F

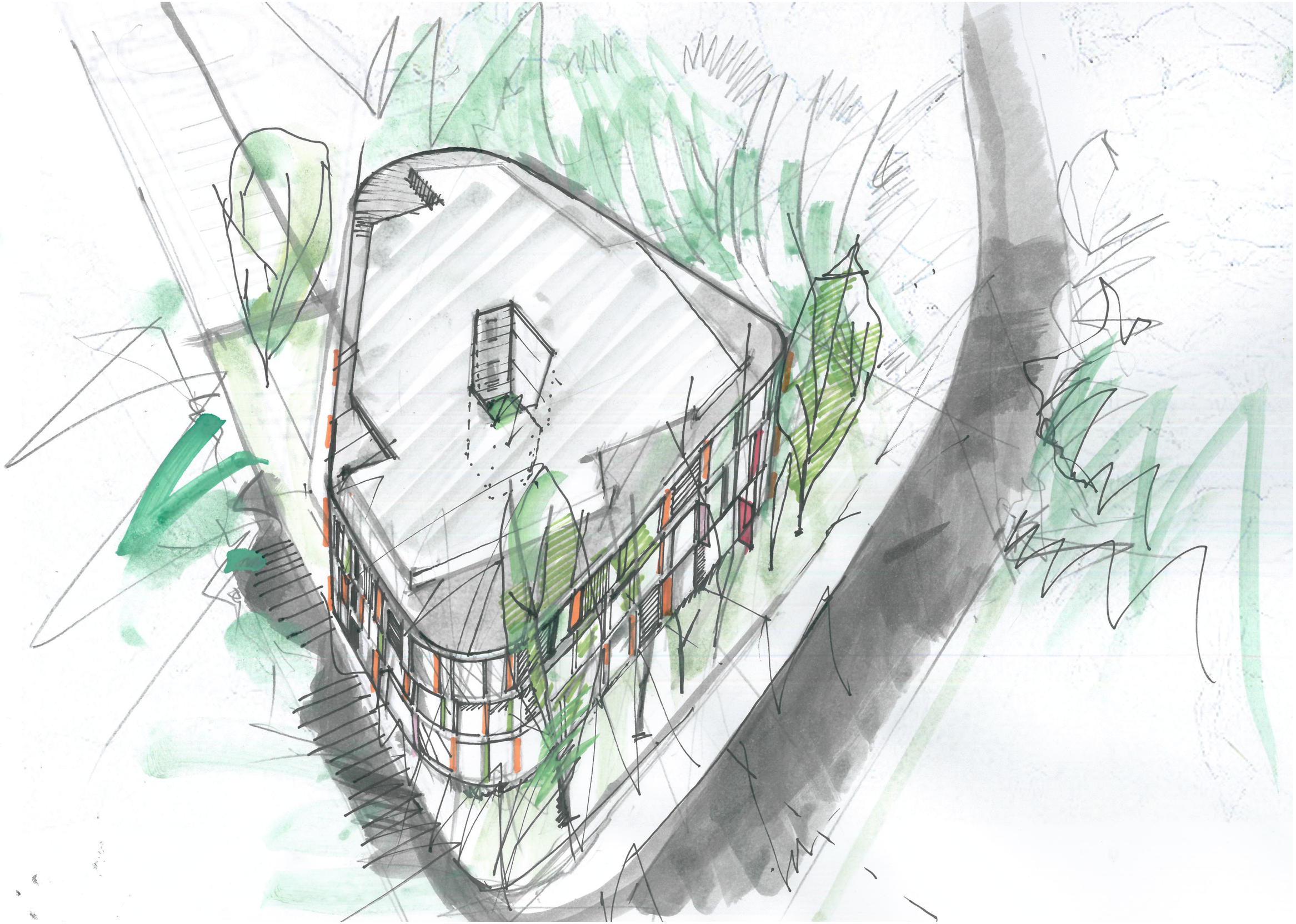
VILLA REDEN

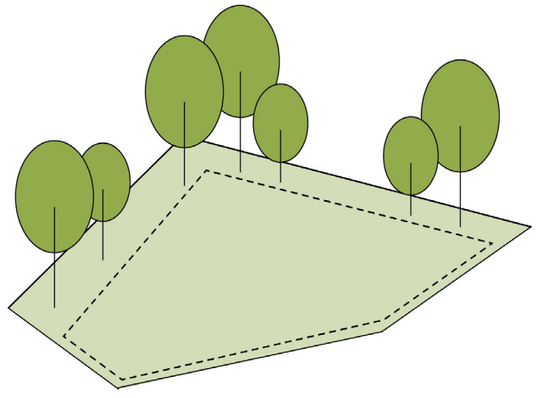
MACIEJ FRANTA

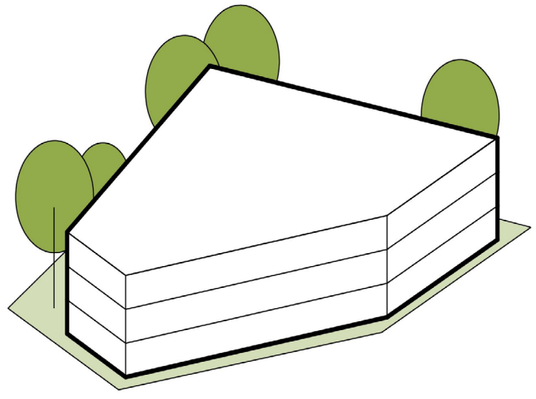
DESIGN BRIEFAND SITE CONSIDERATION

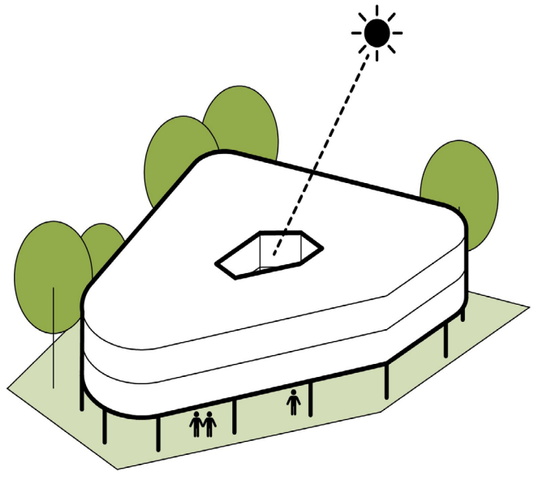
„The main inspiration when designing the building was the idea of the pleasure of use”

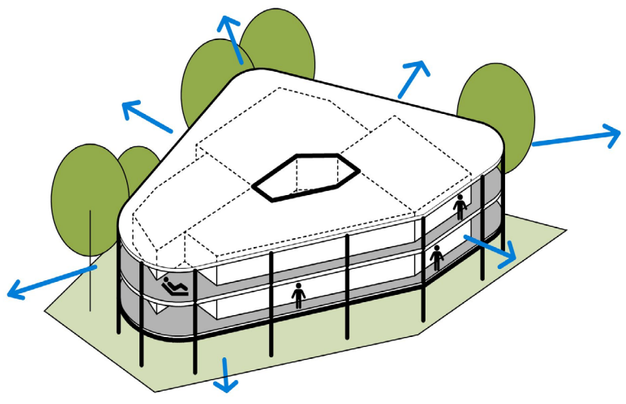
The unique context of the place and the potential negative consequence of implementing a new tissue in this unique area meant that the decision to shape a new building was not easy and had to refer directly to these guidelines, not compete with them, and „respond” to the environment with its uniqueness in a contemporary way. The task was even more difficult as the budget was limited and the investor's expectations were high.The idea and shape of the building resulted directly from the irregular polygonal shape of the area intended for development and the idea of leaving the largest possible tree stand on the plot. Such a simple inspiration has become the basic guideline for shaping the building. Creating theform step by step, first of all: the solid was formed in accordance with the function of the apartments, optimizing their funtion into the shape of an irregular polygon. Then, a perimeter line was marked along the plot boundaries and the block of flats was surrounded with balconies to obtain a panoramic opening to the surroundings. Due to the acute angles (foreign in the context), it was decided to round the corners, referring to the character of the interwar villas in the neighborhood, tree crowns and the surrounding greenery. In the next step, to open the view to the surroundings, the block was dressed in wooden viewing terraces with various surfaces around it, an internal break in the form was introduced by implementing a patio to illuminate the internal parts of the apartments (bathrooms and entrance areas to the apartments) and the floor of the residential part was raised by one level, leaving undeveloped ground floor as a space for social the residential part was raised by one level, leaving undeveloped ground floor as a space for social interactions of residents and additional external functions. The building formed in this way received unique features in the form of large terraces, from which you can enjoy the charms of the surroundings, and full integration with nature due to the proximity of trees and additional lighting in the patio. In the last step, the rhythm of the elevation was shaped. Vertical divisions of the façade were introduced, creating expressive regular squares arranging the freely formed volume of the building. It was ensured that the division of the facade and its rhythm were equal and did not have anomalies in the form of extensions or additional elements.





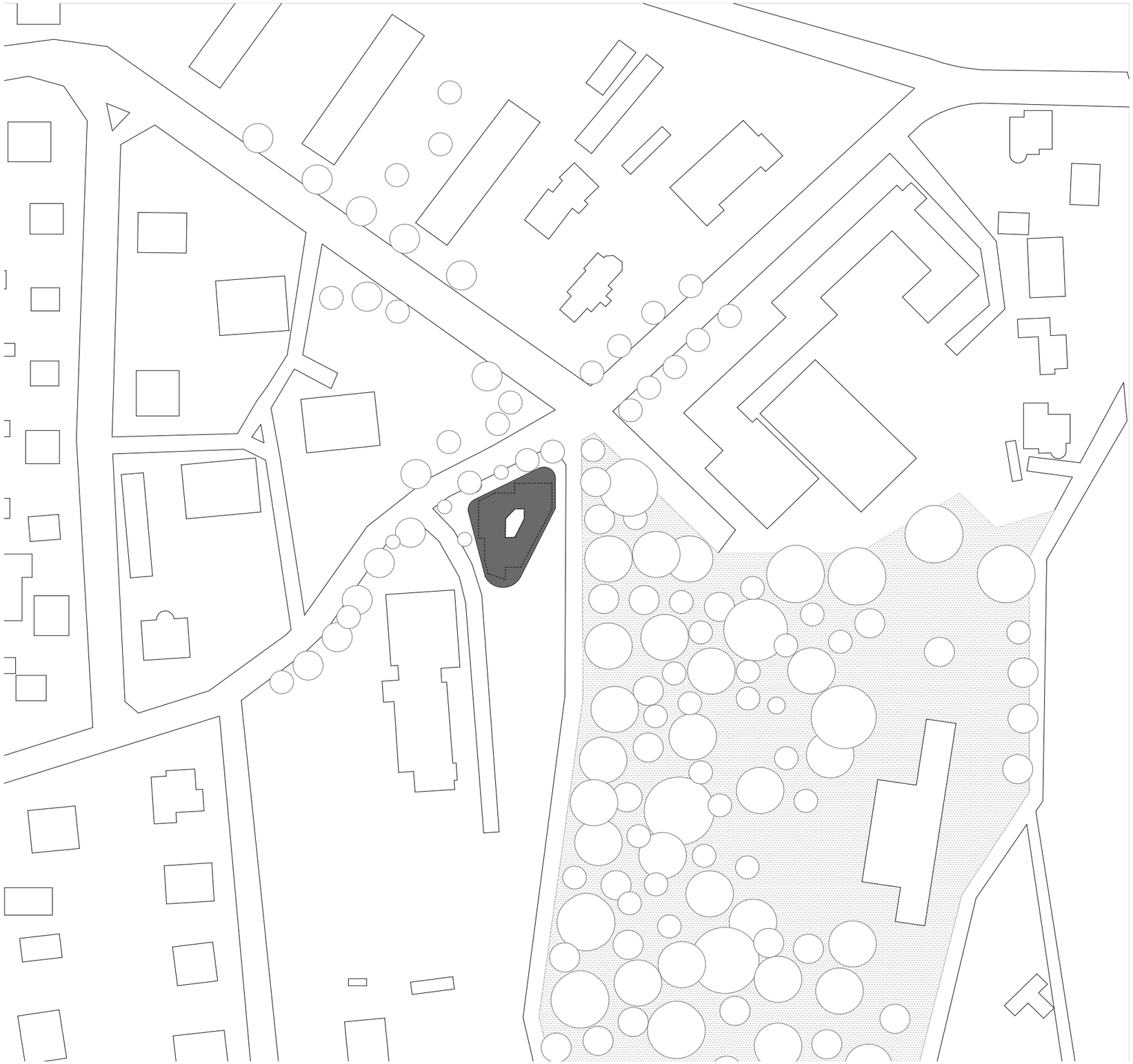


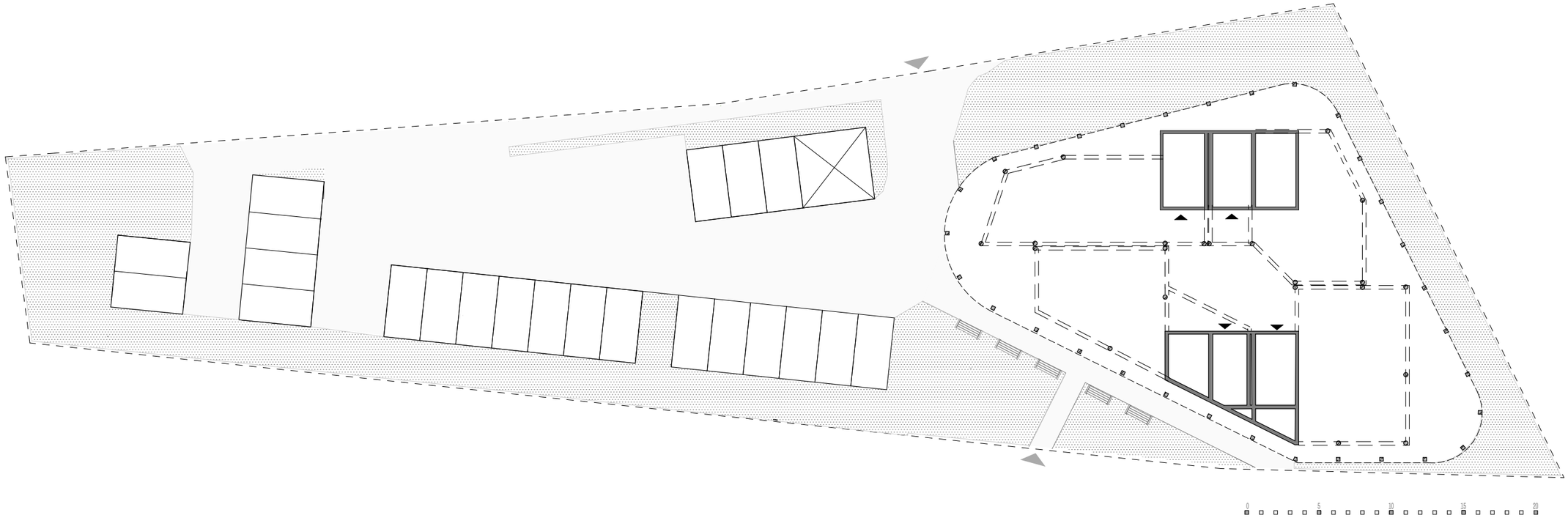




The main inspiration when designing the building was the idea of the pleasure of use. Our reflection on the observation of the current housing market boiled down to the conclusion that instead of having positive associations, buying or owning a flat has become practically a „necessary evil" resulting from the necessity to invest funds in real estate. So we came up with the idea that we should go back to the basics of what an apartment is, i.e. the pleasures of living and its use. For this purpose, our thoughts and searches began with what we really enjoy and we decided that it was the context related to spending free time or holidays. After recognizing this direction of thinking, associations with various places appeared, such as an alpine squeaky terrace when we go skiing in the ground with a view of the mountains, a recreational house with a terrace among greenery, a hammock stretched among trees or a light park pavilion in a park cafe where we spend on a summer day moment looking at the beautiful green. We tried to crystallize all these emotions and feelings in the design solutions at Villa Reden - hence the spacious terraces, wood, view, close distance to trees or raising the ground floor to 2 floors to improve the view, equipping the building with wide windows overlooking the surroundings and a patio cutout so that every room of the building (including staircases, entrance halls, kitchens and bathrooms) has access to daylight.The shape of the building resulted from the plot boundaries and the existing beautiful tree stand. The compositional layout of the borders and trees already had the beauty it had and optimally filled the plot, therefore we considered it a good direction to adapt the spatial form to this shape.

LOCATION

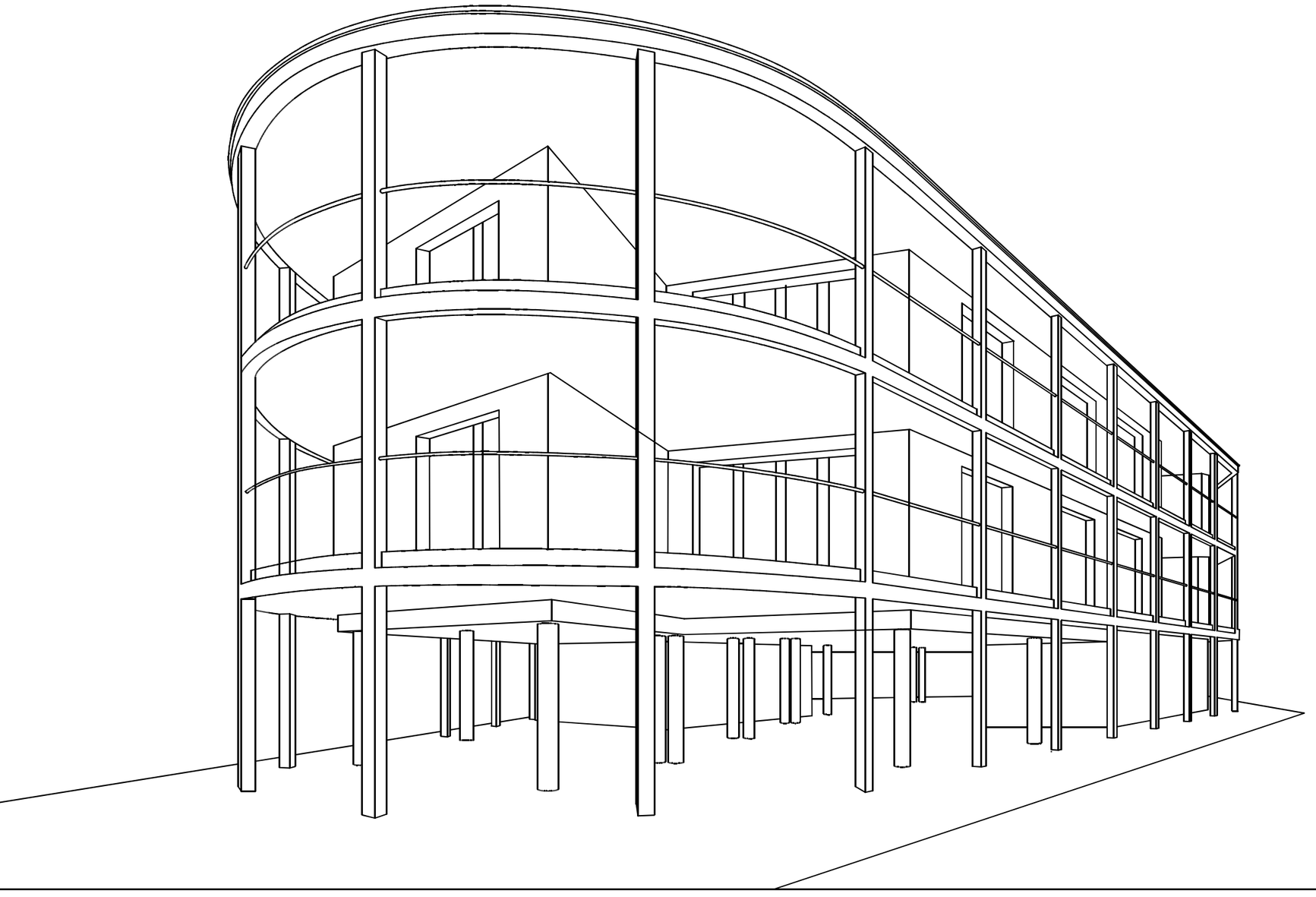




Historically, the Reden Mountain area has been exposed to coal mining shallow decks without proper supervision hence a very high risk voids beneath the ground. After the research, it turned out to be correct our guess. It turned out that part of the building is located a collapsed void after shallow hard coal mining. The most effective the technical solution was the use of a foundation slab under the entire building. Unfortunately this method was not the cheapest. After cost calculation just before the start of works related to the foundation we decided to change the type of building foundations. We redesigned them on a very complicated and varied system of spread footings o different dimensions, located at different levels and braced transverse, diagonal benches and bowstrings. As designers, no we were supporters of such a solution, but nevertheless financial considerationshave decided. Fund complexity degree ments caused quite long construction works and the need for increased author's supervision over it execution.

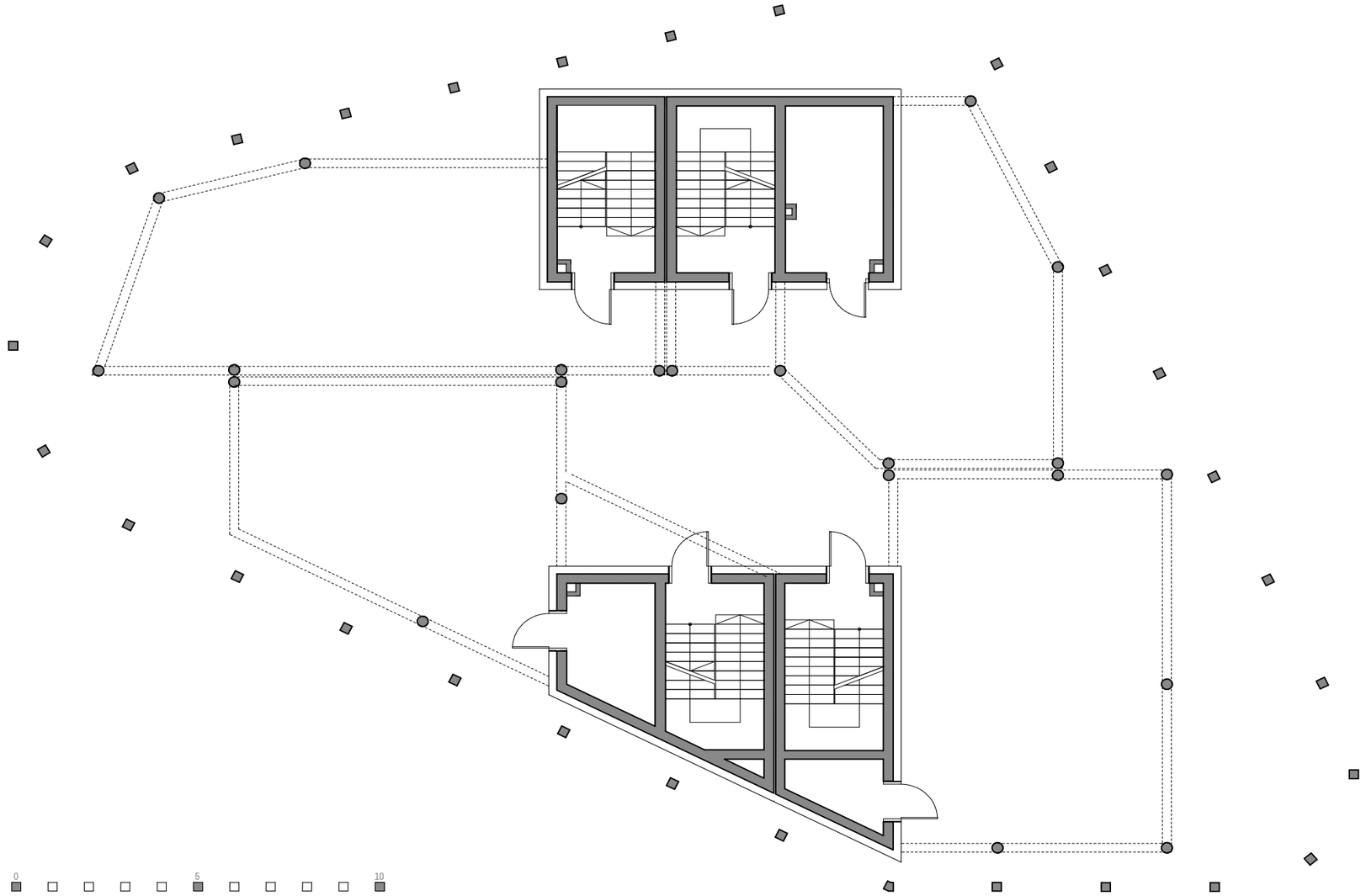
The investment area is the area located in the north-eastern part Chorzów, in the district called Reden Mountain, in the historic Reden Park, of area of 6.72 ha The park was established in 1874 as a green area, in 1898-In 1907 a restaurant, a gardening plant and a greenhouse were built. From 1913 year, the assumption was increased by another 10 ha of forest area. In a later period, it was equipped with additional functions such asak: sports facilities i recreational and hotel. Along with the economic expansion of Chorzów and with the influx of people and increasing housing needs, the area ceased to exist meet the expectations and needs of residents, so it was decided to realization in his the immediate vicinity of a much larger establishment park (over 600 ha)-Provincial Park of Culture and Recreation.

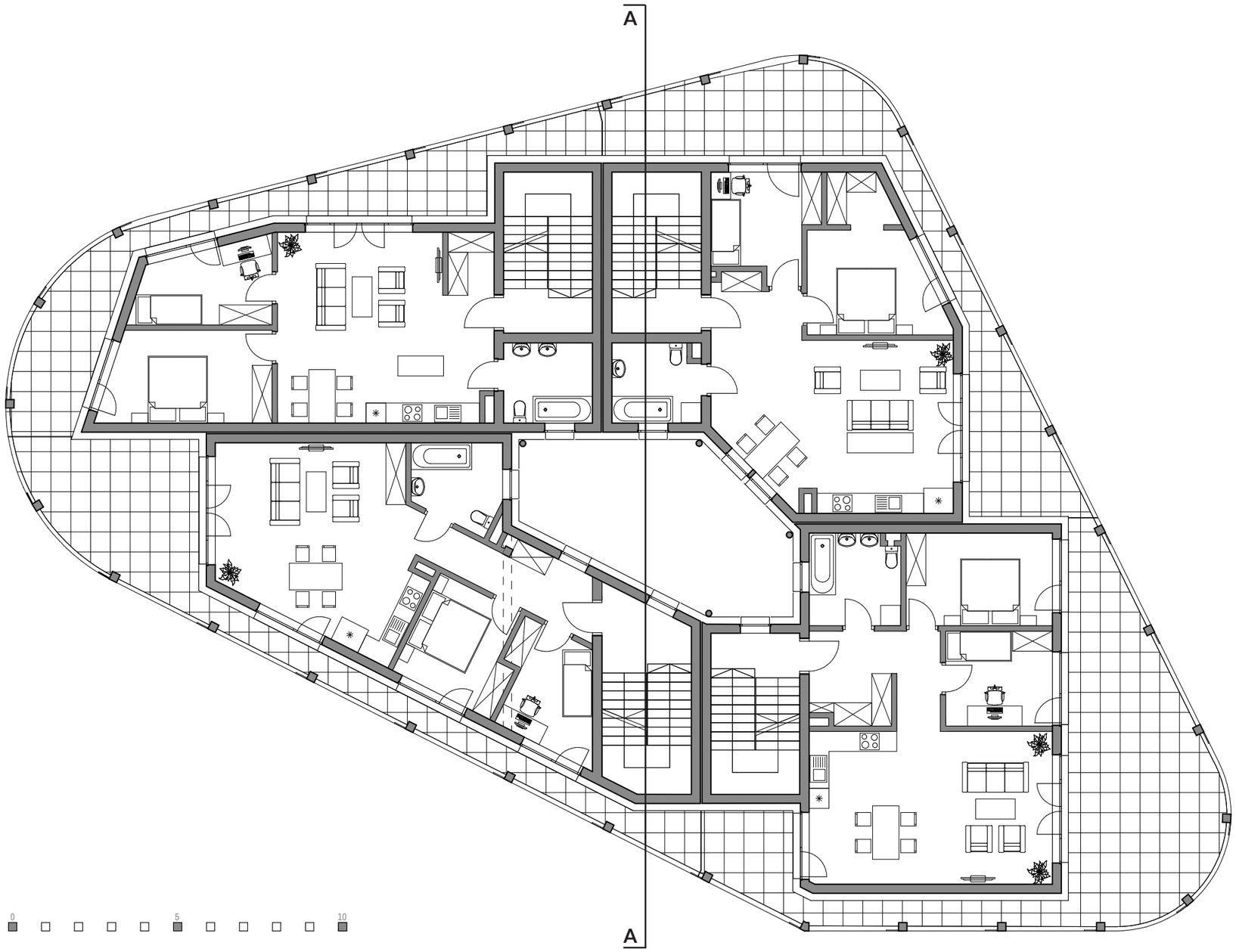
ARCHITECTURE AND USE OF SPACE



Despite the fact that it looks like one coherent apartment building, it was designed as a complex of four single-family, two-apartment group buildings. The building has been divided into four independently functioning parts, in which there are a total of eight apartments and the ground floor of the building is mostly empty space serving as a common part of all residents and the zone of entrances to the buildings with technical rooms (heat exchanger, power connection, water meter). Each part has an independent entrance on the ground floor in the form of a staircase leading to two premises. Each of the apartments has access to a terrace of various widths along its outer perimeter, and to a patio, which additionally illuminates the entrance areas to the apartments and the bathroom.

Building contains 8 apartments 76-75 square meter on 2 levels with usable area: 715,4 square meters.





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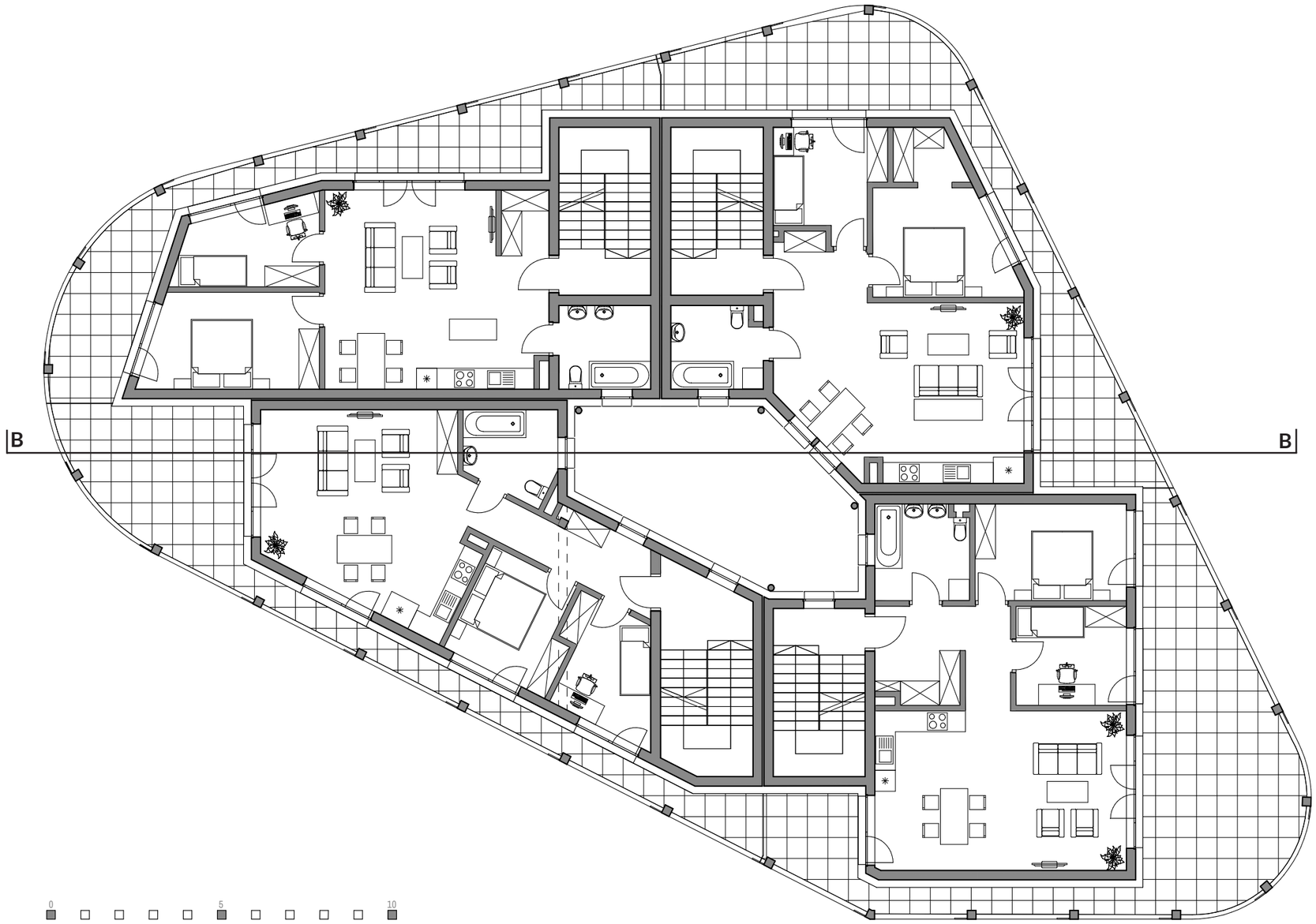
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A-A

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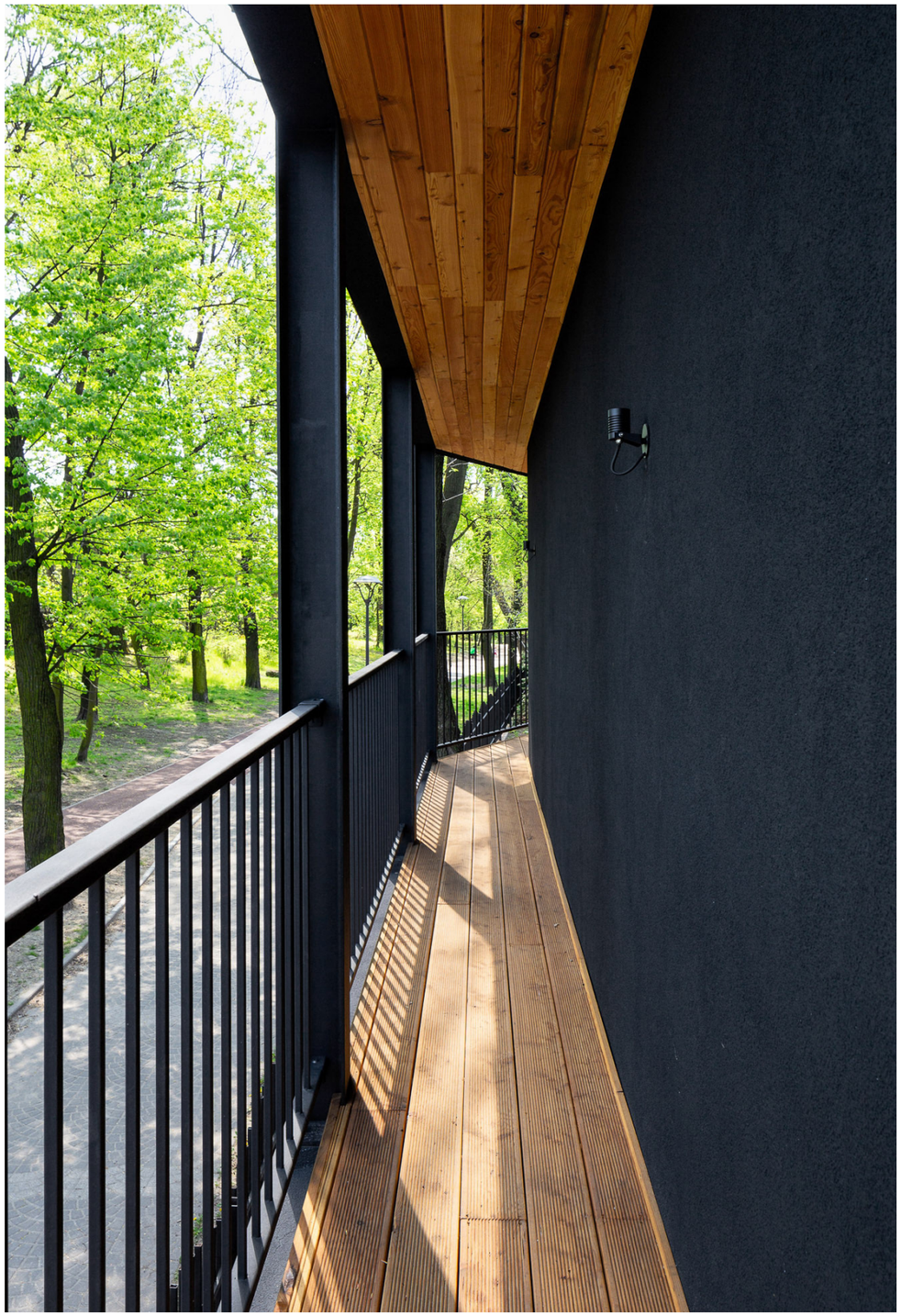
B-B

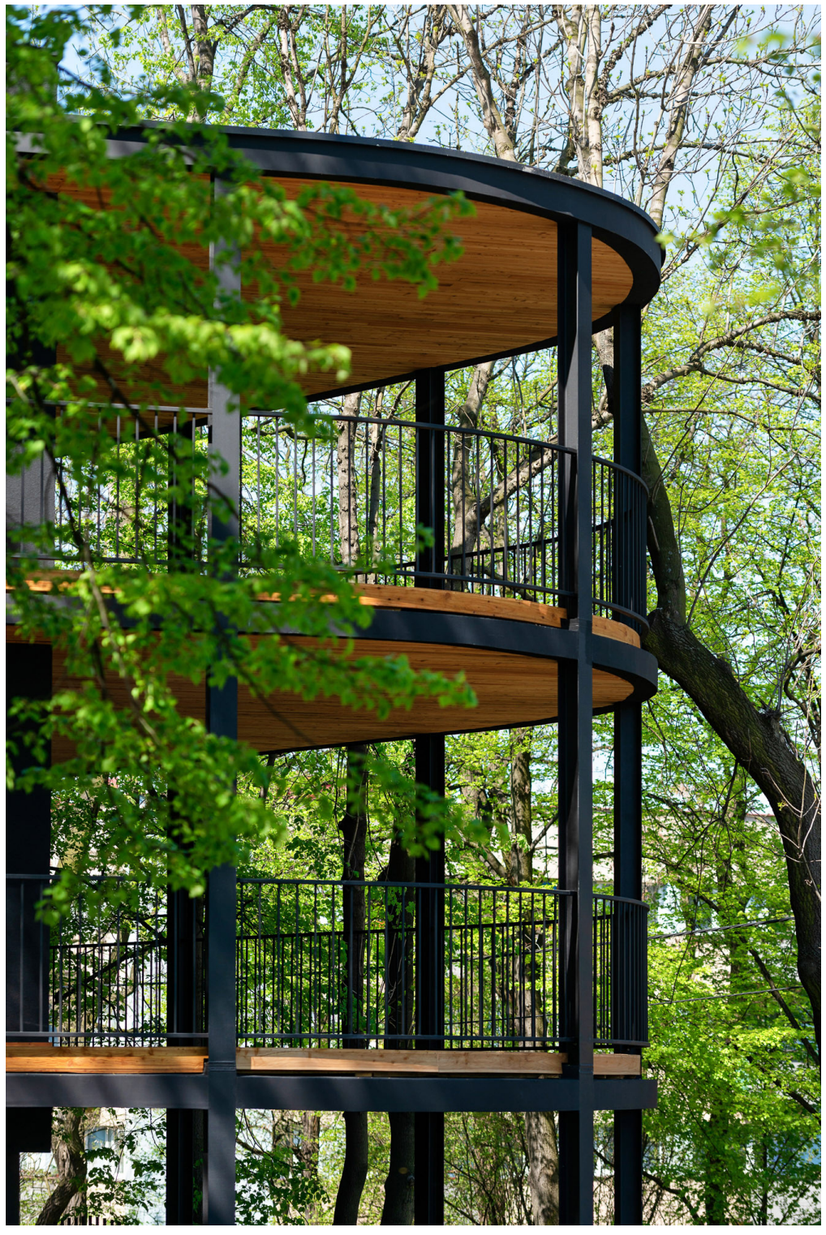
APPERANCE AND FINISH

Basically, the building is a small-scale facility and does not have a very diversified selection of material solutions. Its basic feature is a modest and consistent selection of finishing materials as well as a simple and inexpensive way of building. We tried to meet such assumptions in line with the client's expectations. Of course, the final effect is the result of confronting our assumptions with dynamic changes on the construction site, a fairly long construction period and various unforeseen circumstances.

The upper storeys were built as a reinforced concrete skeleton with columns and cores. The structure is filled with a 25 cm wide ceramic brick and insulated with a layer of 18 cm polystyrene. A 2 mm thick thin-layer plaster was used as the external filling. It is worth mentioning that the volume of the building in the almost empty ground floor was based on reinforced concrete columns and partly on the walls constituting the structure of staircases and technical rooms.

The ceilings were designed in monolith technology, however, at the construction stage, it was decided to change them to a prefabricated structure and replaced them with filigree ceilings, which remained unplastered inside the premises. The internal walls are also made of brick technology with a ceramic brick with a thickness of 11.5 cm. and plastered. The structure of the roof and terraces, originally designed in monolithic and wooden technology, was replaced with a steel structure during construction. Terrace structures consisting of „C” and „T” profiles in the form of perimeter beams, transoms and columns were filled with reinforced concrete, insulated and a wooden terrace was made on the substructure. A wooden soffit was made from the bottom of the terrace





SUSTAINABILITY ENERGY CONSERWATION AND INNOVATION

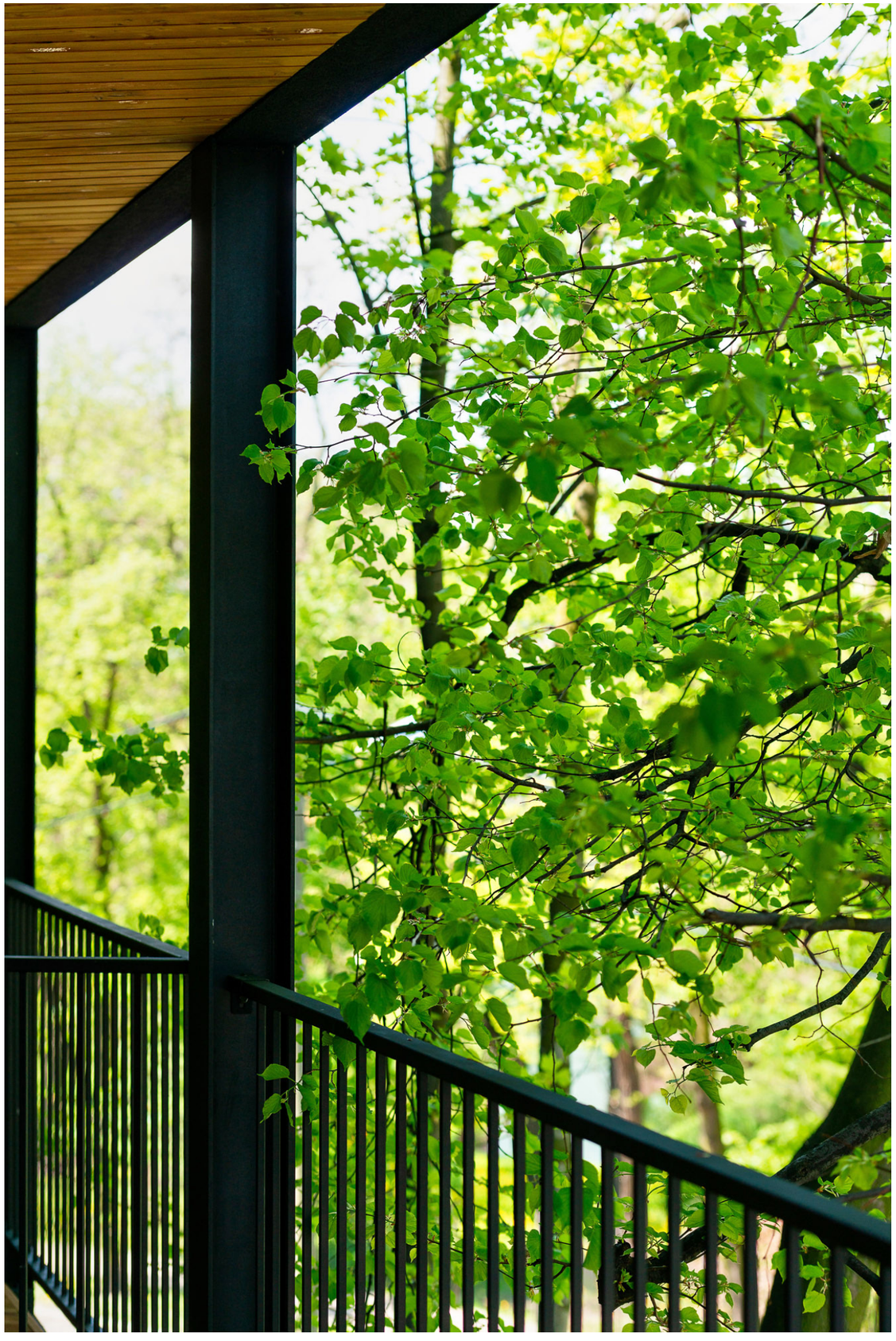
ARCHITECTURAL

The wide terraces and the proximity of the remaining stands allow to keep the level of humidity and temperature at a constant level. In summer, terraces and trees protect the building from overheating, while in winter they constitute a buffer between the outside world, protecting against wind, rain or snow.
Thanks to these simple solutions, the facility is almost self-sufficient and does not need any additional air-conditioning installation

TECHNICAL

Windows	U =1,1 W/(m²K)
doors	U =1.7 W/(m²K)
External walls	U= 0,19 W/(m²K)
Roof	U= 0,18 W/(m²K)

The heat source comes from a highly efficient and low-emission heating network, and a heat exchanger system was also used.



SAFETY AND SECURITY

ARCHITECTURAL

On the ground floor there are only entrances to staircases, which automatically makes it difficult for possible burglars to reach the apartments,Each apartment has direct access to the staircase, which facilitates evacuation (2 apartments per staircase). The perimeter terrace to which all living rooms have access in the event of danger facilitates the rescue operation. Patio in the event of fire facilitates the smoke removal of the facility. Each room has access to windows, which prevents the formation of potentially dangerous „dead spots”.

TECHNICAL

The facility is equipped with anti-burglary doors and windows, in which there is a location under security security with the office of the same residence in this area. 24h monitoring of the area was used, the area was fenced, which hinders the access of people. Individual parts of the building are separated from each fire partition wall.