

# EXPLANATORY NOTE

## DESIGN CONCEPT FOR NEW KARIN DOM BUILDING

Designing for disabled children and children with special educational needs (SEN) is a difficult task and an honour at the same time. Because of its specifics, studies and different approaches the process is more like science work for best reaching the special needs and less like standard architectural design of a new modern building. Looking through the eyes of the small users of the place, we as designers learn more about their unique world and enrich ourselves with so many new perceptions.

- **RESEARCH**

After much research, following the assignment of the competition and examining the terrain on the spot, our team made the necessary analyzes and came to some important conclusions.

**The site** picked for construction is currently like a park for two large student dormitories. The existing vegetation is in middle and good condition but lacks regular maintenance. For this reason, the yard is not intensively used as a park environment, but rather plays the role of green decor.

Designing a building in a green environment should be non-invasive and respectful to nature. So we did some analysis and sketched the possible free zones for development. Assuming the to fulfill so many functions and the size of the property, we have come to conclusion that the only reasonable option is to leave as much as possible of the yard and build a ring around the construction lines. Of course, we have to move some high vegetation to places in the yard which are good enough for their well-being and use them to shade the playgrounds.

- **FUNCTIONALITY AND USEFULNESS**

According to the purpose of the building and serving the special needs of its occupants, we designed each individual functional block with attention to accessibility, its coherence with the other accompanying functions, as well as ensuring a friendly environment and increased security.

**The access** to the building is at the ground level and passing through the reception area each visitor has a direct connection with the yard, which by

the way, is provided with a visual contact even before the entrance through the installation of a glazed structure. In this way, we aim for a smoother transition of children from open space to enclosed one on a psychological level, and we believe that will achieve less stress and tension.

**The building** accommodates a great deal of functions, which is why it is necessary to develop the plan on a second level as well, where we place administrative functions, a training center with a seminar room, early family mediation and others functions that are not preferably used from so many people with walking difficulty. Vertical access is provided by stairwells and elevators at suitable sites and according to fire regulations.

The building offers a cozy environment with many places for communication and recreation, of course in direct visual and physical connection with the natural features of the terrain. All the functions of the assignment are fulfilled with extreme accuracy, the connections, areas and other specific requirements are met in order to provide a safe environment for living and meeting the needs for the development of children. Special floorings, adjustable handles, ceiling hangers and lifts are provided and can be developed and shown in detail at the technical design level of the project. The building provides a quiet and peaceful environment, it is oriented to the courtyard and involves a lot of outdoor work and enhancement of children's motor sensation in the natural environment.

We looked through the child's gaze and stood in the play yard. We adjusted the volumes to the scale of the children because a large and monotonous structure could stress and confuse them. So we did the facade fragmentation as separate houses and sheltered a function in each one. This naturalness of the new Karin Dom can make the children feel at home, able to recognize where they need to go and not be afraid of getting lost.

## ● SUSTAINABILITY

The materials used are natural and ecological, a product of the latest trends and developments in the Bulgarian market at the moment.

We use wood construction and energy efficient ecological panels of pressed straw. For walls - Heat transfer coefficient  $0,14 U = W / m^2 K$  and for roofs - Eco Roofing Technology Heat transfer coefficient  $0,160 U = W / m^2 K$ .

As a cladding material, we use clinker ceramic details that will not only give the finishing layer to the facade, but also aesthetically contribute to the natural look. The building is energy efficient and will "breathe" and not allow the development of mold or moisture retention. All materials are perfectly

combined with the environment, act non-invasively and fit into the overall vision. Natural light is used in all rooms and an option is provided for dimming when needed. This minimizes the use of artificial lighting.

The intended ventilation system uses a constant ground temperature. Through the installation of pipes during the excavation activities for the construction of the underground parking, the trapped air from the windward side of the property / from the north / will be heated underground through natural heat exchange and will continuously supply fresh air to the premises in the summer period. Due to the presence of a heating room on the parking level, we can heat it to the right temperature before it enters the premises during the winter. Ventilation can be performed naturally by flow and assisted with a small amount of energy when needed. This is a subject of a ventilation engineer competency and can be developed in detail in the next step.

The project also has a **social sustainability**. Turning the structure inside the courtyard, creating a vision for small houses touching each other, all contribute to preserving family traditions and care and uniting in the care of a child with special needs. Raising such a child is difficult, and parents would most quickly transfer what they learned to Karin Dom if it were in a similar home environment.

**Sustainability during construction.** As a modular system is used in the construction of the individual structures, the project can be implemented in stages. The individual modules can be replaced if a new need arises. Runtime is reduced as the modules are prepared according to predefined parameters and are mounted on site.

- **FEASIBILITY**

The construction principles used as well as the materials are fully applicable in the budget of the assignment. Excavation activities are kept to an optimum minimum and the construction of the building is not difficult to perform due to its wide-area and low-rise layout.

- **EXTERIOR AND FIT IN WITH THE SURROUNDINGS**

The exterior decision was made based on an on-site environment analysis. Each structure is observed to have a natural look, to fit as much as possible into the park environment and to act soothing and unpretentious.

We have studied the practices of such high vegetation terrains and found that even if the tree is preserved, if its roots are dug, it will inevitably damage and badly affect it. So we decided, instead of doing excavation activities around them, to move them to the newly planned yard where they will be preserved and continue to delight us. This investment is for the sustainability of vegetation for a longer period of time.

- **DESIGN**

The interior design is followed by the exterior and again there is a lot of wood as a trim. All furniture is made of wood in natural tones. On the walls, the cladding changes according to the sector and function, so that they can be more easily recognized by touch. Glazing has a suitable window sill, helping to maintain comfort and a sense of security. When forming colored corners, the tones are pastel and translucent in order not to cause strong contrasts and visual irritation.

In the courtyard of the building, natural materials are used to shape the walkways and play areas, such as small steps of logs, pebbles, and other materials for touch paths. Rope swings, hammocks, tree houses at a small height from the yard level are provided, as well as a wooden climbing table.

The design concept is as close as possible to the natural environment. This city can hardly provide for it, and parents may not always find the time to give it within a small picnic. We think that children with special needs would improve their sense of self if their senses are maximally relieved from any stress.

*...Small wooden-straw simple houses, assembled in a green yard make functional communication and work like one structure - **that is our message...***