

General Requirements and Modern Approaches to Architectural Design of Private Pre-School Educational Institutions

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Abstract: This article, as a result of the research process, studies the impact of the functional-planning structure of preschool educational institutions, sanitary-hygienic and safety requirements on architectural solutions. The issues of written private preschool educational institutions are also covered, based on current regulatory legal acts of the Republic of Uzbekistan and presidential decrees. The article compares traditional and modern architectural approaches and analyzes them on the basis of real objects using the example of private kindergartens in Tashkent.

Keywords: Private, preschool education, institution, architecture, functional, planning, sanitation and hygiene, requirements, modern, approaches.

Introduction: The effective functioning of private preschool educational institutions is directly related not only to the educational content and pedagogical approaches, but also to the architectural solutions of buildings, spatial planning and environmental quality[1]. Therefore, one of the urgent issues is the design of private preschool educational institutions in accordance with general requirements and modern approaches to their architecture. In this regard, improving the architecture of private preschool educational institutions allows creating a safe and comfortable spatial environment for children in the building.

Goals and objectives. The purpose of this article is to scientifically analyze the general requirements and modern approaches to the architecture of private preschool educational institutions, to determine the features of architectural and planning solutions based on the current regulatory legal acts of the Republic of Uzbekistan, and to assess the current situation based on real objects using the example of private preschool

educational institutions in Tashkent. To achieve this goal, the following tasks were set:

- study the general regulatory and functional requirements for the architecture of private preschool educational institutions;
- study the design of architectural design of preschool educational institutions according to regulatory legal acts based on SHNQ 2.08.02–23 “Public buildings and structures” (2023 y); SanPiN 03.48-17 “Hygienic requirements for the organization of adequate and safe nutrition in preschool educational institutions of the Republic of Uzbekistan” (2017 y);
- comparison of traditional and modern architectural approaches;
- analysis of the real state of architectural and planning solutions using the example of private preschool educational institutions in Tashkent;
- development of conclusions and practical recommendations on improving the architecture of private preschool educational institutions based on the

results of the analysis.

METHODOLOGY

The article uses a comprehensive methodology to analyze the architecture of private preschool educational institutions. The study includes an analysis of regulatory and legal documents (SHNQ 2.08.02–23 “Public buildings and structures”, SanPiN 03.48–17 “Hygienic requirements for the organization of adequate and safe nutrition in preschool educational institutions of the Republic of Uzbekistan”), a comparison of traditional and modern approaches, as well as practical observations and interviews on real private kindergartens in Tashkent (“Wunderkind”, “Invento”, “Montessori Ta’lim”, etc.). These methods made it possible to achieve the goal of the article and

determine the effectiveness of architectural solutions of private preschool educational institutions on a scientific basis.

RESULTS

According to the data provided by the Statistics Committee, a sharp increase in the number of private preschool educational institutions in Tashkent led to the formation of different approaches to their architectural and planning solutions (Table 1). An analysis of the activities of these institutions shows that representatives of the private preschool education sector, along with regulatory requirements, are striving to implement modern pedagogical and design concepts into practice.

**Growth in the number of private preschool education organizations
(by the end of the year, units) Table 1**

Toshkent shahri	2016- y	2017- y	2018- y	2019-y	2020-y	2021-y	2022-y	2023-y	2024-y
<i>tumanlar:</i>	546	586	604	632	653	675	715	1 025	1 047
Uchtepa	58	61	61	64	71	67	68	107	108
Bektemir	12	12	13	13	13	13	13	34	35
Yunusobod	69	75	80	85	93	89	98	124	127
Mirzo Ulug‘bek	70	74	76	81	83	81	90	114	115
Mirobod	31	39	37	38	39	37	36	53	54
Shayhontohur	50	56	57	59	59	66	71	107	99
Olmazor	58	60	63	70	72	73	78	94	96
Sergeli	37	41	43	49	50	37	39	72	75
Yakkasaroy	42	43	47	49	48	50	50	66	70
Yashnobod	50	54	54	54	53	61	65	95	107
Yangihayot	-	-	-	-	-	29	31	79	81
Chilonzor	69	71	73	70	72	72	76	80	80

The general requirements for private preschool educational institutions include the following main areas:

1. Functional planning requirements. The internal planning of the building requires the division of children's groups, play, recreation, catering, medical services and administrative rooms into clear zones. A separate playroom, dormitory and sanitary-hygienic rooms should be provided for each age group [2,3]. It is

important that the routes are short, convenient and safe. An example of this is the private preschool educational institutions "Wunderkind" and "Montessori Ta'lim" located in Tashkent (Photo 1). These are relatively large and widespread private kindergartens in Tashkent. The architecture of these institutions uses modern and flexible planning principles. The internal structure of the building clearly separates group rooms, play and training zones, and multifunctional rooms are organized.



Photo1. "Montessori Ta'lim" private preschool educational institution located in Tashkent (photographed by the author)

The rooms are provided with sufficient natural light, and the colors are chosen in accordance with the psychology of children.

The presence of outdoor playgrounds and green areas complies with the requirements of SanPiN. In the example of this kindergarten, it is observed that the private sector strives to create a modern pedagogical environment in compliance with the requirements of SHNQ 2.08.02–23 and SanPiN 03.48–17. Architectural and planning solutions create a comfortable spatial environment for children's independent movement and activity. Low furniture, open shelves and zones for free use by children are organized in the interior. The transparency and openness of the spaces serve to form a sense of freedom and confidence in children. This indicates the integration of modern pedagogical concepts with architecture. However, in some branches, planning opportunities are limited due to the fact that the building was originally intended for a different function, which indicates the urgency of the issue of adapted revision of private preschool educational institutions.

2. Sanitary, hygienic and environmental requirements.



Photo 2. Private preschool educational institution "INVENTO" located in Tashkent (photographed by the author)

Rooms should be provided with sufficient natural light, ventilation and an optimal microclimate. The use of environmentally friendly materials that do not harm children's health is a priority in construction. Landscaping, green spaces, and open playgrounds are also required [3].

3. Safety requirements. Children's safety is the main criterion in architectural solutions. Stairs, doors, windows, and furniture should be adapted to the age of children, and emergency evacuation routes should be clearly marked. Fire safety, video surveillance, and control systems should comply with modern standards [2,3].

4. Aesthetic and psychological environment. Colors, shapes and spatial composition should serve to create a positive emotional state in children. Bright, but not too harsh colors, extensive use of natural light and a comfortable architectural environment have a positive effect on the creative and intellectual development of children [3,5]. A vivid example of this section is the private kindergarten "Invento" (Early Years), which operates in Tashkent (Photo 2).

The private preschool educational institution "Invento" is one of the kindergartens based on foreign educational programs, and architectural solutions are close to international experience.

The building prioritizes open-plan, bright interiors, and multifunctional spaces. The activity and play areas are visually interconnected, which helps children develop social and communication skills. The outdoor and indoor playgrounds are integrated, allowing for year-round activities. In this kindergarten, along with modern architectural solutions, there is a trend toward energy-efficient lighting and the use of environmentally friendly materials.

The results of the analysis show that the following common features are being formed in the design of private preschool educational institutions in Tashkent:

- the desire to create flexible and multifunctional spaces;
- the priority of child-oriented design and interior solutions;
- attention to the harmony of the pedagogical concept and architecture[6];
- the widespread practice of organizing kindergartens by adapting existing buildings.

At the same time, some private preschool educational institutions also face problems such as lack of territory, limited outdoor playgrounds, and the incompatibility of building planning with the requirements of a full-fledged kindergarten.

Modern architecture requires innovative and flexible approaches to the design of private preschool educational institutions. Today, the following areas are widely used:

- Flexible and transformable spaces. Multifunctional, easily transformable rooms are being designed in modern private preschool educational institutions. Playrooms, exercise and recreation areas are planned in such a way that they can be adapted to different types of activities [4].
- Inclusive design principles. Creating comfortable conditions for children with disabilities is an important part of modern approaches. Ramps, wide doors, special sanitary rooms and elements of the sensory environment are being included in architectural solutions [6].
- Sustainable and energy-efficient architecture. Environmental solutions such as the use of solar energy, energy-efficient materials, water-saving systems and green roofs are increasingly popular in private preschools. This ensures not only economic efficiency, but also environmental responsibility [4].

- Architecture that is compatible with the pedagogical concept. Modern pedagogical approaches such as Montessori, Reggio Emilia, and Waldorf have a direct impact on the spatial structure of the building. For example, in the Reggio Emilia approach, open spaces and transparency play an important role, while in the Montessori environment, low furniture and open shelves are convenient for independent activity [6].

CONCLUSION

The analysis of private preschool educational institutions in Tashkent, such as Wunderkind, Montessori Ta'lim and Invento, showed that representatives of the private sector are trying to create flexible and multifunctional spaces, apply child-centered design and combine the pedagogical concept with architecture. At the same time, due to the practice of adapting existing buildings in some institutions, problems such as lack of territory, limited outdoor playgrounds and inconsistency in planning are observed. This indicates the need to develop special, typologically based architectural solutions in the design of private preschool educational institutions.

Based on scientific analysis, the following general conclusions can be drawn:

1. The architecture of private preschool educational institutions should be designed in strict accordance with regulatory requirements and in harmony with the pedagogical concept.
2. Flexibility in the functional-planning structure and the creation of transformable spaces are a modern requirement.
3. Sanitary-hygienic and safety requirements will remain the main criteria for architectural solutions.
4. The widespread introduction of the principles of inclusive and sustainable (energy-efficient) architecture is a promising direction.

Thus, improving the architecture of private preschool educational institutions requires the integration of regulatory and legal frameworks, modern pedagogical approaches and innovative architectural concepts. Through a scientifically based, comprehensive approach, it is possible to form a safe, comfortable and developing spatial environment for children.

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