

Explanatory note

Site plan

The project aims to create a balanced environment between outdoor areas and indoor spaces. The design proposes positioning the new building along the north-west and north-east border of the site in order to create a spacious south courtyard for outdoor activities. The proposed building position considers preservation of the majority of the existing trees and allows natural air flows to penetrate the inside of the enclosed building fabric of the quarter. The outdoor areas are divided in a semi-private zone near the site entrance, which serves as a buffer zone from the street, and a private inner courtyard enclosed by the building. A playground, gazibos, raised garden bed, sensory path and benches are allocated along a pedestrian alley creating a balance between outdoor activities and rest. The main vehicle access to the building is through an inclined ramp to the underground level. The alley leading from the street to the main entrance of the building is covered with reinforced pavement allowing a vehicle to access the entrance for drop-off/short term stay. There will be strict control at the plot border assuring that only authorized vehicles could pass through.

Functional organization

The building is organized around the courtyard, shielding it from the north and presenting a constant visual connection between indoors and outdoors. The functional program is allocated in two blocks – a two-level volume hosting the hydrotherapy unit and training center and a three-level block containing halls for center for social rehabilitation and integration, center for early intervention, center for family-mediation intervention, medical center and administration. The two blocks are connected through the central volume of the vertical communication – staircase and elevator. The height of the two blocks corresponds to the surrounding buildings – the three-level block is located on the side of the four-level dormitories and hospital for ocular diseases, whereas the two-level block is positioned near the two-level volume of the territorial design organization.

The main entrance of the building faces the inner courtyard. It leads into a foyer with reception, waiting and play area and a conversation nook for parents and therapists. The foyer offers a connection to the medical center which also has a separate entrance, enabling it to function as an independent unit. The first floor also hosts a toy library, physiotherapy rooms and hydrotherapy unit.

The second floor is allocated to functions for therapy and learning that require not only children with special needs but a broader range of visitors – administration, Montessori center, training center. The third floor allocates premises for use mainly for children with special needs and their relatives. The proposed functional layout aims to distribute the different flows of users throughout different levels allowing a more accurate zoning and future separation if necessary. Placing the therapy rooms on the third floor also presents a direct access to the green roof which offers an additional secure area for outdoor activities. The staircase, elevator, common areas and rooms are design with consideration for an accessible environment. The design rests on clear horizontal and vertical communication lines allowing easy orientation in the building.

The underground level is dedicated to technical utilities and parking. It is accessible through the main vertical communication as well as through a vehicle ramp.

Structure

The structural scheme consists of concrete columns and slabs. The proposed structure is cost efficient, simple for execution and with a long life span. The structure of the of floor slabs allows the installation of ceiling track hoists. The structural axis comply with the requirements of an efficient underground parking. The cross axis are set to 6 and 8 meters which results in a building with very few interior columns. This offers flexible positioning of the interior partitions depending on the future needs of the users forming premises of various sizes.

Façade

The three volumes of the building are underlined through treatment in different materials. The main two blocks are designed with ventilated double skin façade – white HPL and brick masonry. They are connected through the volume of the vertical communication with a curtain wall façade. The proposed materials are durable and create a warm welcoming atmosphere. Mineral wool insulation and triple glazing with low-emission glass coating shield the building from heat loss and overheating.

Sustainability & energy efficiency

The project implements a set of design and technical solutions in order to achieve a sustainable and energy-efficient environment. The simple geometry of the volumes minimizes heat loss, while enabling cross ventilation. The lightwell and skylights rely on the effects of stack ventilation to naturally cool down the common areas. Most of the therapy rooms are positioned on the north-east facade of the building in order to receive indirect natural light and to avoid strong light, shadows and glare as unwanted stimuli.

The design provides the installation of energy efficient LED lighting as well as a fresh air ventilation system with heat recovery and air humidity control. Photovoltaic and solar panels on the roof will produce energy and hot water for the building's needs.

The proposed interior materials create balanced and calm pastel colour palette. A combination of reflective and absorbing materials provides a comfortable acoustic environment. The design proposes cork flooring for commercial use the common areas and carpet for the smaller rooms and the training center for their good absorbing qualities. The sound absorption is complemented with acoustic ceiling and absorption wall panels. Reflective materials as plaster walls, wood wall panelling and cabinets help in creating a balanced acoustical experience.

Flexibility and adaptivity

The design enables reconfiguration of the spaces in accordance with the user's needs. The main physiotherapy room allows separation in three independent smaller rooms through two moveable walls. The seminar hall could also be separated in three smaller halls. There is a possibility to create a direct entrance from the courtyard to the hydrotherapy unit and to let it for rent for outside activities out of work hours. The placement of the building on the plot allows future extension to the south if there is any need for more floor area in the future.

Floor area of the underground floor - 671m²

Gross floor area of the above-ground level - 1897m²

Total landscape area within the plot - 1235m²

Number of parking spaces in the underground parking - 20

Approximate construction cost – 1 410 000 euro