

OPEN ARCHITECTURAL PROJECT COMPETITION FOR THE RECONSTRUCTION OF THE EDUCATIONAL BUILDING (PRIMARY SCHOOL), ŠEŠKINĖS ST. 15, VILNIUS

EXPLANATORY PAPER

1. INTRODUCTION

The project was created with the main attention to the fundamental principles of the school infrastructure: *communality, child-oriented education and school as a living laboratory*. The structure of the building invites children to communicate and creates an opportunity to use the building for the needs of the wider community (children's parents, neighbors, seniors, other social groups) after classes. The infrastructure of the building ensures an opportunity to discover and realize strengths and hobbies for every student. Inside and outside spaces are designed of different proportions, expressive character, transformable, responding to various needs and stimulating creativity. The project aims to form transparent and equal relations between teachers, students and their parents (guardians). We believe that the project solutions will contribute to the development of independent, free and responsible personalities.

2. GENERAL DATA

2.1. Parameters of the Land Plot Territory Usage

No.	Parameter	Amount in the Project	Summarized Requirements of the Territorial Planning and Regulatory Documents
1.	Nature of the territory usage	SC, SI	Territory of specialized complexes (SC), Territory of social infrastructure (SI)
2.	Type of the territory usage	P	Territory of public purpose (P)
3.	Plot area	10 683 m ²	
4.	Morphotype	Free-planning	Perimeter, free-planning
5.	Plot density	19 %	40 %
6.	Plot intensity	0.4	0.4
7.	Belonging greenery area	52 %	40 %
8.	Number of floors	3 floors	3 floors
9.	Building height from the earth surface	12.00 m	12.00 m
10.	Maximum absolute altitude	177.20 m	Unregulated *
11.	Vehicle number: <ul style="list-style-type: none"> • Automobiles • Bicycles 	11 units 30 units	10 units 19 units
12.	Area of the sport facilities	2,784.01 m ²	450 m ²
13.	Recreational area	5,725.20 m ²	928 m ² (recommended in TS – 2000 m ²)
14.	Area of the hard surfaces in the plot	45 % *	40 %, if compensatory measures are not used

* Compensatory measures are planned to be used.

2.1. Parameters of the Building

No.	Parameter	Amount in the Project
1.	Planned activity	Formal and informal education
2.	Educational program	General primary education program
3.	Amount of the students	384 students
4.	Number of the classrooms: <ul style="list-style-type: none"> • General education 	16 units

	<ul style="list-style-type: none"> • Moral education • Foreign languages • Arts • Additional education • Nature sciences 	<p>2 units</p> <p>2 units</p> <p>2 units</p> <p>2 units</p> <p>1 unit</p>
5.	Net building area	4,476.44 m ²
6.	Overground net building area	4,261.26 m ²
7.	Valuable building area	4,476.44 m ²
8.	Volume of the building	24,200 m ³
9.	Building area	2,049.94 m ²

3. EXPLANATIONS AND SUPPORT FOR THE PROJECT SOLUTIONS

3.1. Compliance with the customer’s needs

3.1.1. Functional Planning of the Spaces

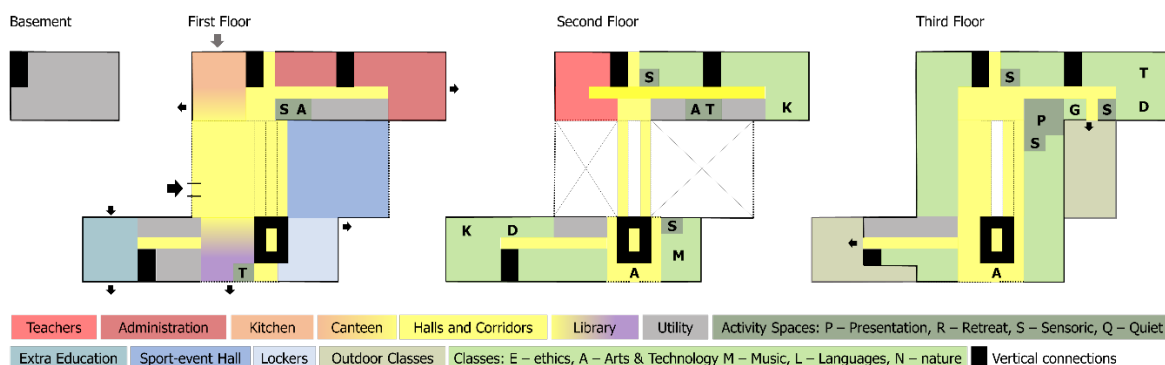
First floor. The building's main (connecting) space is the main hall. From the main hall there is a direct access to the sports-event hall, canteen and library spaces. All these spaces are planned to be physically and/or visually open during the daily-school life, promoting their multi-functional use and interaction between students. Main hall space extends the library (reading room) and canteen spaces during the regular school day, as the type of furniture can change the relationship between these spaces.

In addition, if the need arises, the main school spaces can be used for events of various sizes: lightweight kinetic barriers can form full-fledged backstage and visitors' changing rooms, tribunes of the required size can be assembled from modular sliding elements. Such multifunctional use of the building's premises diversifies the character of the interior and increases the efficiency of the building.

If the need arises, first floor spaces can be separated from the other building’s parts with kinetic partitions as well. These solutions ensure the possibility to adapt the main spaces of the building to the wider community needs, as various events and other after-school activities can be organized there.

On the west side of the southern volume of the building, additional education classes are designed. These classes can be easily accessed by visitors directly from the outside of the building through direct entrances from the outside. In the eastern part of this volume of the building, changing rooms are designed, that have a direct connection with the sports-events hall and the sport-field. The northern body of the building is designed for administrative staff (eastern part) and the canteen kitchen (western part). Thus, the administrative staff can enter the building through a separate entrance from the utility yard and the kitchen facilities are accessible from the utility yard, separated from the representative access.

Second and third floors. 16 classes for general education of primary school children, 6 classes for specialized education (2 for moral education, 2 for foreign languages, 2 for arts) and a few for additional / informal education are designed in the school. In each general education class, a space for student’s retreat, consultation, playground and kitchenette is designed. In addition, the building is equipped with (multi)sensory and quiet spaces, where specialists can help children solve more complex problems. The roofs, accessed from the building's third floor can be used as outdoor classrooms.



3.1.2. Characteristic School Spaces

Aula is the main connecting space. Here the connections of the main functions of the building intersect. Therefore, the space itself is designed with an adaptive character: the amphitheater of stairs and ramps, that are designed in Aula can be used as a connecting dining and reading room (a space that extends these otherwise separate spaces) during a regular day. In addition, Aula performs the main representative function of the school. Thus, architectural design reflects the main values of the school itself: community, inclusiveness, transparency, naturalness. The main highlights of the hall: an amphitheater of stairs and ramps on the first floor and the atrium with impressive open-style ramps, joining all floors of the building. Aula, if needed, can be transformed into a small hall as well, as stage can be assembled in its lower part, a dressing rooms can be formed in the back, and the amphitheater can be used for audience seating.

The canteen is designed as an open-type space. Its function can be extended into the amphitheater of Aula. In addition, it is possible to get outside of the building directly from the canteen, thus, students can have lunch on the outdoor-terrace in the warm season. The canteen is designed in the north-western part of the building, as it allows to have comfortable food supply from the utility yard.

The library is designed on the south side of the building, as in this way the **reading-space** can be extended to the outside-terrace during the warm season. This allows students to enjoy southern sunlight while studying. The reading-space can be extended into the amphitheater of Aula during regular school days as well. Such system of spaces (canteen-hall-reading room) could encourage children combining their free-time with learning process, as the smells of the canteen would invite them to stay in the reading space longer.

The sports hall is designed next to Aula, separated by the main accent of the interior of the hall (ramps, that are enfolding atrium) and a transparent partition. The tribunes are designed sliding, as they could be used on demand. Dressing-rooms and a direct exit to the sports-field is designed next to the gym as well. Two classes can exercise in the gym at the same time. The sports hall can be transformed into an **event hall** during special occasions: the external windows and the internal transparent partitions can be darkened, an amphitheater of the required size can be formed, a stage can be installed and lightweight barriers can be lowered to form the proper backstage.

The staff-cluster. Administration and other staff rooms are designed on the first floor of the northern body of the building. In this way, the staff-cluster is completely separated from other school spaces, and staff can enter the building through a separate entrance directly from the staff parking lot.

The teachers' work and recreation cluster is located on the second floor, next to the general education classrooms. Thus, it is convenient for teachers to reach it during the breaks. The teachers' study room has a full view of Aula and the atrium, allowing teachers to monitor the common areas and ensuring students' safety. In addition, the teachers' workroom is separated from the corridor by kinetic partitions, thus, the it can become totally open for students, encouraging equal communication between students and teachers.

The corridors are designed to be functionally used. Niches are designed for students' lockers, shelves for educational equipment and private sitting areas are designed by the walls. (Semi)transparent partitions are designed, as it allows teachers have the sight at the corridors during classes, thus, it increasing students' safety. Student recreational spaces with soft furniture, climbing walls, running tracks and other solutions for active and inclusive recreation are designed in the open spaces near the atrium. Sound dampening materials are used to ensure qualitative teaching and relaxation processes.

Classrooms. The quantities of designed classrooms are presented in the table of the Building Parameters. An additional space for group-work, play-time, rest and kitchenettes are designed nearby each general education class. *The music classroom* is designed on the second floor of the building near the main staircase. The location of this classroom was chosen, as the close relation with the event-hall is needed. In addition, this part of the building has higher ceilings, thus, if needed, a mini-amphitheater for young musicians can be installed there. *The art and technology classroom* is designed on the third floor, providing this classroom with north and east natural illumination. *The non-formal education cluster* is designed on the first floor of the building, with a possibility to separate it from the rest of the school premises and a separate entrance from the outside of the building. Roofs, accessed from the third-floor premises can be used as additional *outdoor classrooms*. Required classrooms for *moral education*, *foreign language* and *nature sciences* teaching are designed as well. The variety of classrooms and common spaces will enable teachers to educate children-groups of variant sizes at the same time, in the environments of different characters.

Relaxation (retreat) spaces. 5 (multi)sensory, 4 retreat and 3 silence spaces are designed in different floors of the building.

3.1.3. Assurance of the Required Building Premises

The project implements the entire program of the required premises and majority of the additional premises, presented in the technical specification of the tender.

3.1.4. Assurance of the Required Outdoor Spaces

A universal sports-field of at least 450 m² must be developed on the plot of the primary school. The project plans 2,784.01 m² of sports fields: a volleyball court (covered with sand), a green soccer field, a basketball court and a running track with a preparation area (covered with a special sports finish).

The minimum recreational part of the plot must be: 384 students / 3 + 800 = 928 m². The recommended area by the competition technical specification is 2,000 m². 5,725.20 m² of recreational area is planned in the project. Scheme and a detailed description of the outdoor places is presented in Section 3.3.4.2.

3.2. Urban Integrity

3.2.1. Description of the Design Solutions in Relation to the Urban Context (Formed Streets, Blocks)

The reconstructed building is located in the middle of a residential-block, surrounded by apartment-buildings from the three sides. One of the main streets of Šeškinės microrayon (Šeškinės St.) is on the western side of the plot. Drive-ways to the apartment-buildings surrounds the plot from the north and south sides. The project does not change the essential solutions of the block, as well as the solutions of the surrounding streets and drive-ways.

3.2.2. Description of the Urban Morphotype, Created by the Project Solutions

Urban morphotype, in essence, does not change – remains the free-planning.

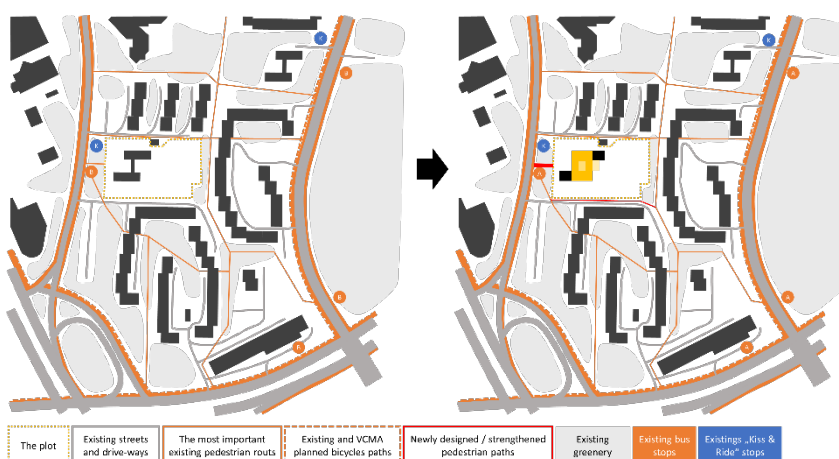
3.2.3. Coherence of the Project Solutions with the Context



The existing “passing by” volumes of the typical building are combined into a single structure with a new taller rectangular volume with atrium, that is oriented perpendicularly to the existing structure. Such volume composition complements the existing urban structure, which is currently somewhat fragmented. The scale of the building remains divided into separate volumes that

repeat the dimensions of the existing building, thus, the overall building remains visually-perceived as small.

3.2.4. Connection with the Surroundings (Green Links and Mobility Options)



Currently the existing pedestrian connection with the intersection of Ozo-Gelvonų streets is only through a drive-way without a pedestrian path, located outside the southern border of the plot, either through the yards of the apartment-buildings, despite the fact that this connection is very important for the neighborhood. Thus, a full-fledged pedestrian-path is designed by the northern boundary of the plot. This solution

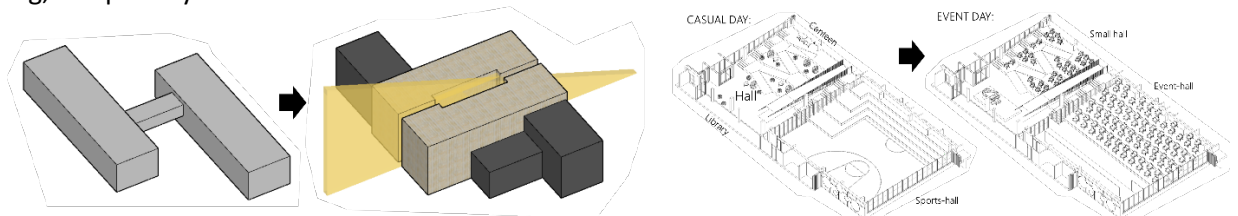
would better integration the school into the existing system of pedestrian paths and public transport stops. Moreover, it would contribute to the VCMA plans, as the green link between Gelvonų st. and eastern side of the plot is already planned. The pedestrian path to the main entrance to the school is planned to be strengthened as well, as it is designed to be more pronounced, forming an attractive square between the street and the building.

A "Kiss&Ride" is already developed near the Šeškinės St., required parking is planned within the boundaries of the plot. Thus, no other solutions are changed.

3.3. Architectural Design

3.3.1. Idea

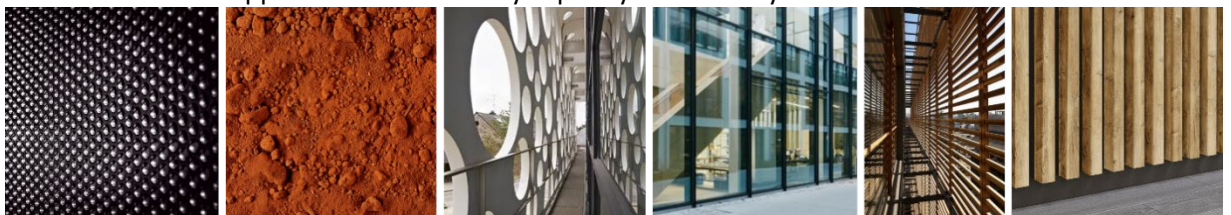
The existing building volumes are planned to be connected by a new rectangular three-story volume with an atrium. Atrium space is the main element of the building, becoming the central place in the structure of the building's functional connections and the most important dominant of the subjectively perceived architectural expression. In order to emphasize the importance of this space, a strip of light ("light section of the building"), crossing the entire building in the north-south direction was chosen as its main accent. At a certain time of the day, the "wall" of sunlight, entering the building, seems to become a material part of the building, inseparably connected to the other structures.



3.3.2. Materials

3.3.2.1. Facades

Solutions of the facade finishing are based on the contrast principle, as the idea was to separate old building contour from the newly developed central volume. Double facades are designed: the inside layer is transparent, while the outside one is openwork. This solution allows to preserve the impression of the integral solid volume from the outside, while the outside surroundings of the building can be brought inside. Materials for the facades were specially chosen natural and to be long-lasting. In this way, the gray fabric of modernist urbanism is supplemented with today's quality and identity.



Finish of the main new volume is designed of thermal wood lamellas and girders. This structure forms an openwork layer of the façade. Underneath, the usual glass and metal façade-system is designed, assembled from large prefabricated elements. Finish of the other parts of the building is also designed as a double-facade, but dark gray perforated metal cassettes are chosen instead of wood lamellas. This solution creates a contrast between these volumes of the building, on the other hand are moderately supplementing the surroundings. Various sized circles are cut in the perforated metal to open views from the building and to provide playfulness for the facades. Some of these circles are framed with red-clay-color borders to refer the identity of the existing building.

3.3.2.2. Interior

All spaces are designed to be discreetly decorated, allowing students to focus on the teaching process. Naturalness and tactile properties of the materials keep the main focus when choosing them. Additional accents, providing playfulness, are provided in common and recreational spaces. The building surrounding environment is considered as an important element of the interior. Thus, the curtain-wall windows are

designed in all of the classrooms. In order to ensure the control of sunlight, curtain-wall windows are covered with openwork-layer facades. Nonetheless, this provides impression of coziness. All interior finishes are chosen with a remark to create an intuitive character of the premises, that clearly indicates function of spaces.

3.3.3. Universal Design Solutions

The building and its environment are designed to adapt to people with special needs. Car parking places (including PWD) are designed in the existing parking lot near the entrance to the building. The structure of the building is designed to be intuitive: spaces are in proportions reflecting their function, horizontal and vertical connections and connections between different rooms are easily understandable. The third floor of the building is accessible for people with special needs via ramps in the central part of the building. An elevator can be installed in the main staircase, if needed. The building provides all necessary facilities for PWD people. Adjustable furniture, that are planned in the rooms of the building, provides possibility to adapt them for the children of different age-groups. The lighting intensity can be dimmed.

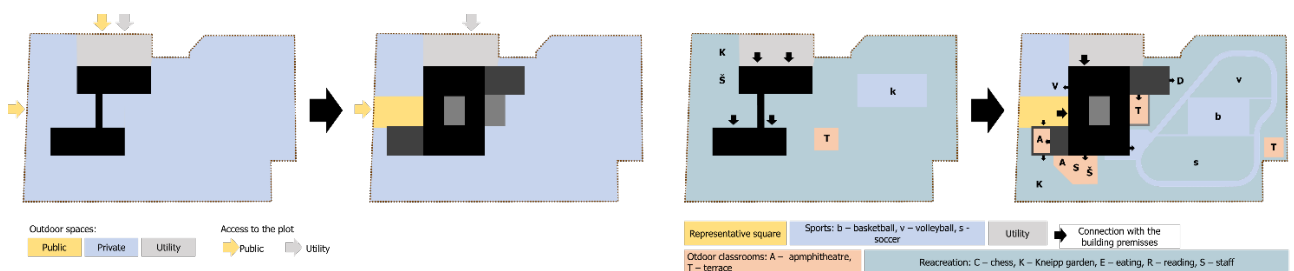
3.3.4. Landscape Design

3.3.4.1. Assessment of the Existing Greenery and Project Solutions

140 trees are inventoried on the plot. According to VCMA regulations, 115 of them should be protected. It is planned to preserve majority of the trees. Only 3 trees are planned to be cut: 26 cm diameter larch No. 4, 14 cm diameter spruce No. 29 and 47 cm diameter maple No. 107. The felled trees are planned to be compensated by replanting new trees in other parts of the plot.

3.3.4.2. Proposed Conception of the Project Solutions

The main goal of the landscape solutions is to clearly separate public, private and utility spaces of the plot, as the public flows from the service personnel. The areas of the spaces around the building do not change in principle, but their character is planned to be changed, on the other hand. In the western part of the plot, a representative square is formed near the main entrance to the building. In the southern and eastern parts sports-infrastructure (basketball and volleyball courts, soccer field, running track), recreational spaces (outdoor richness, Kneipp garden, reading and canteen terraces), learning (outdoor classrooms), and employee recreation area are planned. The northern part of the plot is separated as a utility yard: the existing parking-lot is planned to be enlarged, based on today's regulations and to ensure the needs of school service (inventory, food supply) and staff parking.



3.3.4.3. Measures for Landscape Protection

There are a lot of trees in plot now. The project aims to preserve almost all of them, supplementing them with some extra. 3-leveled greenery is planned: grasses, bushes and trees. In this way children can be introduced to the variety of plants in their learning environment, while this solution contributes to the promotion of biodiversity in the territory at the same time. Plants that do not require intensive care should be selected. It is planned to collect surface rainwater in a tank, installed on the plot. This water could later be used for the greenery maintenance.

4. OTHER SOLUTIONS AND DATA

4.1. Description of Fire Safety Solutions (Fire Extinguishing and Rescue Vehicle Access Solutions, Building Plan Structure Solutions)

Fire-trucks can approach the site from three sides: in the west is Šeškinė St., in the south and north are drive-ways to the surrounding buildings. Existing solutions remain. The nearest hydrants are less than 100 m away: 1 on the other side of Šeškinė St., 2 in the yards to the north of the plot and 1 near the southeast corner of the plot. The height of the floor of the highest floor of the building is less than 15 m, thus, it is not mandatory to provide additional access to the building.

The fire resistance degree of the designed building is I. The building is designed to have 3 evacuation staircases with direct evacuation paths outside of the building on the first floor. The longest distance from the doors of rooms, where people are constantly present, to the evacuation staircase is no more than 25 m. Thus, project solutions ensure safe evacuation from the building.

4.2. Natural Lighting

All classrooms and halls are provided with natural lighting. The coefficient of natural lighting at the farthest point from the window is at least 1.5% in the classrooms. All classrooms are provided with measures to limit direct sunlight: roller blinds, curtains or other. At the request of the developer, the glass facade of the building can be covered with a photochromic film.

4.3. Constructions

The project is based on the fundamental principles of sustainability. Thus, it is intended to preserve and adapt the existing supporting structures (the columns network and the overlays of prefabricated reinforced concrete elements) to the needs of the new building. The principal scheme of the new building constructions is planned from a frame of glued-wood elements. The structural elements of the new volume are planned to be installed in such a way that they do not increase the load on the preserved old-building structures, but allow the creation of high-quality new spaces, that are necessary for the educational process of school and community events.

The roofs, accessed from the third floor are usable. Double facades are planned: transparent internal and openwork external. The material solutions are described in the Section 3.3.2. Elements of the facades can be delivered to the construction site in prefabricated blocks, assembled at the factory. Thus, it allows to optimize construction time and reduce the scope of work on the construction site. In addition, the maintenance of this type of facade is rather simple.

4.4. Engineering

The performance of the existing engineering networks, the need and possibility to reconstruct them would be evaluated during the preparation of the technical project. BMS (building management system), an intelligent management system for the building's engineering devices, could be installed on request of the developer.

The project aims to reduce the needs and losses of energy resources, therefore the structures of the building are insulated and covered with double-facades. These solutions help to protect building from the negative effects of the atmosphere. If requested, a small power (~10kW) solar power-plant could be installed on the roof of the building.

4.5. Estimated Duration of Construction

18 months

4.6. Estimated Construction Cost

€ 3,950,000

4.7. Amount of Construction Investment per Student

€ 3,950,000 / 384 students = € 10,284 / 1 student

4.8. Ratio Between Net Area of the Building and Number of the Students

Ratio between net area of the building and students: $4,476.44 / 384 \approx 11.66$ of the net area per student.

4.9. Calculations to Support Project Solutions

4.9.1. Main Parameters of the Plot and the Building

4.9.1.1. Intensity of the plot

Overground net building area of the building / Plot area = $4,261.26 \text{ m}^2 / 10,683 \text{ m}^2 \approx 0.4$.

4.9.1.2. Density of the plot

Building area / Plot area = $2,049.94 \text{ m}^2 / 10,683 \text{ m}^2 = 19 \%$.

4.9.1.3. Dependent greenery

Dependent greenery / Plot area = $5,513.68 \text{ m}^2 / 10,683 \text{ m}^2 \approx 52 \%$

4.9.1.4. Area of hard surfaces

(Building area + Hard surfaces) / Plot area = $(2,049.94 \text{ m}^2 + 2,759.39 \text{ m}^2) / 10,683 \text{ m}^2 \approx 45 \%$

4.9.1.5. Height of the Building

Absolute altitude of the building – Medium earth surface altitude of the building area = $177.20 - 165.20 = 12.00 \text{ m}$

4.9.2. Parking of cars and bicycles

4.9.2.1. Car parking

Mandatory number of parking places for general education schools is: 1 parking place for 30 students. The following are required to serve the reconstructed school: $384 \text{ students} / 30 = 12.8$ places. After applying the provisions of the "Scheme for dividing the territory of Vilnius city municipality into zones, according to the established coefficients for the number of parking places", the number of required parking places is reduced by applying a coefficient of 0.75. Thus, the required number of parking places is: $12.8 * 0.75 = 9.6$. 11 parking places are designed in the northern part of the plot.

4.9.2.2. PWD parking

It is mandatory to design 1 type A PWD parking space for 11 regular parking places. 1 PWD parking place is designed in the project.

4.9.2.3. Bicycle parking

A mandatory number of bicycle parking places for general education schools is: 1 bicycle parking space for 20 students. To meet the needs of reconstructed school, the following are required: $384 \text{ students} / 20 = 19.2$ places. Thus, 30 bicycle parking places are designed in the project.