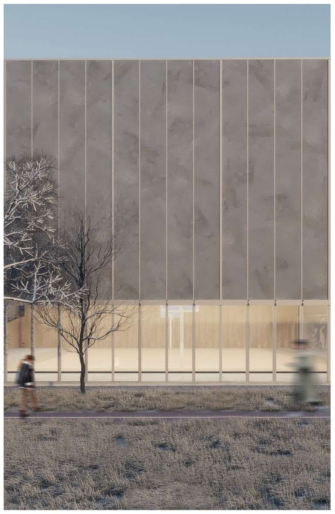
AUGU

BUILDING FOR EDUCATIONAL PURPOSES, M. MARCINKEVIČIAUS G. 72, VILNIUS, OPEN ARCHITECTURAL PROJECT COMPETITION

1. MAIN SITE AND BUILDING INDICATORS

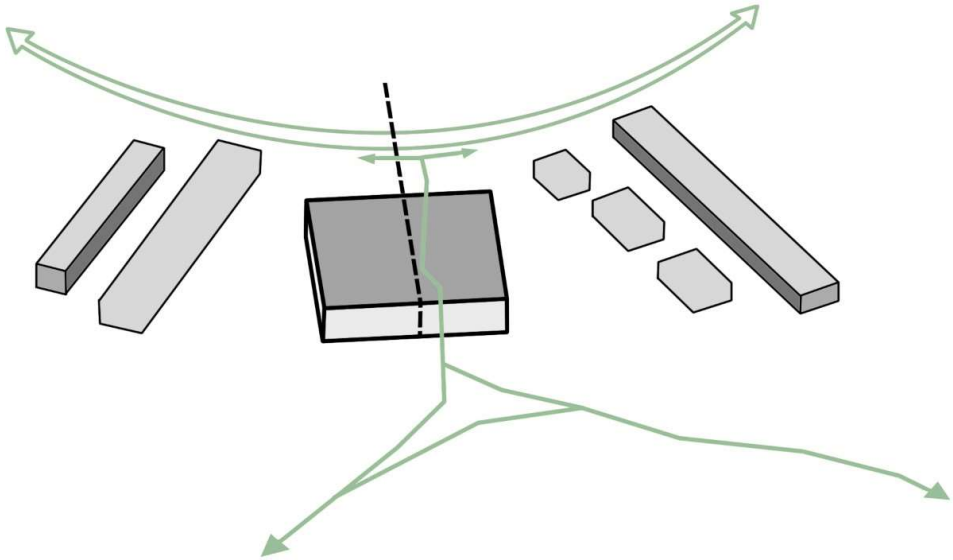
No.	*Name*	*Units*	*Amount*	*Notes*
I. SITE				
1.	Building type in area			Free planning
2.	Building density in are	%	26	
3.	Building intensity in are	%	0.39	
4.	Percentage of dependent green areas	%	52	
5.	Area of sports fields in the site	m^2	2394	
6.	Area of hard surfaces in the site	m^2	1533	
7.	Parking spaces for vehicles			
7.1.	Cars	unit	18	
7.2.	Bicycles	unit	40	
II. BUILDING				
Building for educational purposes (school)				
1.	Building indicators			
1.1.	Number of students	Unit	480	50 personnel
1.2.	Number of classrooms	Unit	43	36 classrooms 6 + 7 belongings
2.	Total area of the building	m^2	8254	
3.	Usable area of the building	m^2	8254	
4.	Volume of the building	m^3	55400	
5.	Number of floors	unit	3	
6.	Maximum absolute altitude	m	167,9	

2. DESCRIPTION OF IDEA

2.1. Urban idea

The proposed concept is presented taking into account the existing construction of the area, formed slopes and existing vegetation. Main school buildings are designed in continuation of the existing logic of the construction of esidential buildings. The projected volumes complete the series of existing buildings in their direction and division while leaving a naturally formed passage.

The project proposes to preserve larger groups of trees by integrating them into the project and making it the focal point of the gathering place. Existing and planned plantations emphasized by the introduction of elements of small architecture, designed green first floor roof with lounges.

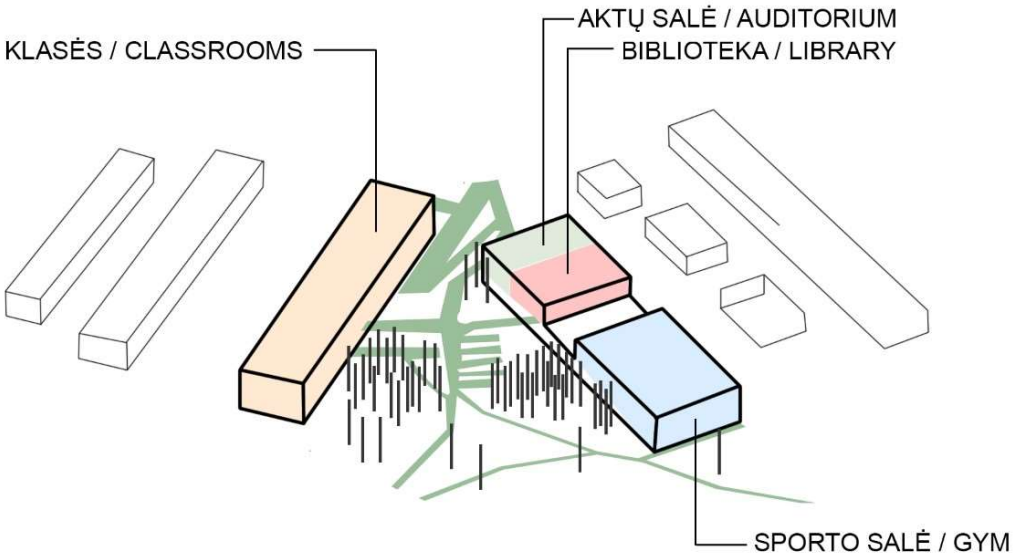


2.2. Architectural idea

The main architectural idea of the building aims to be clearly distinguished by its division to different functions of the building, quiet and noisy areas, but at the same time not to isolate them and encourage gatherings in common spaces.

The core of the building is a canteen-hall connecting the quiet and noisy buildings, which acts as one of the two main gathering spaces. In general spaces pupils are encouraged to communicate, work in small groups or individually - choosing according to everyone's needs. The second gathering space is on top of the first high operable roof, this space is also open to the public.

Inside the building, bright spaces for communication and relaxation are emphasized. Projectable transformable classroom partitions allow for flexible adaptation to the lesson format, combining or separating classes if necessary. Using of natural, light materials, transparent partitions aims to provide a feeling of lightness and security, concentration for the school.



2.3. Building's for educational puspose identity and needs fulfillment

The school project was designed to provide the opportunity for all students to use both indoor and outdoor spaces of the building comfprtably and without restrictions. Using vegetation on the roof of the first floor and preserving existing trees encourage spending more time outdoors, getting to know and exploring the surrounding environment.

The school's indoor and outdoor spaces are adapted for public use, but priority is given to students and their needs. The diversity of spaces allows for choosing between active or peaceful rest, working in groups or individually.

3. OTHER DATA

3.1. Planned number of students and the ratio of the building's total area, and calculations

The ratio of the number of students to the building's total area is 8254/480 = 17 m^2.
The planned total number of students is 480 students.
There are planned 43 classrooms (36 regular classrooms and 7 ancillary rooms).

Room	Typical room area, m^2	m^2/1 student.
Classroom (30 students)	52	1,7
Science classroom (30 students)	72	2,4
Foreign Language classroom (15 students)	34	2,26
Workshop (30 students)	94	3,1
Sports Hall (60 students)	1188	19,8

3.2. Universal design solutions

The project complies with all universal design requirements, ensuring convenient and intuitively comfortable use of the building spaces for everyone. Two elevators are designed to facilitate movement between floors: one elevator is intended for the classroom wing near the main entrance, and the second elevator ensures access to the library and terrace on the roof from the common use lobby. Evacuation staircases have designated spaces for people with disabilities. Sanitary facilities and changing rooms are designed according to ISO standards.

Movement within the premises is intuitive, and common areas are well-lit with natural and artificial lighting. Wide passageways are designed to allow convenient passage and turning for people with mobility impairments.

Outdoor spaces are adapted for the movement of people with disabilities, and access to the accessible roof is ensured by a pathway with a slope no steeper than 1:20. Parking spaces for people with disabilities are provided in the parking lot, and a drop-off area is located within 30 meters from the building."

3.3. Description of the building's interior spaces and rooms that ensure formal and informal education of students;

The interior spaces of the building are grouped according to function, ensuring convenient communication between the building blocks. The building is divided into three main zones: educational classrooms, assembly hall, sports hall, and these zones are connected by common leisure areas, a cafeteria, and a lobby, utilizing the roof of the first floor. By zoning the building in this way, the aim is to separate active and quiet spaces, creating a comfortable environment for learning and relaxation.

The classroom block is divided into 3 floors, with classes, administrative, and support rooms distributed as follows:

1st floot	**2nd floor**	**3rd floor**
Classroom block		
Administrative rooms Kitchen Ethics education classrooms Arts class	Humanities Language classrooms Computer science classrooms	Natural sciences Laboratories
Assembly/Sports hall block		
Cafeteria Lobby Assembly hall Sports hall	Library Reading area (quiet zone) Reading area (stairs zone)	-

Two main gathering spaces being formed. The first space is inside the building, next to the central entrance, combining the lobby, cafeteria, and leisure area on the first floor. The second gathering zone is planned on the accessible roof. These areas can be used for larger gatherings, relaxation, or small group work.

To separate from noise and provide a calm environment for learning, the classroom block is designed further away from the sports ground, ensuring natural lighting for the classrooms. Additional light in the corridors and above the classroom walls is provided through light wells. Since the building is clearly divided into blocks, there is a separate entrance to the library, and after classes, the building can be easily adapted to the needs of the community and informal education.

3.4. Other building facilities (sports fields, parking spaces for cars and bicycles, etc.), their indicators, and supporting calculations;

Determination of minimum requirement for parking spaces for vehicles

Room	No. of children	Requirement	Requirement, units
Educational buildings	480	1 space for 30 students	16

The parking lot for cars is planned on the north-western side of the site next to the proposed building. It will have 18 parking spaces, out of which 2 spaces are designated for people with disabilities and 4 spaces for electric vehicles. Electric vehicle charging stations will be installed near the electric vehicle parking spaces.

Determination of minimum requirement for bicycle parking spaces

Room	No. of children	Requirement	Requirement, units
Educational buildings	480	1 space for 20 students	24

A bicycle/scooter storage facility is planned in the building, allowing for the charging of electric bicycles and scooters..

The planned size of the sports infrastructure is 2394 m2: a universal court of 500 m2, a volleyball court of 360 m2, and a 100-meter running track. The infrastructure is designed for athletics - running, long jump. An outdoor exercise equipment area is provided. Outdoor sports equipment will be stored in rooms located beneath the stands.

The minimum total number of parking spaces for cars is determined according to STR 2.06.04:2014 " Gatvės ir vietinės reikšmės keliai. Bendrieji reikalavimai " Table 30 in Chapter XIII.
The minimum total number of parking spaces for people with disabilities is determined according to STR 2.03.01:2019 " Statinių prieinamumas " Table 1 in Chapter IV.
The minimum total number of bicycle parking spaces is determined according to STR 2.06.04:2014 " Gatvės ir vietinės reikšmės keliai " Table 43 in Chapter XV.
The decisions on sports equipment for the site are regulated by the regulations hygiene standards " Mokykla, vykdanti bendrojo ugdymo programas. Bendrieji sveikatos saugos reikalavimai," Chapter IV, Point 16.1.

3.5. Description of Fire Safety Solutions (Firefighting and Rescue Vehicle Access, Planned Structural Solutions)

Access to the plot is planned via existing roads and streets.
To facilitate the access of firefighting and rescue vehicles to the proposed building, a 12x12 m area is designated, which is located in the vicinity of the projected parking lot.

The safety of people moving along the roads to the emergency exits and between them is ensured through planned, ergonomic, structural, engineering, technical, and organizational measures.

3.6. Building construction solutions, materials, sustainability, and innovation

Innovative building solutions involve selecting time-tested details with optimal cost and top-quality. The project includes a four-building complex with a frame-wall structural system. To ensure a smooth and sustainable construction process, a prefabricated reinforced concrete structure is chosen, consisting of columns and beams. Load-bearing masonry walls are

designed to ensure the stability of the building. Flooring and roofing are made of pre-stressed concrete slabs. In areas where larger spans are required (such as auditoriums and sports halls), steel truss roofing systems are planned. These designs are optimized to select the optimal height, ensuring minimal steel weight and favorable use of elements. Load-bearing profiles are placed on the trusses, providing support for the loads. Practice shows that roofs with solar panels are more vulnerable, so we opted for a more efficient and stronger PVC membrane instead of the classic bituminous roof covering, ensuring the longevity of the roof during the operational period.
The facades with masonry walls feature a classic ventilated facade system with a National Technical Approval. The facade detail consists of stainless steel brackets and L/T profiles, which support the cladding made of wooden panels. The insulation of the frame consists of two layers: rock wool boards and windproof rock wool boards. This solution is more efficient and cost-effective than single-layer insulation. In the classroom building, the masonry wall stands on the edge of the beam/slab, so lightweight hollow silicate blocks are used there. The auditorium requires excellent acoustics, which is achieved by using ceramic bricks with better acoustic properties.
To strengthen the multi-layer board in the sports hall, specific solutions are applied. The element is reinforced with continious carrier flat rail details, an identical wooden facade is attached through steel hat channels, maintaining visual integrity with other parts of the building. Inside, impact resistant gypsum plasterboard is fixed to the Z-shaped verticals between the columns, specially designed for sports halls.
The green roof, suitable for walking paths and landscaped areas, utilizes a classic inverted roof system. The detail consists of the following layers:
• EPS100 layer to form the slope on the reinforced concrete slab;
• Vapor insulation;
• Reinforced leveling layer;
• 2-layer bituminous waterproofing;
• Drainage troughs with geotextile on top;
• XPS300 extruded polystyrene for higher loads;
• Geotextile;
• Leveling concrete layer;
• Torch-on bituminous waterproofing.
Terrace boards are placed on longitudinal and adjustable terrace supports in pathway zones. In landscaped areas, instead of gravel drainage, lighter drainage troughs with geotextile on top and root protection at the bottom are used to reduce the weight of the construction.

3.7. Building Engineering Solutions, Measures to Reduce Energy Resource Needs and Losses

The proposed building will incorporate energy-efficient and innovative solutions to achieve the A++ energy performance class category.
The heating of the building is planned to be supplied from centralized city heating networks.
Solar panels will be installed on the roofs, with a combined capacity of approximately 200 kW, to generate renewable energy.

3.8. Transportation and engineering network development or reconstruction solutions. Solutions related to the development and integration of related public infrastructure

The sites solutions are connected to the approved solutions of the project "Reconstruction of the Territory around Jeruzalės Tvenkinys and Verkių Manor Estate (U.K. 756) between Jeruzalės, Mokslininkų, Mykolas Marcinkevičius, and Baltupio Streets in Vilnius". Integration with the recreational trail "Santariškės-Baltupiai-Ozas-Neries Senvagė" is ensured to make it convenient for the public to use the recreational path.

The school's parking lot is planned in the north-western part of the site with access from M. Marcinkevičiaus Street. On M. Marcinkevičiaus Street, next to the site under consideration, a kiss&ride drop-off zone is planned, from which a paved pedestrian path leads to the main entrance of the building.
Bicycle parking/storage spaces are planned inside the proposed building, near the main entrance.
A turning circle of 12x12 is provided for service vehicles in the north-western part of the site.
The calculations for parking spaces for vehicles are provided in point 3.4.

Based on the General Plan of Vilnius and the Vilnius Information System, all necessary utility networks are available near the plot. To ensure the functioning of the school, there is an existing electrical transformer station, which is planned to be relocated near the inside of the proposed turning circle.

Rainwater from the building's roofs is collected and directed into underground storage tanks, from which water is used for irrigating greenery. Excess rainwater is directed into underground infiltration tanks.

Rainwater from the parking lot is collected, treated, and discharged into underground infiltration tanks.

3.9. Construction Duration, Construction Cost Including All Site Management and Other Related Expenses

The projected construction duration is 24 months.

COST ESTIMATE

No.	Name	Units	Amount	Price in EUR inc. VAT	Total EUR inc. VAT
Construction of Buildings with Internal Engineering Networks.					
1	Building volume	m3	55 400,00	239,85	13 287 690,00
2*	Solar panels	kW	200,00	1 000,00	200 000,00
3*	Inverted Green Roofs for Exploitation	m2	1 595,00	111,02	177 076,90
4*	Skylights for exploitation	set	3	20 000,00	60 000,00
Outdoor Engineering Networks, Surfaces, and Structures					
5	Street repair/resurfacing	m	92 ,00	80,03	7 362,76
6	Car parking lot. Asphalt pavement	m2	747,00	95,69	71 480,43
7	Pedestrian paths. Concrete pavers, cobblestone pavement	m2	875,65	61,97	54 264,03
8*	Pedestrian paths. Terrace boards	m2	635,89	110,00	69 947,90
9	Greenery. Grass, trees, bushes	m2	10 988,64	15,97	175 488,58
10	Pedestrian paths. Gravel	m2	354,22	14,99	5 309,76
11*	Small architecture	set	1	300 000,00	300 000,00
12*	Outdoor classrooms	set	2	25 000,00	50 000,00
13	Stadium	m2	2 394	84,50	202 293,00
14	Water supply networks. Plastic pipes d 150-200	m	74,00	240,63	17 806,62

15	Domestic wastewater disposal networks. Plastic pipes 110-250	m	70,00	244,62	17 123,40
16	Rainwater disposal networks. Plastic pipes	m	270,00	244,62	66 047,40
17	Heating supply networks. Two insulated steel pipes. D 114-168	m	117,00	453,44	53 052,48
18	Electrical transmission cable lines. 4x120 - 4x150	m	112,00	110,86	12 416,32
19*	Rainwater drainage accumulation tank	set	1	30 000,00	30 000,00
20*	Underground infiltration tanks	set	3	50 000,00	150 000,00
21*	Rainwater drainage treatment device	set	1	20 000,00	20 000,00
Client reserve					
18	Up to 15% when the estimated cost of the building is determined based on aggregated indicators and expert evaluations.	%	15	14 978 521,58	2 246 778,24
			Total with VAT, EUR:		17 225 299,82

Notes:

The calculated construction cost is selected based on the comparative indicators of building construction costs from UAB "Sistela" using March 2023 prices.

The prices include all expenses and taxes, including VAT.

* - The calculated construction cost is selected based on market inquiries.