

**INTERNATIONAL ARCHITECTURE COMPETITION FOR
SCHEMATIC DESIGN OF A NEW BUILDING OF
KARIN DOM FOUNDATION**

Explanatory note



Since its foundation, Karin Dom has become one of the most significant places for Varna citizens. Children, fund staff and adult visitors have a traditionally formed comprehension of this place – these are feelings of calm, safety and home. Foundation team's commitment, professionalism, and love are the basement of this comprehension undisputed. In addition, we would like to mention that the genius loci of Karin Dom current location have a special influence on sensation too. An old and beautiful building is situated at the seaside and was a Stancioff family house for a long time. That is why pupils, training center visitors, employees, and guests feel here at home.

In our competition proposal for new Karin Dom Foundation building, we would like to keep and transfer all qualities of the old existing house for children and teaching staff. Our goal was to transmit feelings and emotions of residential building typology to the public one.

The first step was to determine a comfortable, unthreatening scale for children. The massive volume was divided into parts and they were shifted to create internal courts. Playgrounds are situated in these separated from city noise spaces. Courts communicate with each other by the surrounded perimeter of existing trees. Also, different views on structure appear with shifting. The building invites you to walk through, look round it. The next step was to place all key parts of the program on the first and second floors. The administration part with roof access was designed on the third separated floor. Additional playgrounds and recreation zones could be organized on the roof. With these steps, the building keeps lower trees and its scale and proportions become closer to children.

Separated blocks have personal functions. They communicated by recreation galleries with large windows and unique views on outside nature help to navigate inside the building together with special interior design. Each zone has distinct interior features. They are expressed in local use of color - tactfully, but distinguishable and easily retainable. The only design of reception and vestibule groups remains neutrality. Open terraces on the first floor are the reference to Stancioff's family villa. Children can play on these terraces in foul weather.

We propose to use the warmest, comfortable and traditional for human material. All load-bearing structures, interior and facade finishing are designed in wood. Extruded «points» create the «tactileness» of the facade and put on children research it, oversee the light and the shadow.

EXPLANATORY MEMORANDUM FOR KARIN DOM ENGINEERING CONCEPT

Heating and Air Conditioning Systems

It is proposed to implement heating and air conditioning of the building as a multi-zone 3-pipe VRV system (Variable Refrigerant Volume). An important feature of the proposed climate systems is the recovery of heat or cold. The proposed climate system provides climate control in each room. The combination of energy-efficient technologies made it possible to increase the cooling coefficient of the system to 4.7 in cooling mode and up to 5.6 in heating mode, that is, for 1 kW of consumed electricity, 4.7 kW of cold and 5.6 kW of heat can be obtained. The total length of pipelines in the system can reach 1 km, and the maximum level difference between the outdoor and indoor units is 90 meters. In addition, the automation of the air conditioning system allows you to govern the energy consumption in each room. The same indoor units carry out the functions of both heating and the cooling system, as well as the outdoor units of the system provide heating and cooling of the outside air in the ventilation systems. Due to heat recuperation and the possibility of transferring heat to different parts of the building as needed, the system allows both heating part of the building's premises and cooling other parts of the building.

Ventilation System

The building provides for a mechanically driven supply and exhaust ventilation system, each ventilation system serves its own functional area:

- premises intended for classes with children, manipulations, lectures;
- pool;
- parking.

Air exchange is calculated from the air supply conditions for 1 person 60m³ per hour. The air exchange of the pool is designed to assimilate moisture from the water evaporation from the surface of the pool and maintain the parameters of internal air: temperature 24-29.5 C° and humidity 55-60%. For parking, an independent ventilation system is designed for the CO - assimilation.

Cold and Hot Water Supply System

The building is equipped with a centralized system of cold and hot water and gravity drainage. As a heat source for hot water a capacitive boiler with electric heater is offered. According to an framework calculation, the heat consumption for buildings is about 200 kW, the cold consumption is 300 kW.

Communications Networks and Security Systems

To accommodate the equipment of internal communication and security networks, a Server room is located on the first and second floors. To ensure centralized control, monitoring and control of security systems and fire protection in the building, a Guard post is provided on the ground floor.

Structured cabling system (SCS)

To provide the building with telephone communications and Internet access, a structured cable system should be implemented.

Telephone communications

To provide the building with telephone communication, a mini-automatic telephone exchange with partial access to the city should be implemented. Phone communications are provided at a doctor's office, a director's office, etc. SCS is used as a distribution network.

Electric synchronized time clock system

To ensure a unified time at the school, a time clock system it is planned to install in the guard room. To bind the clock station to the global standardized time, a module for synchronization is provided. Secondary clocks are set in the lobby, administration rooms, medical rooms, instructors room, corridors, etc. a module for synchronization is provided.

Technical Security Systems

The complex of technical safety includes:

- Security alarm system (SAS);
- Access control and management system (ACS);
- Security video surveillance system (SVS).

The central equipment of security systems (SS) is located at the post. The Guard post is located on the ground floor in the reception area. Security network equipment is located at the Server room.

Automatic Fire Alarm

The automatic fire alarm system is built out of analogue-type fire alarm equipment. Information about the state of the system is transmitted to the control panels installed in the building Guard room, where a 24-hour duty staff is

provided. The AFA system provides for the automatic transmission of alarm signal to a metropolitan fire guard post office.

Fire alarm and people evacuation management systems

The central equipment of the fire alarm and evacuation management system is located at the Guard post. System provides the transfer of emergency information to all rooms of permanent and temporary stay of people and in the premises of staff.

The equipment of the system is located in a 19" communication rack in the Server room.

System provides:

- broadcasting specially recorded voice messages to warning areas;
- activation of the warning system: manual - from the microphone console and automatic - on a "fire" signal of the fire alarm system.

Staff call system

In cases requiring additional assistance from staff, it is proposed to install a wireless call system in the premises. The system consists of call buttons installed in the therapy rooms, and a panel or console installed in the personnel premises. Wireless systems are easy to use and install.

Electric Power Supply and Lighting System

For energy saving purposes, the use of energy-efficient lighting, reasonable light distribution, presence sensors and daylight control solutions are provided. According to the preliminary calculation of loads, the power supply of the building will be 150 kW. On each floor in niches, electric switchboards are installed. Backup and emergency lighting is provided by lamps with built-in rechargeable batteries. Power supply to consumers of fire protection systems is provided for in the first category of reliability. Building Grounding System - TN-C-S. The building's lightning protection system is supposed to be according 3-rd protection level.