



FAKULTA
STAVEBNÍ
ústav architektury

Studio subject: BGA036 - Atalier Architektonickej tvorby 5
Project name: Penzion Aviatic – Medlánky Airport Community Center
Academic year: 3. ročník / letný / 2025-2026
Supervisor: Prof. Ing. arch. Jiljí Šindlar, CSc.
Consultant: Ing. Olga Rubinová, Ph.D.
Author: Jakub Fábrić

CONTENT

- 1 INTRODUCTORY REPORT
- 2 LOCATION PLAN
- 3 SITE PLAN
- 4 DESIGN CONCEPT
- 5 OPERATIONAL SCHEME
- 6 FLOOR PLANS AND AXONOMETRIC VIEWS
- 7 SECTIONS
- 8 ELEVATIONS
- 9 MATERIAL PALETTE
- 10 VISUALISATIONS

INTRODUCTORY REPORT

The objective of this studio project is to develop an architectural study for the "Aviatic" Guest House a facility designed for short-term and temporary accommodation of pilots and sports aircraft crews within the premises of the Medlánky airport. The task is to design accommodation capacities, including comprehensive basic services encompassing dining, relaxation, and social-cultural activities. In line with the brief, emphasis is placed on architectural and design detail, not only within the interior itself but also in the overall shaping of the architectural space. The design simultaneously reflects normative requirements for barrier-free design and specific operational regulations for sports airport facilities.

Context and Site Analysis

The project is situated on the northern edge of the Brno-Medlánky sports airport. The site possesses an exceptionally strong "genius loci" built on a long and rich aviation tradition. However, the current infrastructure is outdated, and the surrounding structures are spatially fragmented. This presented a unique opportunity to design a cohesive architectural intervention that creates a smooth transition between the strictly technical world of aviation operations and a quiet zone intended for recreation. The volumetric shaping of the building had to carefully navigate significant external constraints, specifically the strict limits of flight corridors and the immediate proximity of a protected European ground squirrel nature reserve.

Project Brief and Function

The primary objective was to create a hybrid facility providing short-term accommodation for pilots and crews, combined with an active community center. The complex offers 16 apartment units with a capacity of 46 beds. An integral part of the operation is a multifunctional social hall designed for morning briefings, theoretical training, and broader cultural events. To accommodate the highly irregular schedules of flight personnel, the residential operation is designed as an independent, fully self-service system.

Project Metrics

Built-up Area: 840 m²

Number of Floors: 3

Estimated Costs: 65,000,000 CZK

Architectural Concept



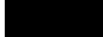



The architectural expression is defined by a cascading arrangement of volumes that naturally responds to the morphology of the slope. By utilizing a mono-pitch roof that mirrors the original terrain and optimizing the solar orientation, the design ensures that every accommodation unit benefits from equal daylighting and highly attractive panoramic views directly onto the runway. The layout logically separates the active hangar zone from the quiet accommodation wing via a central external passage, which also functions as an acoustic barrier.

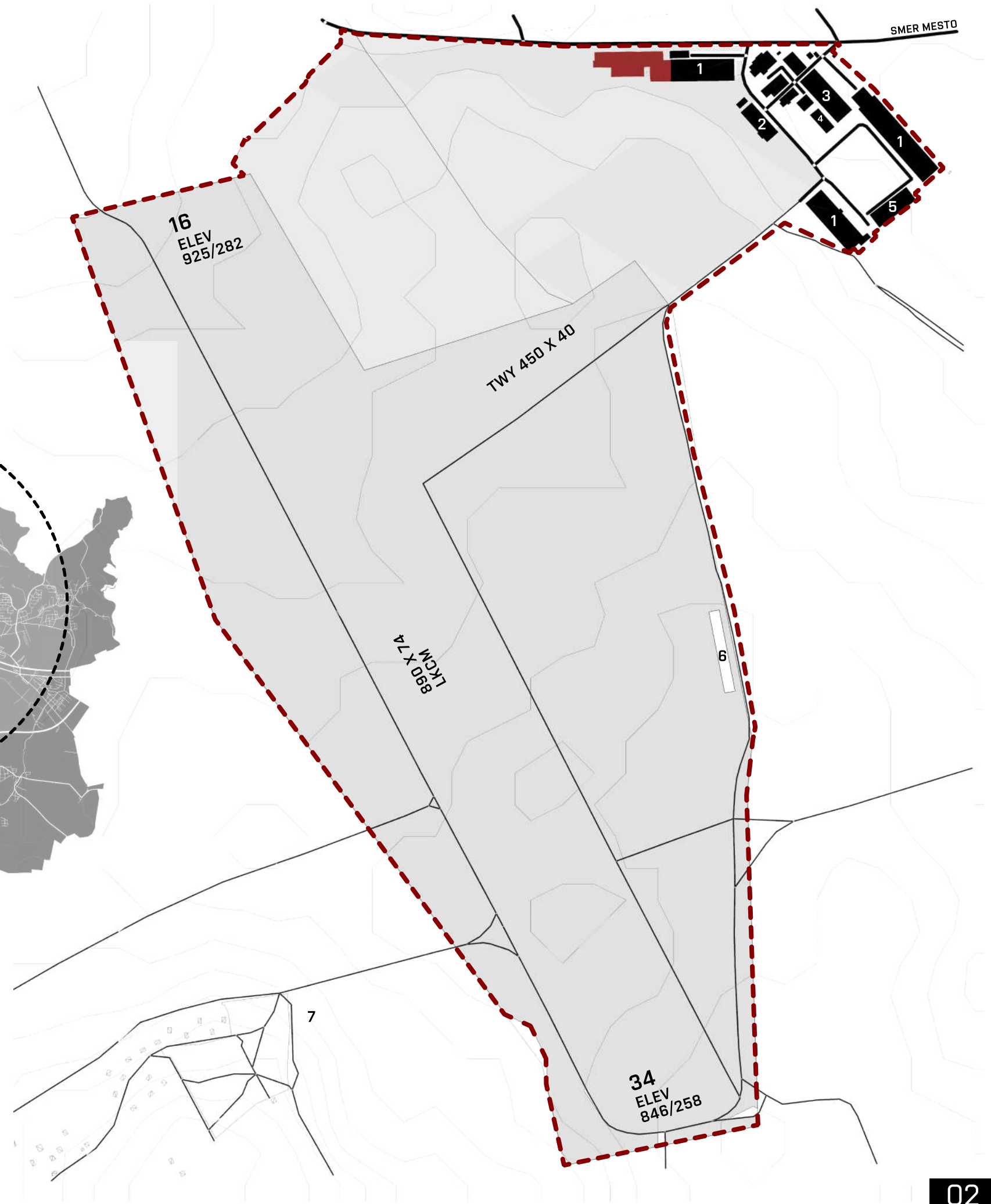
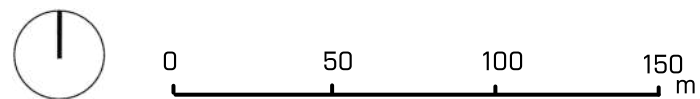
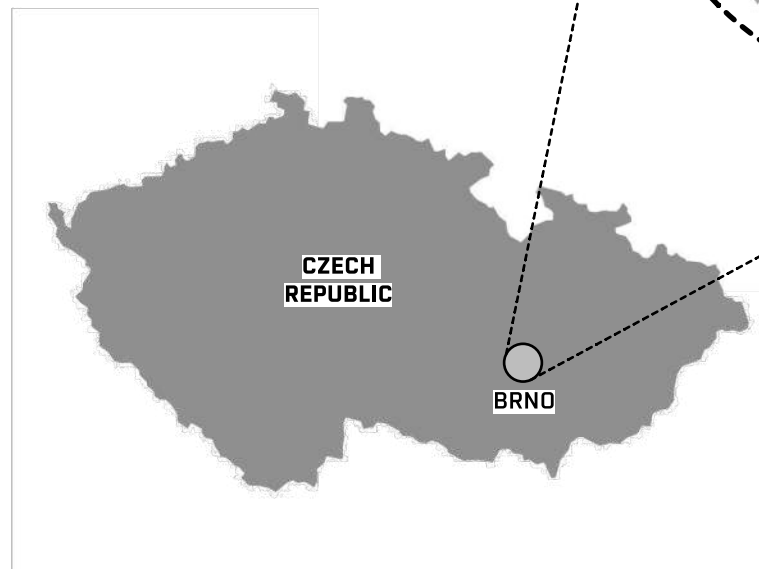
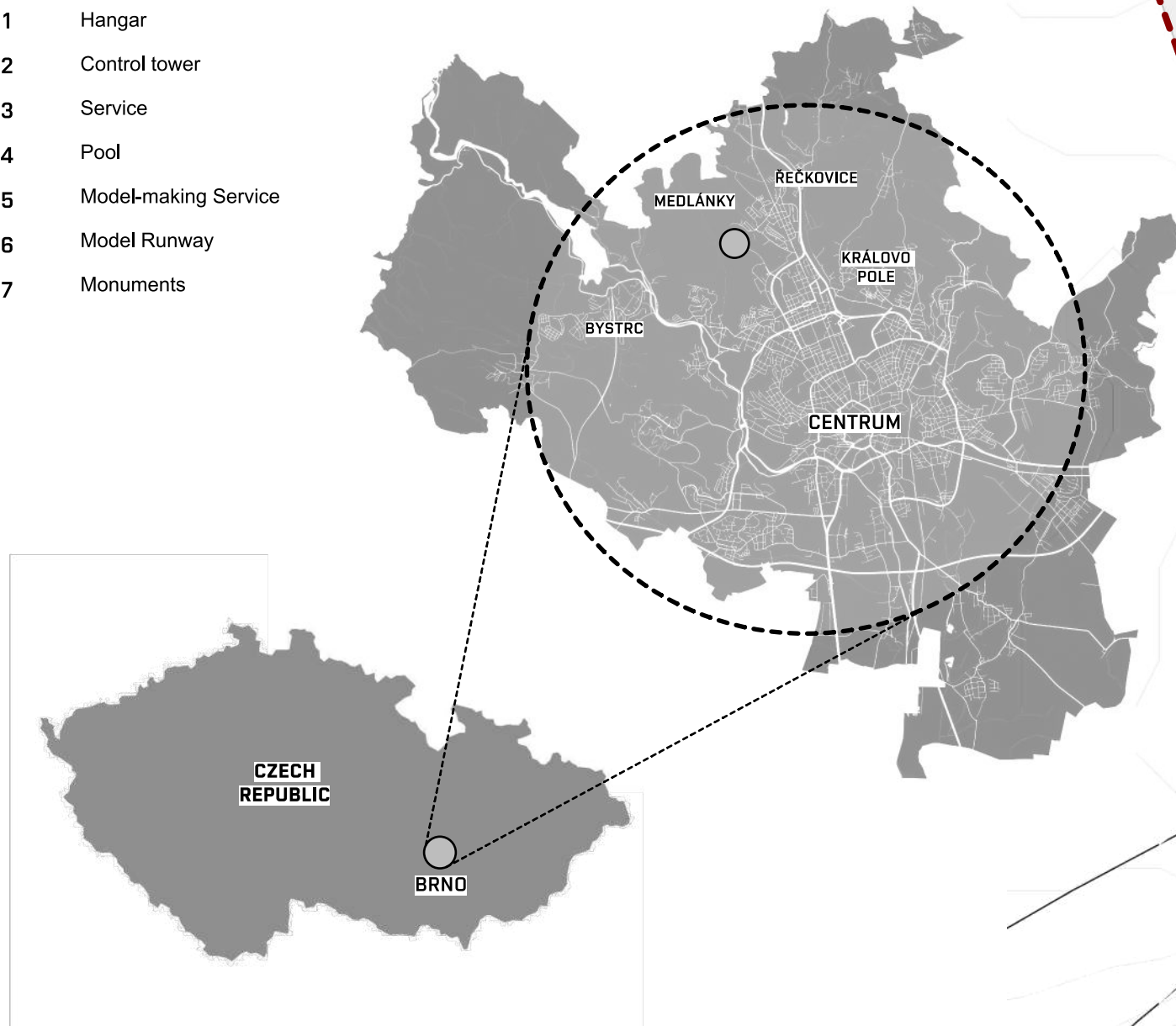
Construction and Materiality

The building employs a reinforced concrete skeleton and wall system arranged in a strict 6000 mm modular grid. Due to the partial embedment into the terrain, the lowest floor utilizes reinforced concrete retaining walls to ensure slope stability. The material palette balances industrial and residential needs, contrasting structural steel in the hangar with warm wood textures in the living areas. The exterior features a ventilated duralumin facade, directly referencing the aviation industry. A defining architectural detail involves precise technological cutouts in this cladding, which project the Medlánky airport logo into the interior via sunlight. The walkable exterior terraces utilize highly durable design SPU flooring, seamlessly integrating the architecture into the open steppe landscape.

LOCATION PLAN





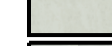





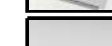




LEGEND

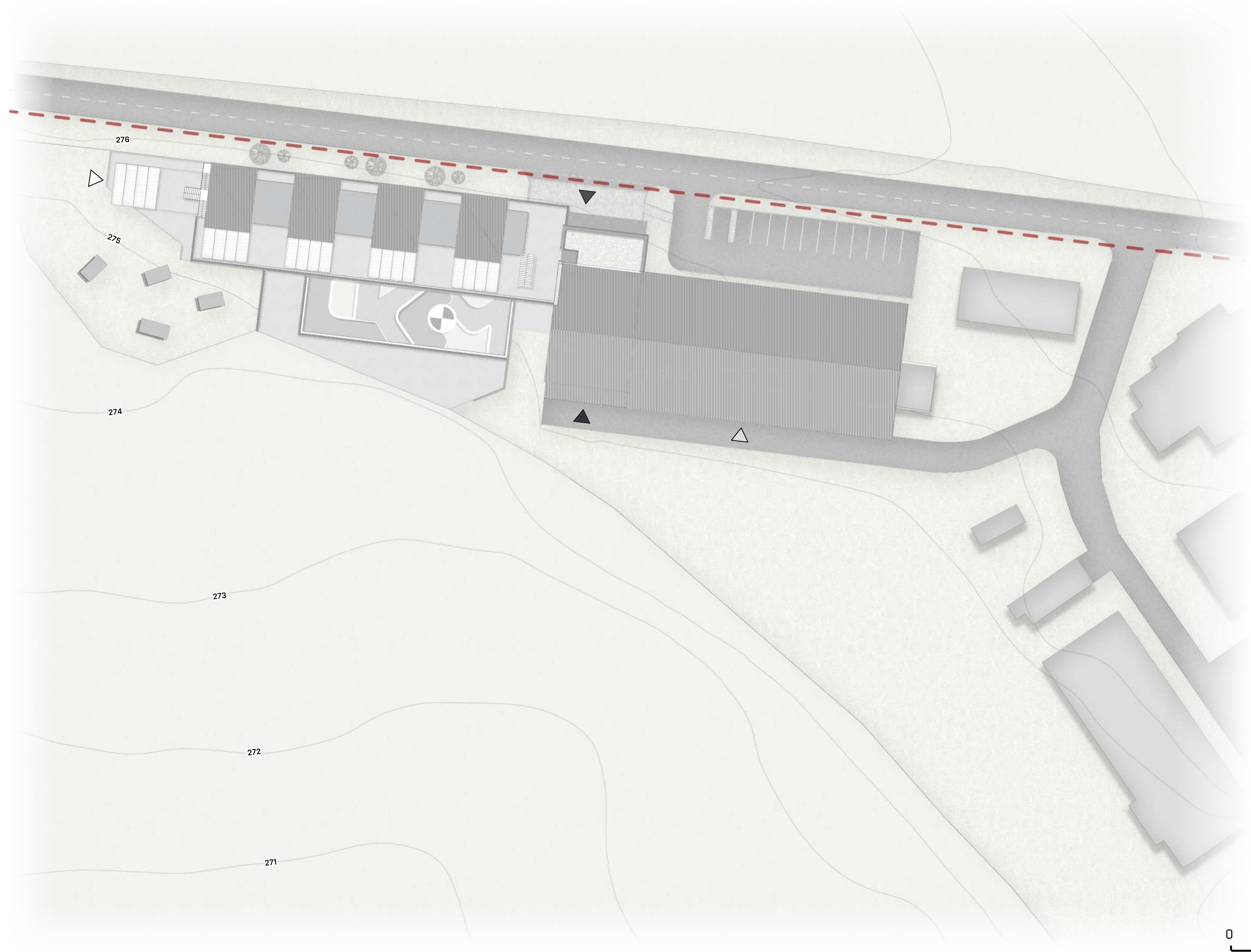
-  Boundary of the Airport Site
-  Proposed building
-  Other buildings
-  Grass area of the airport
-  Airport field
-  Road
- 1 Hangar
- 2 Control tower
- 3 Service
- 4 Pool
- 5 Model-making Service
- 6 Model Runway
- 7 Monuments



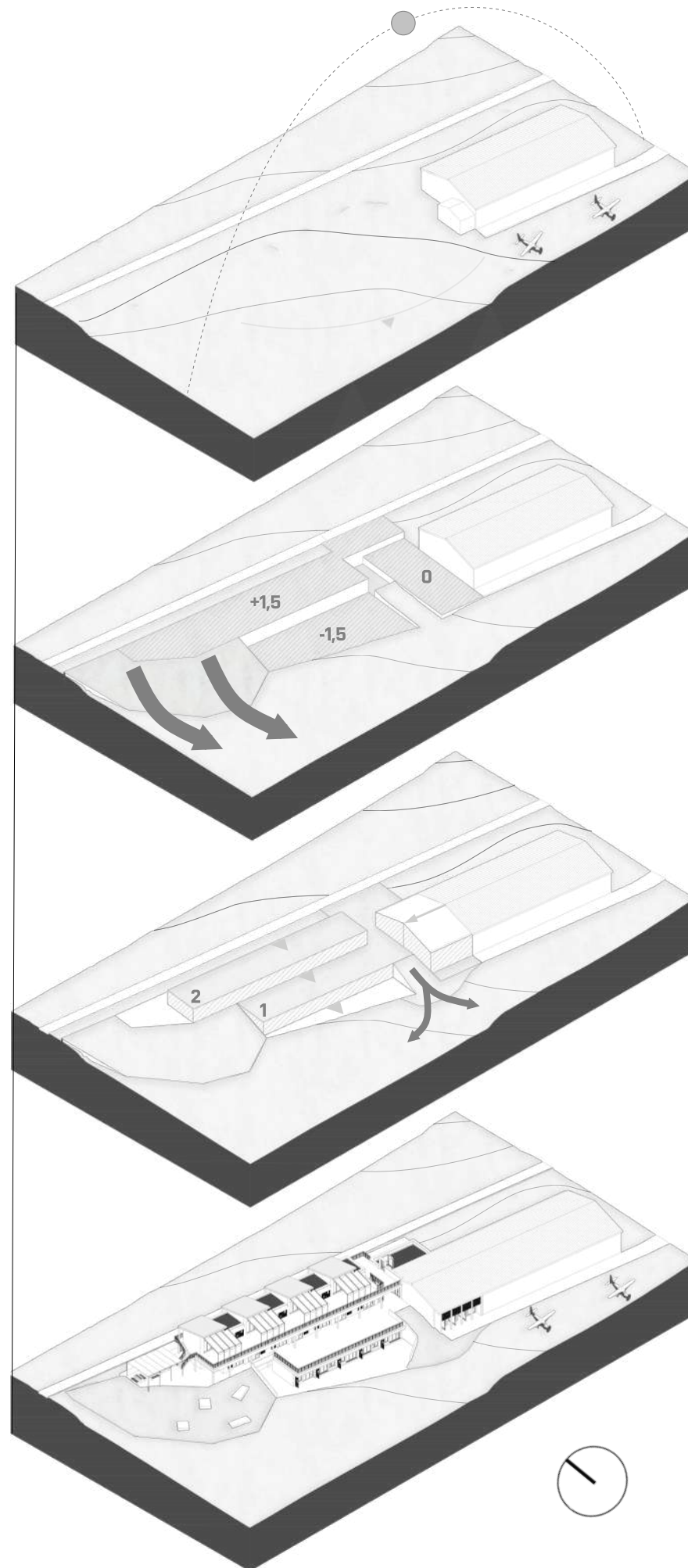
SITE PLAN

LEGENDA

-  Airport Area Boundary
-  Proposed Object
-  Paved Road
-  Field Area
-  Grass Area
-  Open Greenery
-  Canvas Sail
-  Roof Cladding
-  Roof Gravel Ballast
-  Roofing
-  Seating Block
-  Surrounding Buildings
-  Exterior SPU Flooring Design
-  Main Entrance to Site /
-  Secondary Entrance



DESIGN CONCEPT



1

The initial phase of the design was based on detailed mapping of the existing site conditions without any construction interventions. The objective was to understand the natural morphology of the terrain, analyze the precise placement of the existing hangar, and define spatial relationships in its immediate surroundings. The orientation relative to the cardinal directions, as well as the identification of the most valuable sightlines towards the runway and the surrounding environment, became a key starting point for further concept development.

2

The second stage involved sensitive grading and terrain modeling into clearly defined elevation levels, creating a platform for the integration of the new residential structure. In the immediate vicinity of the hangar, a minor garage was removed, and the existing paved area was expanded to increase the maneuvering space. Given the fixed zero level of the existing hangar ($\pm 0,000$), it was necessary to carefully adjust the terrain so that the new residential structure would naturally connect with the existing building, appearing neither overly elevated nor excessively embedded into the slope. Therefore, the terrain was divided into two elevation levels—the front section was lowered by 1.5 m and the rear section was raised by the same value. This created an optimal platform for the uniform placement of accommodation units oriented to the south, while maintaining a balanced cut-and-fill earthwork volume. The rear slope was then gently shaped into a smooth line to naturally merge with the surrounding landforms.

3

The third phase defines the actual placement of the architectural masses across two primary cascading levels. The core design principle was to ensure a uniform southern orientation for all residential units, providing optimal daylighting conditions and the most attractive views. The design deliberately eliminates any spatial inequality among individual apartments; thanks to the cascading arrangement, each accommodation unit features comparable solar exposure and visual contact with the airport environment. The central core between the masses was graded smoothly to establish a natural and seamless pedestrian connection.

4

The final phase shapes the resulting silhouette of the building by adding the uppermost floor with a sloped mono-pitch roof that naturally follows the inclination of the original terrain. A characteristic architectural element of individual floors consists of generous outdoor terraces, which extend the usable floor area of the apartments while establishing an intense visual and physical connection with the surrounding landscape.

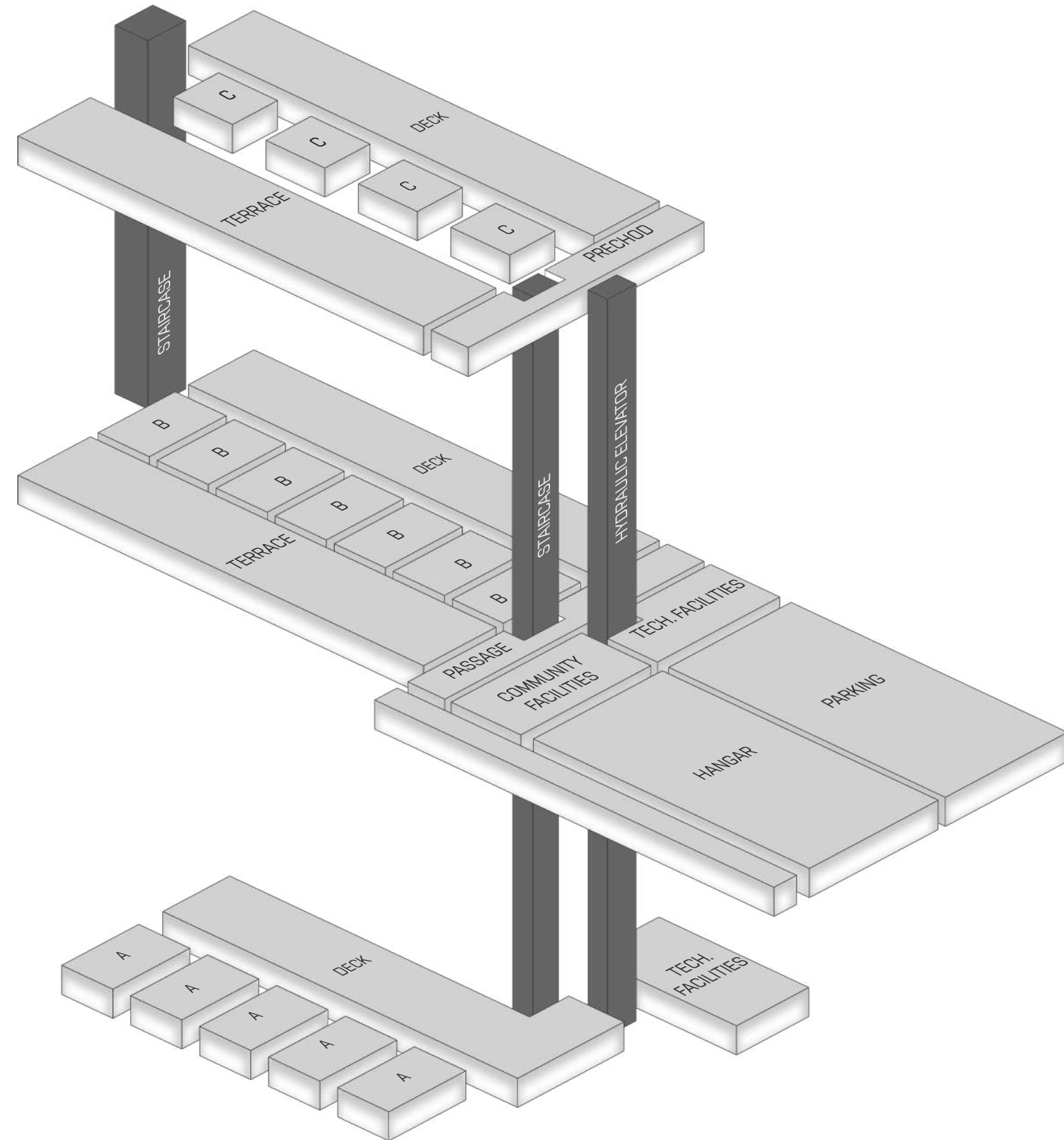
OPERATIONAL SCHEME

The operational layout of the community center is logically divided into two interconnected volumes: a quiet residential wing on the left and an active zone with community facilities on the right. These two operational worlds are separated by a central external passage. This passage functions not only as the primary communication hub with vertical connections and a barrier-free hydraulic elevator but also serves as a natural acoustic barrier protecting the accommodated guests. Secondary vertical movement is secured by a rear external staircase.

The accommodation capacity is dimensioned to meet the needs of larger aviation events and training camps. It provides a total of 46 fixed beds divided into 16 apartments across three floors—5 units in the basement, 7 on the ground floor, and 4 on the upper floor. The layout of the middle floor is operationally the largest and most flexible. Each of the seven rooms features a sofa bed, adding another 7 extra beds for up to 2 people to the complex.

The entire accommodation workflow is designed with maximum efficiency, comfort, and independence in mind. Given the secure location and the goal to eliminate both personnel and financial burdens for the aeroclub, a traditional reception desk is absent from the building. Check-in is completely self-service via code lock boxes, allowing pilots flexible arrival at any time.

The right section of the complex is dedicated to the aeroclub's community life. While the ground floor fulfills the technical function of a hangar, the main social room is located within the upper floor extension. This clubhouse is directly connected both operationally and visually to the hangar, creating an immediate contact between the community and the aircraft. The independent operation of the entire building is centrally supported by a technical room located on the lower floor.



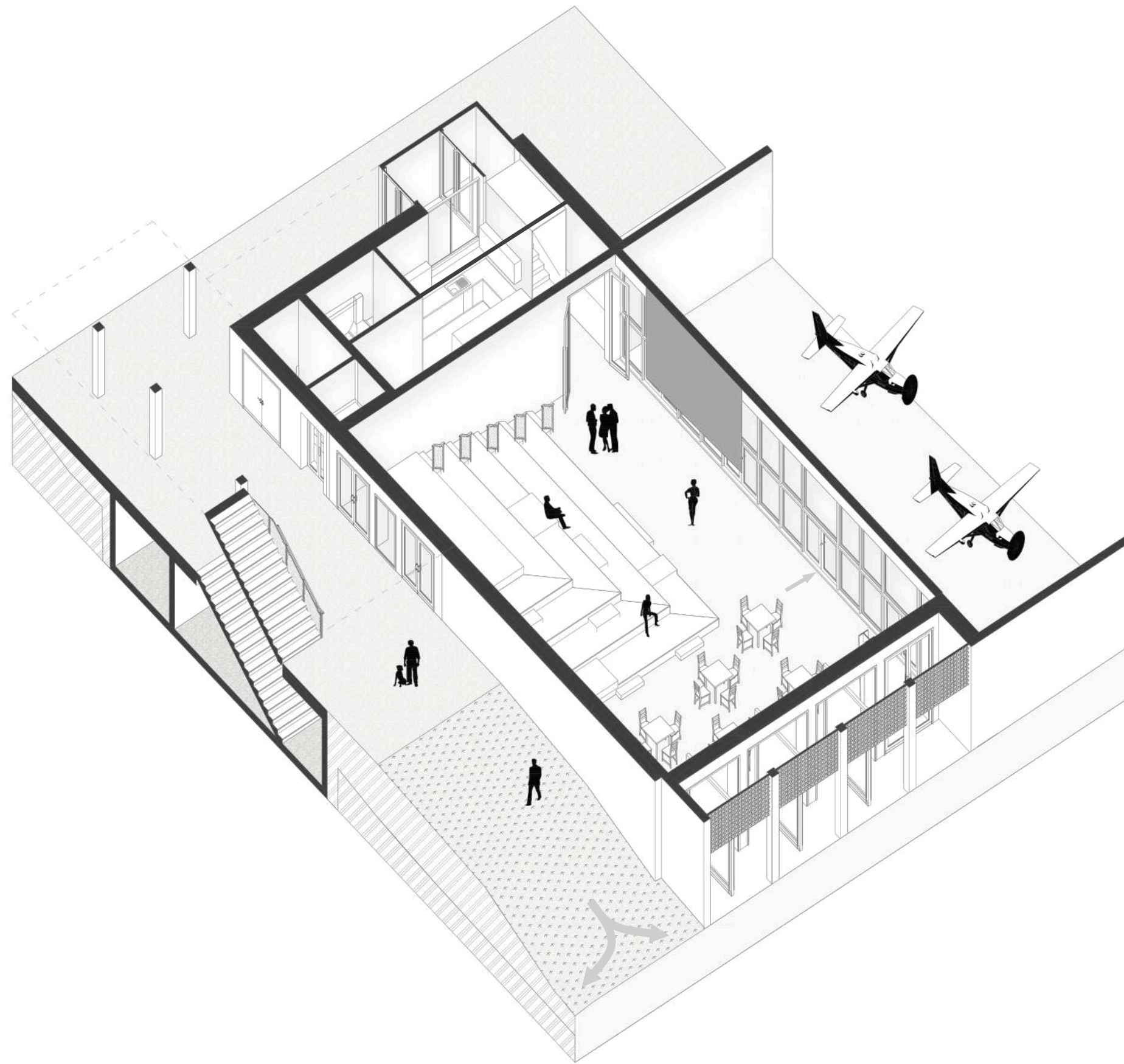
AXONOMETRIC VIEW OF THE HANGAR OF THE GROUND FLOOR

Multifunctional Hall and Events

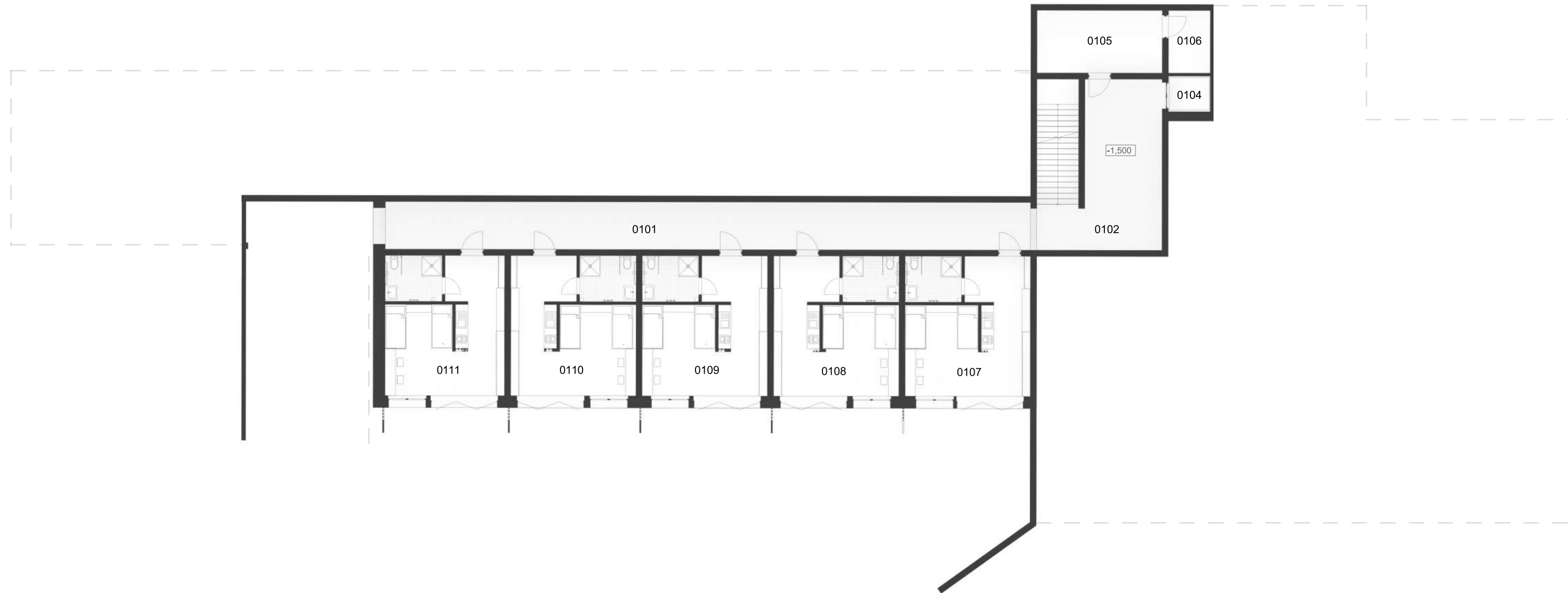
The primary purpose of this floor is to create a variable social space suitable for public workshops, lectures, and community events. The central hall features cascading seating oriented directly toward the displayed gliders, which can be combined with a classic table layout as needed. The technical facilities are complemented by a retractable projection screen for professional presentations and education.

Connectivity and Facilities

Visual contact between the social hall and the hangar is secured by a mobile glass wall with integrated doors, allowing for flexible interconnection of both operations. Located at the rear of the hall is a publicly accessible kitchenette designed for communal cooking or catering preparation during events. The entire floor is fully accessible for persons with reduced mobility, with vertical circulation ensuring a smooth transition between all levels of the building.



1ST BASEMENT LEVEL

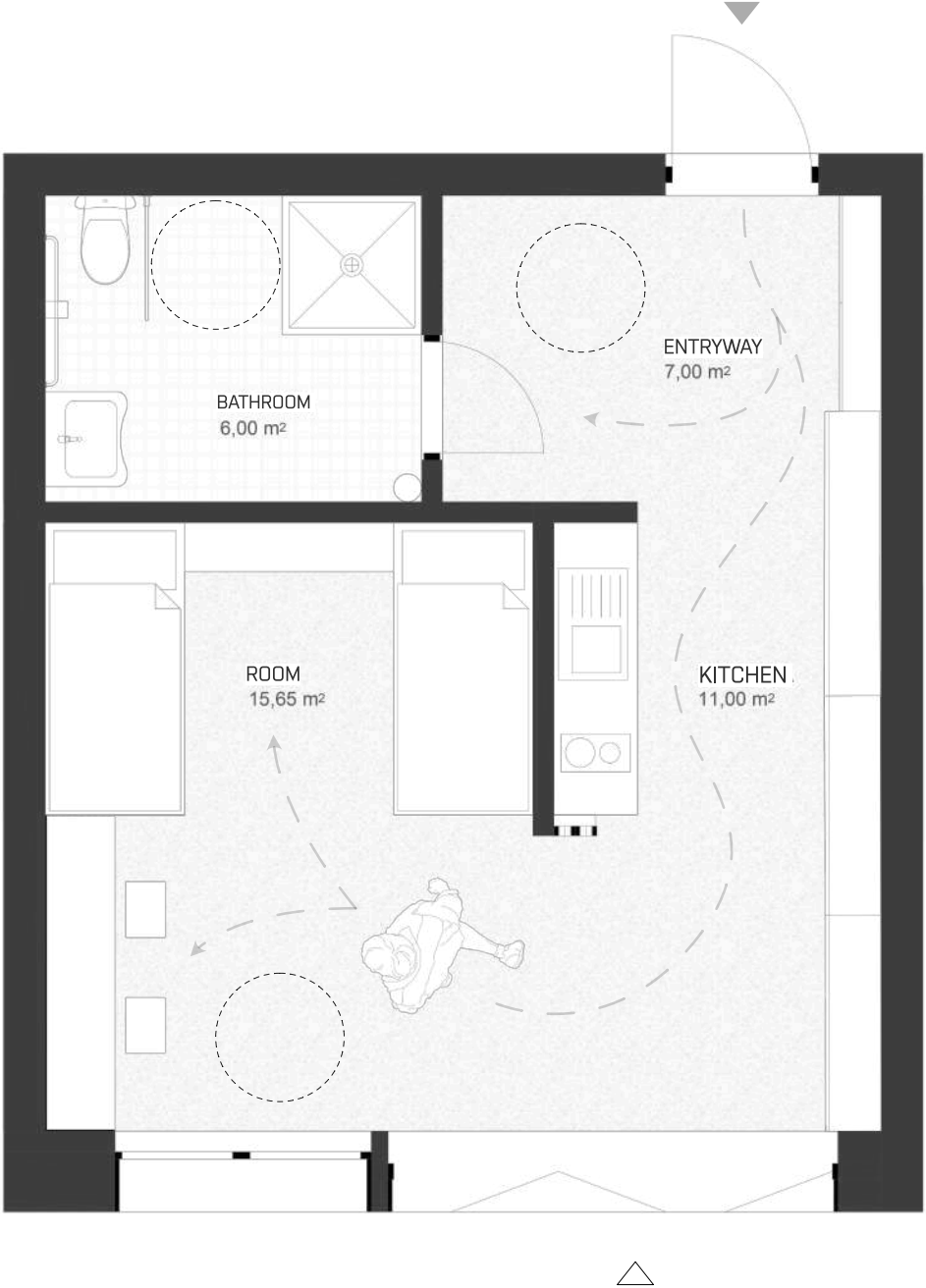
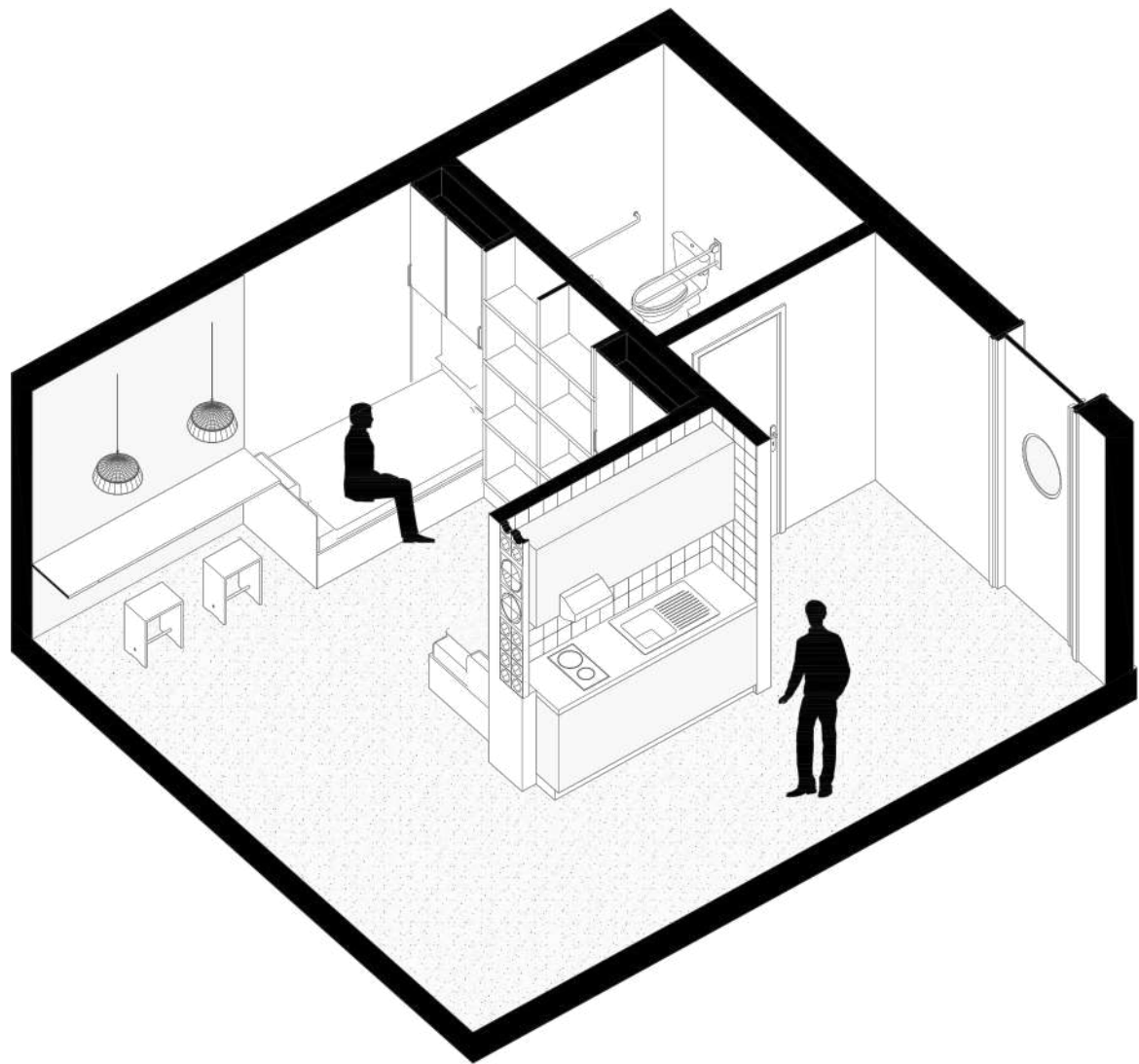


LEGEND

N.	Room name	Area (m2)
0101	Corridor	70,70
0102	Communication area	49,79
0104	Lift	03,40
0105	Utility room	18,40
0106	Specific utility room	06,00
0107	Apartment A-1	40,92
0108	Apartment A-2	41,12
0109	Apartment A-3	41,12
0110	Apartment A-4	41,12
0111	Apartment A-5	41,12
		351,61 m²



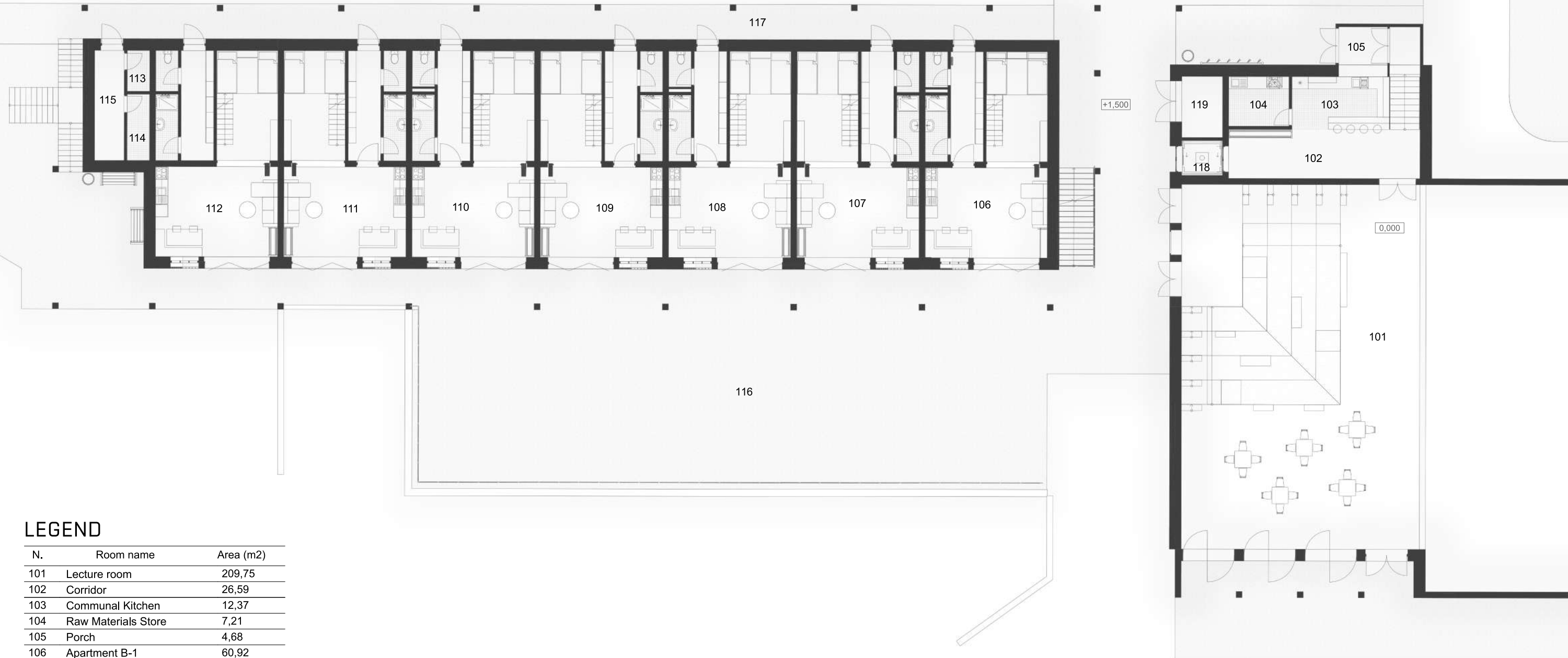
APARTMENT UNIT A - 1ST BASEMENT LEVEL



Description

The apartment unit on the 1st basement level with a usable area of ~40 m² represents the second largest accommodation unit within the entire complex. Its increased floor area stems from the requirements for a full-fledged barrier-free solution, which includes the necessary maneuvering clearances for wheelchair movement and an accessibly designed bathroom. Due to its location on the lowest floor, partially embedded into the slope, the unit lacks the panoramic views and exterior terrace typical of the upper stories. However, this character is balanced by direct, barrier-free access from the surrounding terrain. The layout connects the living area, kitchen, and night zone on a single floor level, with the entire space designed with an emphasis on ergonomic and comfortable use for persons with reduced mobility.

1ST FLOOR



LEGEND

N.	Room name	Area (m2)
101	Lecture room	209,75
102	Corridor	26,59
103	Communal Kitchen	12,37
104	Raw Materials Store	7,21
105	Porch	4,68
106	Apartment B-1	60,92
107	Apartment B-2	62,42
108	Apartment B-3	60,92
109	Apartment B-4	62,42
110	Apartment B-5	60,72
111	Apartment B-6	62,42
112	Apartment B-7	60,92
113	Cleaning storeroom	2,20
114	Maintenance room	3,57
115	Laundry room	8,03
116	Terrace	375,54
117	Balcony	82,46
118	Hydraulic lift	9,87
119	Tool store	3,60
		1 185,40 m²

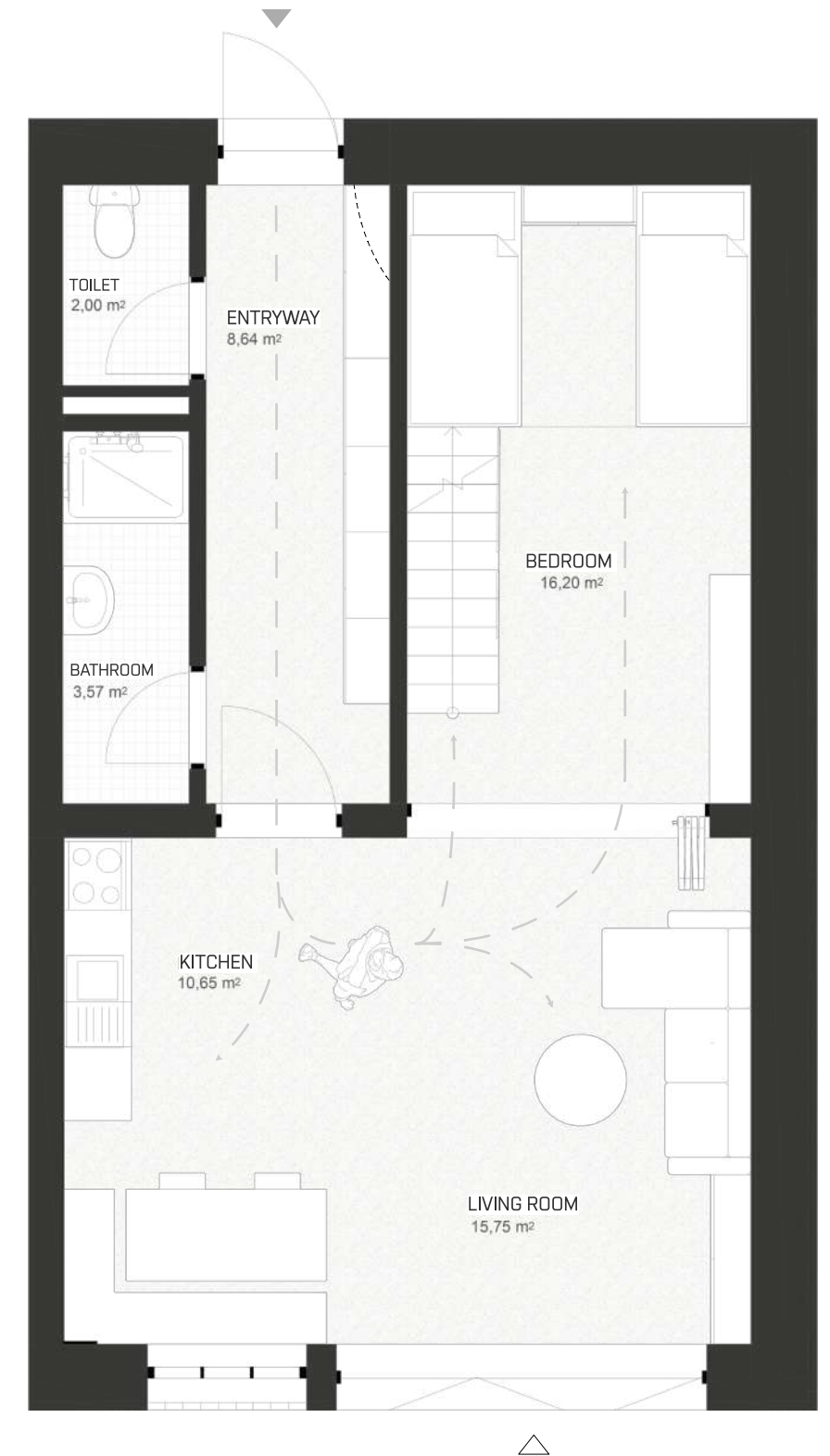
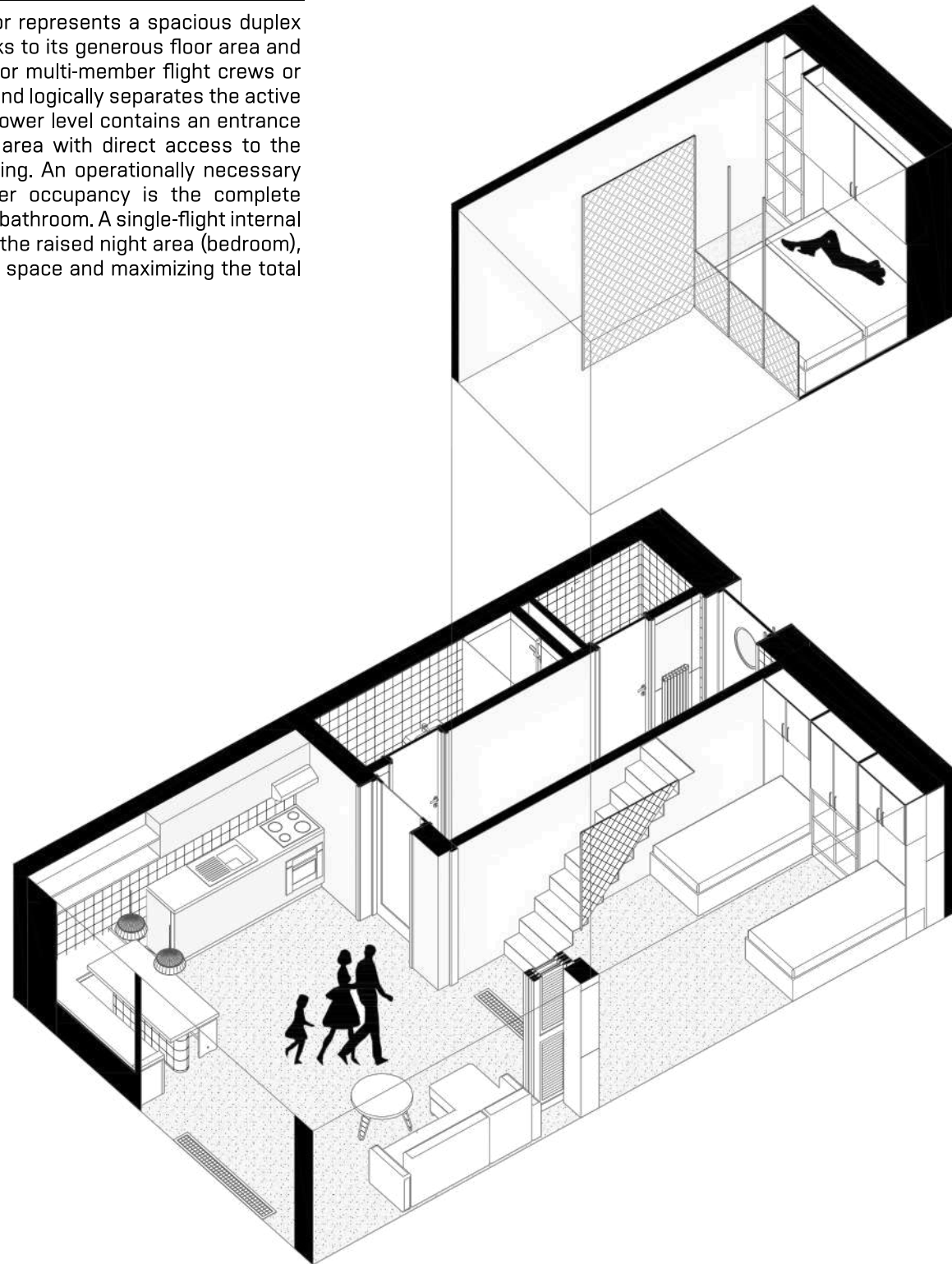


0 5 10 15 m

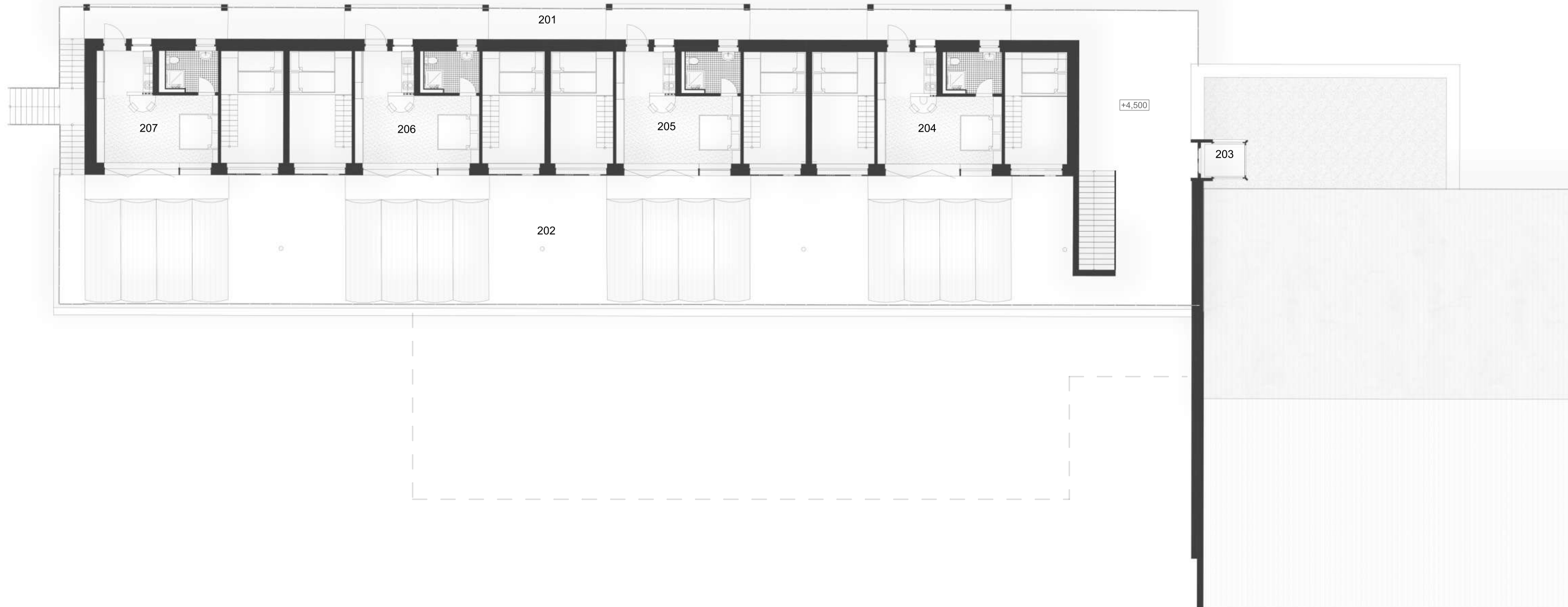
APARTMENT UNIT B - 1ST FLOOR

Description

Apartment unit B situated on the 1st floor represents a spacious duplex (two-level) type of accommodation. Thanks to its generous floor area and internal gallery, it is capacity-wise ideal for multi-member flight crews or families with children. The layout strictly and logically separates the active day zone from the quiet night zone. The lower level contains an entrance vestibule, an open kitchen, and a living area with direct access to the outdoor terrace through large-scale glazing. An operationally necessary and highly functional solution for higher occupancy is the complete separation of the restroom from the main bathroom. A single-flight internal staircase connects the ground floor with the raised night area (bedroom), efficiently utilizing the clear height of the space and maximizing the total usable floor area.



2ND FLOOR

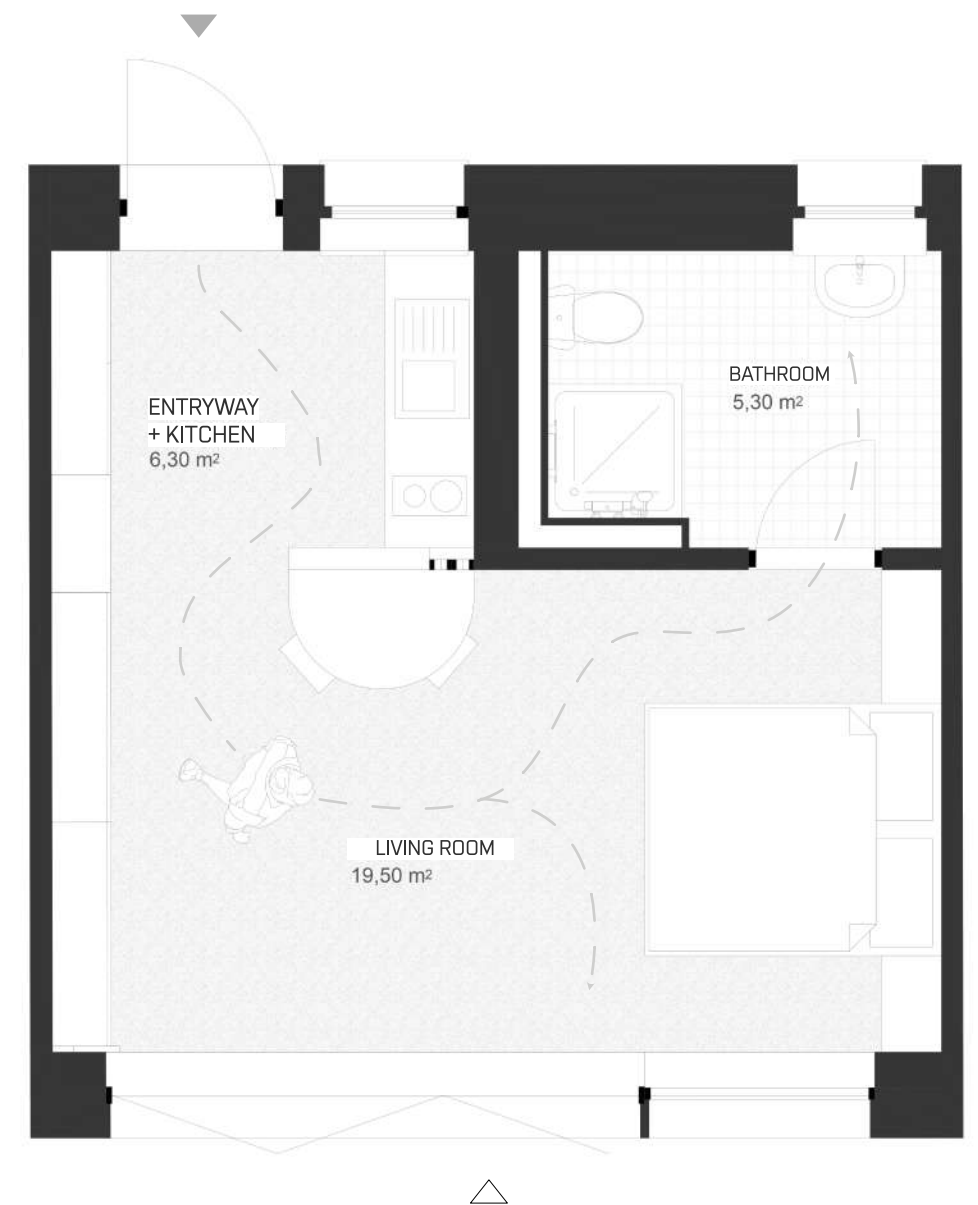
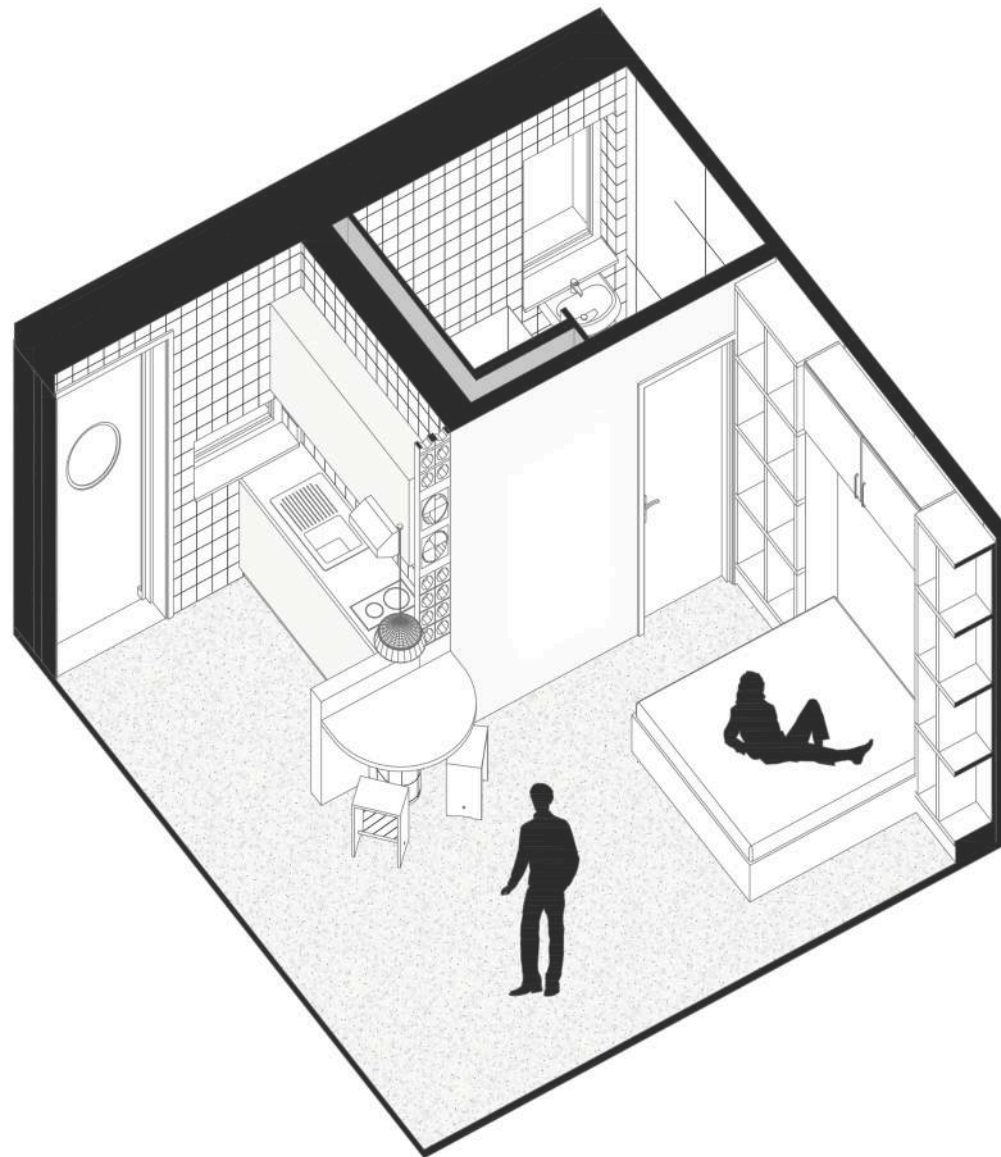


LEGEND

N.	Room name	Area (m2)
201	Deck	72,18
202	Terrace	385,40
203	Lift	2,13
204	Apartment C-1	33,17
205	Apartment C-2	33,18
206	Apartment C-3	33,18
207	Apartment C-4	32,39
		591,63 m²



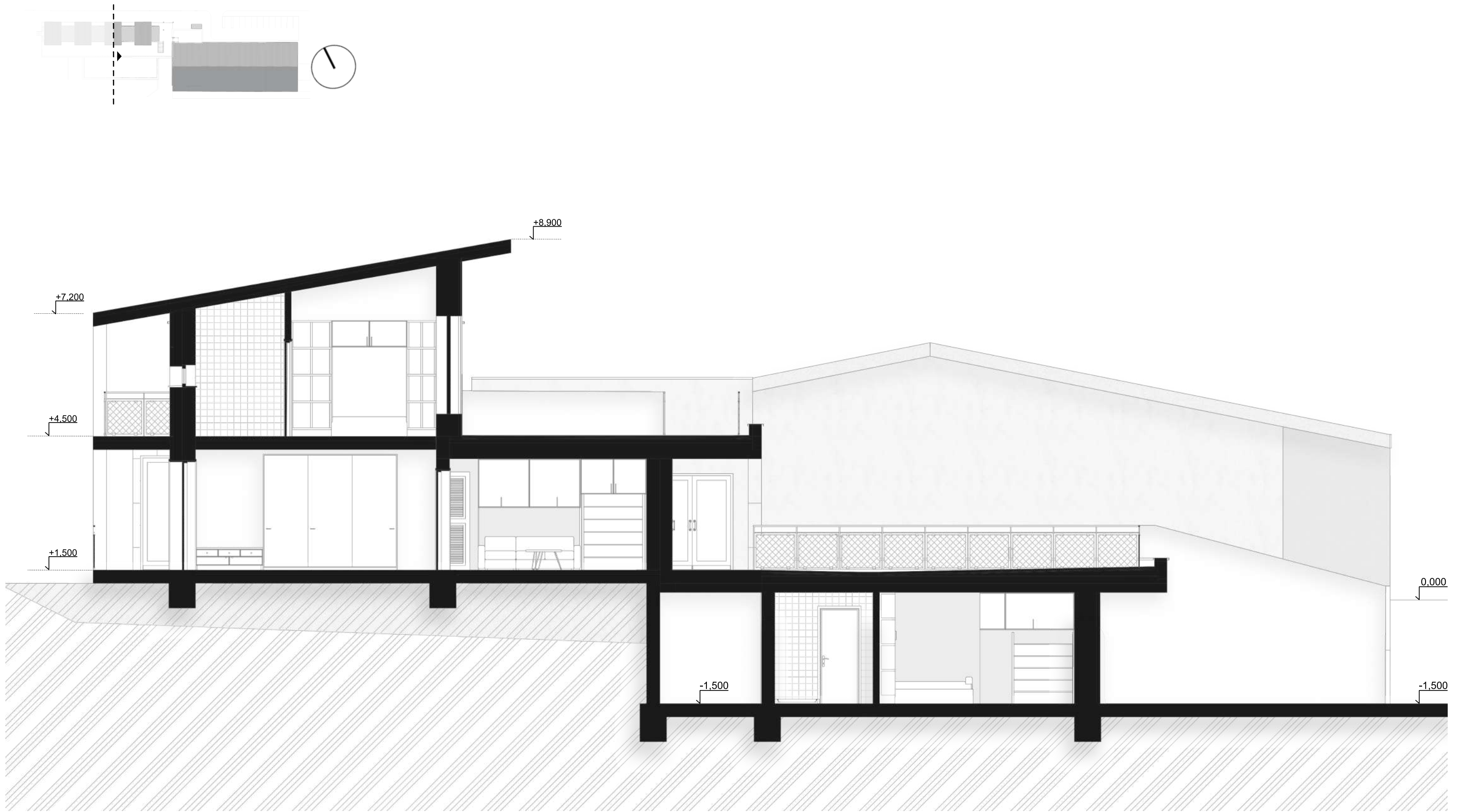
APARTMENT UNIT C - 2ND FLOOR



Description

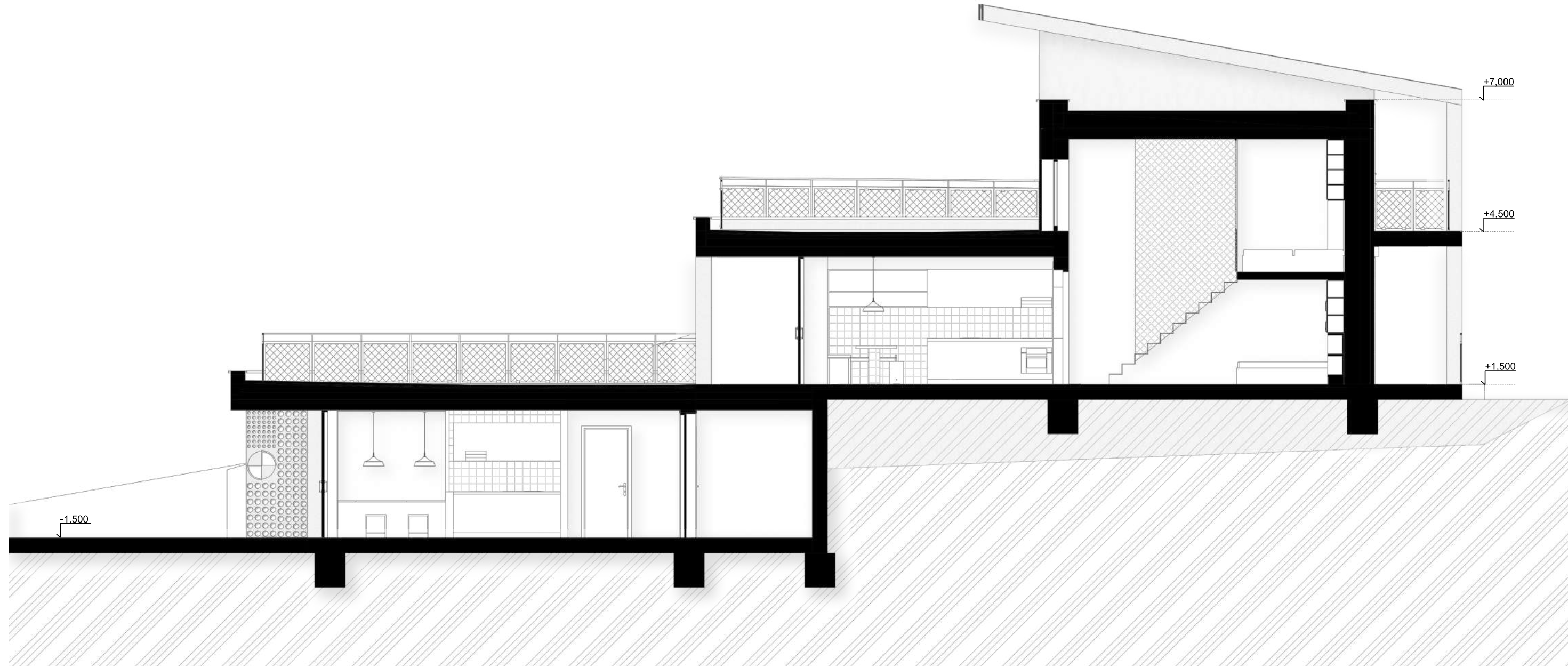
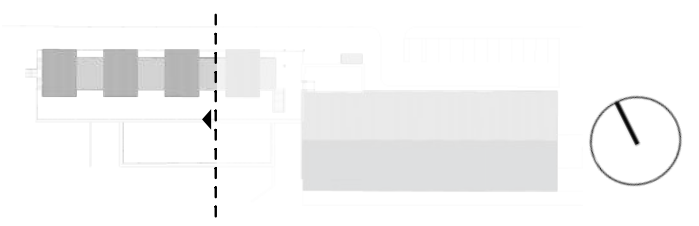
Apartment unit C situated on the 2nd floor (2.NP) represents a standard, highly efficient accommodation cell with a usable area of approximately 30 m², designed for a comfortable stay for two people. The layout builds on maximum spatial optimization without losing user comfort. The entrance area is pragmatically integrated with a compact kitchenette, allowing the saved square meters to translate into greater spaciousness in the main living zone. A fully dimensioned bathroom is part of the entrance tract. The main room seamlessly combines the functions of a bedroom and a relaxation space. Its dominant architectural feature is the generous glazing with direct access to the outdoor terrace, which visually and functionally extends the apartment's interior while ensuring direct contact with the airport environment.

SECTION A-A'

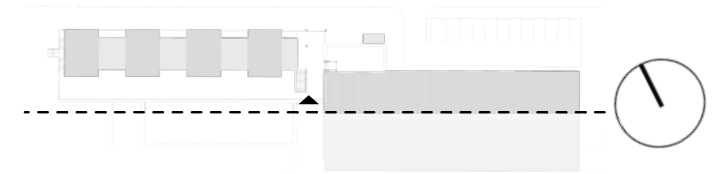


0 2 4 6 m

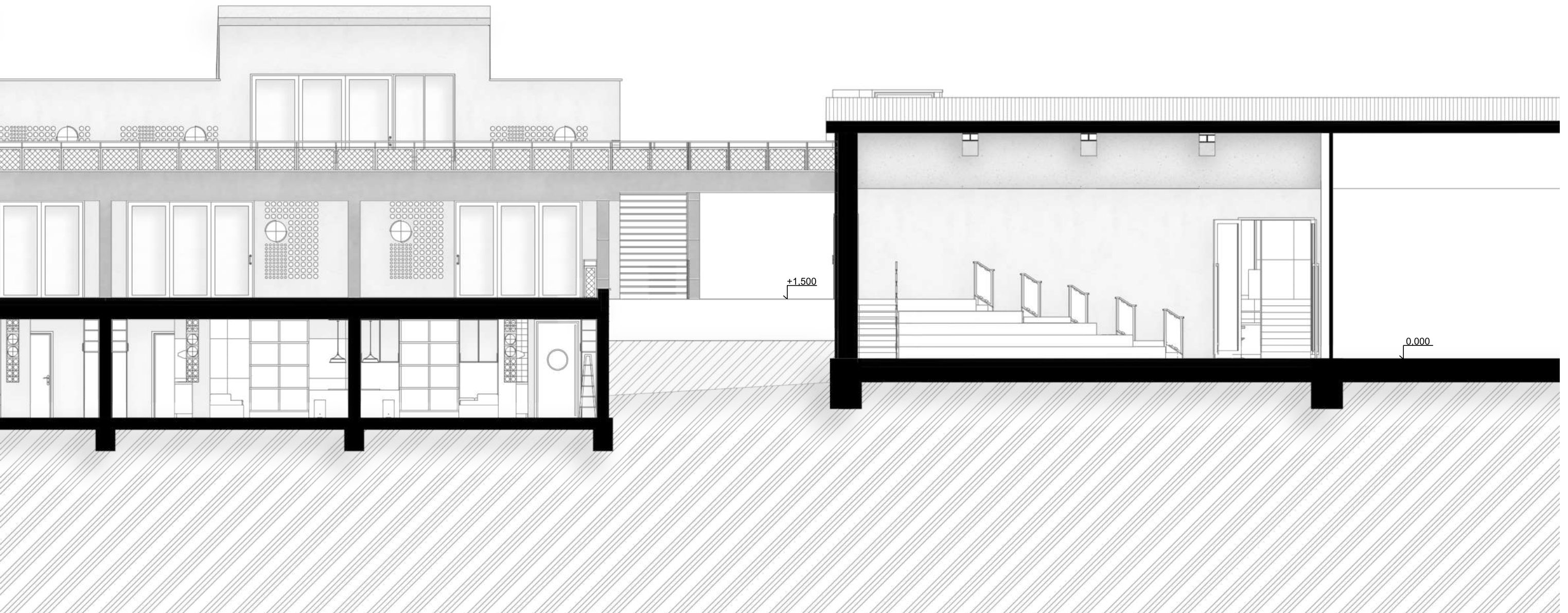
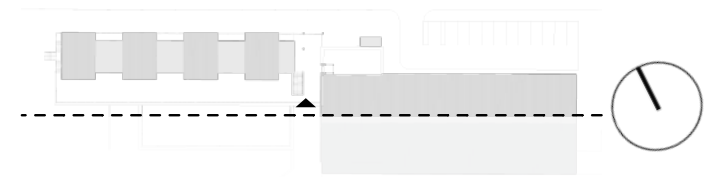
SECTION B-B'



SECTION C-C'

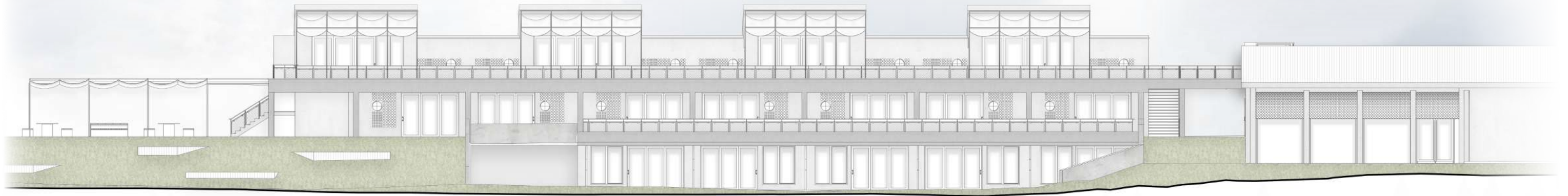


SECTION C-C'

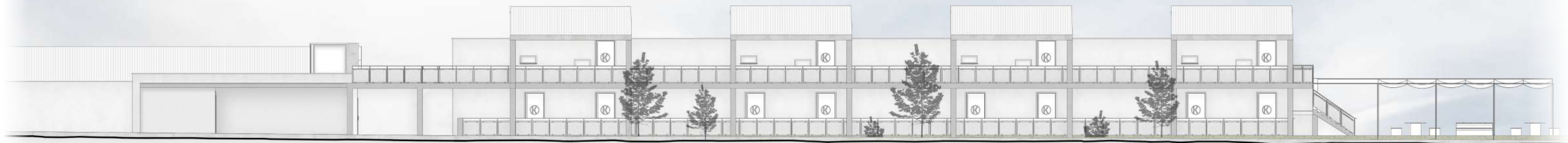


0 2 4 6 m

SOUTH ELEVATION

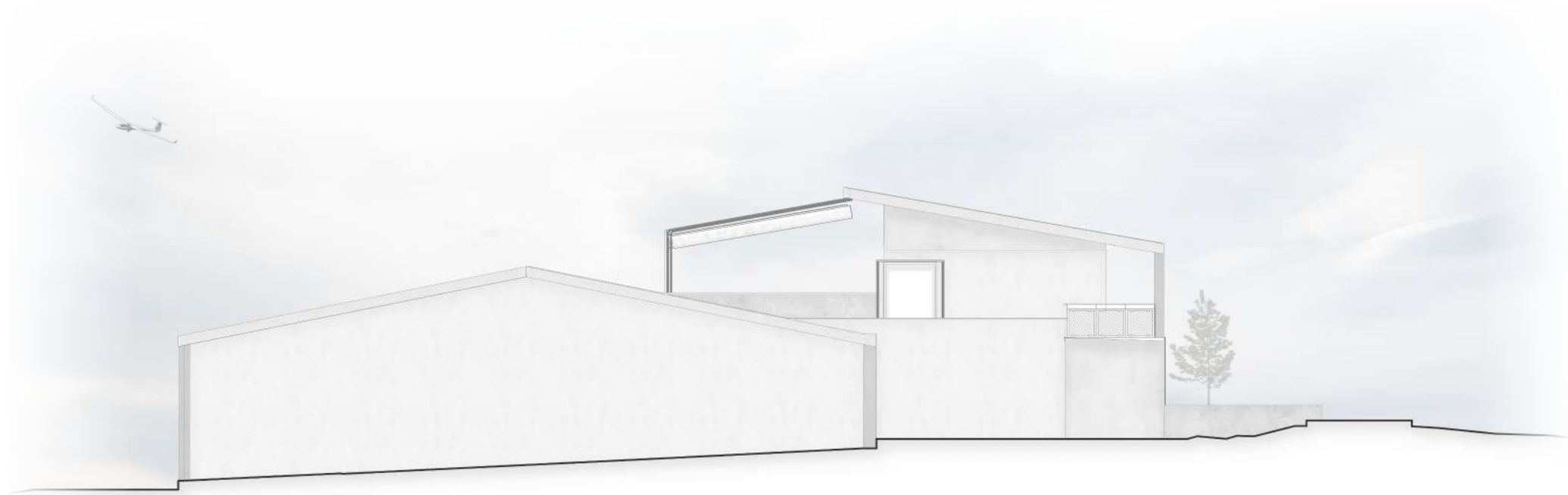


NORTH ELEVATION

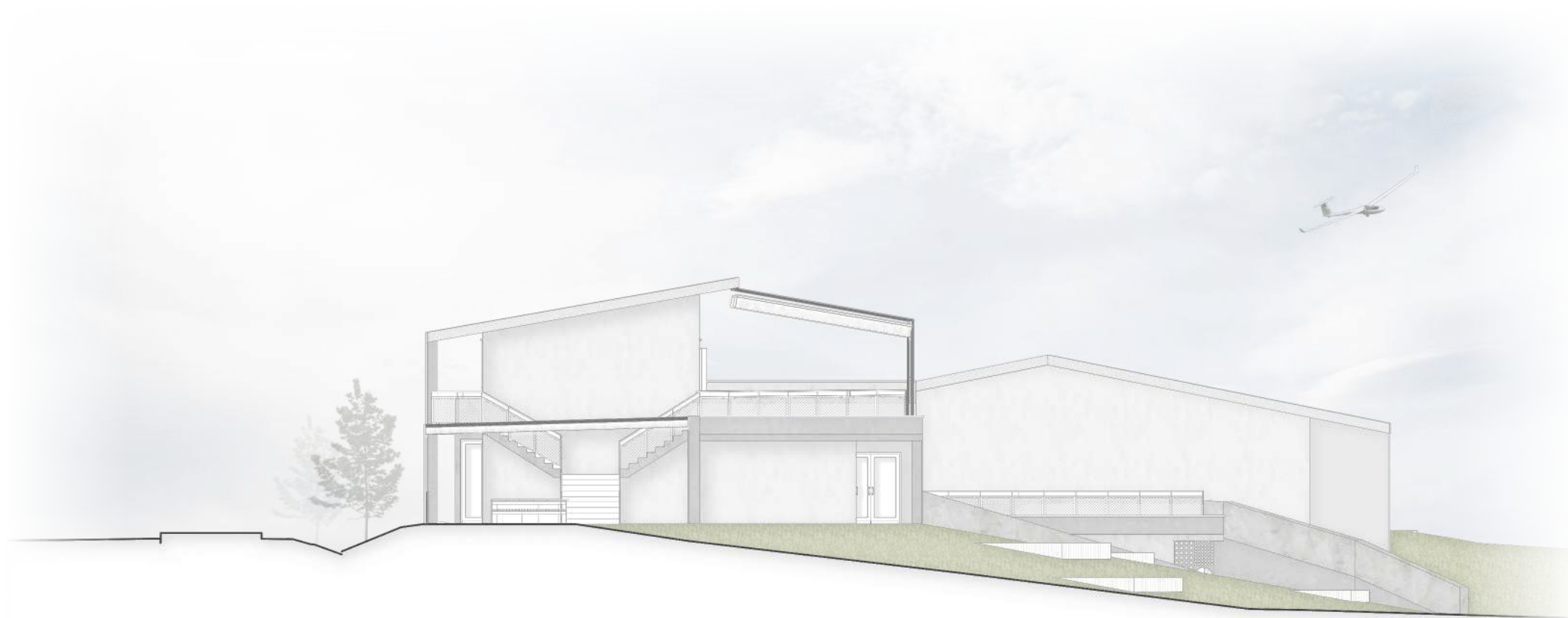


0 3 6 9 m

EAST ELEVATION



WEST ELEVATION



0 3 6 9 m

Material Palette & Color Concept

Energy and Action

Energy and Action

Strength and Technology

Calm and Balance



Fine Interior Plaster



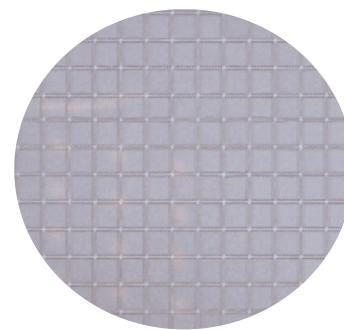
Light Oak Veneer



Powder-Coated Aluminum



Upholstery Fabric



Ceramic Cladding



Dark Walnut Veneer



Matte Black Steel



Duralumin Facade Cladding



Lumion



lumion

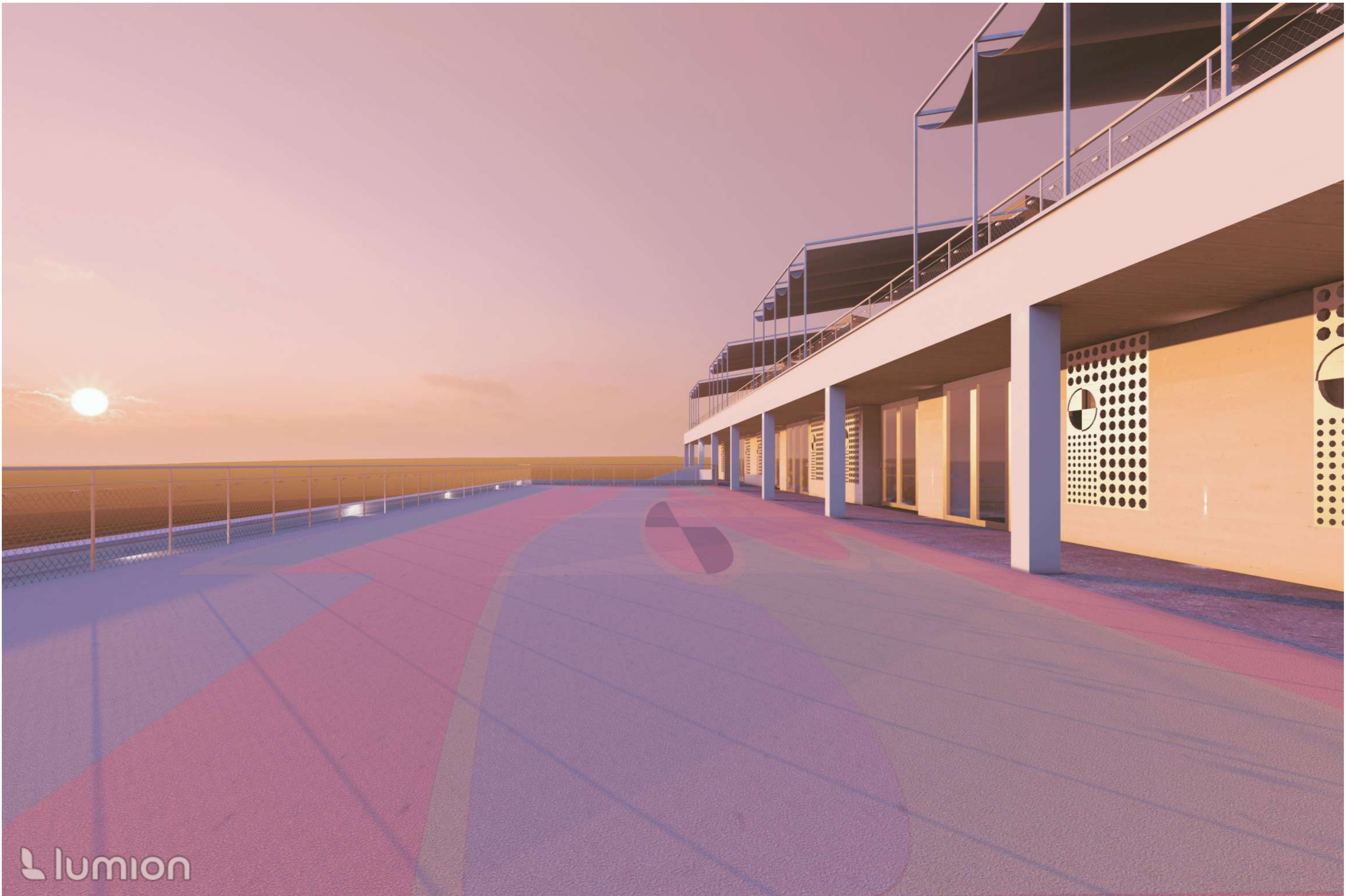


lumion





Lumion





lumion