EXPLANATORY NOTE
Karin Dom New Home - Varna

1. ARCHITECTURAL APPROACH

Before establishing the architectural concept for a new Karin Dom building we have defined a series of questions related to the meaning of the main activity that the future building should accommodate, as well as urban and contextual issues, the complex functional program, the budgetary limits and technical issues. The conclusions drawn on the detailed analysis of each aspect generate the information needed to sort this puzzle. For the spatial concept we have chosen an organic and natural approach to include the “house” in the park, treating the building as a “park furniture” in contrast with the surrounding buildings. Based on this method the functional program of the building is arranged, using a tectonic principle aiming to “break” the main volume into parts, achieving the scale of a single-family house with different functional groups. This gives the spatial composition a scale typical for a home and comfortable to integrate into the natural environment. The “development” of each volume is subject to established logical links between the function and the environment and an adequate energy efficiency. A number of modules varying in height and function rotate in spiral fashion around the main volume, where the vertical communication takes place, starting from the one-story volume with the pool from the south towards the courtyard and reaching the high volumes at the face and entrance.

2. ARCHITECTURE

2.1. Site planning

The building is situated within the boundary lines of the plot in accordance with the easement distances and urban development indicators. In order to do that the main characteristics of the environment are taken into consideration - the "solid" frame of the existing massive buildings and the enclosed park space which continues southeast and merge with the Varna TPO building court yard. On the other hand, the main access to the property is from northwest. Using these favorable characteristics of the location we choose to pull the building site as close as possible to the face of the property, aligning the building with the directions of the surrounding edifices and thus allowing it to stand in the "shadow" of TPO-Varna. In such a way we get the most spacious yard with a favorable exposure and a convenient and short access to the building. By applying small manipulations to the shape of the building step and volume a balanced entrance space is created, as well as a quiet and peaceful inner courtyard (a common principle of all private homes). All decisions are made in a preservative and respectful manner toward the existing vegetation (about 20 trees, mostly conifers, will be affected but compensated with new ones).

2.2. Volume-space design

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2.3. Functional organization of the building and yard

The layout of the building is subordinated to a clear, concise and intuitive functional organization in harmony with the spatial composition and meets all the requirements described in the design assignment. A clear and definite logic has been implemented in both horizontal and vertical directions. A compact layout and a volume composition scheme (derived from a QUADRAT - CUBE) provide convenient and short connections between the multiple functional groups. On the other hand, the built-up area is minimal as well as the external surface of the building which guarantee an optimal budget (initial investment) and good energy efficiency (fixed costs).

The structure of the individual functional groups by levels is subordinated to the workload and access control as well as convenient communication. All levels are designed with even floors and thresholds for an easy and unobstructed accessibility especially for people with disabilities.

A functional “star” type scheme is applied by positioning the vertical communication in the center of the floorplan and the spatial composition, thus the area of the common parts is minimized. The functional program for the above ground levels is structured in several main groups according to the level of access to each zone:

- Level I – PHYSIOTHERAPY
- Level II - DIAGNOSTICS AND DEVELOPMENT
- Level III – TRAINING
- Level IV – ADMINISTRATION
- Level V - PANORAMIC SITE

The underground level provides compact parking lots for 21 cars, two of them are intended for disabled people, a minimum ceiling height of 2.6m is provided for minibus access. The rest of the level is designed for warehouses, technical premises and server rooms.

On the groundfloor level ± 0.00 all entrances of the building are organized - the main entrance to access the Lobby area (A+B), a separate one to the Medical center (I) and one more to the courtyard of the building. The orientation of he Physiotherapy (C) and Hydrotherapy (E) units is southeast with good exposure and a convenient connection to the courtyard.

On the second level there are three centers for diagnostics and therapy - Montessori (D), Center for diagnostics and therapy (F) and Family-mediated intervention (H). On the third level there are a Training center (J) with its accompanying spaces, Early intervention center (G) and an Staff area (L). The Administration (K) is separated on the uppermost level independently. In addition to the program of the assignment, in the highest part of the

building (as a compositional and functional accent) a covered panoramic terrace is designed and is accessible through the staircase and the elevator. Thus future visitors would have the opportunity of a "sneak peek" to the southeast through a close-up of the green courtyard, the urban area and flowing into the azure of the seafront.

The design of the exterior spaces is strictly functional and pragmatic, aiming to form clearly distinguishing the functional zones. The layout of the building naturally creates optimal spaces - a front yard with area for maneuvering, temporary parking and parking lots for 3-4 cars, access to a covered ramp and a spacious and bright yard to the southeast. A bicycle parking spot near the entrance area is provided as well.

2.4. Structural design

The preliminary design was developed on the basis of a structural model with a monolithic reinforced concrete skeletal-beamless system. In order to create a flexible structure with an economical budget, a constructive scheme was adopted with an optimum pitch of 5.4m in both directions, suitable for both combining the functions on the different levels and for designing beamless structures with smooth ceilings. In the main halls (the swimming pool and the seminar hall) with large bridging and a visible ceiling in the interior, a structural metal system will be used – with wide flange H-shaped beams along the slope. Vertical diaphragms of reinforced concrete (main core, shear wall and frames) will be provided to resist to vertical and horizontal forces. Exterior walls along the contour of the building are made with ceramic blocks with a thickness of 25 cm, and the inner partition walls are made with a two-layer plasterboard with a thickness of 10 to 15 cm and a filling of mineral wool (70-80 kg / m3).

2.5. Used materials

2.5.1. Exterior finishes - the treatment of the facades includes several basic materials / systems: mosaic plaster (mineral plinth), mineral plaster, steel sheet cladding with PE coating (facades, roofs), glazing with a 6-chamber PVC frame profile and triple glazing (flader wood-outside, white-inside), vertical wooden ribs 4/4 cm from coniferous thermal wood. Frameless triplex glass railings are provided at the balconies and toward the yard. The building will be insulated with an effective thermal insulation layer of mineral wool, laid on the outer surface of the enclosing structures.

2.5.2. Interior finishes - the elements used for designing the visual communication of the environment are subject to the modern criteria for perception, reception and transmission of information. Symbolic language is used, with characteristic patterns (type of icons), allowing a fast, easy and intuitive consumption of the necessary information.

The flooring in the building will be of: polished concrete with a sealed cover for the underground parking; granite / faience tiles for the office and service areas; vinyl coating for the public areas and main premises and carpet in the rooms with acoustic and functional requirements.

The walls will be treated with interior plaster, faience tiles and vinyl finishes according to the purpose of the room. The areas with suspended ceilings (corridors and service rooms) will have a raster ceiling with a grid of 60/60 or 120/30cm - convenient for periodic maintenance, and for the representative premises (foyer, reception, offices and cabinets) - a suspended ceiling of plasterboard will be used.

3. INSTALLATIONS

3.1. HVACK system

A basic design principle will be to provide year- round comfort with minimal operating costs and high reliability of the systems.We offer a low energy building with floor heating in all rooms. Each zone will have its own temperature control. An energy source with a capacity of 60kW is required.We recommend that the heat pump is air- to-water. The investment is as cost- effective as any other heat pump. We anticipate the use of solar energy for domestic hot water 2000l / day and help to heating also with 30 square meters of selective solar panels. General ventilation is designed for all areas using recuperators with an efficiency > 75%. Fresh air is at a minimum 15 m^3/h /person. In the low-energy buildings, the ventilation system supplements a basic heating system. The project will include Hybrid AHU with "2 stage thermodynamic heat recovery technology" - recovering up to 100% of the extract heat/cool/humidity and system COP> 6. The rooms for working with children do not provide heaters, only floor heating and air conditioning. Fan coils can be used in offices and halls, which will be:

- management (of the construction process and the operation of the completed building)

3.2. BMS SYSTEM

- occupants' health and tone (internal and external factors - light, noise, air quality, thermal comfort, etc.); - quality of the indoor environment and innovation in design.

-Transportation (proximity to public transport, maintenance of utilities, provided transport services, reduction of the use of motor vehicles by promoting alternative means of transport).

In terms of inputs and materials, two other criteria have been introduced

- water (monitoring and managing of water consumption and promoting its reduction), water efficiency

3.3. RAIN WATER TANK

-Materials (promoting the use of low-impact building materials, reusing some of them, promoting the use of thermal insulation, reusing existing facades, etc.).

BUILD-UP AREA

UNDERGROUND LEVEL	**– 685.1m^2**
GROUND LEVEL	**– 677.8m^2**
LEVEL 1	**– 673.3m^2**
LEVEL 2	**– 456.8m^2**
LEVEL 3	**– 166.0m^2**
LEVEL 4	**– 37.6m^2**

4. BUILDING COST CALCULATIONS

Approximate value for implementation of the competition project is

- CONSTRUCTIONS WORKS	318900 EUR
- ARCHITECTURAL WORKS	618900 EUR
- HVAC SYSTEMS	215000 EUR
- BMS	27000 EUR
- ELECTRICITY WORKS/ POWER SYSTEM	66100 EUR
- WATER SUPPLY SYSTEMS	45600 EUR
- VERTICAL PLANNING	57000 EUR
- LANDSCAPING	16000 EUR
- FENCE	8000 EUR
- CONTINGENT UNEXPECTED COSTS 5%	69125 EUR
TOTAL EXCL VAT EURO	**1441125 EUR**