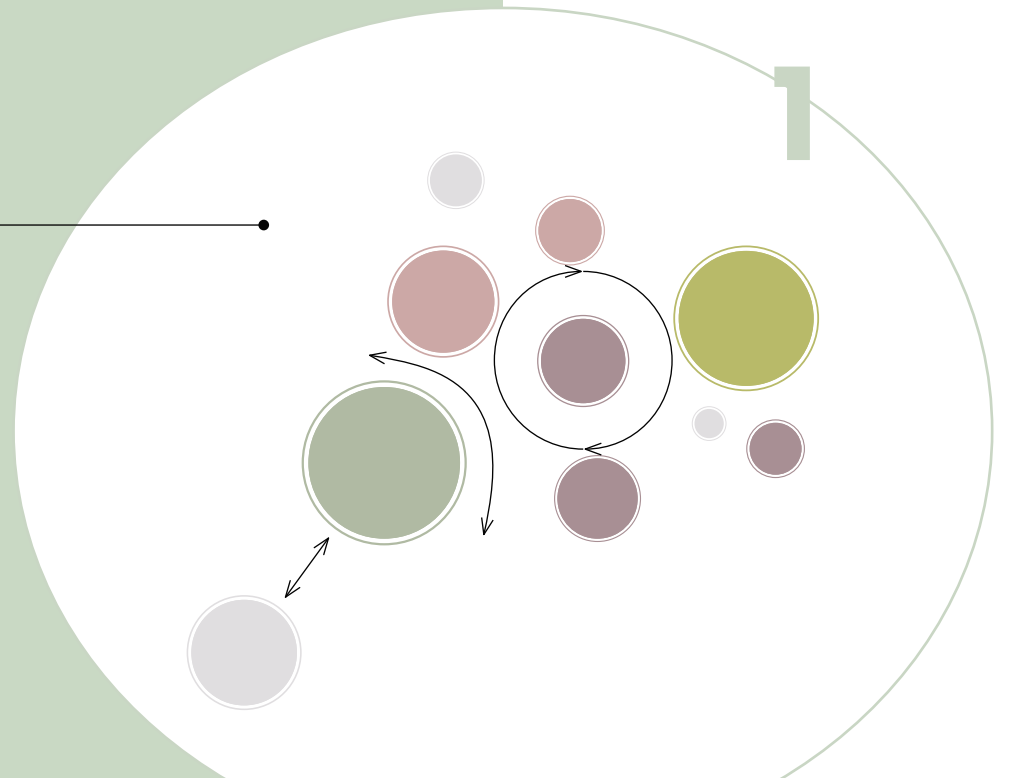
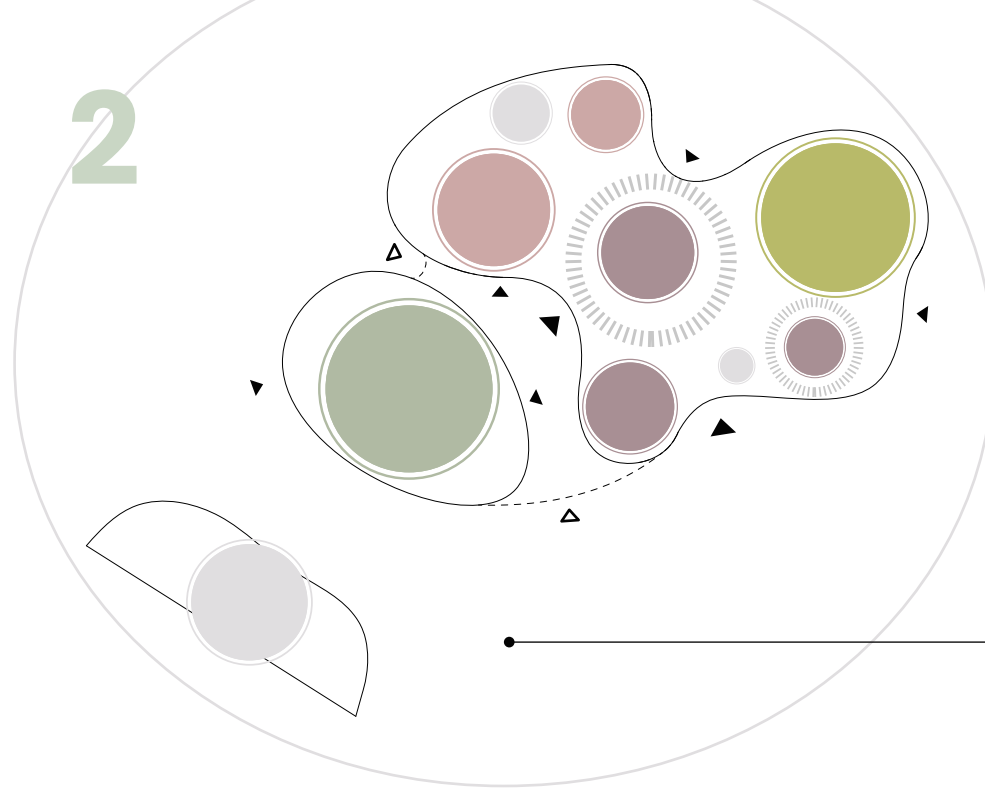
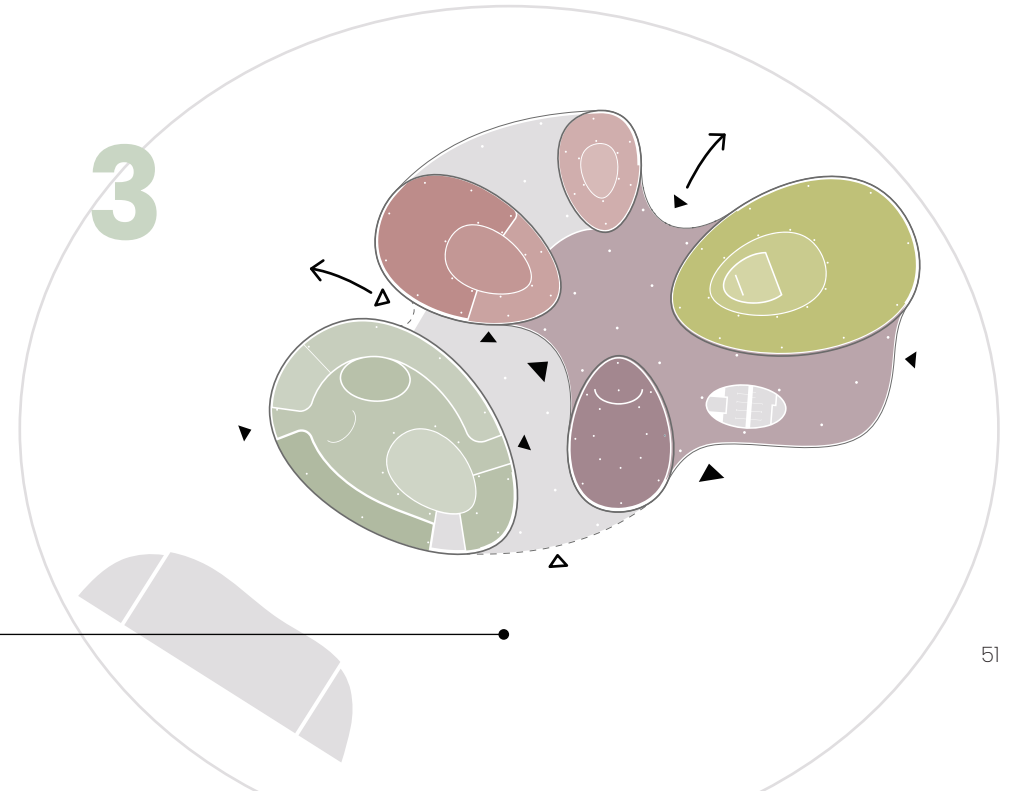


Figure 36. Programmatic concept >



The circular functional organization of the building, as well as the pathway that divides its layout, not only facilitate multiple access points to the central space but also enhance the overall connectivity of the structure. Two of these access points serve as links between the street and the hill.

The building's definitive layout is formed by the crater-shaped structures that define the space. The central area acts as a unifying element, connecting four of the "craters". Despite the partial detachment created by the pathway between the fifth crater and the rest, the roof serves as a connective element, linking all components and reinforcing the cohesive design.



meet & learn 806 m²

1. foyer | common space
2. info centre | exhibition
3. multipurpose room
4. chair storage

upcycle & exchange 425 m²

1. drop off | reception
2. resource exchange area
3. wood workshop
4. upcycling workshop | research
5. kids room

others 556 m²

1. depo
2. outside equipment storage
3. restrooms | shower facilities
4. general storage
5. technical room

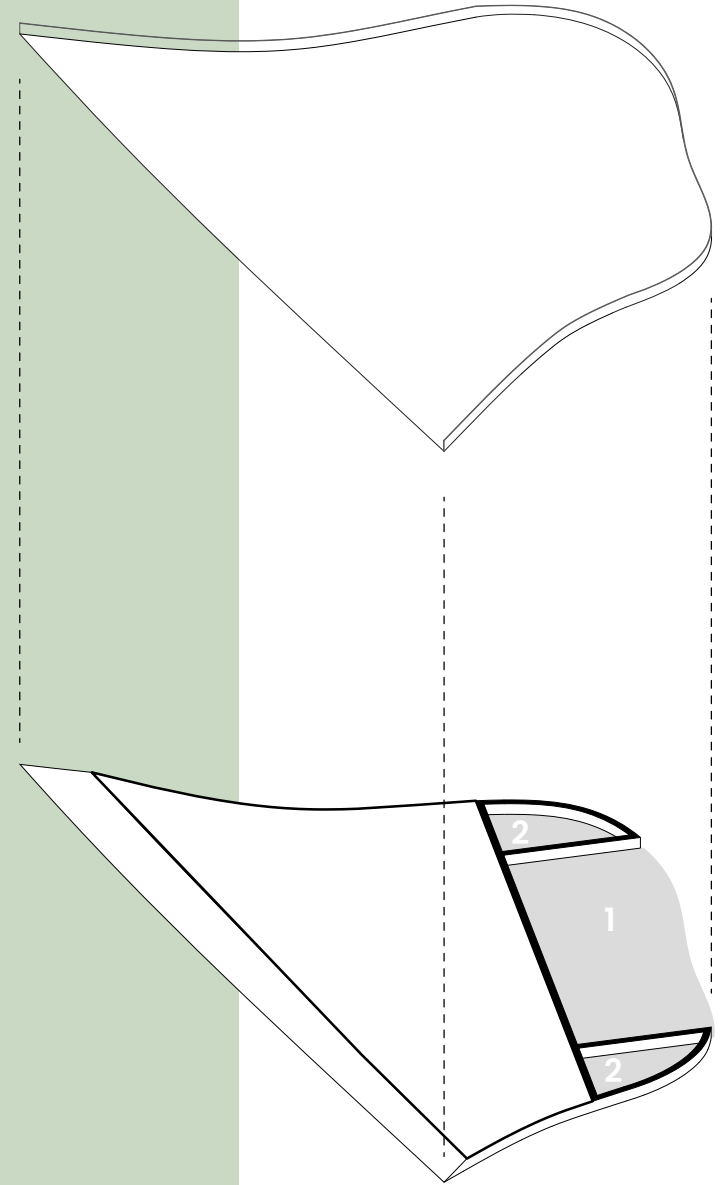
collect & recycle 878 m²

1. waste collection area
2. organic waste management
3. composting
4. maturing
5. storage | packaging
6. worker's office
7. compost shop
8. gallery

grow & sell 627 m²

1. greenhouse
2. cafe
3. kitchen
4. kitchen storage
5. cafe gallery | flower shop

total surface 3.292 m²



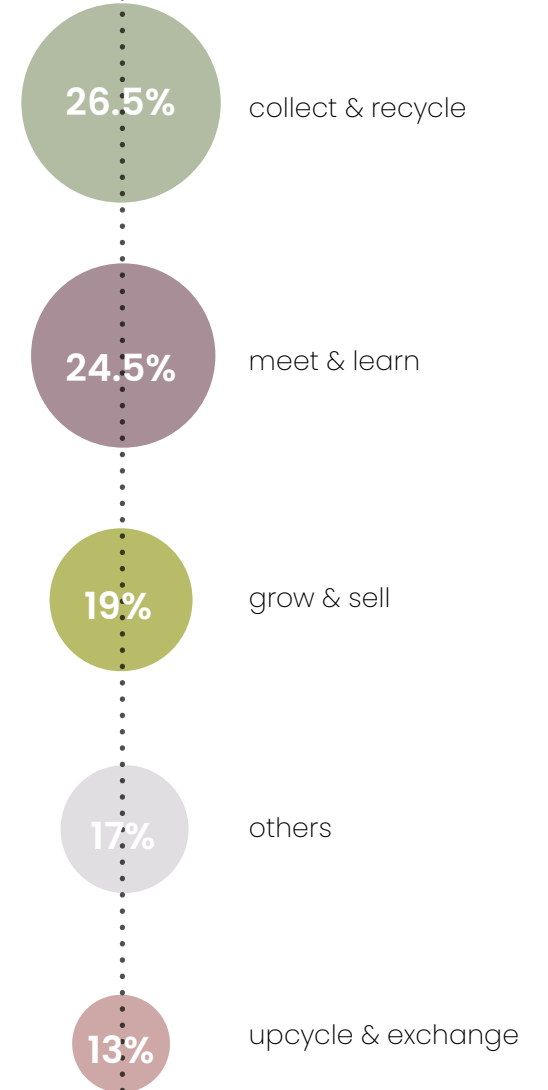
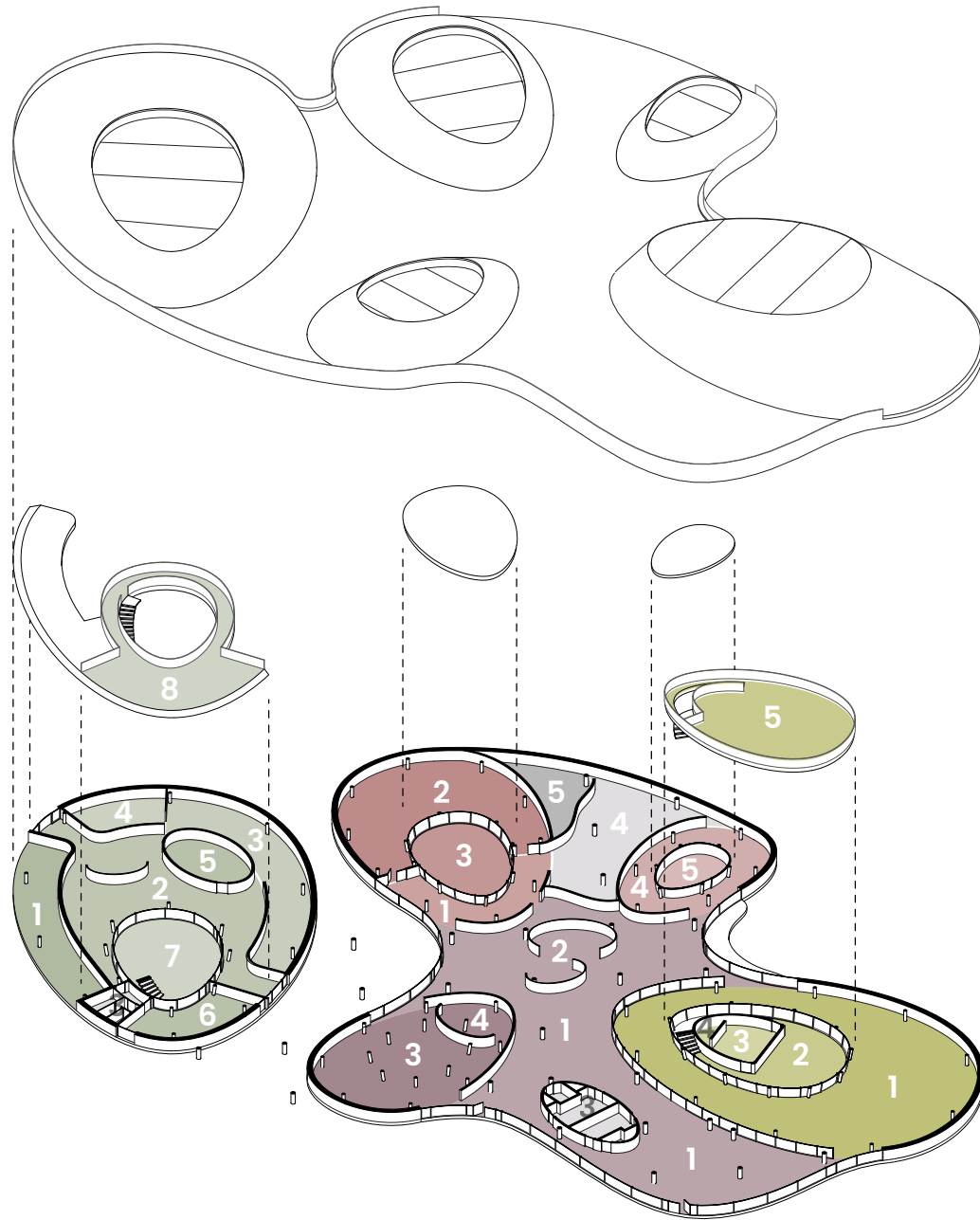


Figure 37. Exploded axonometrie

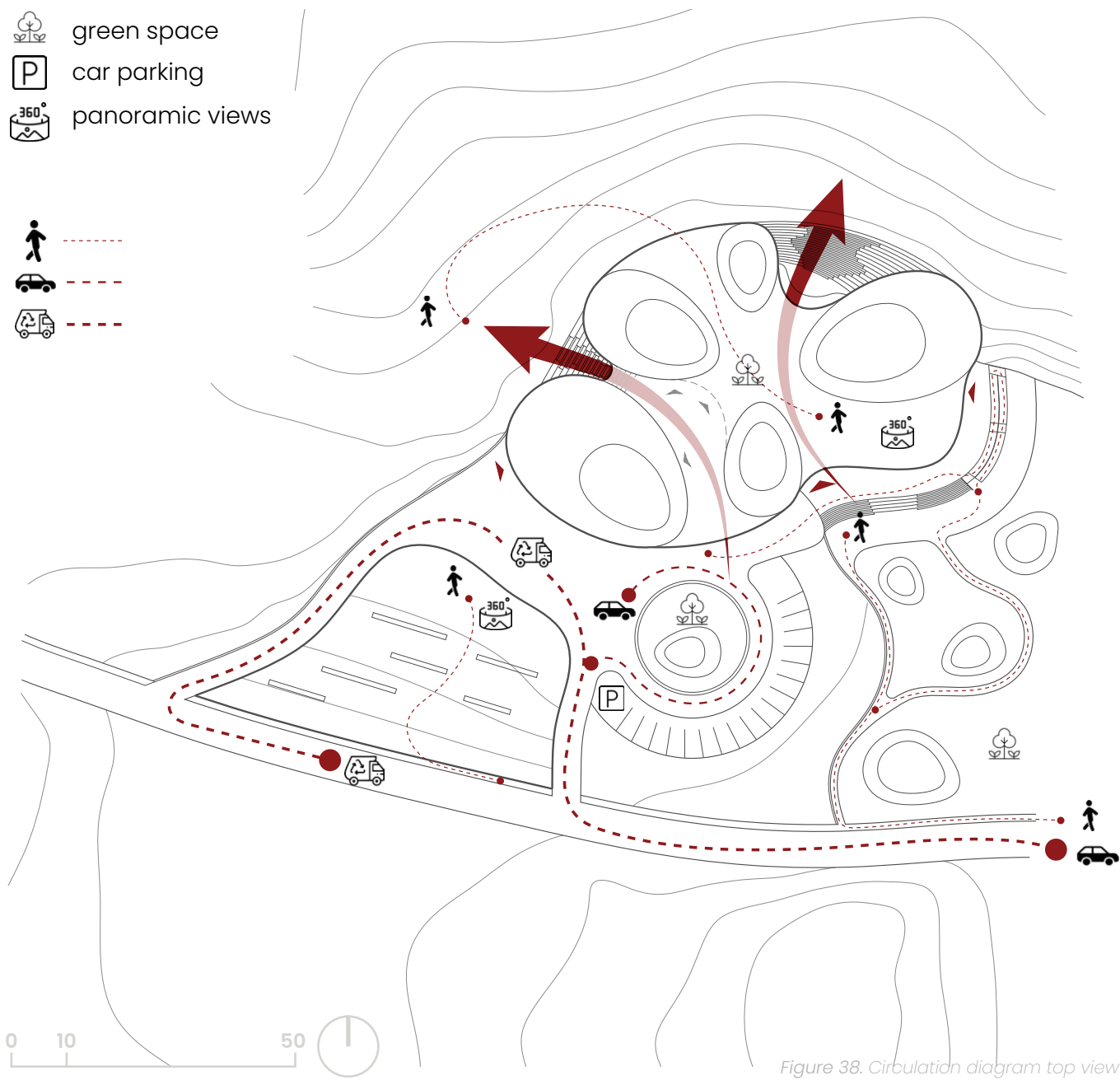


Figure 38. Circulation diagram top view

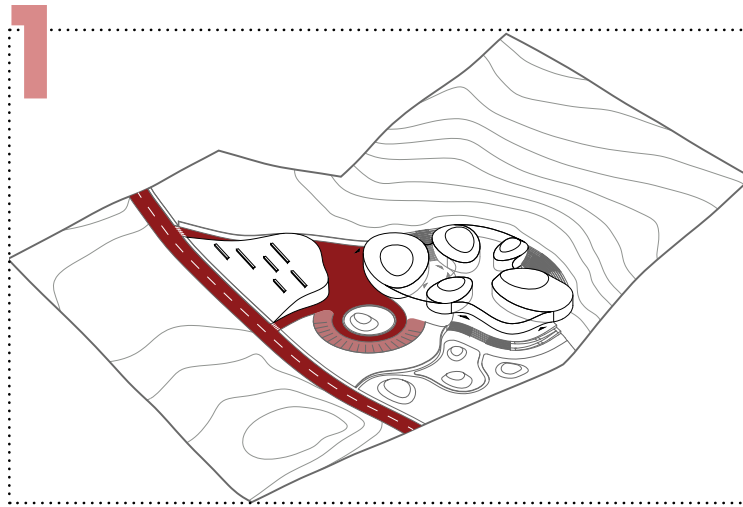
4.5

circulation

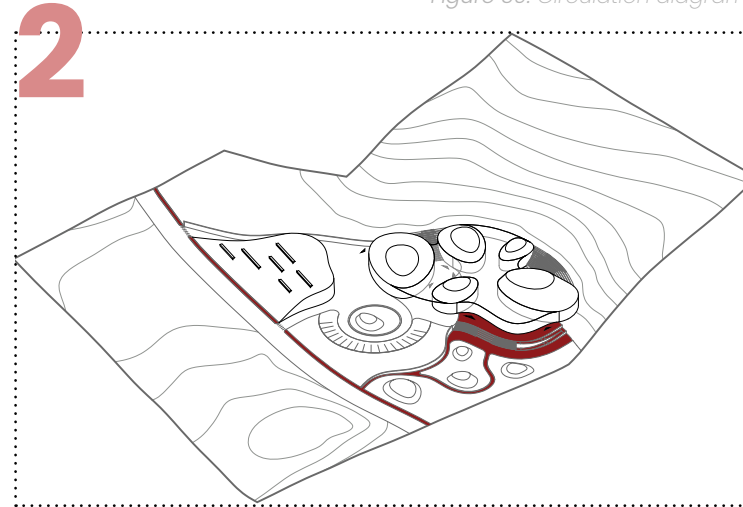
A well-thought-out circulation concept was crucial for both the design and functionality of the center, given the necessity for ample space to facilitate truck navigation. The existing roadway was expanded around the depot, creating a roundabout for efficient truck entry / exit from the waste drop off area. A thoughtfully positioned second roundabout improves car flow and offers optimal parking solutions for both workers and visitors.

Both the central facility and the depot were designed to be integral parts of the natural landscape, incorporating green, accessible roofs that allow individuals to enjoy the panoramic views of the lake and the volcano. The center also features two access points, maintaining a connection between the street and the hill.

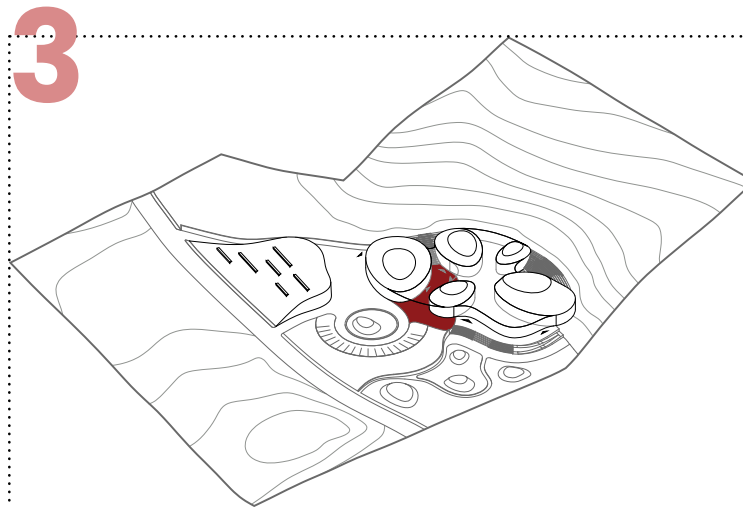
Figure 39. Circulation diagrams



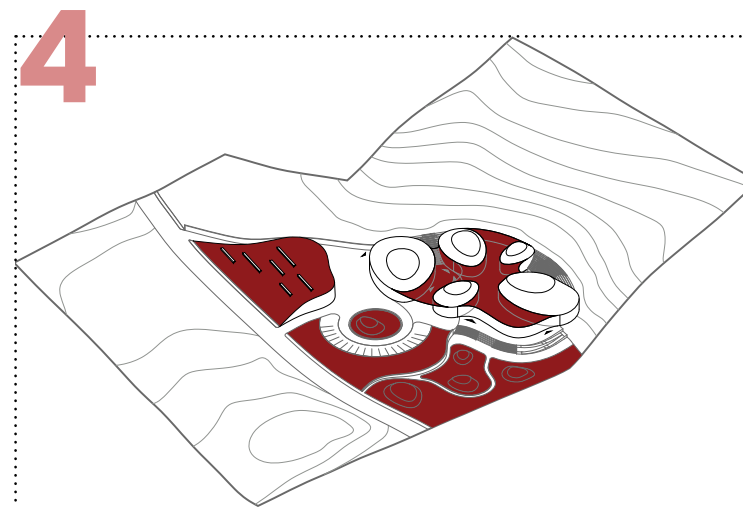
The broad roadway facilitates truck navigation, and a strategically placed roundabout improves car flow and parking options.



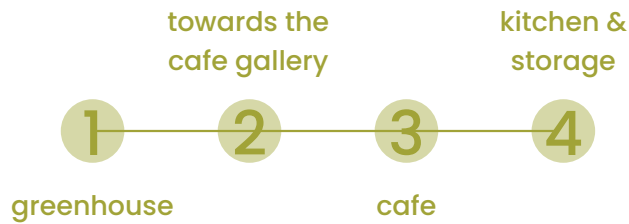
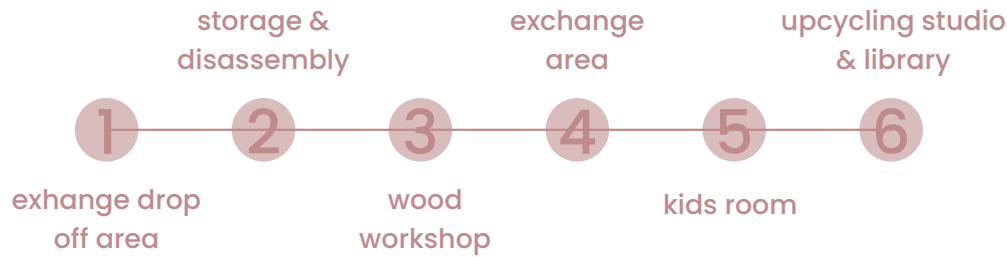
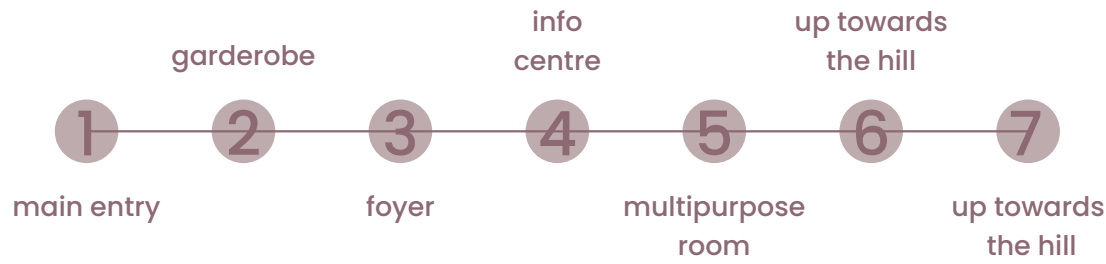
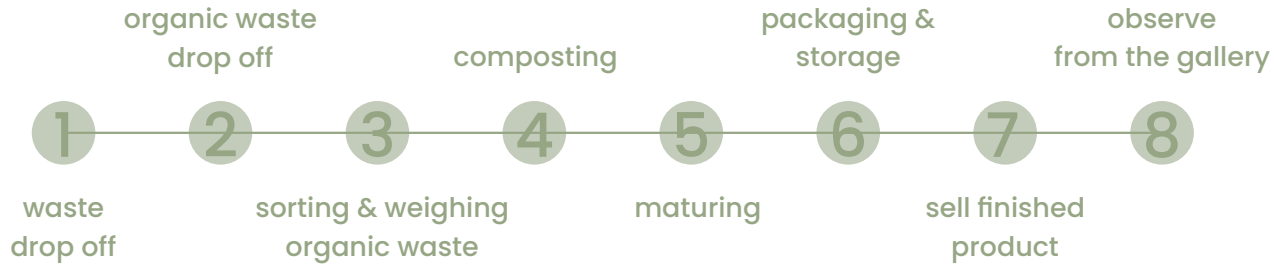
A natural pathway leads visitors through the green space to the main entrance, offering access to the center via the main stairs or the accessible ramp.



The covered area that links the organic waste section to the center serves as a drop-off zone for the exchange area, and as a pathway connecting the street side to the hill.



Both the center and depot are integrated into the natural landscape, featuring accessible green spaces, with a deliberate effort to minimize site paving.



walkthrough



Figure 40. Walkthrough diagram 57

4.6

structural concept

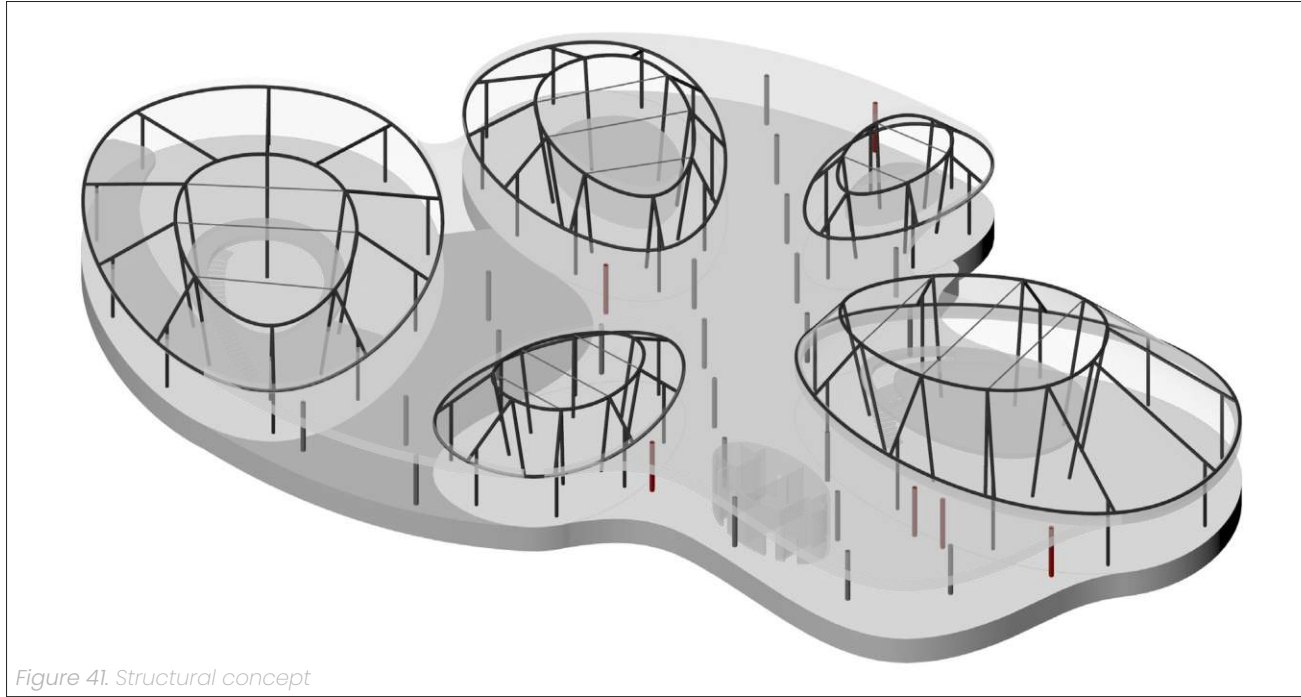


Figure 41. Structural concept

The construction features a reinforced concrete base that serves as foundation. Each of the crater-shaped volumes forms a structural shell supported by a network of steel pillars. To ensure stability and connectivity, an additional grid of columns, spaced at 7 x 7 meters, are integrated into the open area that links the various structures. Additionally, the sanitation block contributes to the overall load-bearing capacity of the

building. The crater "openings" invite abundant natural light into the interior. The structures also play with varying interior heights and provide the opportunity for expansion on two levels.

This is intended to present a structural concept, as the dimensions of the support system have not been specifically calculated for this project.

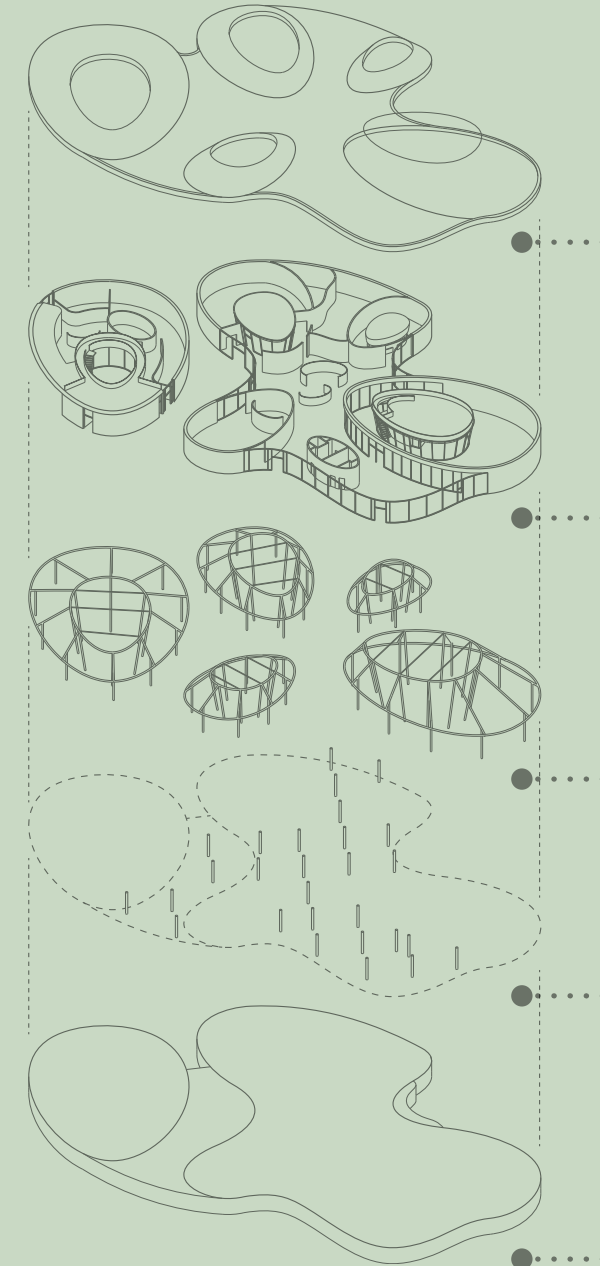


Figure 42. Structure: exploded axonometrie

foundation

column grid

crater steel framework

walls

roof

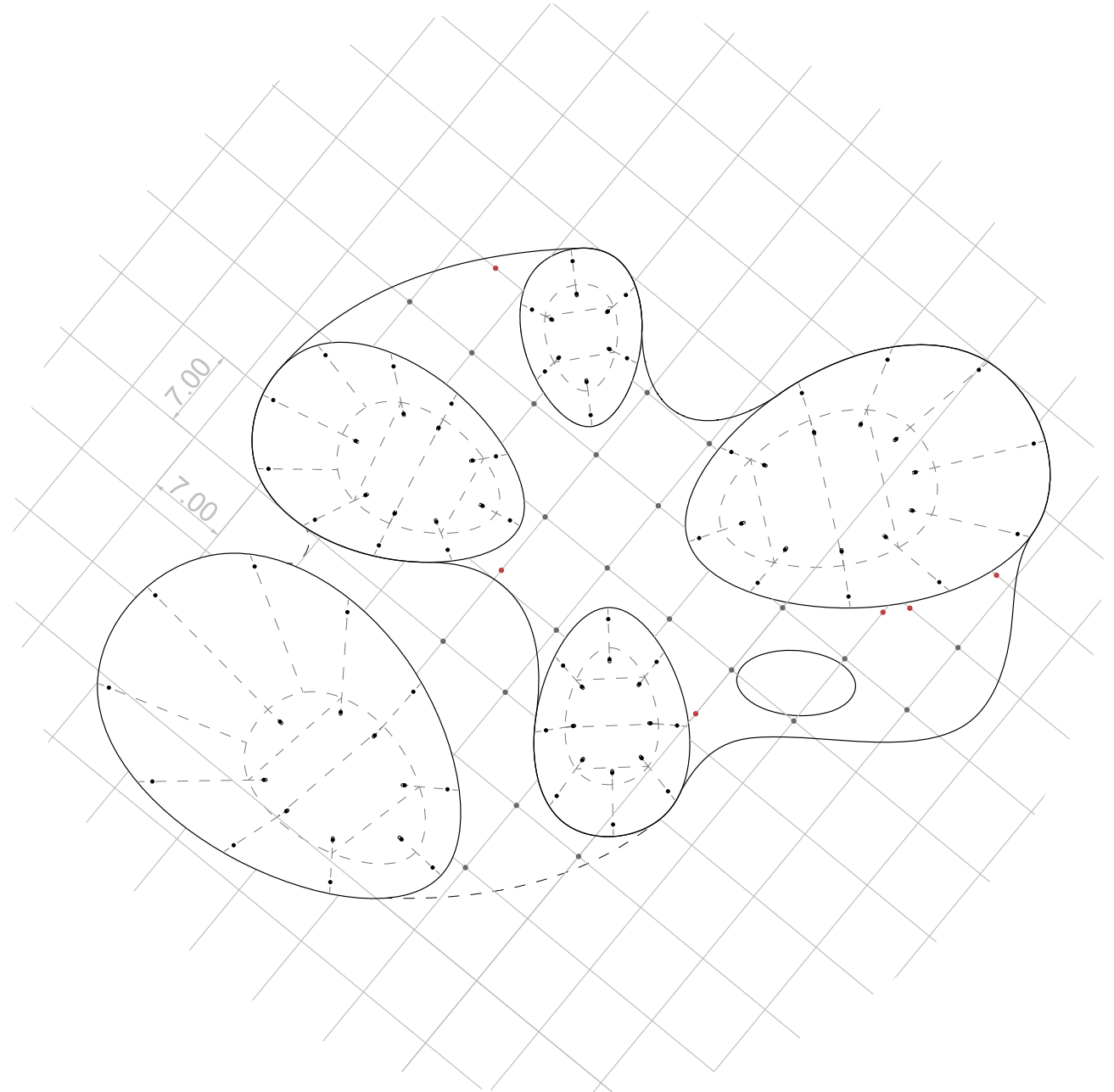


Figure 43. Columns grid sketch

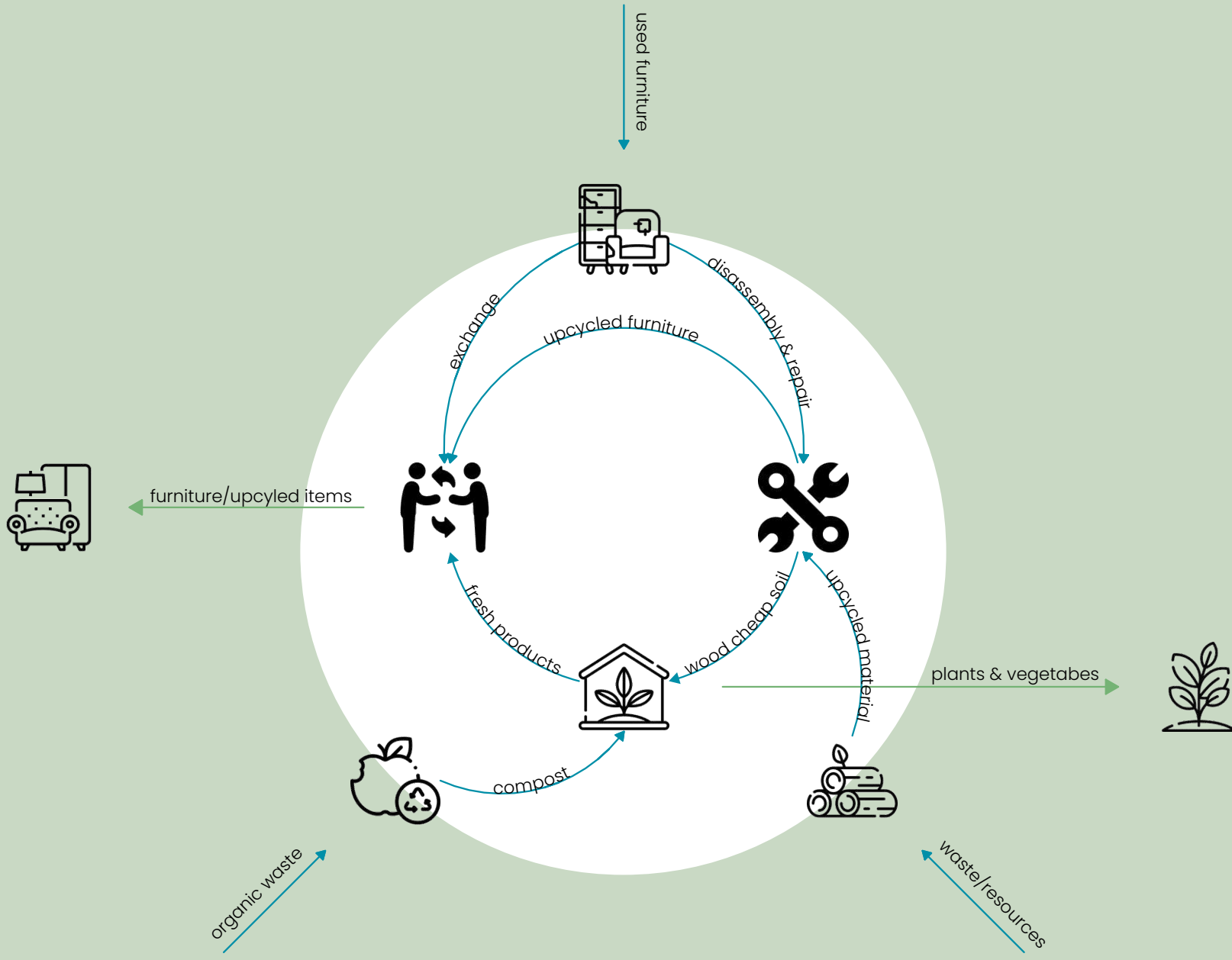
4.7

sustainable approaches

The center is based on a deep commitment to circular economy, minimizing waste, and optimizing resource efficiency. This sustainable approach is represented in the diagram on the right, illustrating the streamlined operational process of the center across its main zones: the **Organic Waste Management Zone**, where locals actively contribute to compost production from organic waste; the **Wood Workshop & Upcycling Area**, transforming discarded items into functional pieces for the **Secondhand Exchange Area** and providing upcycled furniture for the **Cafe**; and the **Greenhouse**, serving as a communal space for cultivating vegetables and plants using the compost generated. The diagram encapsulates a holistic approach to sustainability, where the outputs of one area become the inputs for another, creating a continuous cycle of resource utilization.

The centre strives to be an example of sustainability, not only through its practices but also through the very fabric of the building - by incorporating a green roof, using energy efficient strategies and through the choice of materials.

Figure 44. Sustainability diagramm



1 green concept

The green roofs of the building and the adjacent depot blend with the urban environment. Beyond their visual appeal, the roofs act as natural insulators, reducing cooling and heating needs within the building. The green areas, which feature native vegetation such as *Myosotis arvensis*, *Vaccinium myrtillus*, *Betula pubescens*, and *Cetraria islandica*, contribute to biodiversity, offering a suitable habitat for local flora and fauna. Moreover, the vegetation plays an important role in rainwater management, effectively capturing and filtering water.

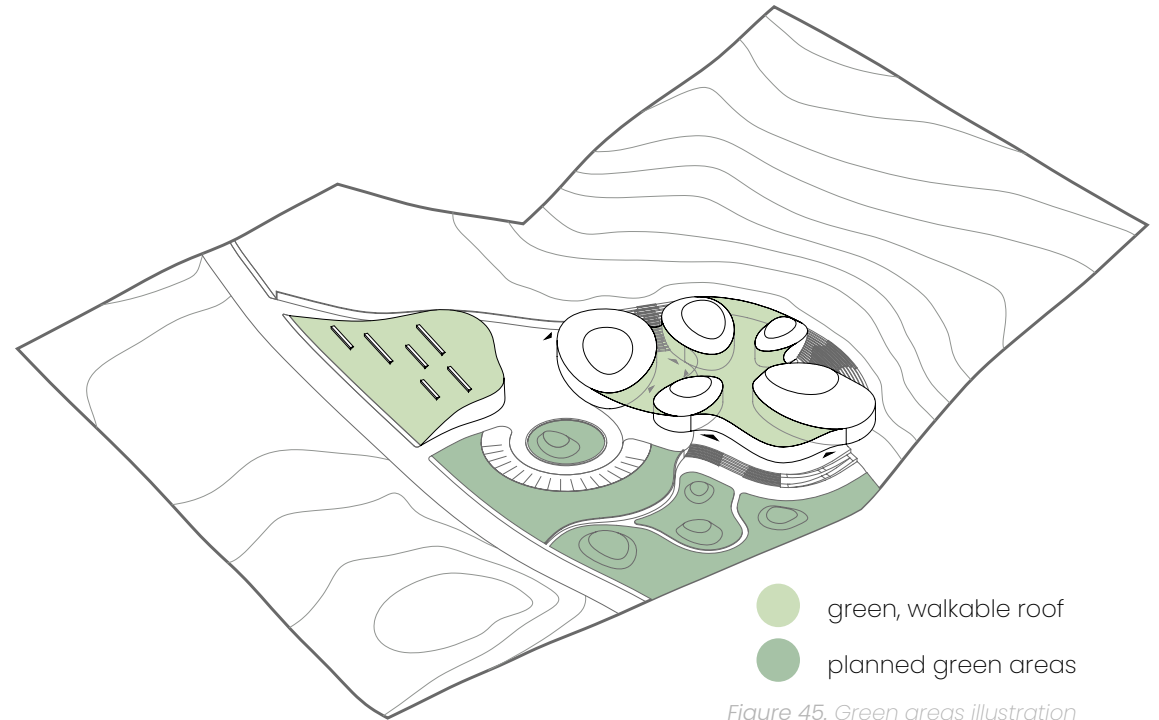


Figure 45. Green areas illustration



myosotis arvensis
Figure 47



vaccinium myrtillus
Figure 47.



betula pubescens
Figure 48.



cetraria islandica
Figure 49.

native shrubs and mosses

substrate

protection | drainage | filtration layer
waterproof membrane

rigid insulation

vapor control layer

low carbon concrete roof deck

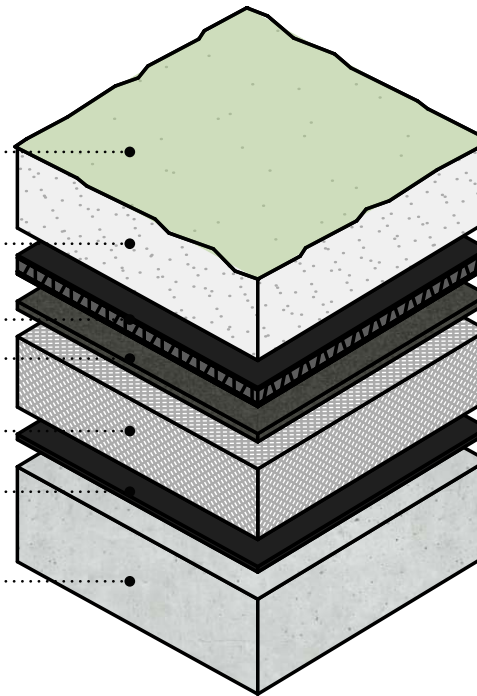


Figure 46. Green roof construction

2 geothermal energy rainwater collection

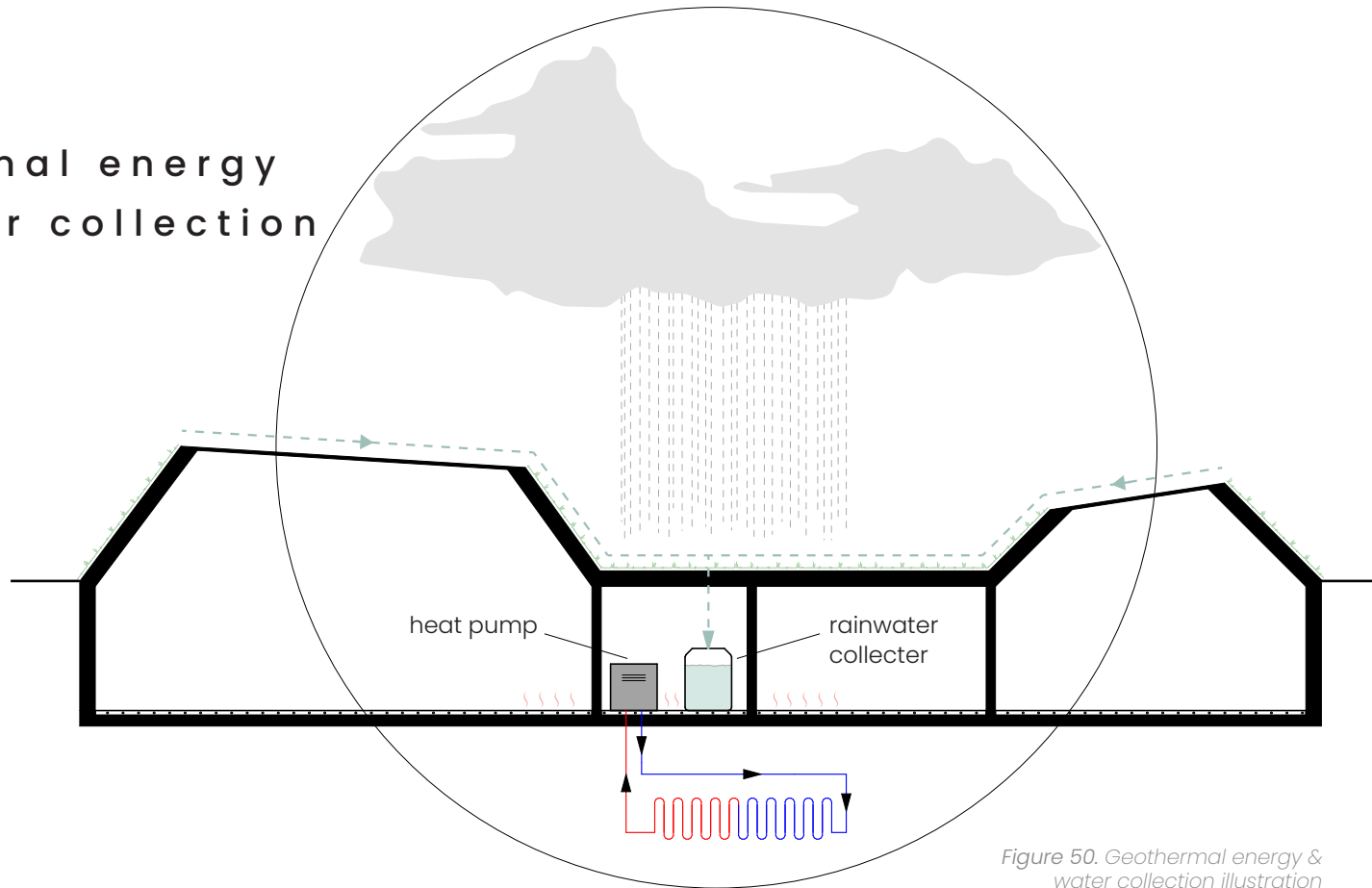


Figure 50. Geothermal energy & water collection illustration

As a sustainable energy source, the project harnesses geothermal energy through the implementation of a heat pump. Using a network of pipes that circulate a special liquid, natural warmth from the ground is absorbed and turned into a hot gas. This releases its heat into the building, providing an efficient and sustainable solution for temperature management.

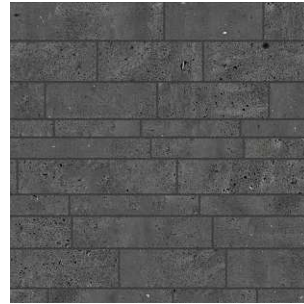
Additionally, the building uses a rainwater collection system, which directs rainfall from the surface into a storage tank. Once collected, the rainwater is filtered to remove unwanted contaminants and is then repurposed for different uses, specifically for the organic waste management and the greenhouse, reducing the reliance on conventional water sources.

3 materiality



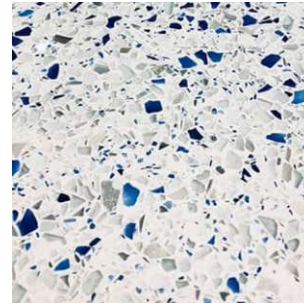
native moss

Figure 51.



basalt panel

Figure 52.



terrazzo

Figure 53.



basalt gravel

Figure 54.

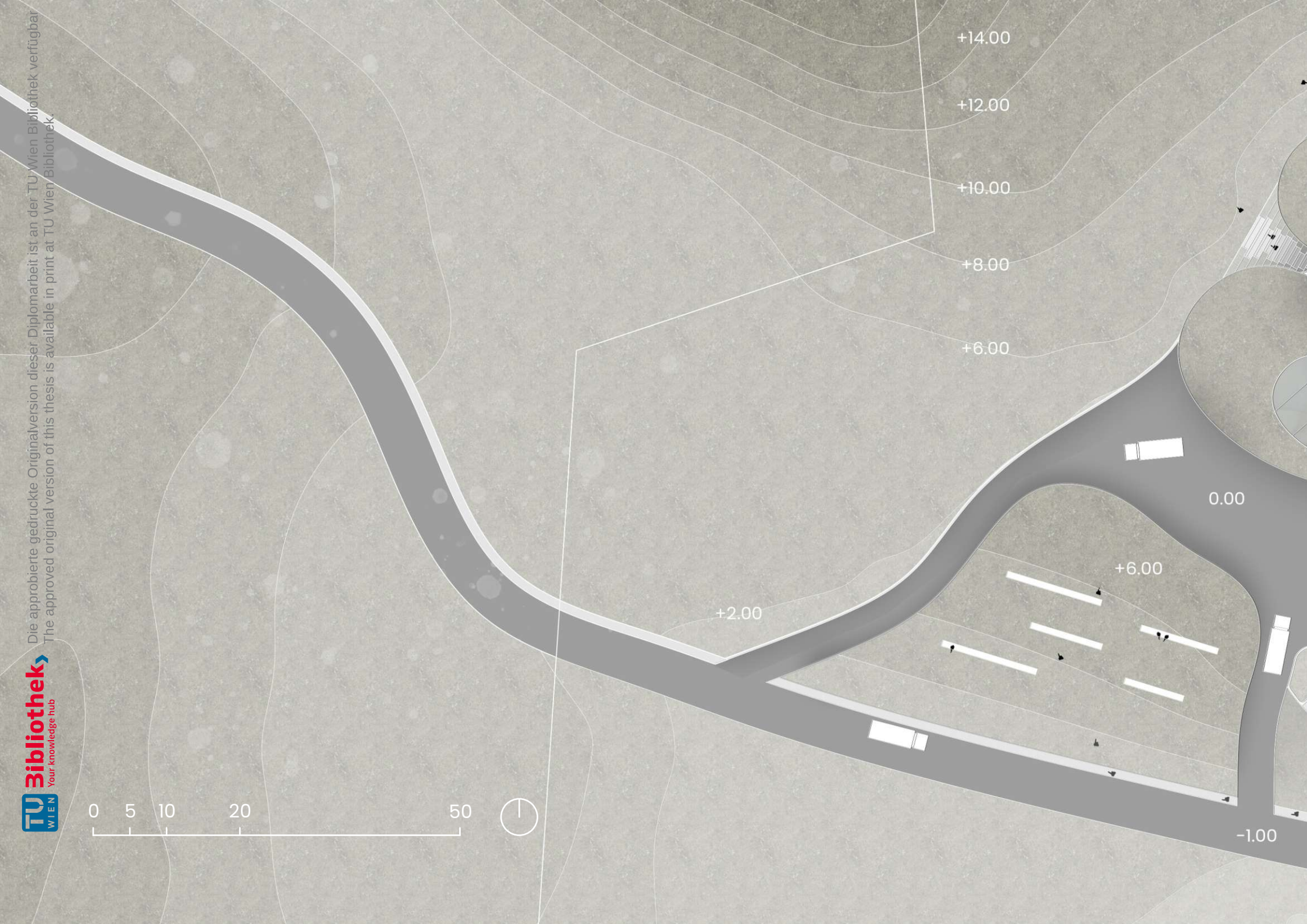
The choice of materials is based on historical inspiration, environmental resilience, and local sourcing. The green roof is reminiscent of the traditional Icelandic turf houses and was chosen both for its aesthetic appeal and environmental benefits. To address Iceland's cold climate, the walls and ceilings are constructed from concrete, chosen for its durability and insulation properties. Steypstöðin is Iceland's largest concrete producer and operates sustainably, transporting the material on electric trucks, ensuring minimal environmental impact. The

structural frame, comprising columns and beams, is crafted from reclaimed steel. Inside, the interior walls showcase the raw beauty of the exposed concrete. The flooring features terrazzo with recycled glass, providing a visually pleasing and eco-friendly surface. For the facade, thin panels crafted from locally sourced basalt stone add a touch of authenticity and harmonize the building with its surrounding geological richness. The access path and driveways are surfaced with basalt gravel and paving stones, also locally sourced.

result



Figure 55. Axonometric view



5.1

site plan

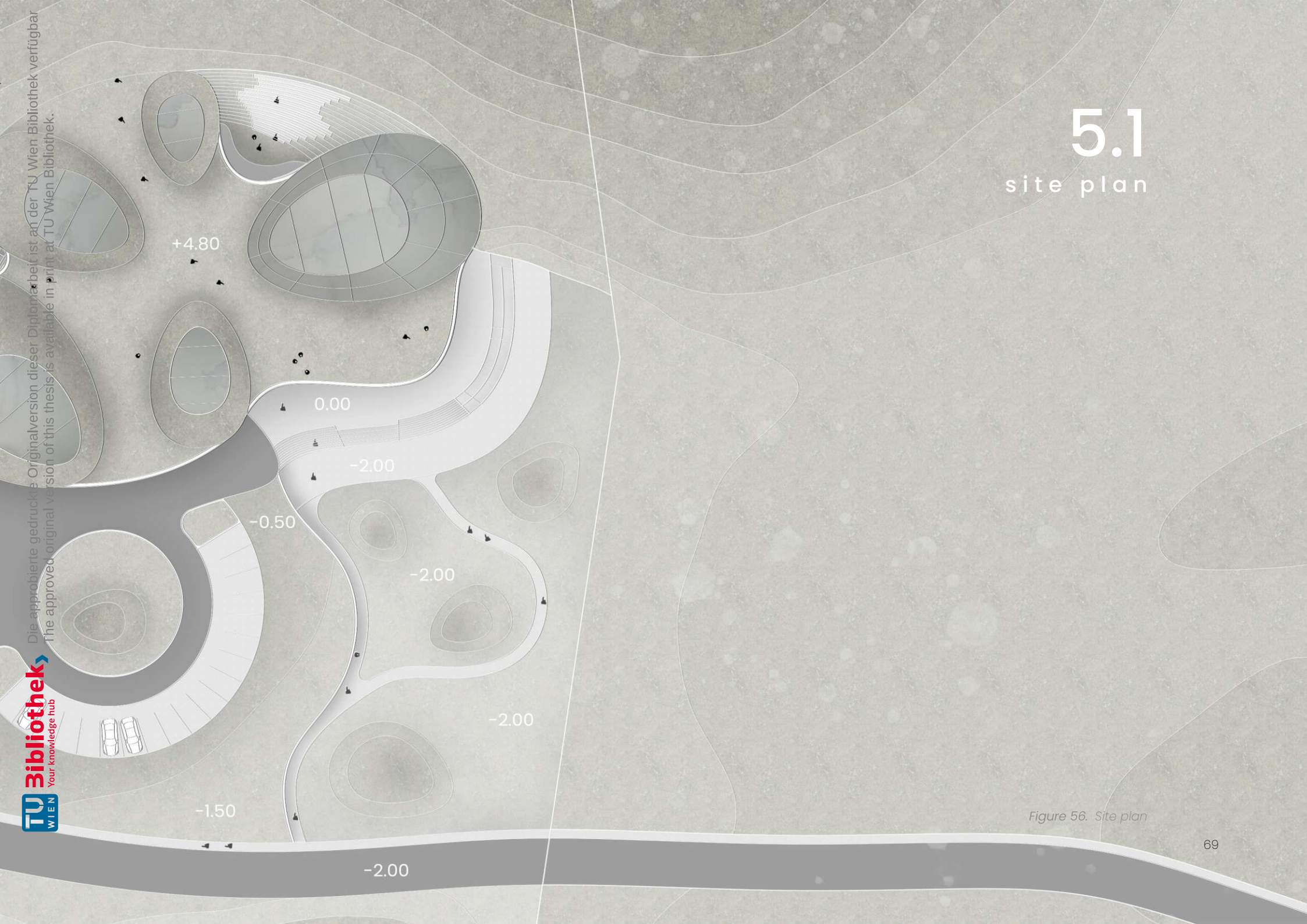


Figure 56. Site plan

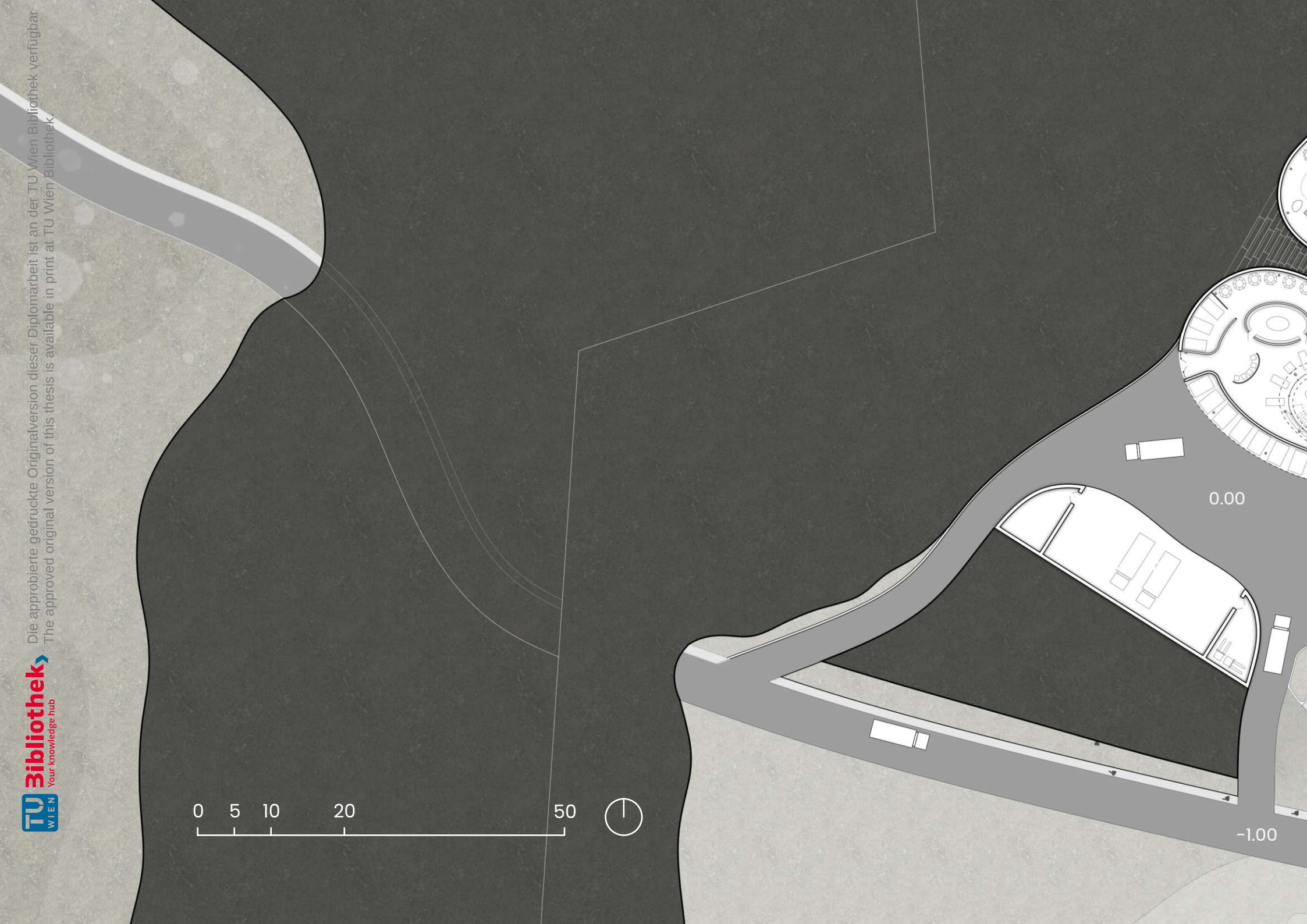




Figure 57. Floor plan 600

5.2

floor plan

o.1 depo	298.89 m ²	II.6 research I library	90.23 m ²
o.1a outside storage	47.26 m ²	II.7 kids room	24.50 m ²
1b outside storage	44.26 m ²	II.8 technical room	42.81 m ²

meet & learn

I.1 main entrance	
I.2 main second	
I.3 foyer	546.08 m ²
I.4 info centre I exhibition	45.06 m ²
I.5 wardrobe	29.70 m ²
I.6 multipurpose room	154.27 m ²
I.7 chairs I equipment storage	31.20 m ²
I.8a WC men	12.22 m ²
8b WC women	13.27 m ²
8c accesible WC	4.23 m ²
8d cleaning room	3.45 m ²

upcycle & exchange

II.1 reception exchange area	66.68 m ²
II.2 exchange area	173.95 m ²
II.3 diassemble area	28.37 m ²
II.4 storage area	89.67 m ²
II.5 wood workshop	69.26 m ²

collect & recycle

III.1 resource collection zone	83.48 m ²
III.2 organic waste drop off	31.88 m ²
III.3 sorting I mixing I management.....	155.19 m ²
III.4 composting	110.00 m ²
III.5 maturing	35.60 m ²
III.6 packaging I storing compost	37.32 m ²
III.7 compost store I learning area	86.68 m ²
III.8 worker's office	49.34 m ²
III.9 restrooms I showers	16.00 m ²
III.10 equipment storage	21.21 m ²

grow & sell

IV.1 greenhouse	388.27 m ²
IV.2 equipment storage shelves	10.00 m ²
IV.3 cafe	53.80 m ²
IV.4 kitchen	24.90 m ²
IV.5 kitchen storage	5.77 m ²
IV.6 under stairs storage	13.38 m ²

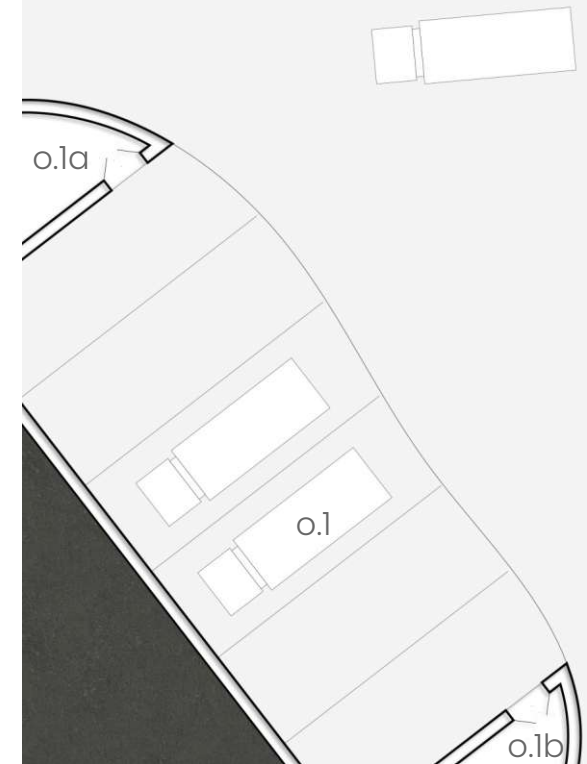




Figure 58. Floor plan 300

I. meet & learn

<i>I.1</i>	<i>main entrance</i>	
<i>I.2</i>	<i>second entrance</i>	
<i>I.3</i>	<i>foyer</i>	546 m ²
<i>I.4</i>	<i>info centre exhibition</i>	45 m ²
<i>I.5</i>	<i>wardrobe</i>	30 m ²
<i>I.6</i>	<i>multipurpose room</i>	154 m ²
<i>I.7</i>	<i>chairs equipment storage</i>	31 m ²
<i>I.8a</i>	<i>WC men</i>	12 m ²
<i>8b</i>	<i>WC women</i>	13 m ²
<i>8c</i>	<i>accessible WC</i>	4 m ²
<i>8d</i>	<i>cleaning room</i>	3.5 m ²

The meet & learn functional category encourages community engagement, learning, and collaboration. As visitors approach the center, they are welcomed through two main entrances, positioned to ensure convenient access from different directions. The center is designed to be accessible both through grand outside stairs and a ramp. Additionally, an accessible restroom is incorporated to prioritize inclusivity. Upon entry, the grand foyer serves as a central hub connecting all major functions. This versatile open space promotes community engagement, acting as an extension of the multipurpose room. It also provides extra room for various activities, serving as a meeting point,

recreation zone, and event area. Additionally, visitors can access the adjacent hill through outside stairs directly from the foyer, further enhancing the connectivity between indoor and outdoor spaces. The information center features an exhibition on the history of the Myvatn area, highlighting its cultural heritage. It also explores Iceland's sustainability practices, promoting environmental stewardship and a mindful use of resources. The multipurpose room, a flexible and dynamic environment, meets the diverse needs of the community. Equipped with storage for chairs and event equipment, this space can adapt to accommodate various seminars, workshops, and community events.

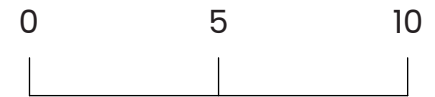
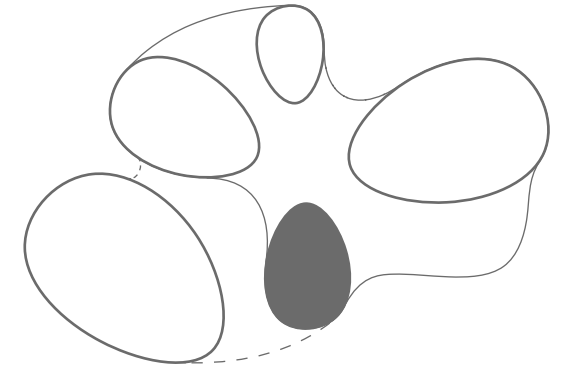
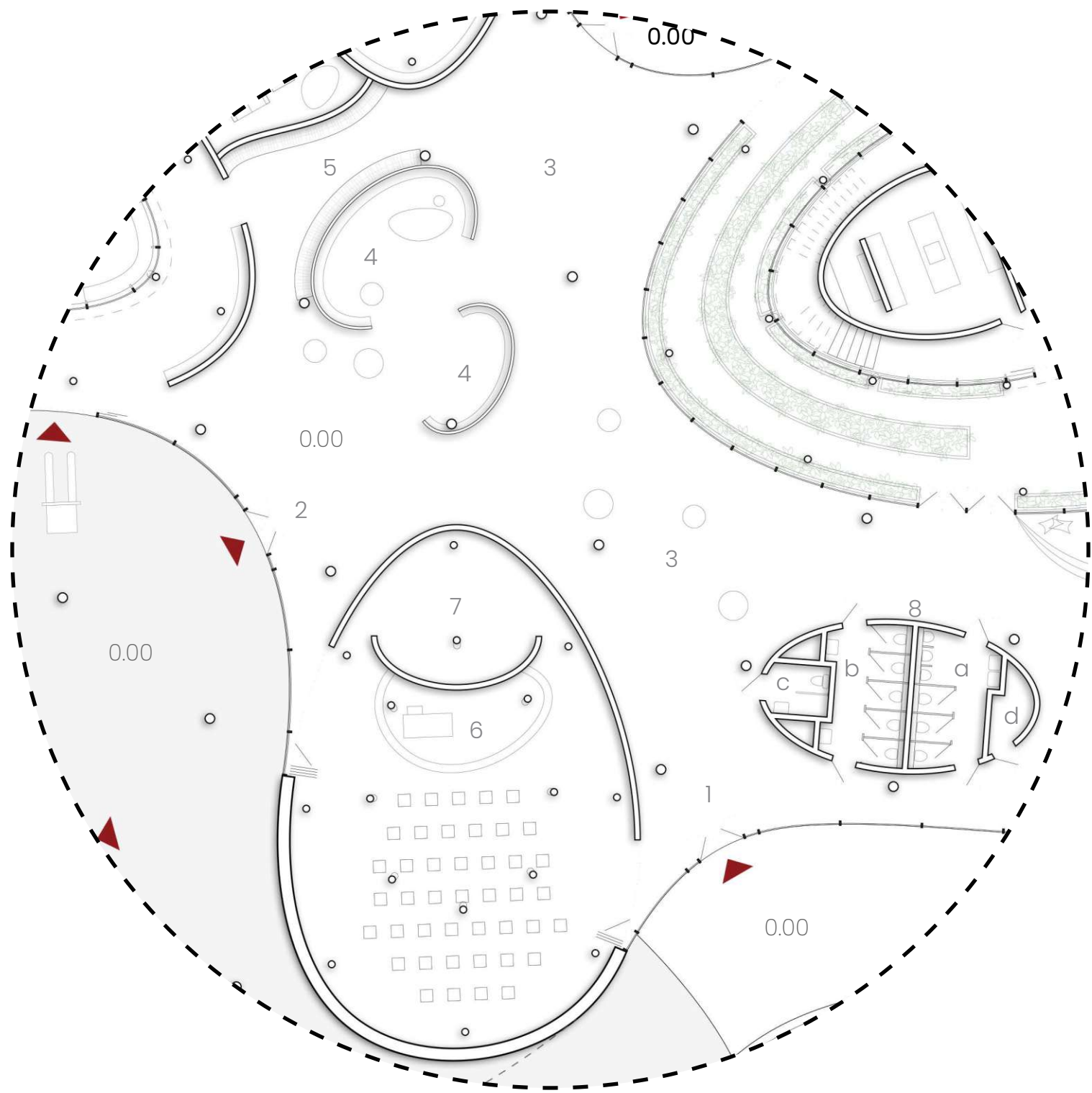


Figure 59. Floor plan 200. Meet & Learn



II. upcycle & exchange

II.1	reception exchange area	67 m ²
II.2	exchange area	174 m ²
II.3	wood workshop	69 m ²
II.4	disassemble area	28 m ²
II.5	storage area	90 m ²
II.6	technical room	43 m ²
II.7	research / library	90 m ²
II.8	kids room	25 m ²

In the upcycle & exchange section of the community center, locals can bring in their used furniture, clothing, and household items. Upon arrival in the reception area, these items are directed to the disassembling area or storage. From there, they progress to the wood workshop, where skilled artisans repair or creatively upcycle them into new, functional pieces. A separate room is designated for the upcycling of smaller items like bags and jewelry. This space serves a dual purpose, functioning as a resource hub with

a research library. Additionally, a dedicated kid's room engages younger community members, teaching them about sustainable practices and the principles of upcycling through interactive activities.

The journey of these items ends in the exchange area, where the pieces are displayed for new owners to discover. The wood workshop is visible through glass walls, allowing visitors to observe the craftsmanship involved in the upcycling journey.

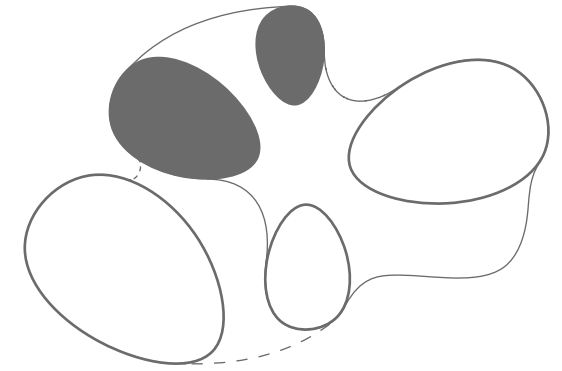
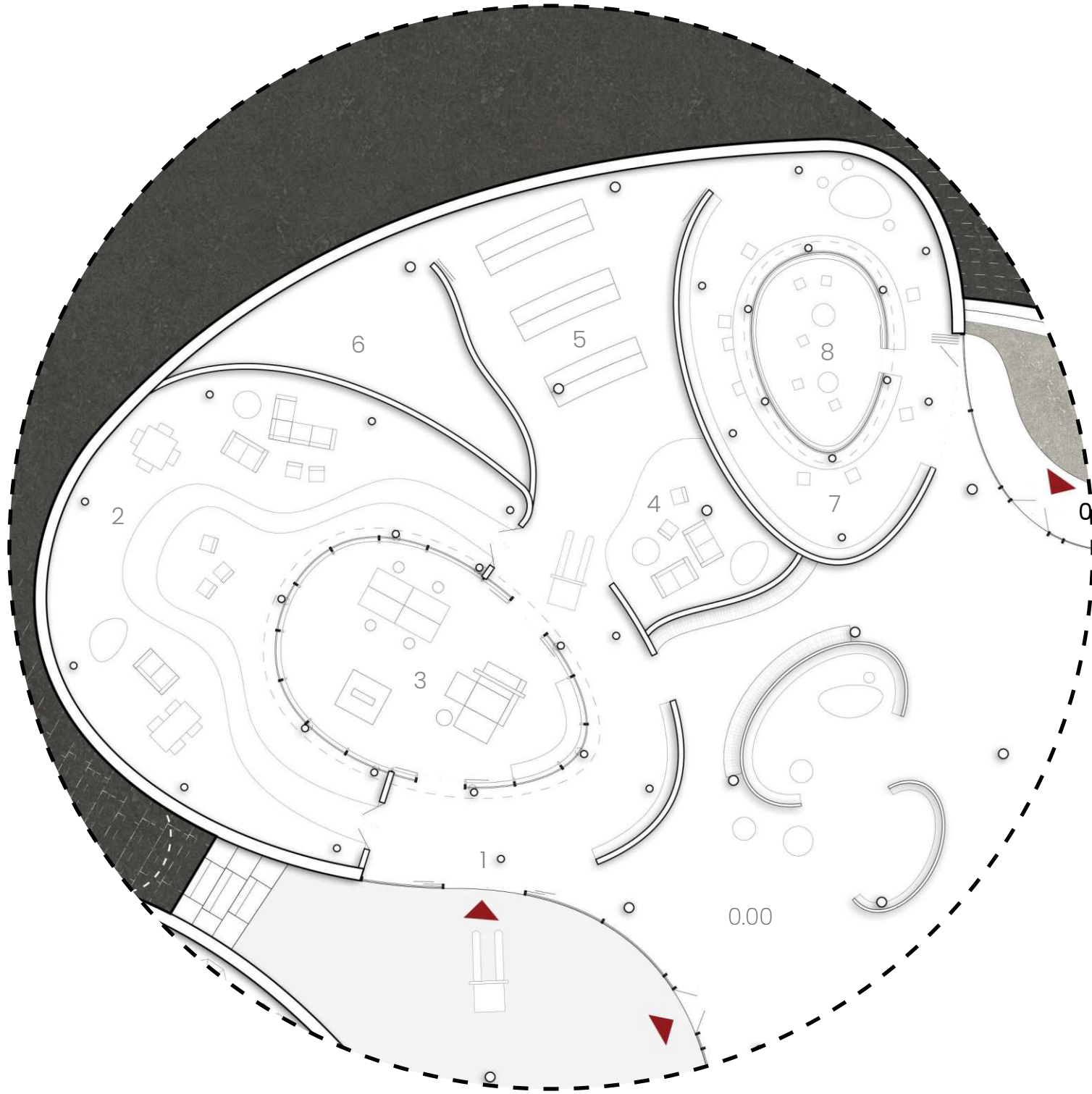


Figure 60. Floor plan 200. Upcycle & Exchange



III. collect & recycle

III.1 resource collection zone	84 m ²
III.2 organic waste drop off	32 m ²
III.3 sorting I mixing o.w.	155 m ²
III.4 composting	110 m ²
III.5 maturing	36 m ²
III.6 packaging I storing compost	37 m ²
III.7 compost store I learning area	87 m ²
III.8 worker's office	49 m ²
III.9 restrooms I showers	16 m ²
III.10 equipment storage	21 m ²
III.11 gallery I recreation space I storage	267 m ²

The collect & recycle section of the center is primarily dedicated to organic waste management. The area is partially separated from the main building to address potential smells and enhance accessibility, allowing for the creation of a covered pathway with stairs leading to the adjacent hill.

This section features three access points: one for dropping off organic waste, one for workers, and one for visitors interested in learning about the composting process or in purchasing compost. The proximity of the resource collection zone to the depot facilitates waste drop-off and loading via garbage trucks. The process involves several key steps: After drop-off, the waste undergoes

sorting and mixing before being placed in composting bins. Following that, it moves to maturation boxes, and the final compost is packaged and stored for sale in the center's store. Additionally, a portion is allocated for use in the greenhouse, where it contributes to the cultivation of plants and vegetables. The store serves a dual purpose, functioning not only as a retail space but also as an educational platform. Visitors can observe the composting process from a gallery, gaining insights into the methodology and principles behind organic waste management. This section incorporates essential facilities for workers, including an office and a recreation zone. Additionally, restrooms and shower facilities are available.

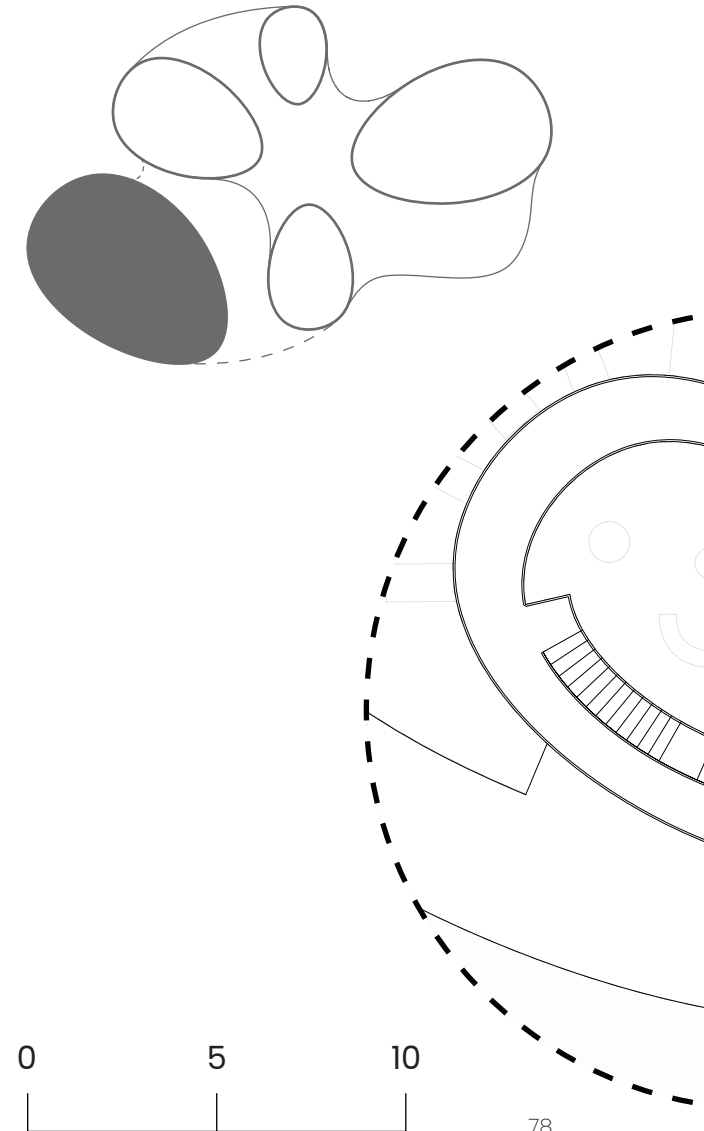
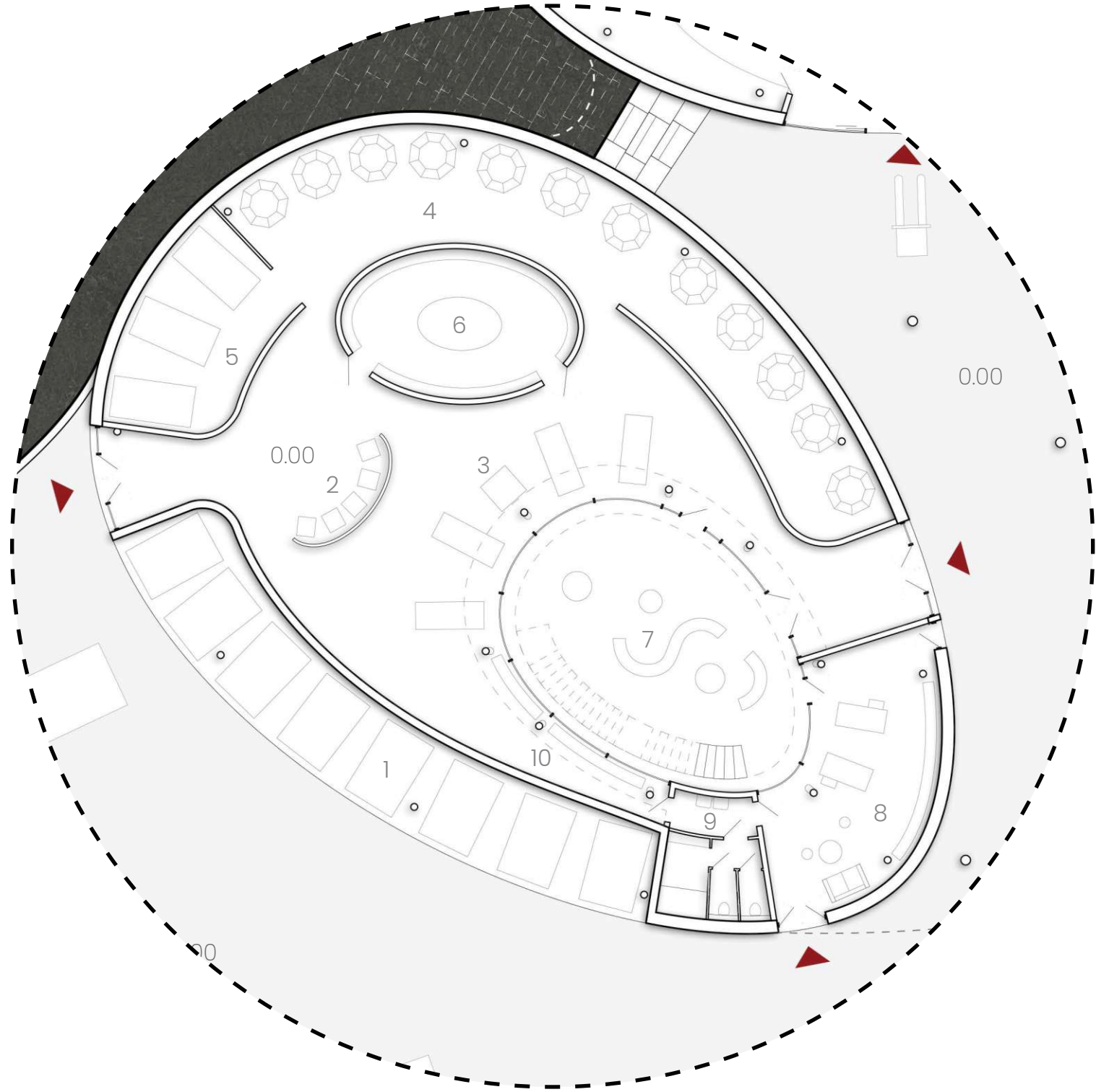
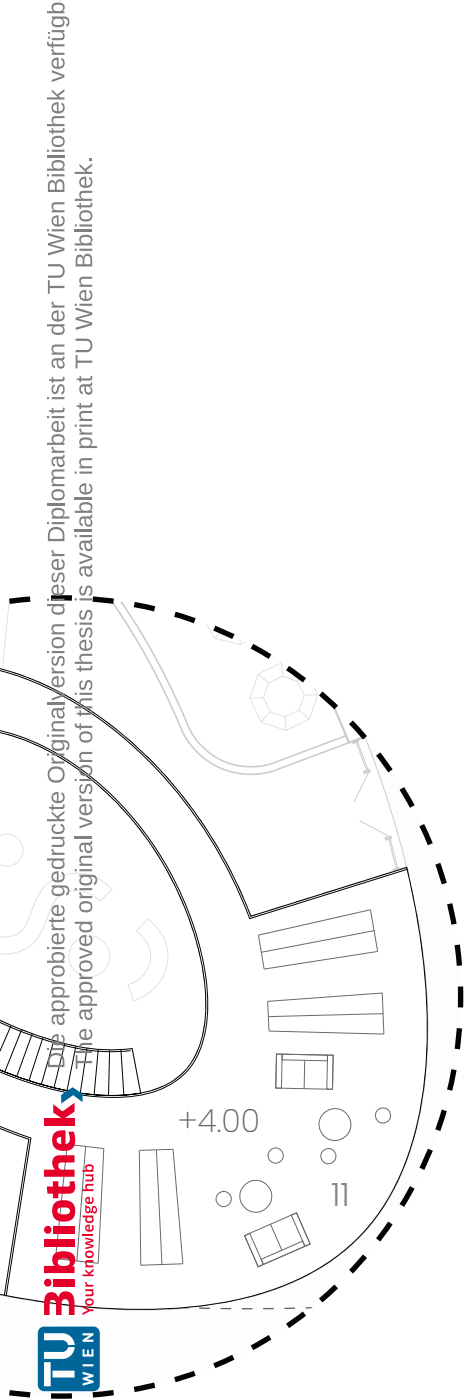


Figure 61. Floor plan 200. Collect & Recycle



IV. grow & sell

IV.1 greenhouse	388 m ²
IV.2 storage shelves	10 m ²
IV.3 cafe	54 m ²
IV.4 kitchen	25 m ²
IV.5 kitchen storage	6 m ²
IV.6 storage	13 m ²
IV.7 cafe gallery	131 m ²

The grow & sell area centers around the greenhouse, where community members come together to utilize the compost generated in the recycling process to cultivate plants and vegetables. At the heart of the greenhouse is a glassed cafe bistro, where individuals can enjoy meals and beverages while overlooking the garden through the transparent walls. The cafe is equipped with a bar, a small kitchen, and storage facilities. It also features an intermediate floor that houses a gallery with additional seating options. Visitors can enjoy a panoramic view of

the landscape through the transparent roof of the greenhouse. This strategic layout not only maximizes space but also provides an immersive experience, connecting the interior with the surrounding natural environment. Storage for compost, gardening tools, and equipment is integrated into the design. Shelves along the walls and the area beneath the stairs leading to the cafe gallery, also serve as practical spaces for storing essentials. The greenhouse incorporates a secondary access point, dedicated to supplying it with compost and necessary tools.

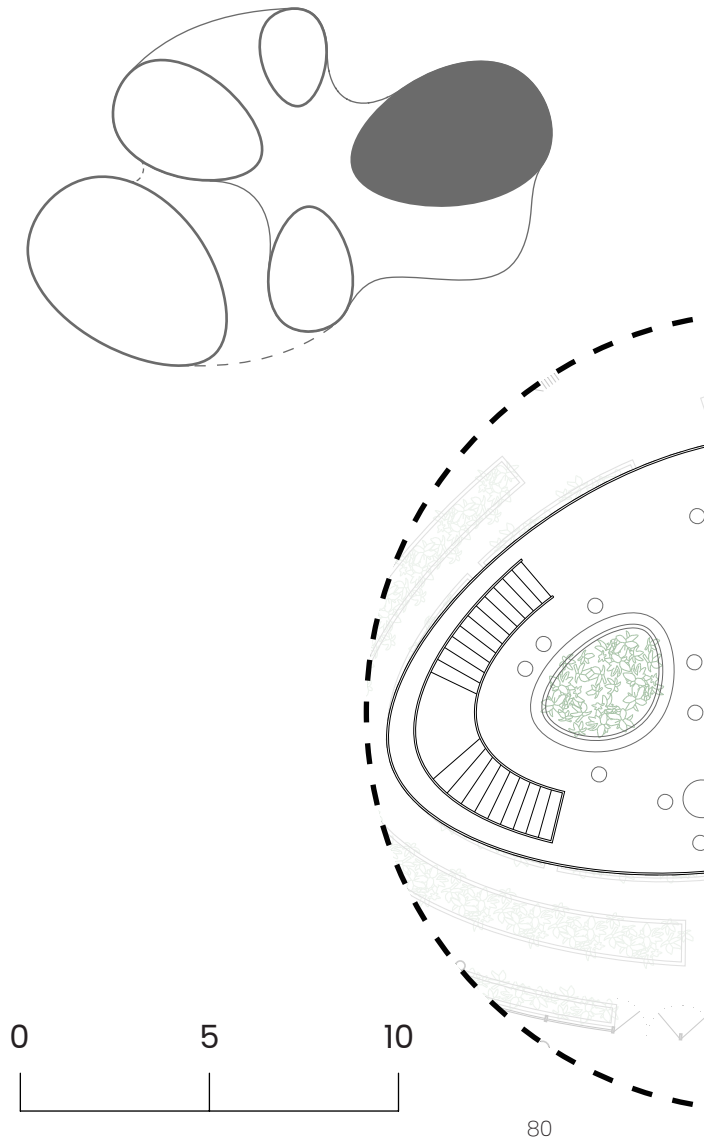
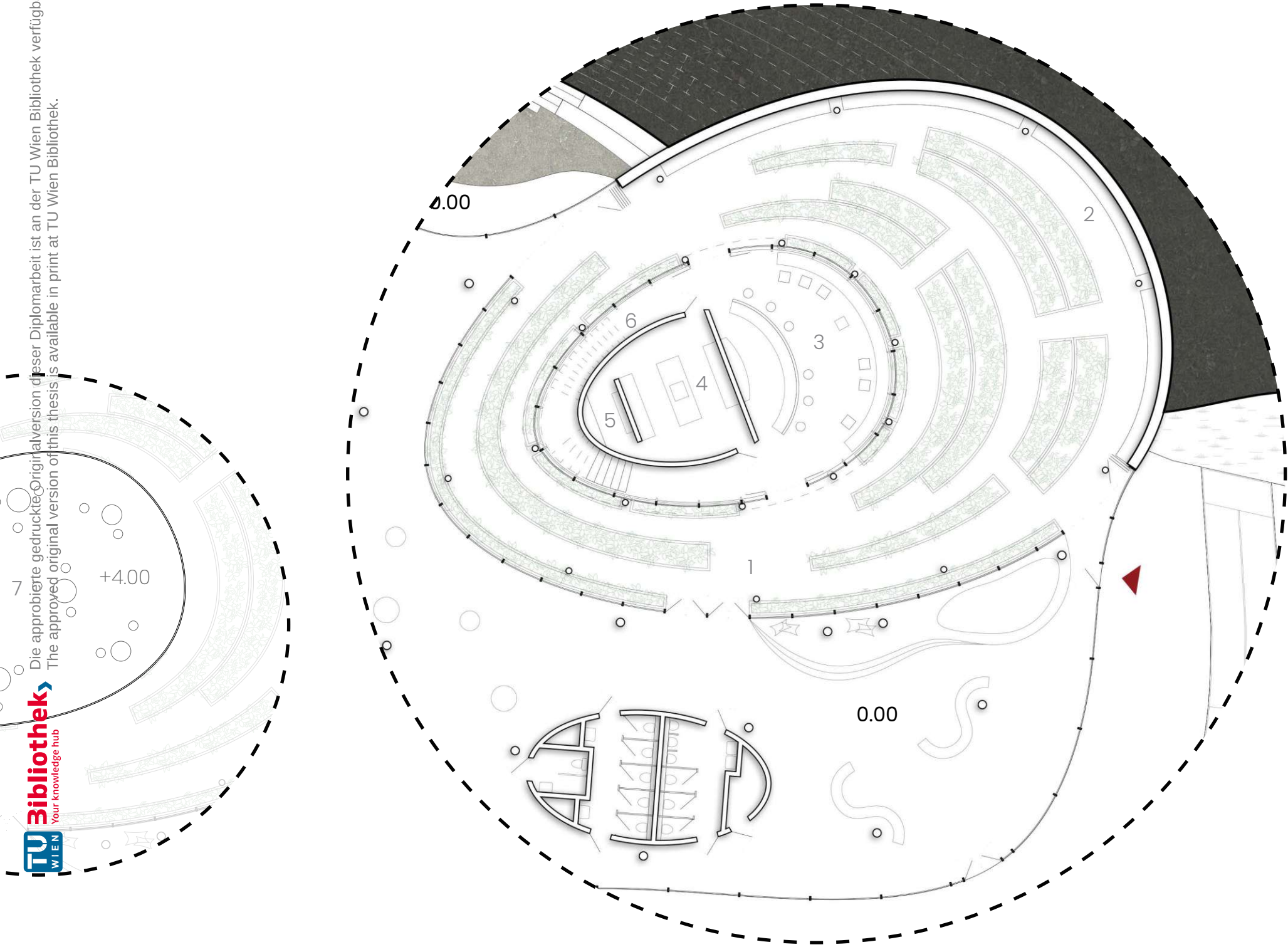
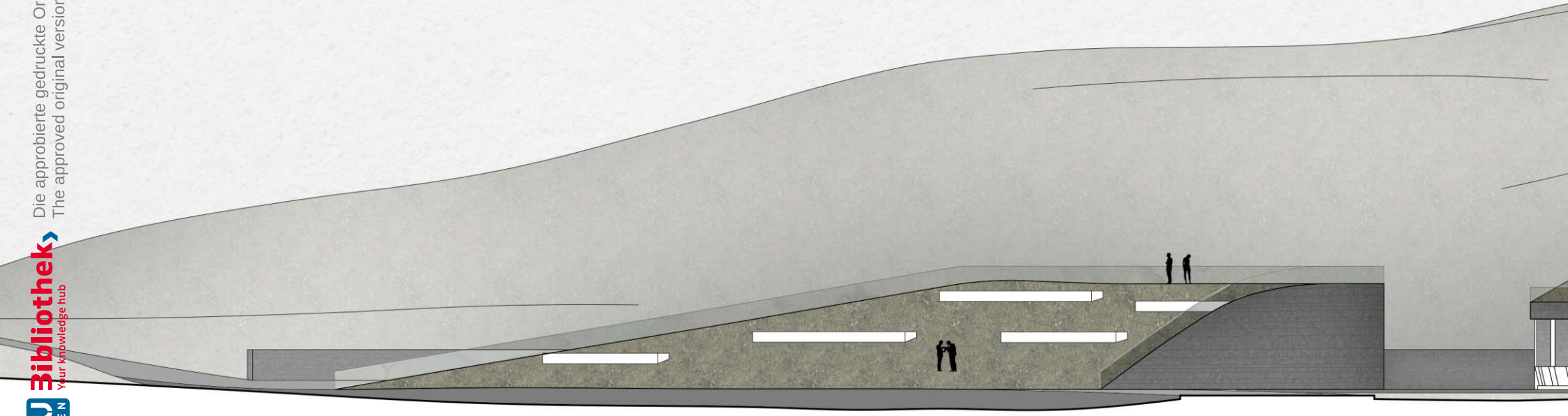


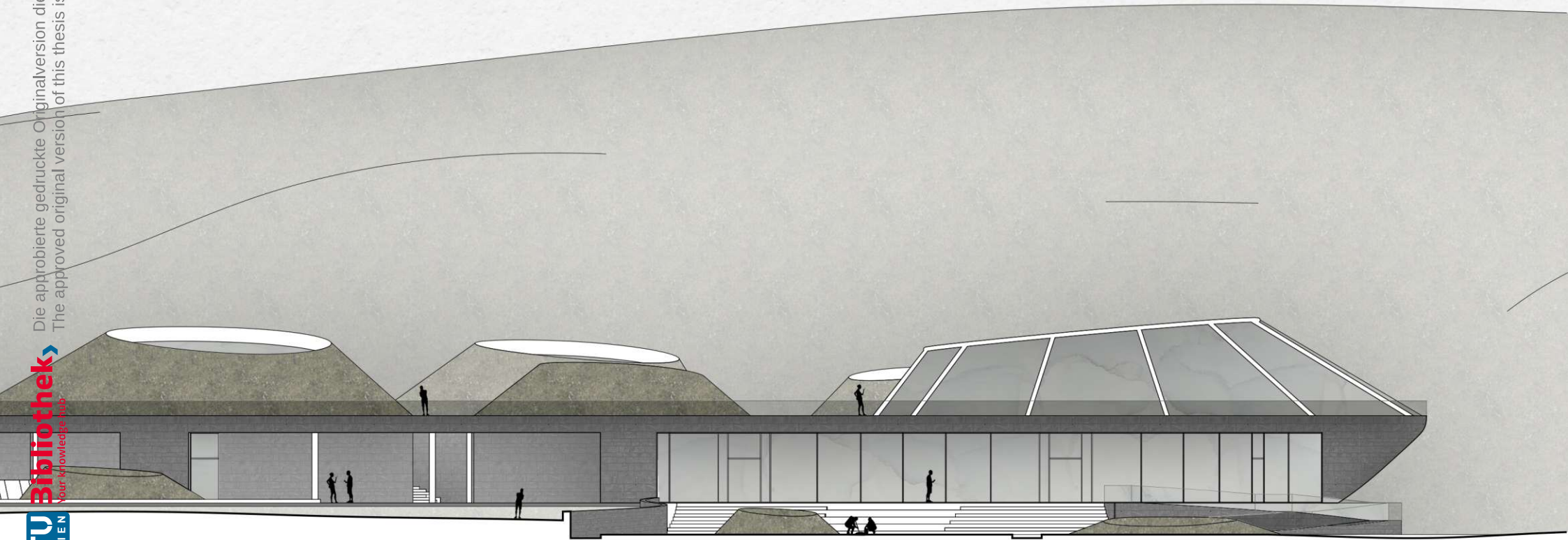
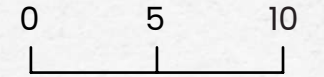
Figure 62. Floor plan 200. Grow & Sell

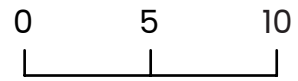
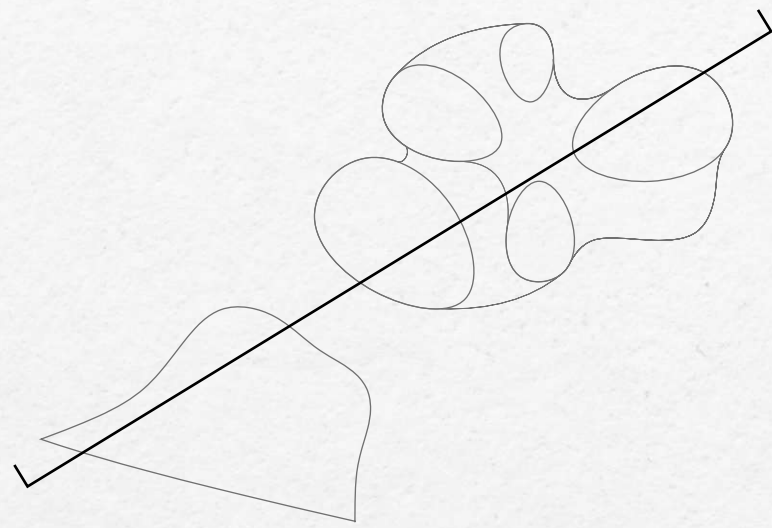


5.3

elevation 1:300







+6.00 ▾

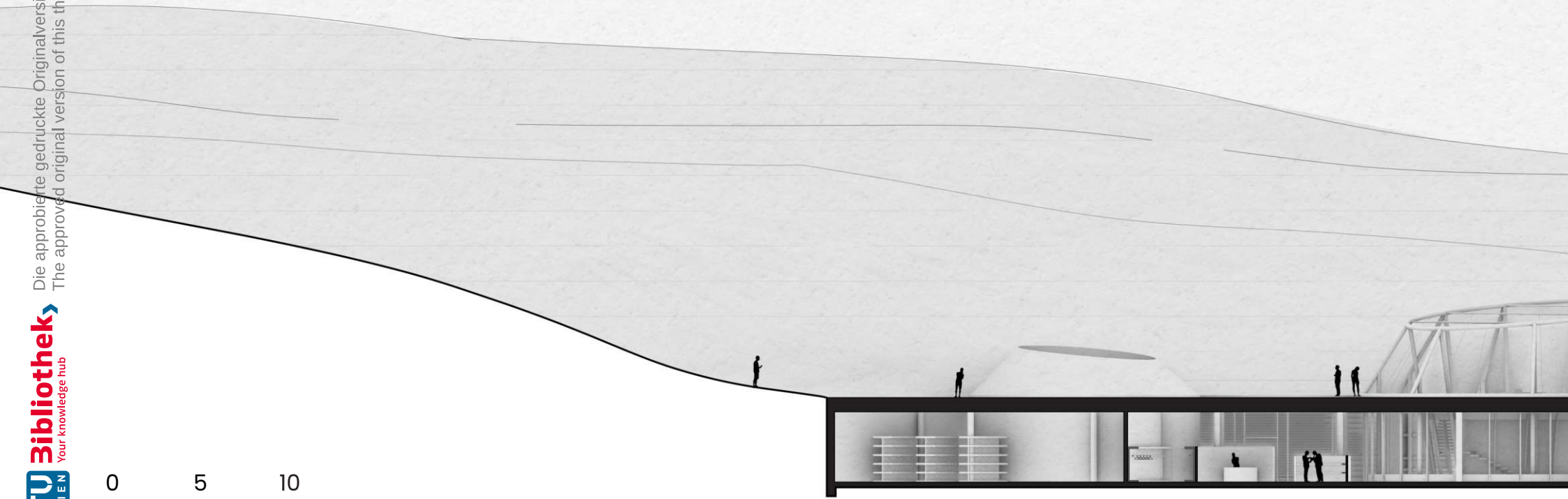
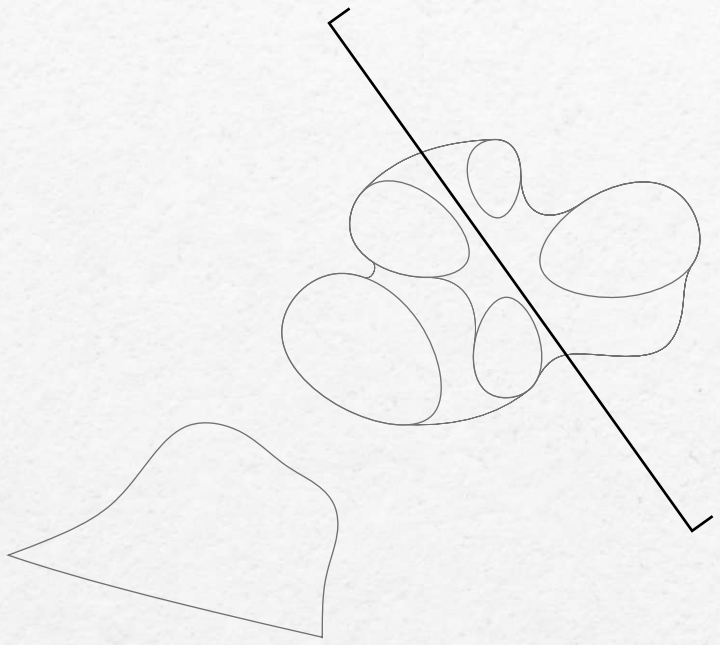
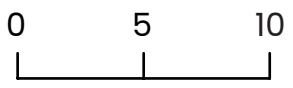
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5.4

section AA

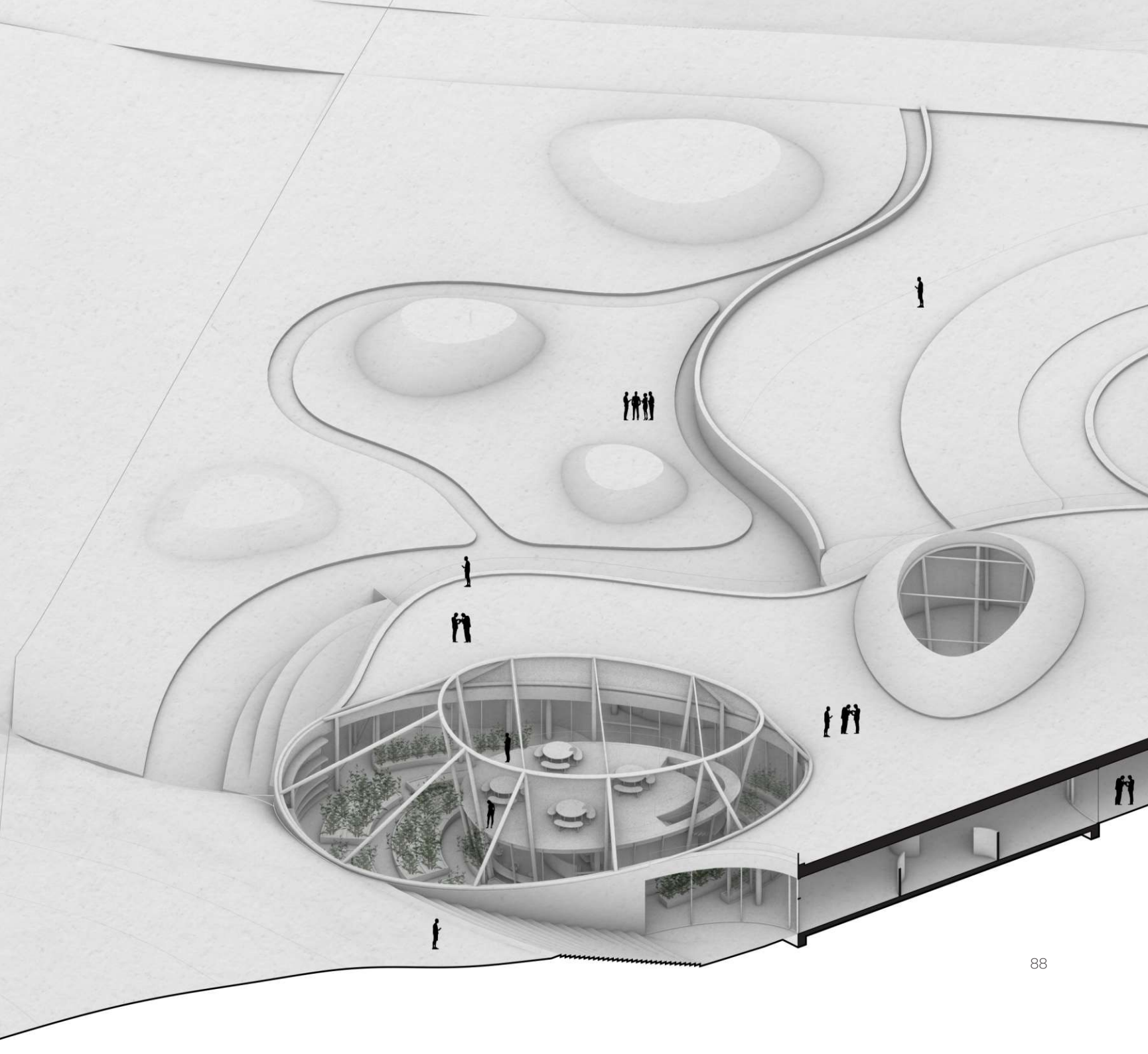
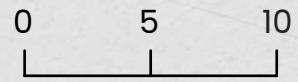




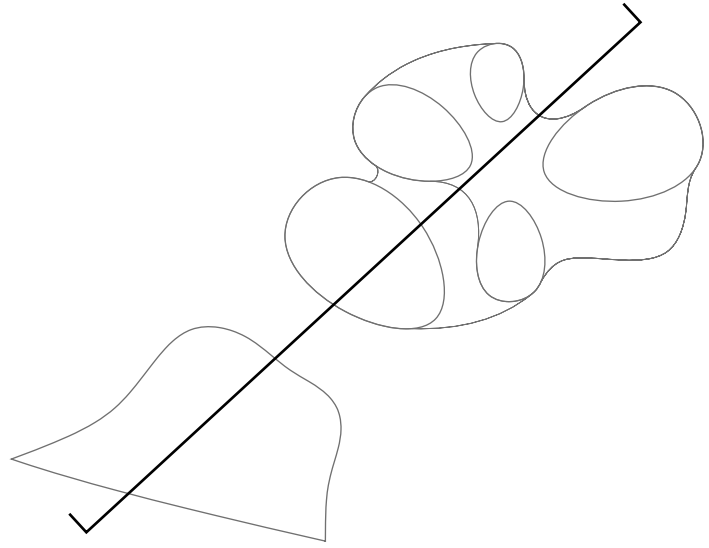
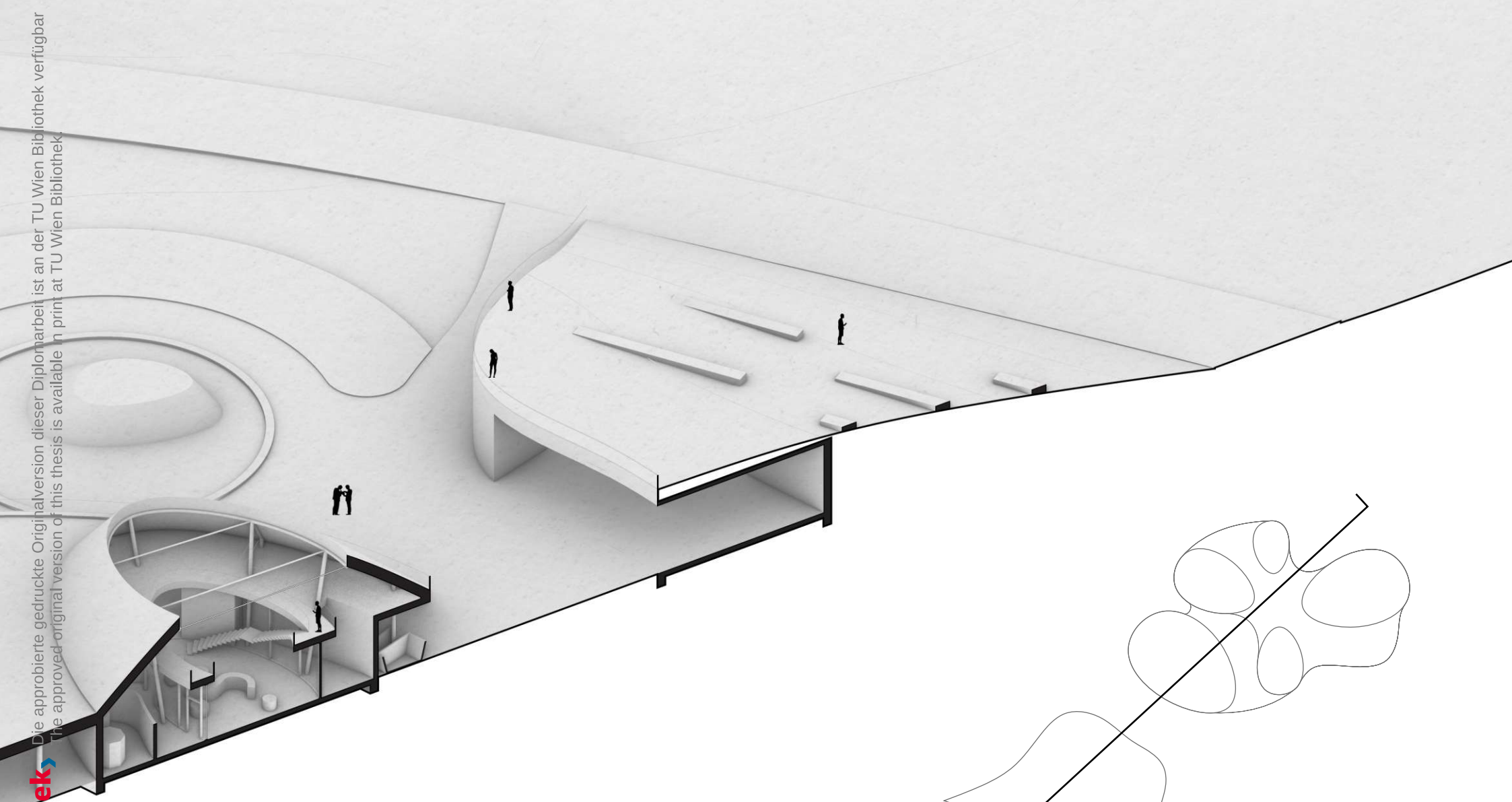
5.4

section BB





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5.5

axonometric section

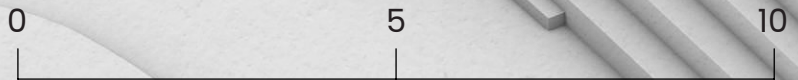
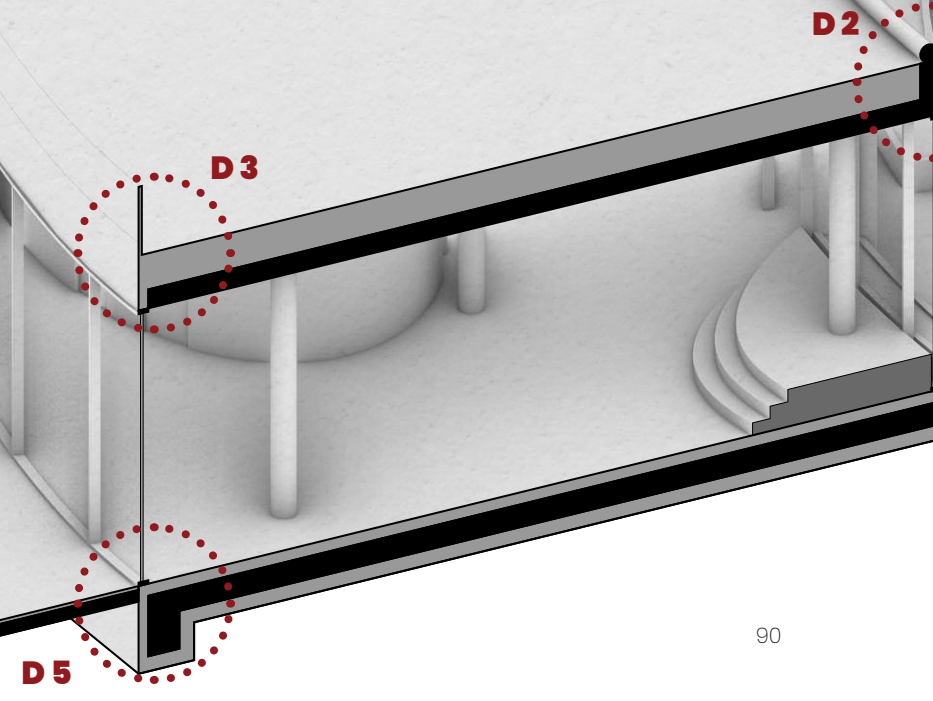
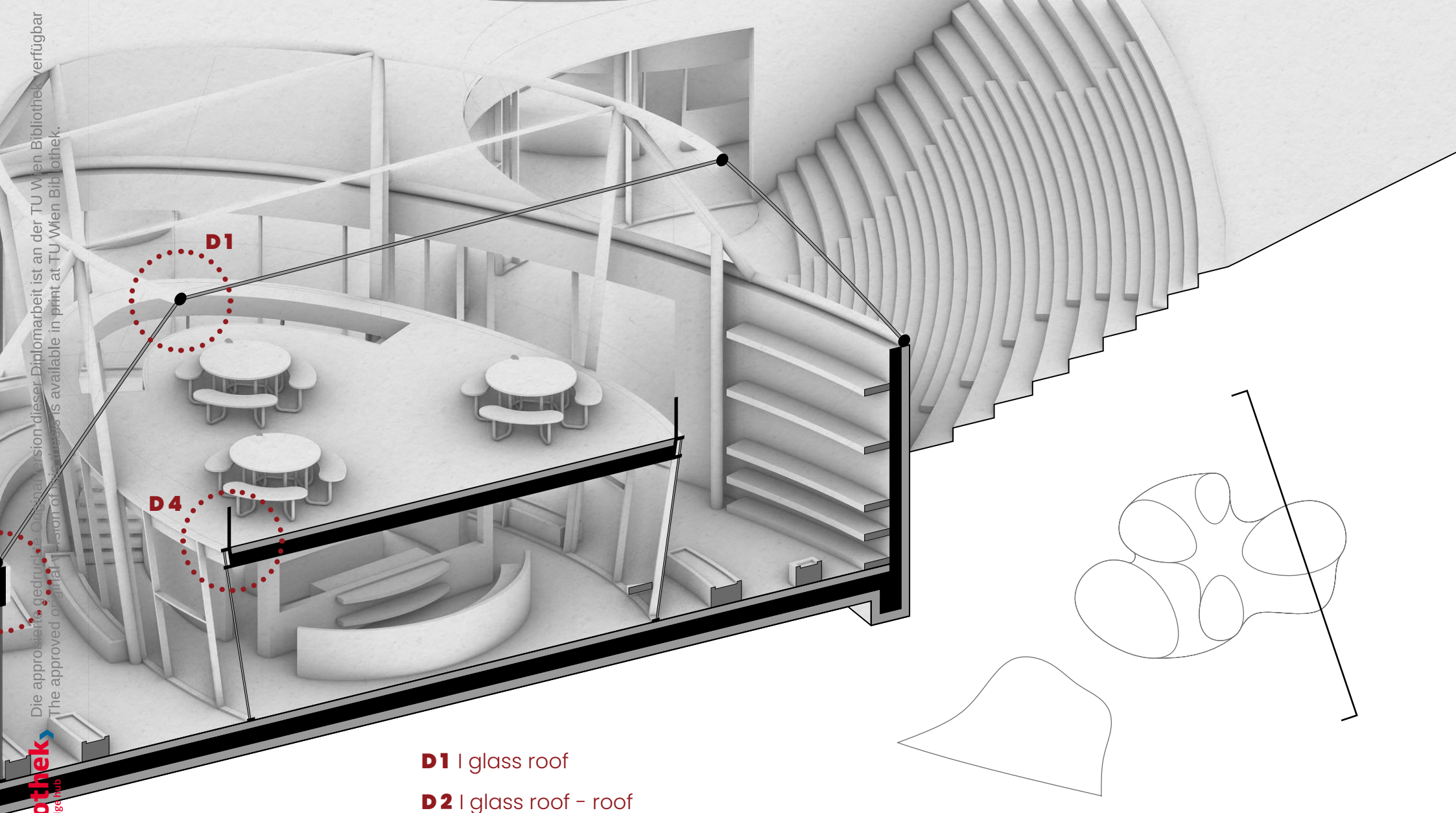


Figure 67. Facade section 100





- D1** | glass roof
- D2** | glass roof - roof
- D3** | walkable green roof - railing
- D4** | intermediate floor ceiling
- D5** | floor construction

5.6

facade section 1:100

5.8

details 1:20

Figure 68. Details 20

D1 glass roof

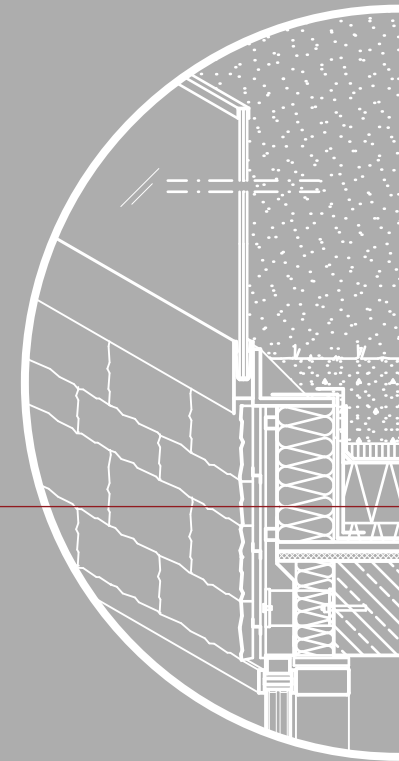
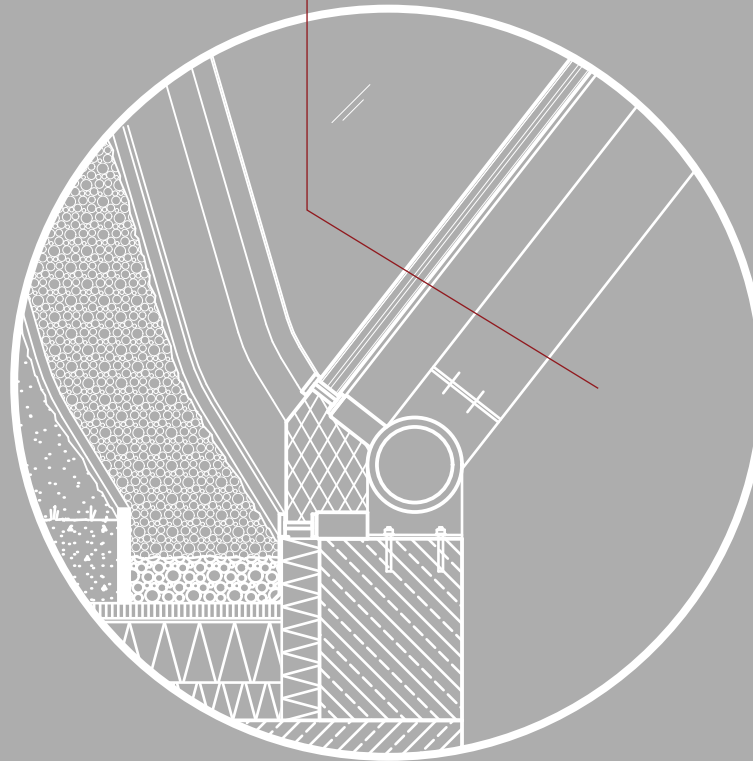
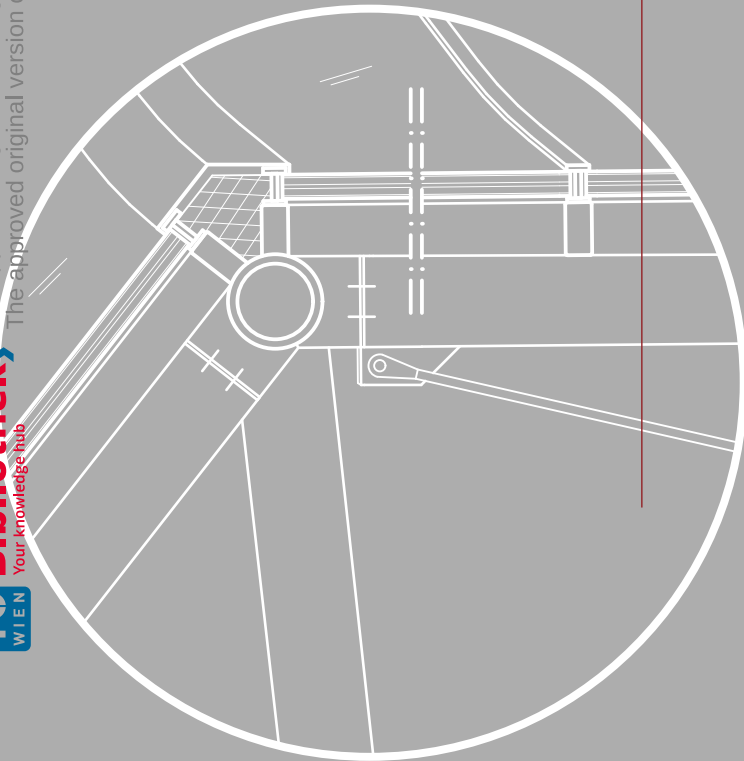
structural glas roof
secondary steel beam
primary steel beam

D2 glass roof - roof

structural glas roof
secondary steel beam
primary steel beam

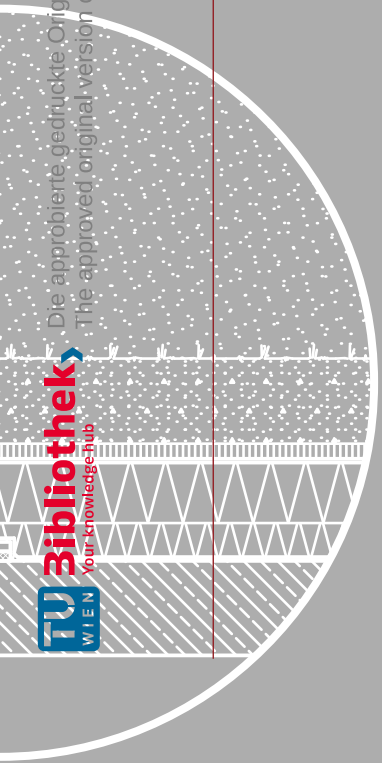
D3 railing - facade

basalt stone panel
substructure with profile
waterproofing
steel profile (insulation
inbetween)
aluminium sheet profile
vapor barrier



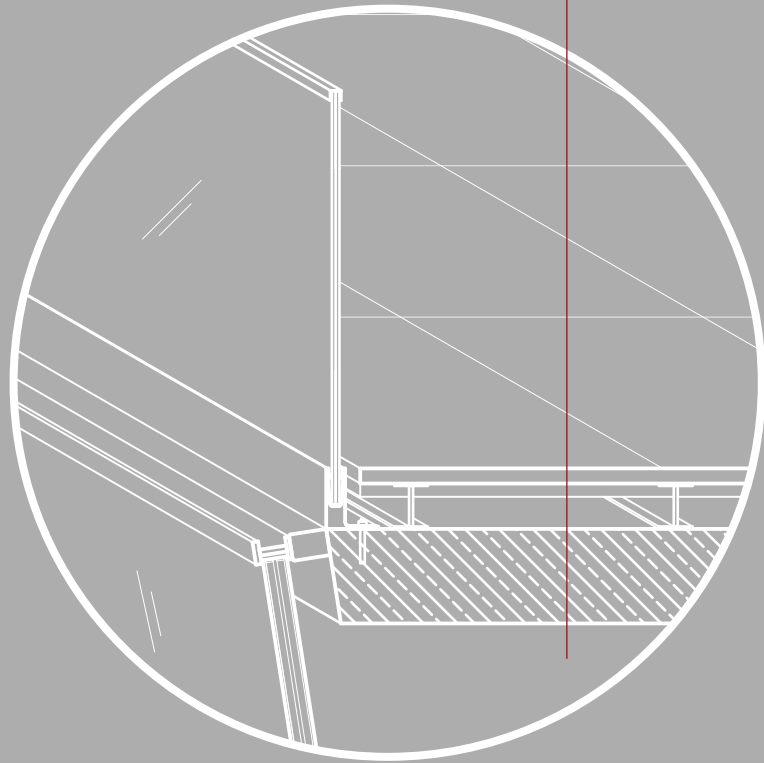
D3 walkable green roof

- native shrubs and mosses
- substrate
- filtration layer
- drainage
- protection layer
- waterproof membrane
- rigid insulation
- vapor control layer
- low carbon concrete roof deck



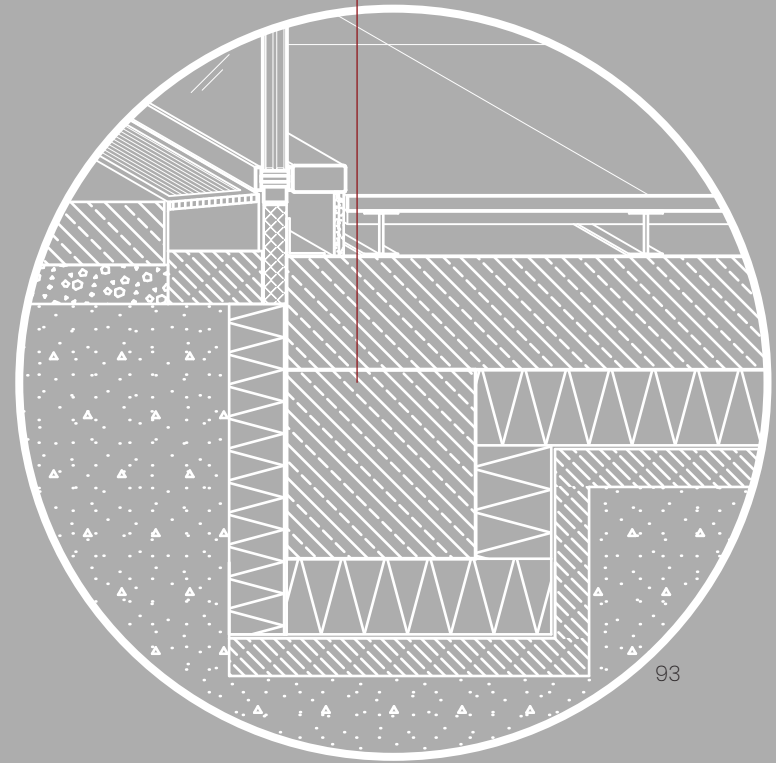
D4 intermediate floor ceiling

- terrazzo tiles
- raised floor system with underfloor heating and support pedestals
- reinforced concrete floor slab



D5 floor construction

- terrazzo tiles
- raised floor system with underfloor heating and support pedestals
- reinforced concrete floor slab
- underslab thermal insulation
- lean concrete



5.9

visualisations

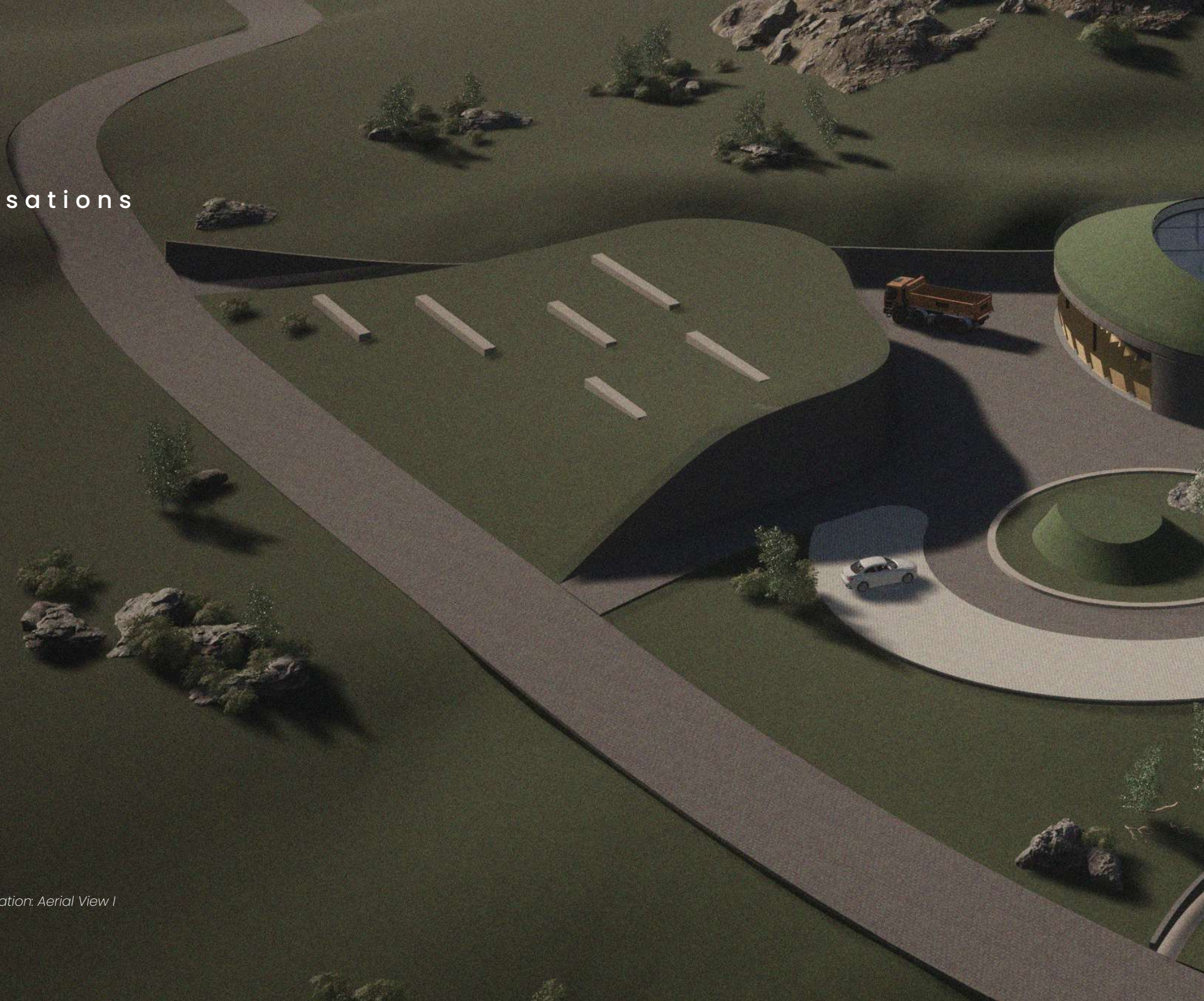
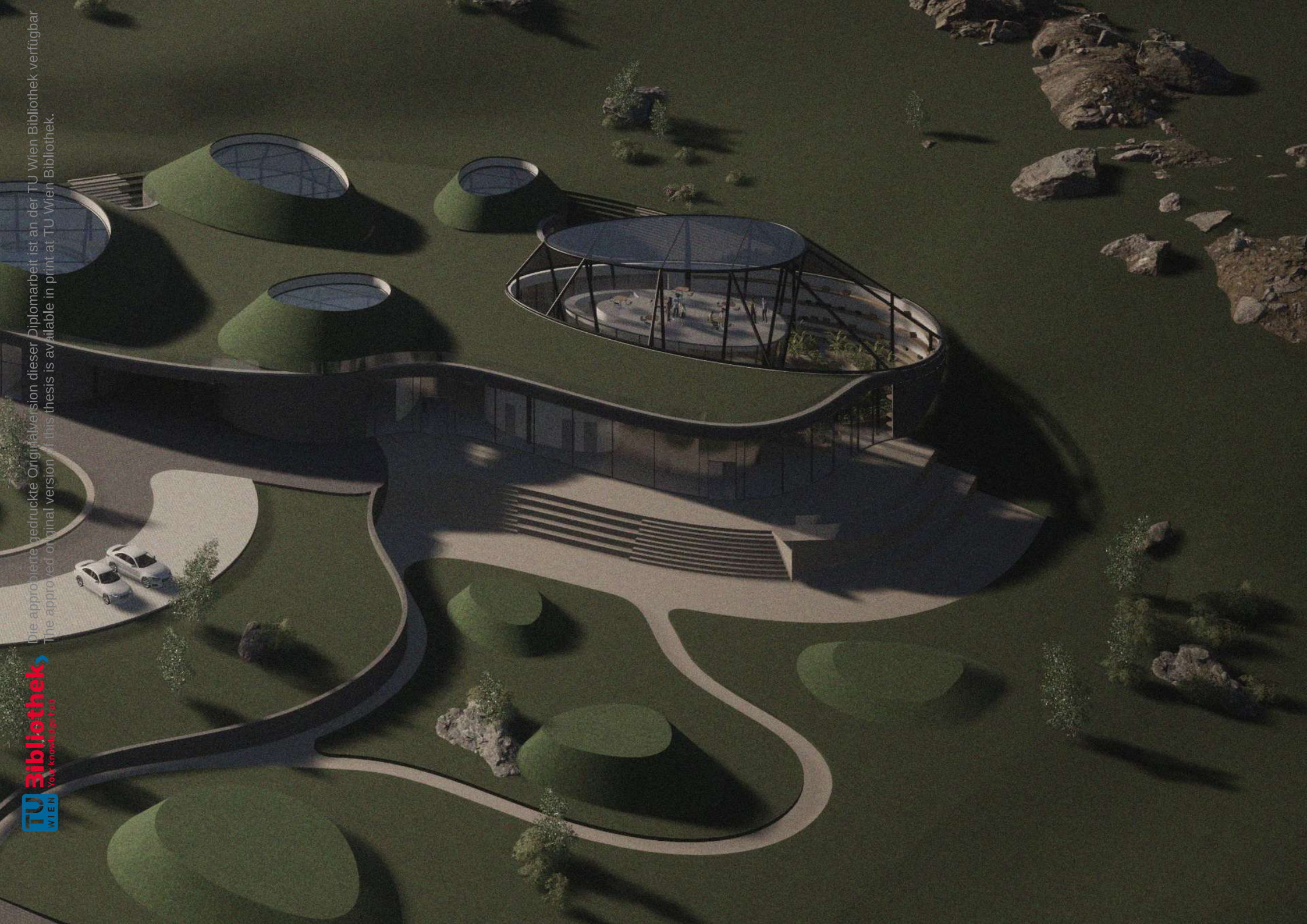


Figure 69. Visualization: Aerial View I

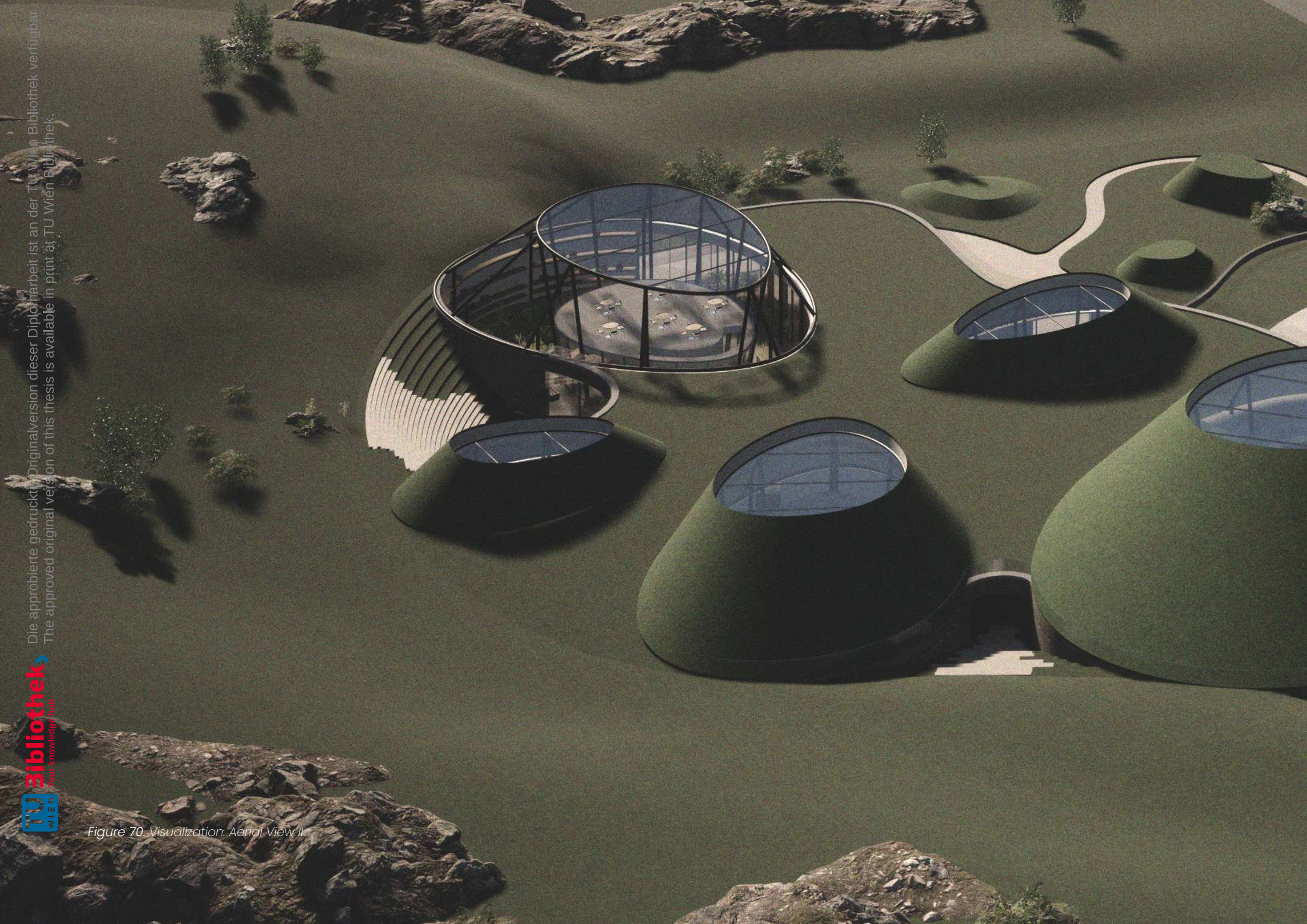
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Figure 70. Visualization: Aerial View II



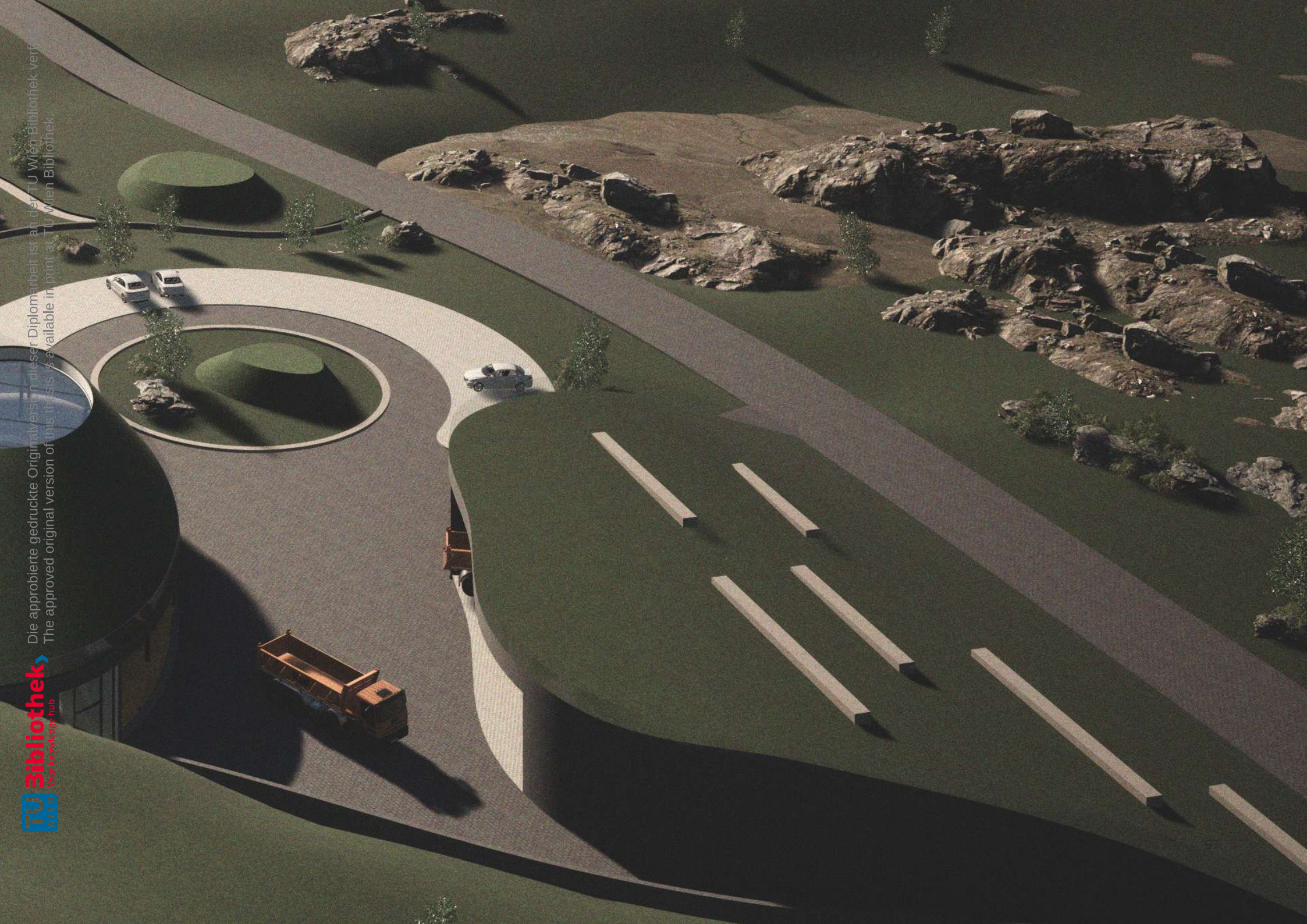
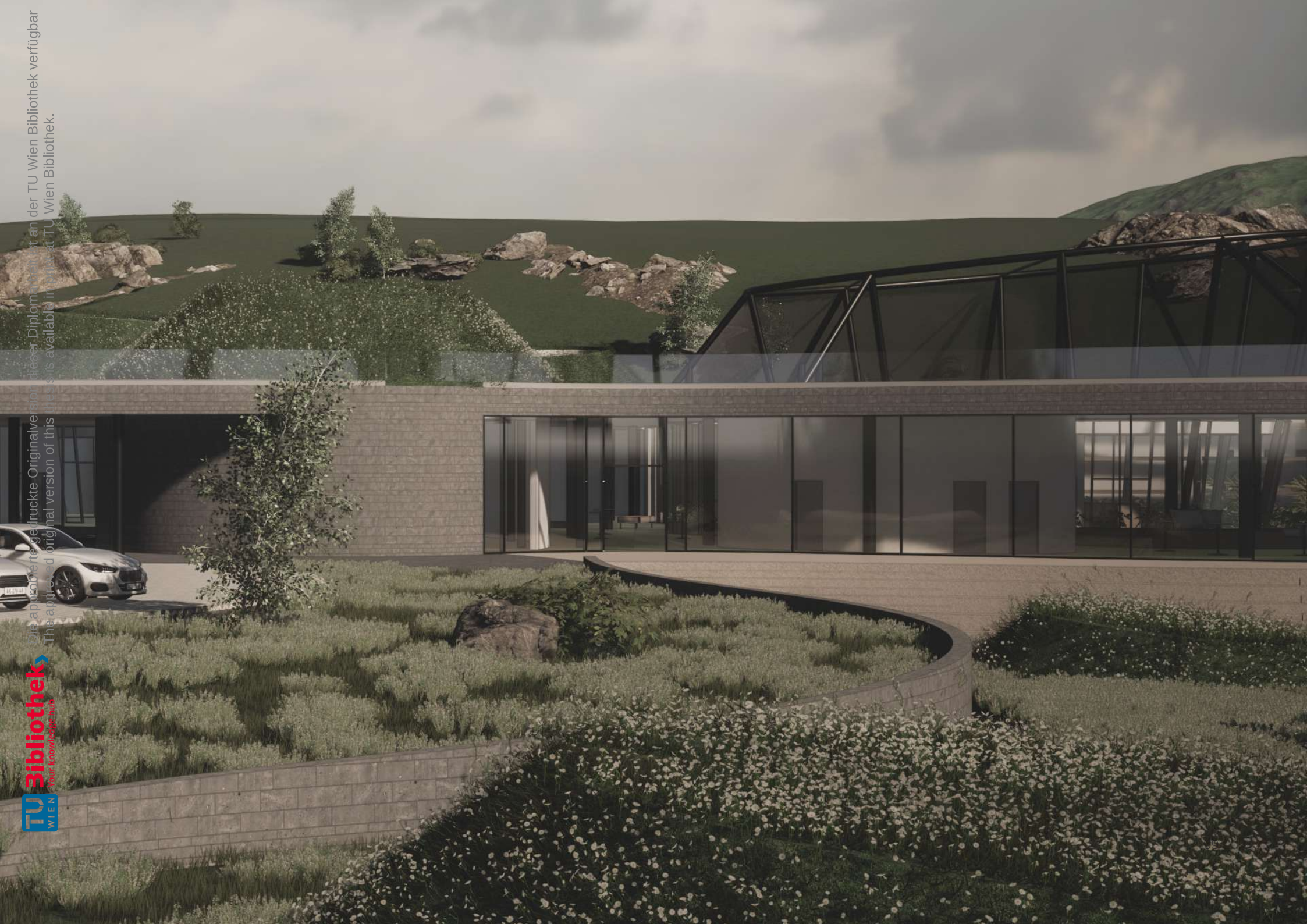




Figure 71. Visualization: View from the street

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Figure 72. Visualization: View from the hill

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Figure 73. Visualization: View from the hill II

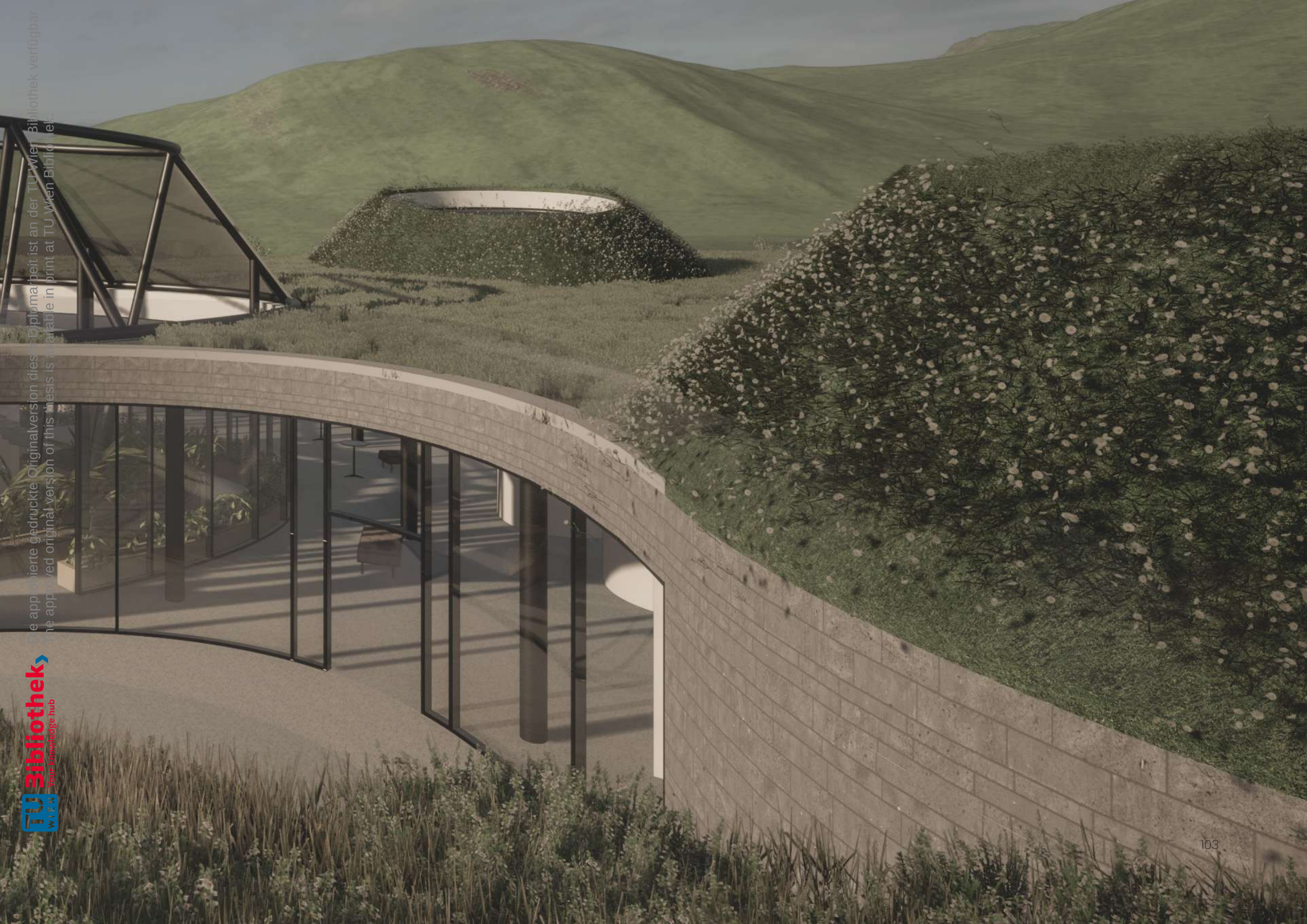
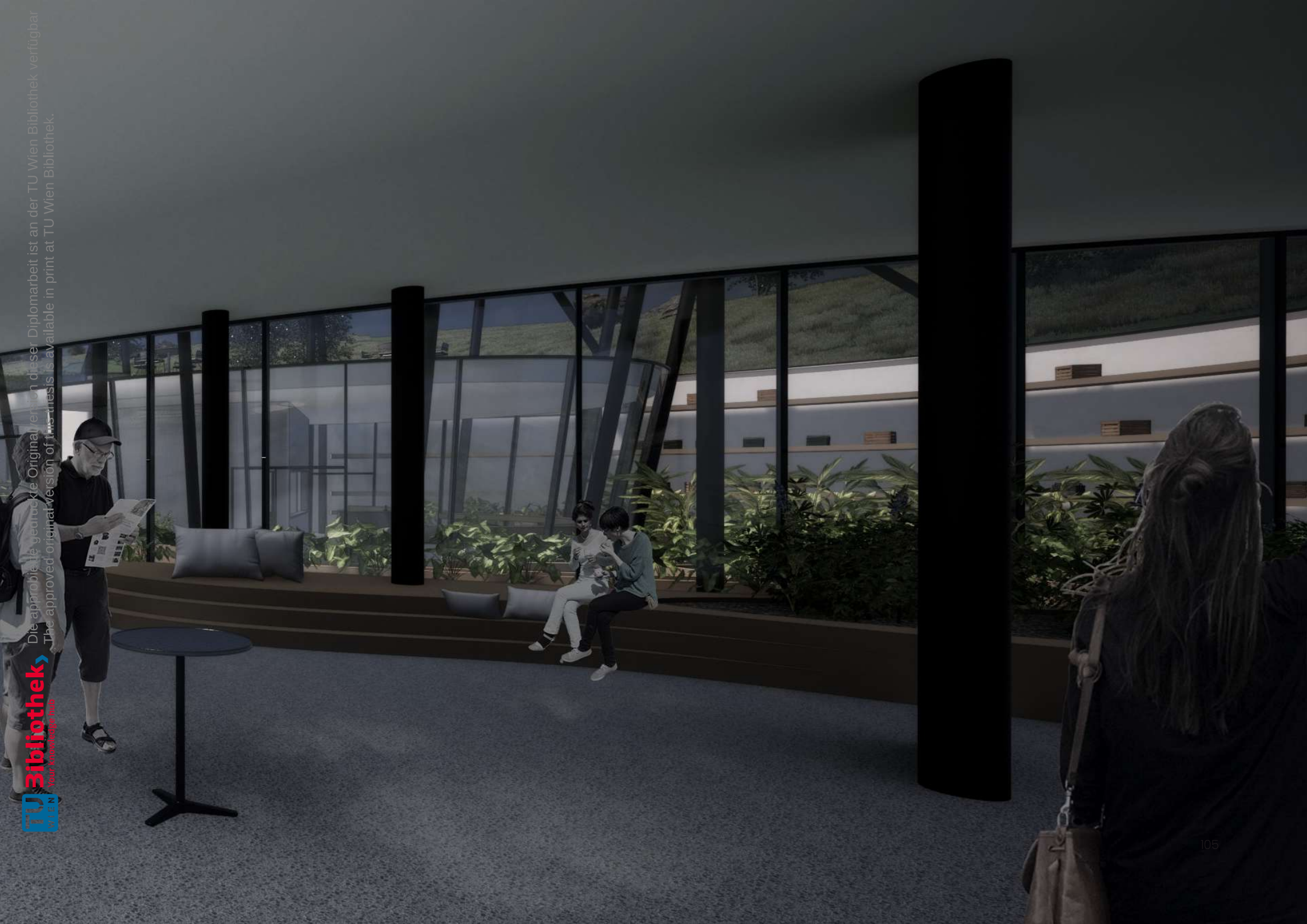


Figure 74. Visualization: Interior | Foyer 1



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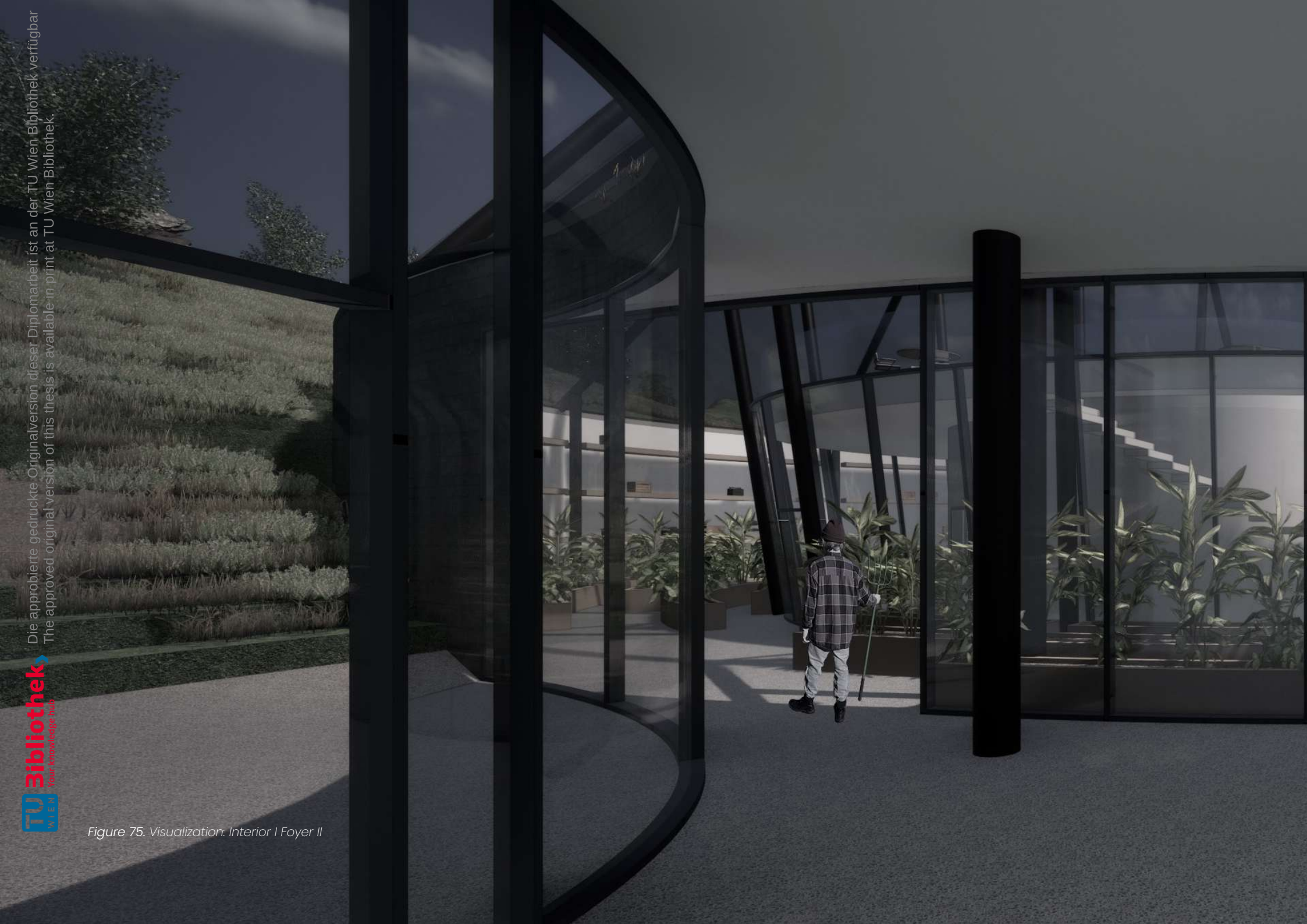


Figure 75. Visualization: Interior I Foyer II

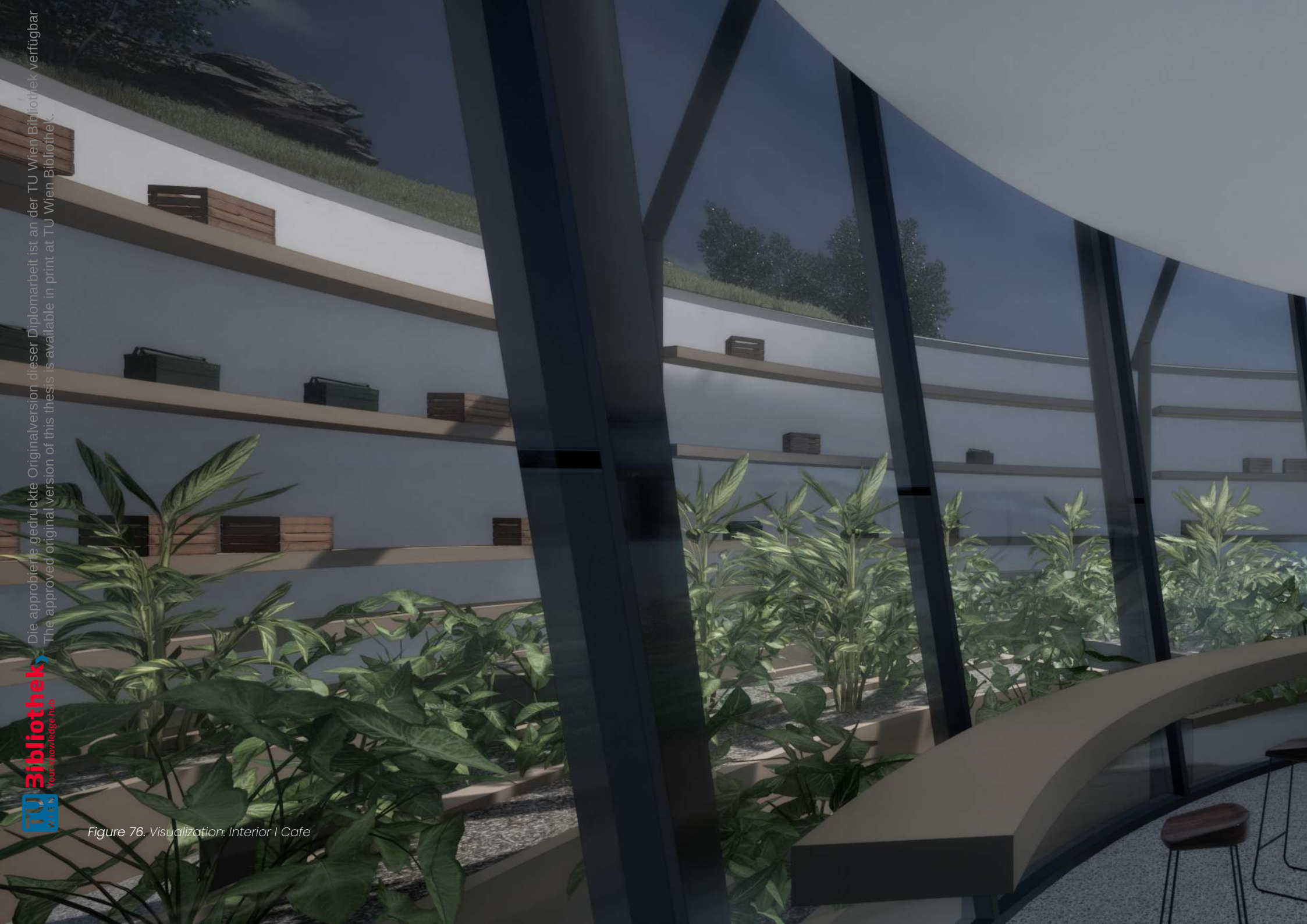
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Figure 76. Visualization: Interior I Cafe



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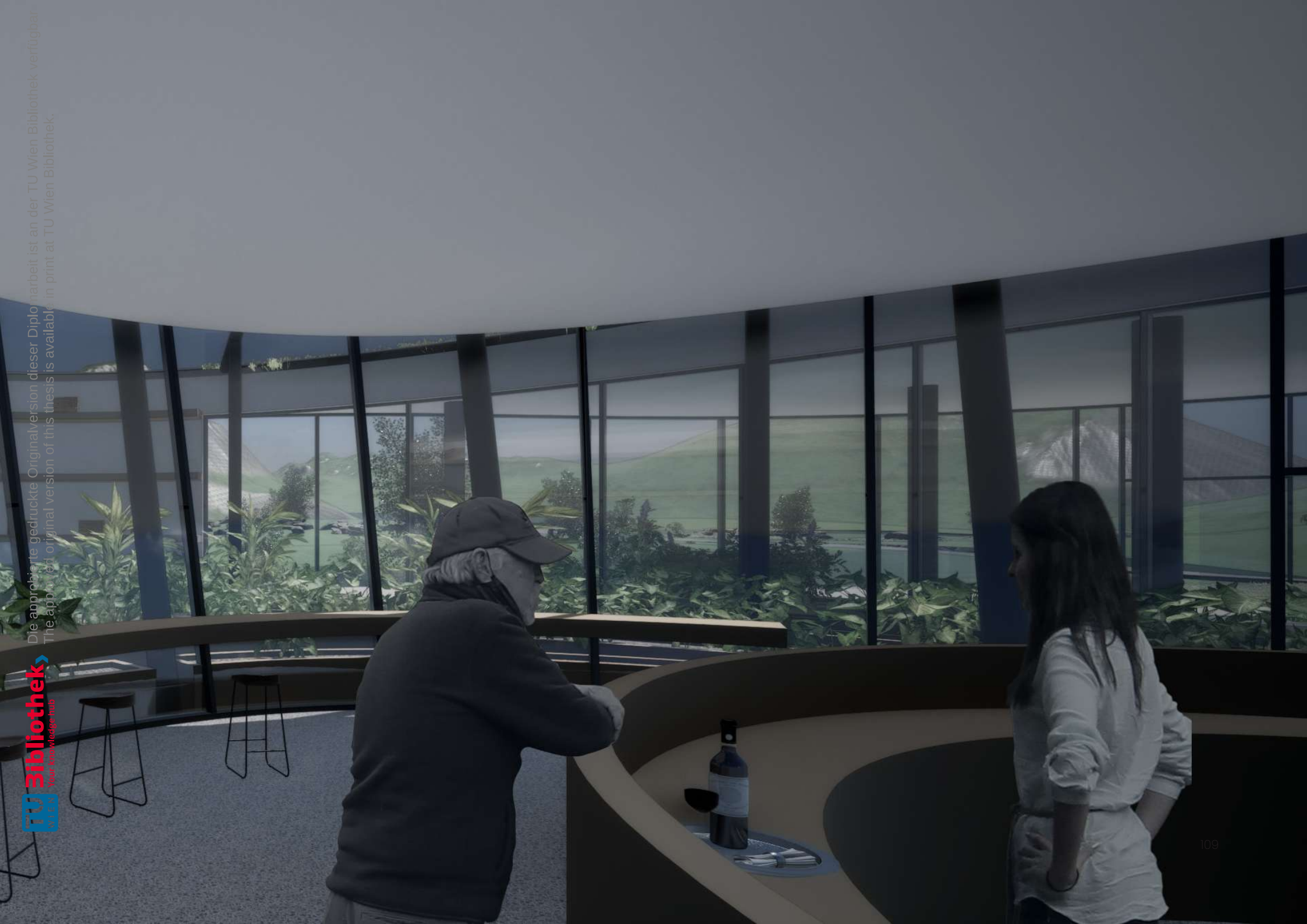




Figure 77. Visualization: Interior | Organic waste management



assessment

6.1

area evaluation

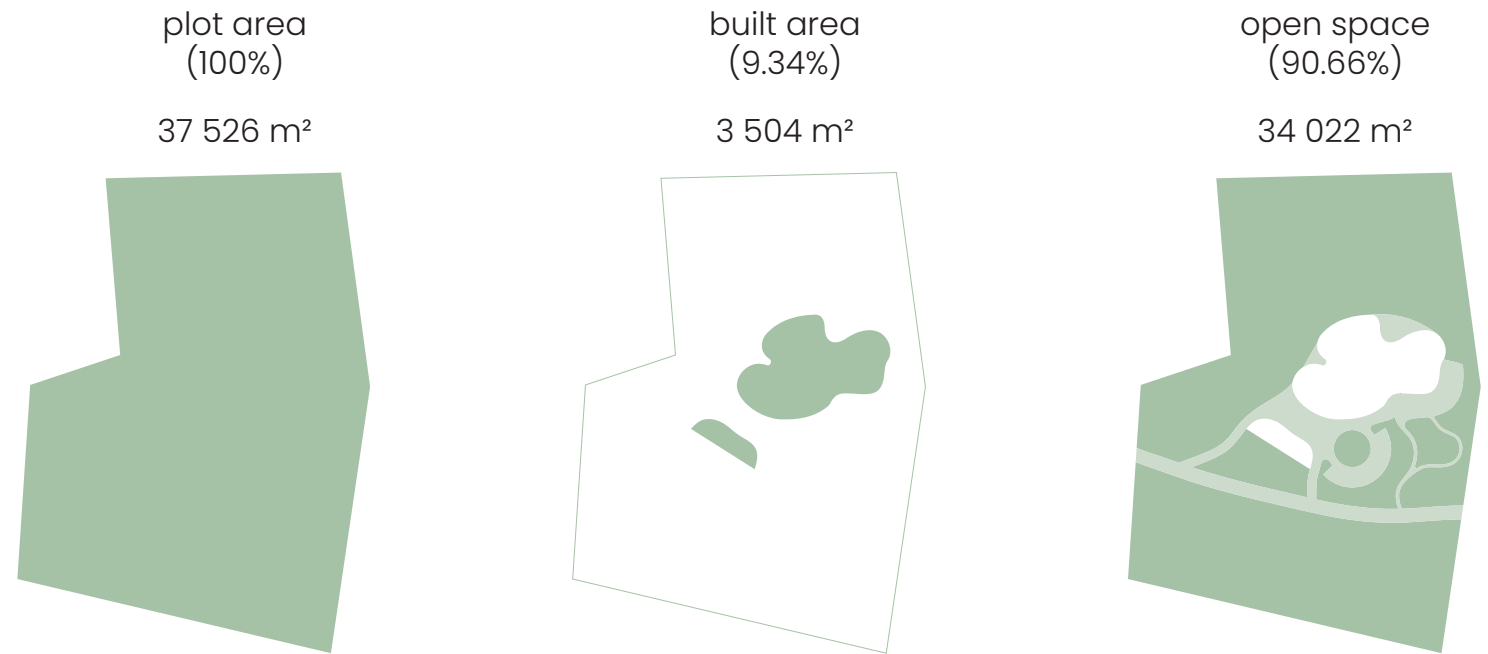


Figure 78. Assessment illustrations!



usable area
(NF)

2 421 m²



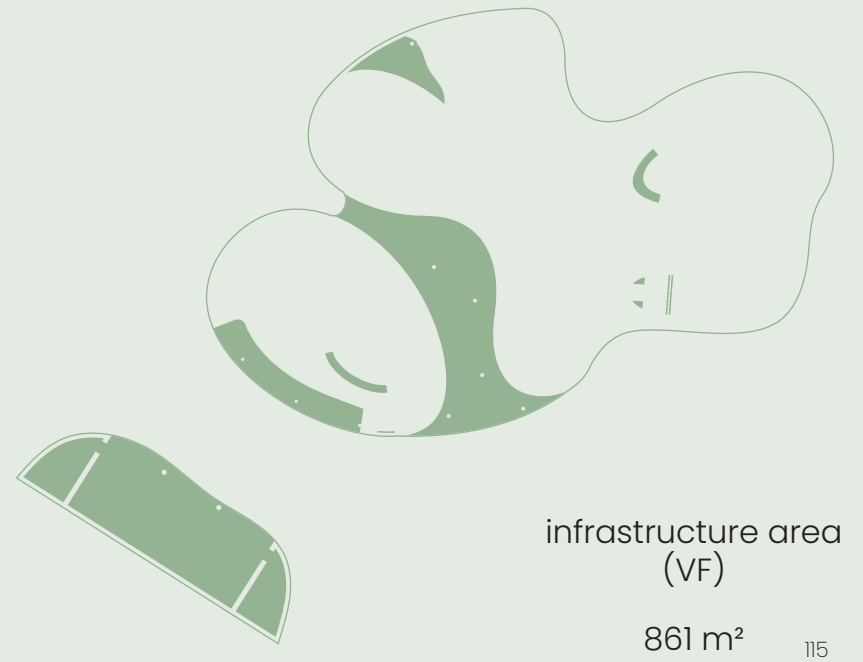


Figure 79. Assessment illustrations

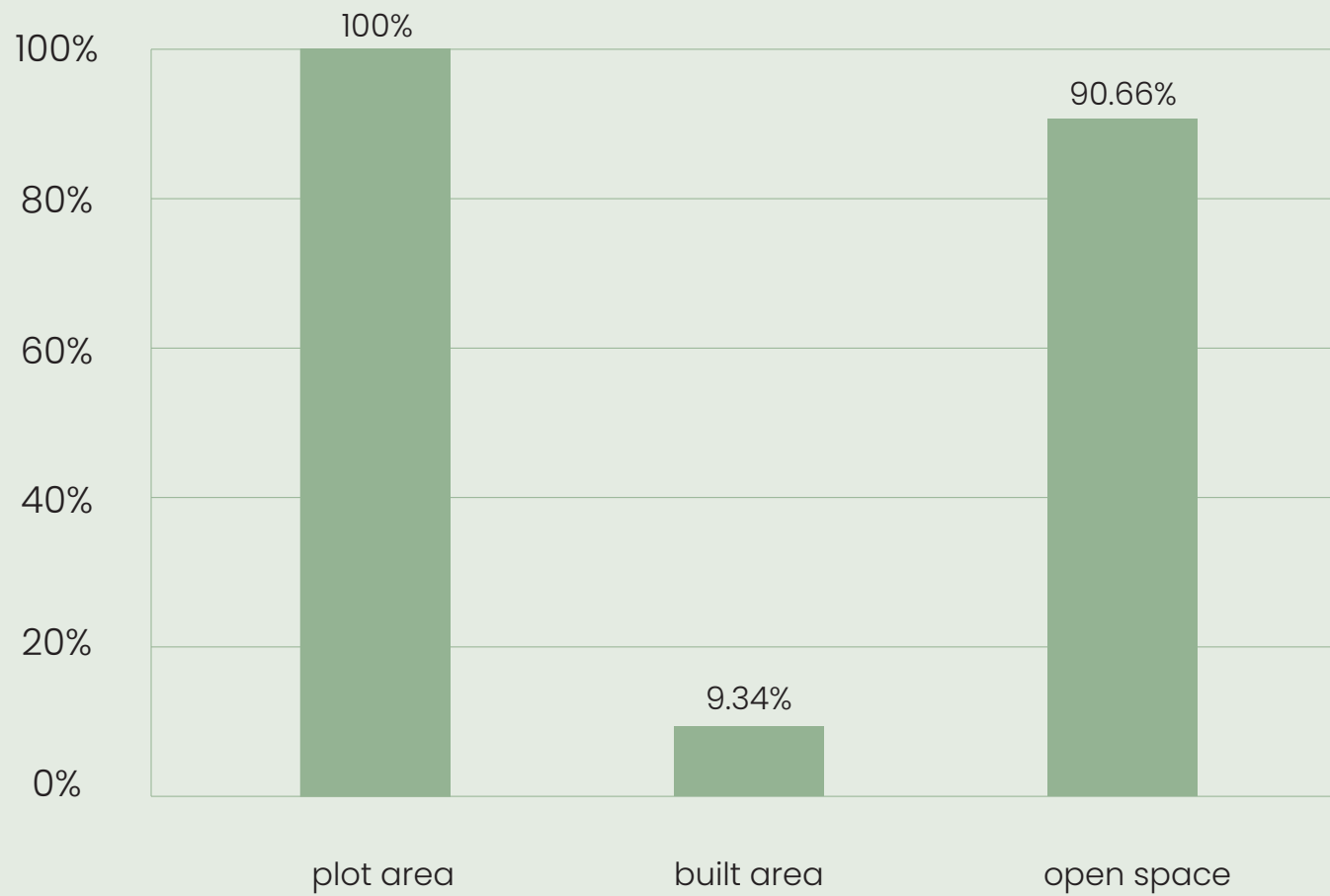
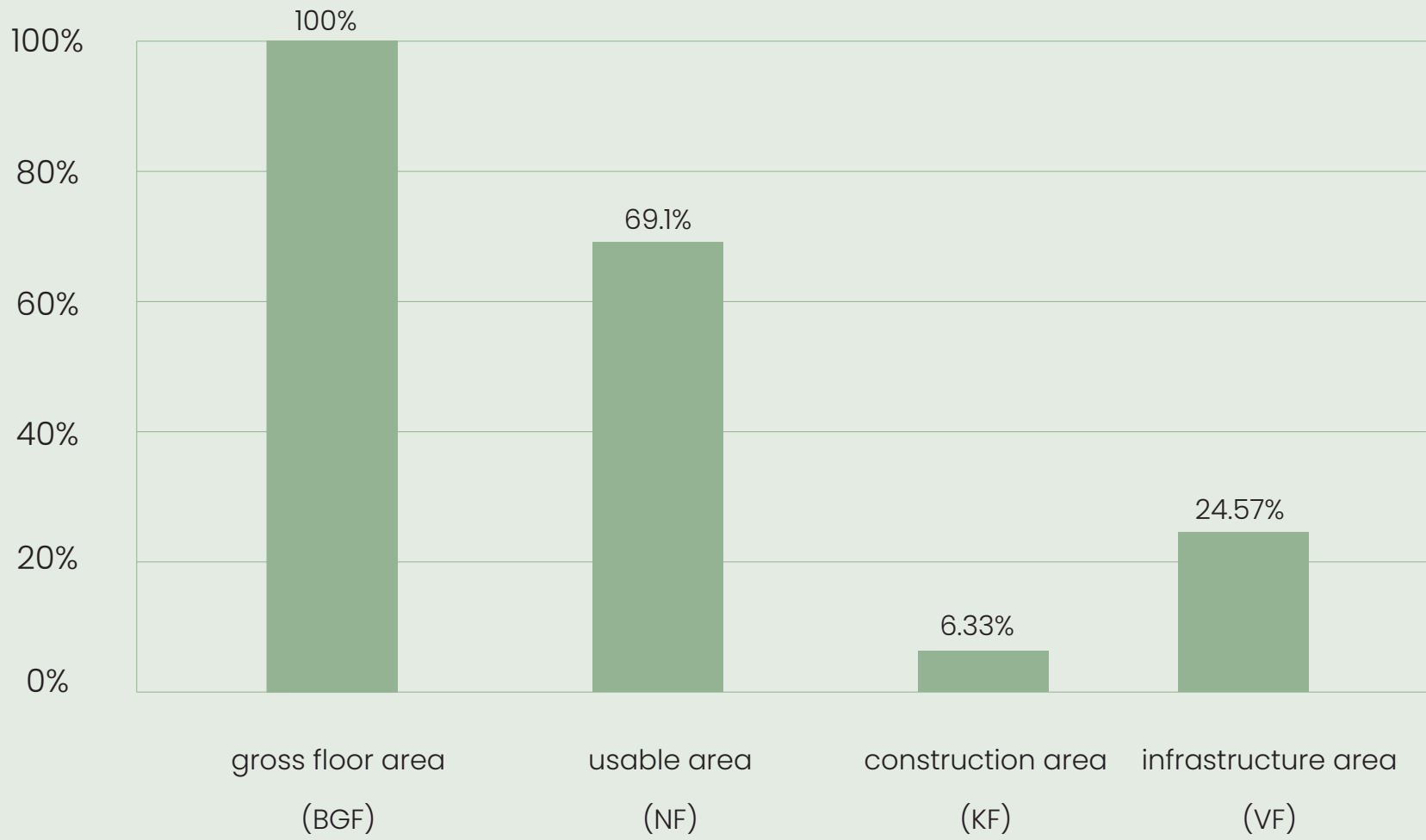


Figure 80. Assessment Statistic



conclusion

This resulting project addresses the need for a new communal space for the people of a newly formed municipality. It stands as a symbol of collaboration, providing a place for community members to unite in their shared commitment to a more sustainable future.

The core functions of the center - meet & learn, upcycle & exchange, collect & recycle, grow & sell - collectively promote a circular economy, with careful consideration not only for practicality but also for a seamless integration into the building surroundings. The structure doesn't have the conventional design associated with technical, recycling centers; instead, it seeks to mimic the

nearby pseudo craters, harmoniously blending with it. To achieve a better integration, green roofs have been used in the design. Beyond their ecological benefits, they serve as an extension of the landscape. This feature is accessible to both locals and tourists, thereby optimizing the building's usability. The same approach has been extended to the depot, ensuring an integrated design.

Through this project, I aimed to make a meaningful contribution towards environmental consciousness and strive for a better, more sustainable future.

s o u r c e s

literature

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figure index

Figure 1. View over the lake and volcano
(<https://architecturecompetitions.com/icelandcommunityhouse/brief>) [last access: 12. 2023]

Figure 2. Map of Iceland
© Vemaps.com + Adobe Illustrator | Andreea Danciu

Figure 3. Situation plan Myvatn area
© openstreetmap.org + Adobe Illustrator | Andreea Danciu

Figure 4. Inside the Hverfjall crater
© Picture by Benno Wutzl

Figure 5. Pseudocraters of the surrounding area
(<https://unsplash.com/photos/a-body-of-water-with-land-in-the-back-lwbbEnfXRqA>) [last access: 12. 2023]

Figure 6. Building site
Rhino + Adobe Illustrator | Andreea Danciu

Figure 7. Map of Myvatn region
© openstreetmap.org + Adobe Illustrator | Andreea Danciu

Figure 8. Circular economy illustration
<https://i.pinimg.com/originals/c/8e/82/8e821a719ec3341a6c344c7772f999.jpg> [last access: 12. 2023]

Figure 9. Population development in the municipality of Þingeyjarsveit
<https://www.gaumur.is/en/samfelag-1/11-lydfraedi> [last access: 12. 2023]

Figure 10. Upcycled items
<https://www.gabarage.at/> [last access: 12.2023]

Figure 11-16. Concept variations
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Figure 47. Illustration of *Myosotis Arvensis*
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Figure 47. Illustration of *Vaccinium Myrtillus*
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Figure 80. Assessment statistics
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a b o u t



ANDREEA DANCIU

andreea.danciu96@yahoo.com

068110784736 | Vienna, Austria

nationality romanian
date of birth 22.03.1996

EDUCATION

MA in Architecture

2020 - ongoing
Technical University of Vienna
Vienna, Austria

BA in Architecture

2015 - 2020
Technical University of Vienna
Vienna, Austria

Romanian Baccalaureate

2011 - 2015
George Cosbuc National College
Cluj-Napoca, Romania

EXPERIENCE

Junior Associate
formfolgt architekten ZT GmbH
2021 - ongoing

Junior Associate
PPA architects ZT GmbH
2018 - 2020

SKILLS

CAD I Rendering

ArchiCAD I Rhino I Twinmotion

Adobe CC

Photoshop I Illustrator I
InDesign

Sonstiges

Modellbau I Graphic Design I
User Interface Design

LANGUAGES

Deutsch 
verhandlungssicher

English 
Muttersprache

Rumänisch 
Muttersprache

Spanisch I Italienisch 
gute Kenntnisse



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