Modern Trends in Design of Extracurricular Institutions for Children

T Shamaeva¹, E Mayasova¹,²
¹National Research Moscow State University of Civil Engineering (NRU MGSU), Yaroslavskoye Shosse, 26, Moscow, 129337, Russia
²E-mail: ShamaevaTV@yandex.ru; mayasova.katya@yandex.ru

Abstract. Extracurricular institutions (EI) with various functional purposes for children and adolescents from 7 to 15 years are very popular with the population. Today, the construction and commissioning of this type of public buildings is undergoing a period of active development and progress. The child forms her worldview, social behavior and reveals her personal abilities, thanks to her family, school and leisure activities in her free time. Extracurricular institutions should have a clear typology by their function, the types of functions and the target directions determined by the State. Facades and architectural appearance of the constructed EI over the last 3–5 years are diverse and designed under individual projects with various facade systems and finishing materials. Unfortunately, not all buildings correspond to the function of the facility in their exterior and visual image. The architectural and urban exterior of the building should correspond to the function of the facility, fit into the environment and be attractive to children and teenagers. It is recommended to design buildings as a separate structure on a separate territory, while more than 50% of the territory can be used to arrange children's play areas with various places for recreation and sports. The recommended number of floors is 2-3. The modern design practice identified priority trends: institutions fulfilling cultural, educational, creative, as well as sports, physical and health-improving functions. Other areas of activity should also be developed with a focus on the choice of profession, science and technology, practical and craft skills, as well as on stronger family and patriotic values. Extracurricular institutions should be as accessible to the public and as diverse by purpose as possible.

1. Introduction
This article dwells upon architectural and planning solutions for modern extracurricular institutions. The research work is aimed at studying trends in the design of leisure, additional education, sports facilities, etc., that is, the sought-after services for children and adolescents after school. The authors analyze architectural solutions under modern projects and identify the trends based on this analysis.

1.1. Relevance
Currently, extra-curricular education has no stringent government requirements, there is no system that is mandatory to comply with. Extracurricular institutions are built and opened in various settlements and have various functions. The population has a high demand for such institutions. A child and a teenager are brought up, develop and form their worldview in the family, at school, and it also depends...
on where and how they spend their free time. What functions of extracurricular institutions are a priority under the state program? What institutions are parents and children more interested in? What buildings will be designed now and in near future for the younger generation? These questions are relevant today.

The Government is developing new programs aimed at improving the overall level of education. In the concept of the Federal Target Program for the Development of Education [6], unlocking competitive human potential became the main goal. Under the Federal Law On Education in the Russian Federation the creation of an infrastructure that ensures available education for students is an important task [7, Art.75]. The Model Law On Extracurricular Education [8], Article 4 was adopted: “An extracurricular educational institution (EI) is a component of the extracurricular education system which provides knowledge, develops the know-how and skills based on children’s interests, ensures that an individual’s needs in creative self-realization are met as well as intellectual, spiritual and physical development, preparation for active professional and social activities, creates conditions for social protection and organization of meaningful leisure activities subject to abilities, talent and health of pupils, students and participants.”

The purpose of the paper is to identify emerging trends in the design of modern extracurricular institutions as well as to understand the current situation with design of the EI with the help of the analysis of the facilities. The following tasks were set out in this work:
- to trace the evolution of the EI in our country;
- what the goals and directions chosen for preschool institutions by modern society are and, therefore, what functional purposes are considered to be the main ones in their design;
- to study the functional composition of the designed buildings, to consider architectural solutions for volumes and facades using the case of EI analyzed facilities;
- to forecast design trends for the EI.

1.2. Scientific significance
The paper aims to study design solutions for modern EI. The study of this topic will cover several areas. Turn to the history of this type of public institutions in our country. Consider the goals and tasks that were set when the EI first appeared and the ones that have formed now after some changes. In accordance with this, we make a parallel with the volume-planning solutions for the institutions. We define EI design trends and what EI functional and planning solutions will be in demand in the near future.

1.3. Theory
In the Soviet Union, since 1918, the first institutions for extracurricular work with children and teenagers appeared, they worked together with the school, with Pioneer and Komsomol organizations. The main goal is to combine pedagogy and social aspects, organize children and adolescents with regard to social and economic activities, compensate for lack of school education. The practical significance of the training was aimed at social education. The first clubs and groups appeared. In the 1920–1930s, the official term “extracurricular work” was approved in three areas: educational and club work, mass work, methodological work. The goal is to develop “an individual with a socialist education” [1]. Creativity palaces and clubs, sports schools, pioneer camps were opened everywhere. The EI began to tackle more comprehensive tasks: spiritual, intellectual and physical development of children. During this period, the main task was to teach children the basic skills of working specialties, hence hobby clubs. In 1940–1950s, the solemnity and formalities [2] came forward. New buildings for extracurricular institutions were built, and they could have also been placed in existing buildings adapted for the purposes of EI.
The Znamenskoye-Gubaylovo estate, heritage site of federal significance since 2013.
- House of Pioneers (1920–1990),
- Children’s Creativity Center (1990–2015),
- Cultural and Exhibition Center (2015–2021)

Today, 2021

- the Podmoskovye House of Culture, built in 1984.

Today after reconstruction, 2021
- Multi-functional cultural and leisure complex, 2020-2021

Salyut House of Culture, Krasnogorsk, 1966. Today after reconstruction, 2021.

**Figure 1.** Examples of extracurricular institutions of the “Soviet period,” Krasnogorsk.

In the 1960s the method of collective creative work became popular (Fig.2). The activities of extracurricular institutions prioritized respect for the child’s passion, her activities in a hobby club; engagement of personal interest, knowledge and skills for collective purposes [3].

**Figure 2.** “Commune of the French youngsters” in the House of Pioneers, Leningrad, 1960.

**Figure 3.** Children’s Art and Music School, Krasnogorsk, 1985.

Extracurricular institutions were at their zenith in the 1970–1980s, when the concept of extracurricular education was developed: a special educational space, a focused process of learning and development. Education provides children with the freedom to choose forms and activities aimed
at the process of developing the child's social and active personality. In 1985, according to the Law of the Russian Federation On Education [4, Article 5], besides basic types of education the public education system included “out-of-school education.” Since 1992, the term “extracurricular education” both for adults and children was introduced in the Law of the Russian Federation On Education [5]. The creative development of the child's personality becomes a backbone factor. In order to broadly cover children and young people with educational work in their place of residence, a network of children and adolescent hobby clubs, technical and artistic creativity clubs, sports sections and other forms of extracurricular education was developed [5, article 52]. Clubs, palaces, houses of culture, typical children's art and music schools (Fig.3), stadiums, swimming pools, gyms were free of charge [5, Article 53]. Since 1996, the typology of extracurricular educational institutions for adults and children has been clarified. The creative development of the child's personality becomes the backbone factor of EI.

The institutions of several types and target directions were distinguished: sports and tourism (sections and schools for different sports, clubs for tourism aficionados); science and technology (young technicians clubs); clubs of nature lovers (a young naturalist's, biologist’s, chemist's clubs), as well as clubs aimed at the choice of the future profession (clubs for young motorists, sailors, pilots, railway men, sewing clubs, etc.), creativity (art, music schools, song and dance companies, orchestras). Children's libraries, theater studios and art studios were opened. To accommodate these institutions, separate-standing Houses and Palaces of Pioneers, clubs, Houses of culture, children's and youth schools were built. According to the content, extracurricular work was formed based on the following pillars: socio-political, educational, socially useful, sports and health, artistic and creative.

At first, extracurricular education was associated with the solution to the problem of education and literacy of the masses. Further out-of-school work was oriented toward solving the tasks of educating a person of a new (Soviet) society. Extracurricular education is aimed at supporting the process of general human development, meeting the cognitive, creative and communicative needs of a growing individual.

“Out-of-school work” is a concept that includes the whole range of organizational forms and methods, as well as appropriate institutions that carried out cultural, educational, leisure and educational work with children in the 20th century [9].

In the early 2000s, a certain worldview was no longer imposed through out-of-school work. The function of development and support of intellectual and creative, personal potential of a child and a teenager was put first.

Now the child and parents can themselves choose extracurricular activities that will interest them and which they will be able to afford, since many institutions offer services on a fee basis. Some institutions hold competitions and examinations, and it is not easy to enroll; training courses are required for admission.

To date, the structure of extracurricular education consists of the following institutions:
- centers of out-of-school education; clubs, sections, associations, cultural and educational, sports and health-improving, scientific institutions on the basis of general educational institutions; clubs and associations at the place of residence; cultural, educational, physical-cultural and health-improving, sports and other educational institutions, agencies; foundations, associations whose activities are connected with the activities of out-of-school education [8, art.5]. The range of basic tasks of out-of-school education is huge: education, development of an individual as socially significant for society, more patriotism, respectful attitude toward the family, responsible attitude to health, conditions for creative, intellectual, spiritual and physical development of pupils, meeting the needs in professional self-determination, creation of conditions for creative, intellectual, spiritual and physical development, promotion of healthy way of life, development and support of able, gifted and talented pupils [8, article 8].

The next step of the study will be to analyze existing EI and EI under construction. Analyze what is the practice of EI design solutions and whether new EI fully carry out their tasks?
1.4. Research methodology

In this article, the object of the study is modern extracurricular institutions for children and adolescents located in the Moscow region and built since 2018. The subject of the research is volumetric planning and architectural and town-planning solutions for objects of leisure and educational institutions operating outside the school process.

30 objects fulfilling the function of an extracurricular institution for children designed in the Moscow region over the last 3-5 years were analyzed. About 15 facilities are PE and Health facilities (PHF) and sports facilities, whose construction has intensified over the past 5 years thanks to comprehensive state policy and support. The article presents 9 EI buildings, including 1 sports object (Fig.4). Solutions on facade finishing, volume and general visual perception taking into account the existing skyline are considered. The planning decisions were analyzed and the functions of the institutions were defined. The question was raised about the age of young visitors and general accessibility to the population. On the basis of the analysis of designed and constructed sites, modern extracurricular institutions trends are identified.

| No. | Sites. Address | Special features |
|-----|----------------|------------------|
| 1.  | Krasnogorsk, Anninskaya Street | Specialized extracurricular institution – ballet school. |
|     |                | • Total area—3,921 sq.m, area of construction—1,100 sq.m, the area of the plot—2,754 sq.m. |
|     |                | • 4 floors+basement; height (H) of the building—22m |
|     |                | 1.1. Age of children: 7-15 years |
|     |                | 1.2. Facade panels - imitation of “waves”, fiber cement panels, metal perforated panels |
|     |                | 1.3. Structures: Reinforced concrete frame |
|     |                | 1.4. Plans: Dance halls, study rooms, lectures, buffet, additional spaces |
| 2.  | Voskresensky district, Tsyurupa village, Oktyabrskaya st. | House of Culture, Development Center. |
|     |                | • Total area—1,400 sq.m, area of construction—854 sq.m, area of the plot—4,000 sq.m. |
|     |                | • 2 floors+basement; the height (H) of the building is 11.5m |
|     |                | 2.1. Age of children: not limited |
|     |                | 2.2. Facade panels – hanging system, fiber cement siding, |
|     |                | 2.3. Structures: Reinforced concrete frame, walls |
|     |                | 2.4. Plans: clubs, creative studios, music classes, painting, choreography. |
| 3.  | Ramensky municipal district, Ilyinsky village, Oktyabrskaya st. | An annex to the existing children’s art school |
|     |                | • Total area—966 sq.m, area of construction—1,088 sq.m, area of the plot—2,724 sq.m. |
|     |                | • 1 floors + attic; the height (H) of the building is 9m |
|     |                | 3.1. Age of children: 6-12 years |
|     |                | 3.2. Facade lining: tiles made of heat-treated granite, grates of fences are from forged steel |
|     |                | 3.3. Structures: supporting walls |
|     |                | 3.4. Plans: music hall, study rooms, directing, artistic, stage props rooms, additional premises. |

NOT CONSTRUCTED
4. Klin, Zalyubaeva street

- Total area—10,330 sq.m, area of construction—3,650 sq.m, area of the plot—12,400 sq.m.
- 1–4 floors + technical floor; the height (H) of the building is 23m

4.1. Age of children: 6-15 years (several groups from 3 to 6 years)
4.2. facade tiles, ceramic granite, decorative elements of fiber concrete, painted metal
4.3. Structures: supporting walls
4.4. Plans: rooms for music classes, rooms for studies, lectures, choreography, a concert hall, additional premises.

5. Krasnogorsk, Bolshaya Komsomolskaya Street

- Total area—9,000 sq.m, area of construction—4,000 sq.m, area of the plot—14,178 sq.m.
- 3 floors+technical basement; the height (H) of the building is 15.3m

5.1. Age of children: 3-15 years
5.2. facade panels – metal, colored glazed unit
5.3. Structures: reinforced concrete frame
5.4. Plans: divided into 2 blocks.
- block 1—psychological-pedagogical and medical-social support; block 2—primary general education with extracurricular groups, an auditorium, a swimming pool, a library, additional premises.

6. Reutov, st. Lenin

- Total area—1,293 sq.m, area of construction—375 sq.m, area of the plot—1,693 sq.m.
- 3 floors + basement + attic and maintained roof; the height (H) of the building is 16m

6.1. Age of children: not limited
6.2. Fiber cement facade panels, ceramic granite tiles, aluminum wall-regional facade system
6.3. Structures: Reinforced concrete frame, walls
6.4. Plans: dressing room, reception, interactive museum area, bar, laboratories, auxiliary laboratories, lecture halls, study and lecture rooms, additional premises.

7. Voskresensk, Doktorova Street

- Total area—1,130 sq.m, area of construction—800 sq.m, area of the plot—2,111 sq.m.
- 1-2 floors + terrace; the height (H) of the building is 10m

7.1. Age of children: No information
7.2. Fiber cement facade plates, facade plaster, ceramic granite with rough surface.
7.3. Structures: Reinforced concrete frame, walls
7.4. Plans: multifunctional hall, administration premises, leisure center, domestic, technical and office premises.
8. Zhukovsky, Bazhenova Street

UNDER CONSTRUCTION

7. Multifunctional complex
- Total area—4,307 sq.m, area of construction—2,167 sq.m, area of the plot—4,138 sq.m.
- 2 floors; the height (H) of the building is 15.6m
- Age of children: 7-15 years and older
- Decorative facade plaster with painting, ceramic granite slabs
- Structures: metal frame
- Plans: gymnastics, choreography and aerobics room, multipurpose hall, rifle range, shooting gallery

7.1. Age of children: 7-15 years and older
7.2. Decorative facade plaster with painting, ceramic granite slabs
7.3. Structures: metal frame
7.4. Plans: gymnastics, gym, choreography and aerobics room, multipurpose hall, rifle range, shooting gallery

8. Sports children's and youth school.
- Total area—3,938 sq.m, area of construction—2,520 sq.m, area of the plot—6,875 sq.m.
- 3 floors; the height (H) of the building is 12m
- Dimensions of the building 135m x 18m
- Age of children: 7-15 years and older
- Facade plaster, steel galvanized sheet, metal panels with crest profile “Wave,” ceramic granite.
- Structures: Frame-wall system
- Plans: Gymnastics, gym, functional training room, boxing, fitness bar, shooting range, yoga room. Sports school.

9. Mytishchi, estate 16.

NOT CONSTRUCTED

Figure 4. Examples of modern extracurricular institutions.

The following results were obtained from the analysis.

The names of the institutions reflect the main function of the facility: ballet school, Development Center, Children's School of Arts (2 pcs.), Educational Center, Center for innovative creativity, Hobby Club, Multi-purpose Center, sports children's and youth school.

Table 1

| No. | Range of basic extracurricular education tasks [8, Article 8]. | Practice. EI Projects |
|-----|-------------------------------------------------------------|-----------------------|
| 1   | - education, development of an individual as socially significant for society, patriotism inculcation (social functions) | + -                   |
| 2   | - creating conditions for creative, intellectual, spiritual and physical development of pupils; - development and support of capable, gifted and talented pupils. (cultural and educational, creative) | + +                   |
| 3   | - meeting the needs for professional self-determination | + -                   |
| 4   | - establishment of a healthy lifestyle (sports and health functions) | ++                    |

The functions in the projects reviewed are different. Sports and physical-cultural and health-improving complexes occupy a special place. This type of institution is now being built quite a lot and, in addition to sports, the offered range of services includes entertainment and leisure, they are intended for population of different age and social status.

In this article we will focus on the EI with other functions.

Predominating functions are aimed at developing the creative potential of children and adolescents, cultural and educational education of an individual child. Admission to these institutions is usually subject to exams, competitions, training is paid for either by the government or on a fee basis. Unfortunately, during our research we did not find any clubs, sections, associations helping kids
choose their future profession, such as modeling and sewing clubs, aero-modeling, auto-modeling, needlework clubs, carpentry workshops, clubs of amateur technicians, cooking clubs etc. Today, in the country the demand on the labor market is changing and there is a considerable demand for blue collar employees with little competition. A demand has emerged for agricultural workers and skilled specialists for factories, plants, companies [10].

All facilities are built as separate buildings on their plots. The area of the plot varies from 1,000 sq.m to 14,000 sq.m. Number of floors vary from 1 to 4. The total area of the buildings varies from 375 sq.m – 4,000 sq.m. Unfortunately, 80% of the projects have few playgrounds on their plots, in many cases, a car parking lot is located on the territory of the facility.

Facades and architectural appearance of the EI are diverse and designed under individual projects with various facade systems and finishing materials. Not all buildings correspond in their exterior to the function of the facility, some buildings are similar to shopping centers or office buildings, and even residential buildings.

2. Practical significance
The recommended number of floors for EI buildings are 2–3, which is allowed for preschool children, the possible number of floors are 1–4 fl., with a basement or a ground floor. More than 50% of the territory should be free from construction, with children's play areas with playgrounds for playing and sports. The architectural appearance of the building should correspond to the function of the facility, fit into the environment and be attractive to children and teenagers.

The modern design practice identified priority trends: institutions fulfilling cultural, educational, creative, as well as sports, physical and health-improving functions. Sports, creative directions in the future will remain at the forefront. Having a child taking lessons in music, dance, art or sports should not become a cure-all for parents and children. We should not forget other areas, with a vector toward crafts, science, technology, practice-oriented classes; such classes should be paid by the budget and be accessible to the population.

3. Conclusions
Designing and constructing public buildings, for example, institutions for children and adolescents designed to spend their free time, in are very important for the younger generation. The diversity of tasks should be fully reflected in the functions of these agencies. The task of raising, developing children in different spheres and areas is one of the priorities for today and should be carried out as fully as possible.

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