

DOI: 10.21005/pif.2020.41.B-04

CURRENT STATE AND NEEDS OF SPORTS COMPLEXES OF THE HIGHER EDUCATION INSTITUTIONS OF UKRAINE (ON THE EXAMPLE OF ODESSA)

Oleg Sleptsov

Doctor of Architecture, Professor

Author's Orcid number: 0000-0001-5441-5453

Kiev National University of Construction and Architecture,
State Higher Education Establishment
Department of Architecture and Architectural Design

Dmytro Kravtsov

Ph.D. Student

Author's Orcid number: 0000-0002-1060-4276

Odessa State Academy of Civil Engineering and Architecture
State Higher Education Establishment
Department of Architecture of Buildings and Structures

ABSTRACT

The article is devoted to the problem of the current state of sports complexes of a network of universities in Ukraine. A brief theoretical review of the problem is given. The current trends in physical education are considered. An analysis is made of the compliance of the current state of sports complexes of Odessa universities with the requirements of the educational process and motivational capacity. The analysis of the correspondence of the volume of existing sports spaces with the existing regulatory acts is carried out. Based on the analysis, the directions of further development and improvement of sports complexes of Ukrainian universities are proposed.

Keywords: higher education institutions, architecture of the sports complex, motivational capacity of the architectural environment.

1. INTRODUCTION, AIM AND RESEARCH METHODS

In today's complex socioeconomic and environmental circumstances, physical education and training of the population is of great importance in Ukraine. It is known that regular sports contribute to the physical hardening of people, especially young people. Sports games and competitions are a good incentive for further personal development. Awareness of one's physical development and commitment to improving one's own athletic achievement brings one a sense of joy. Unfortunately, the 21st century population of Ukraine has little to do with sports. According to statistics in our country, only 8-10% of the population visit sports sections on average. At the same time, in developed countries, this figure ranges from 40-55%. It is not by chance that physical tempering and health improvement of the population is one of the most pressing contemporary social problems in Ukraine.

Given the above circumstances, the system of physical education of the country's higher education institutions becomes one of the most important as one of the possibilities of encouraging the population to play sports and to create healthy lifestyles for young people. In order to better understand the possibility of achieving this goal, it is appropriate to consider in more detail the current trends and needs in physical education, as well as the current state of sports complexes of universities in order to meet these needs.

The main purpose of this article is to analyze the current state of sports complexes of Odessa higher education institutions network. To establish the level of their compliance with the existing legislative acts and the needs of the educational process on the basis of the conducted review of various sources. Another goal is to outline possible directions for further development and improvement of the architectural environment of sports complexes of Ukrainian universities. The article is devoted to the problem of improvement of architectural and subject environment of sports complexes of the network of universities of Ukraine.

The research is based on the analysis of the existing design and technical documentation, the current state building standards, the author's observations and photo-fixed material, the graphical and quantitative analysis of the nomenclature of the premises of the existing sports complexes of the universities with the established criteria.

2. THEORETICAL REVIEW

The problem of designing, building and reconstruction of sports complexes of universities is raised in the works of such scientist as G.G. Lebedev. In particular, the classification of institutions of physical education, rest and treatment of university students is given. It also stated the main purpose of the university's sports complex: "The main purpose of sports complexes is to provide academic hours of physical training and sports self-improvement, to create a high level of comfort and service, to provide a wide choice of different types of classes in sports halls of various purposes, in the swimming pool, on the sports grounds. In their free time, the halls will be used for sports improvement groups, staff sessions and the public." (Lebedev G. G., 1990, 10) There is a characteristic of many universities lack of nomenclature of sports spaces.

The question of the theory of designing sports complexes of universities is also partly shown in the book "Physical and Sports Facilities" edited by L.V. Aristova. The authors note the problem of lack of auxiliary premises of sports spaces in conditions of intensive use of them. A number of recommendations for the calculation of the nomenclature of indoor and outdoor sports spaces of the complex, its auxiliary premises depending on the number of students of the university are given. Attention is drawn to the problem of cooperative operation of the sports complex by students and residents of surrounding residential areas. Many typical and experimental sports complexes of the Soviet period are not adapted to this mode of operation. The authors note a number of factors that negatively affect the attractiveness of the university's sports complex for visiting other segments of the population, namely: the neglect of its material base; the location of its elements in the depths of the territory of the educational institution; placement of gyms on the upper and basement floors of educational facilities of other faculties. There are also suggestions that the formation of a coopera-

tive sports complex of universities of technical profile with adjacent research institutes and industrial enterprises (Aristova L. V., 1999, 285-301).

In their studies, L.M. Kovalsky and G.L. Kovalskaya also raise the issue of designing sports complexes of universities. In particular, there are requirements for its placement within 15-minute accessibility of the main educational buildings. Researchers propose the use of indoor arenas with transformation systems to universalize the sports space. The authors also raise the issue of increasing the efficiency of use of valuable land. In particular, data are provided that the possibility of 25% savings of land plots under the condition of cooperation of identical structural units (including sports complexes) close to the universities. Also, it is proposed to use multilevel compact solutions of educational buildings to optimize the exploitation of urban territories and increase the efficiency of the educational process by compacting its structure and reducing the time spent on communication between the structural units of the university (Kovalskyi L. M., & Kovalska H. L., 2011).

Legislative and regulatory documents for the development of education aim at creating the appropriate physical education and sports facilities in educational institutions. The most extensive network of sports buildings and structures is in higher educational institutions. According to the current regulatory acts, 1 to 2 hectares of territory per 1000 students is allocated to the sports zone. In large university complexes, several sports sub zones are often created: for educational purposes (near educational buildings), sports and entertainment (in the structure of cooperated public centers) and sports and athletic fields in the hostel area.

In some educational institutions, in addition to the main sports zone, additional student physical education and sports bases are being created in the suburban forest park territory. Sports buildings significantly affect the functional and space-planning structure of the educational institution. According to the regulations in force in Ukraine, the total area of sports halls in higher educational institutions should be determined at the rate of 0.8-1.1 square meters per student (excluding auxiliary premises and pools). In large educational institutions it is recommended to create a system of universal and specialized sports halls, swimming pools.

Thus, the network of sports complexes of higher education institutions in Ukraine needs more detailed study.

3. CURRENT TRENDS AND PHYSICAL EDUCATION NEEDS

Definition of the purpose of a higher education institution's sports complex given by Lebedev G. G. gives us an understanding of its close relationship with the institution's physical education program. Thus, for a better understanding of the architecture of sports complexes in the network of higher education institutions, current trends and needs of the physical education system of educational institutions should be considered.

Many researchers note that the most significant drawback in the physical education system of students is that it does not encourage students to exercise, to do sport and to independently acquire knowledge and skills in the field of physical education. It is emphasized that physical education will become an effective means of promoting health and improving the physical fitness of students, if its main principles are regularity, flexible variability and motivational background. The importance of students' emotional and value attitude to physical and sports activities is also noted (Petrenko H. I., & Honchar V. I., 2015, 497-500).

The issue of motivating of students (and the population) to play sports and physical education is currently very acute. The Ukrainian physical education system does not provide the necessary level of motivation and this applies not only to the method of teaching but also to the material base. Noted by many experts, the lack of infrastructure not only does not encourage sports but also has a negative impact on the motivation of many students and other segments of the population.

The results of the sociological survey reveal the main factors contributing to the formation in students of the wrong attitude to exercise in physical culture and sports. These factors include: misunderstanding by the student of the importance of sports and physical education for professional and

personal development; unwillingness to exercise in free time; lack of habits and basic skills in sports; a small amount of free time; inability to organize their free time; lack of conditions and more (Baranov D. V., 2008, 97-104). In view of the above factors, there is a need to develop students' interest in a particular sport, to create conditions that will contribute to the emergence of positive sports motivation.

It is interesting to study the environment approach to physical education of student youth. Researchers divide the factors of sports lifestyle formation into three components: system-forming - the presence of an internal source of activity in a person; system-filling - the ability of the individual to cognition and self-organization; system-conditioning - social interactions that determine the self-improvement of the individual. The last group of factors include the nature of interpersonal relationships with the immediate environment and features of the sociocultural environment of the educational institution (including sports). There is an increased interest of researchers in the pedagogical potential of the environment (Manzhelej I. V., 2014, 125-138).

Based on the definition of V.A. Yasvin, the sporting environment of an educational institution is understood as a set of diverse conditions and opportunities for shaping the sporting lifestyle of a person, which are contained in the spatial-object and social environment. According to the eco-psychological approach, the sports environment of the educational institution includes the following three components: spatial-object, social and technological. The most interesting for us is the space-subject, which determines the educational potential of the local sports environment of the institution of higher education at the expense of: modern architecture and design of sports halls, playgrounds, canteen, medical center; the presence of outdoor and outdoor shower areas; availability of quality equipment and equipment; saturation with sports symbols; appropriate hygienic conditions, etc.

An environmental approach to the process of physical education is presented as a way to build an educational process, in which the emphasis of teaching will go on actively influencing the student's personality in the industry of building the environment of an educational institution as a set of conditions of a spatial-subject and socio-cultural environment conducive to self-improvement and self-expression of an individual due to means of mass sports.

Very important for an environmental approach to student physical education is J. Gibson's theory of capabilities. The capacity of the educational environment means all that the environment provides to the subject and what he offers. It emphasizes the fundamental importance that opportunity represents a special unity of the properties of both the environment and the subject. That is, providing an environment with one or another opportunity that suits the subject's needs "provokes" him or her to show appropriate activity.

Ideas that have become the basis for the basic conceptual provisions of the approach environment in physical education: changes in the philosophy of physical education; saturation of the environment of an educational institution with interconnected sports-oriented micro environments of different modality as a means of shaping a sports lifestyle in student youth; the teacher and student in the learning process act as partners of co-action and co-development; the criterion for assessing the professionalism of a teacher is his ability to organize a sport environment and create incentives for students to engage in physical education and sports.

Among the given directions for the implementation of the approach environments, the most interesting in our opinion is the direction of strengthening the material and technical base: the construction and reconstruction of sports facilities, improving the ways they function, updating equipment and inventory, and applying architectural and artistic means of encouragement and motivation.

4. SPORTS COMPLEXES OF HIGHER EDUCATION INSTITUTIONS

At the beginning of the 2018/2019 academic year, 652 higher education institutions were in Ukraine. As an example of the current state of the network of sports complexes of higher education institutions it is possible to consider sports complexes of Odessa educational institutions. In total, there are 27 higher education institutions in the Odessa region, 23 of which are located directly

within the city of Odessa (Fig. 1). Some of these educational institutions are characterized by the dispersed location of educational buildings in the city structure.



Fig.1. Scheme of placement of the higher education institutions in the city structure. Source: Developed by D.S. Kravtsov based on the Master Plan of Odessa.

An interesting example of the diversity of decisions of sports complexes of higher education institutions is the sports complexes of the Odessa National Maritime University, the Odessa Naval Academy and the Odessa State Academy of Civil Engineering and Architecture, whose campuses are located in a single city block and are bounded on the east and north east of Didrichsona Street and Composer Nishchynsky, respectively, and street Dukovskaya on the west side. The academic buildings of the University of Maritime occupy the eastern part of the quarter and are bordered on the west side by the OSACEA campus. The university's sports complex was built on the territory in 1950 and was reconstructed in 1986 and 2002. At the moment, the building of the sports complex consists of the main and annexed parts. The main part is a multi-storey (1-3 floors), rectangular in plan with a partial basement. The built-in part is mainly two-storeyed and partly one-storeyed, rectangular in shape. In the basement there is a pump room. The ground floor contains an entrance group, rehabilitation center facilities, gyms and weightlifting halls, a sports hall and their ancillary facilities. On the second floor there are premises of the Department of Physical Education and Sports Club, table tennis halls and their auxiliary premises, and a balcony of the game hall. The third floor contains aerobics, wrestling, table tennis, gym, chess club and their auxiliary facilities. The total area of indoor gyms, excluding their auxiliary facilities and swimming pool, is approximately 1414 square meters, which is only 35% of the envisaged regulations.

Given the specifics of physical education in high schools, the presented variety of specialized gyms is a positive factor, as well as the location of the premises of the department of physical education in the building of the sports complex. Direct placement of the building of the sports complex on the territory of the educational campus contributes to a better organization of the educational process. However, the location in the interior of the educational institution creates obstacles for the use of the complex by residents of the surrounding residential areas. The external architectural image and

condition of the premises of the sports complex also do not contribute to the encouragement and stimulation of students to engage in sports (Fig. 2.).

The main educational buildings of the Odessa State Academy of Civil Engineering and Architecture occupy the central area of the quarter and are bordered by the campuses of the National University "Odessa Maritime Academy" on the west side and the Maritime University on the east. The sports complex of the Academy is an extensive network of disparate gyms built into different buildings of the educational institution. The sports halls of the complex occupy basements and upper floors in different educational buildings, or are equipped. For example, a sports hall for sports games and boxing halls with auxiliary premises were located on the 2nd and 3rd floors of the educational and laboratory building №5. Table tennis halls are occupied by basements of the educational and laboratory building №6A, and the premises of the department of physical education and the hall of medical groups are located in the right annex (building №6B). The volleyball hall was located near the premises of the scientific library (Fig. 3). The total area of the Academy's indoor gyms is 1018 square meters. The advantage of such arrangement of gyms in the structure of the educational institution is the saving of scarce territories. The proximity of the halls of the sports complex to the student dormitories is also a positive factor. However, this sports complex has several disadvantages, such as: architectural fuzzy and neglected elements of the complex, which negatively affects the motivation of student youth to play sports and does not attract residents of the surrounding residential areas; the location of the sports complex on the fenced-in territory of the educational institution makes access to it to other segments of the population not convenient, and the placement of gyms in the structure of educational buildings may create crossings of visitors flows, which is undesirable in this case. Also, the location of a health care facility off-campus is a negative factor, and access to it is complicated by difficult terrain.

The sports complex of the National University "Odessa Marine Academy" is located at 10, Malovskoho str., on the territory of the university's student dormitories, and about 800 m away from the main academic buildings of the university. The complex is represented by a swimming pool building and a group of dormitories adjacent to the house and occupying the first floors of sports halls. This placement of the sports complex has a positive impact on the organization of leisure for students, however, it makes certain adjustments to the organization of the educational process due to the remoteness of the complex from the main educational campus, which is also complicated by the difficult relief and the highway on Balkovska str., which runs between the campus and the dormitories.

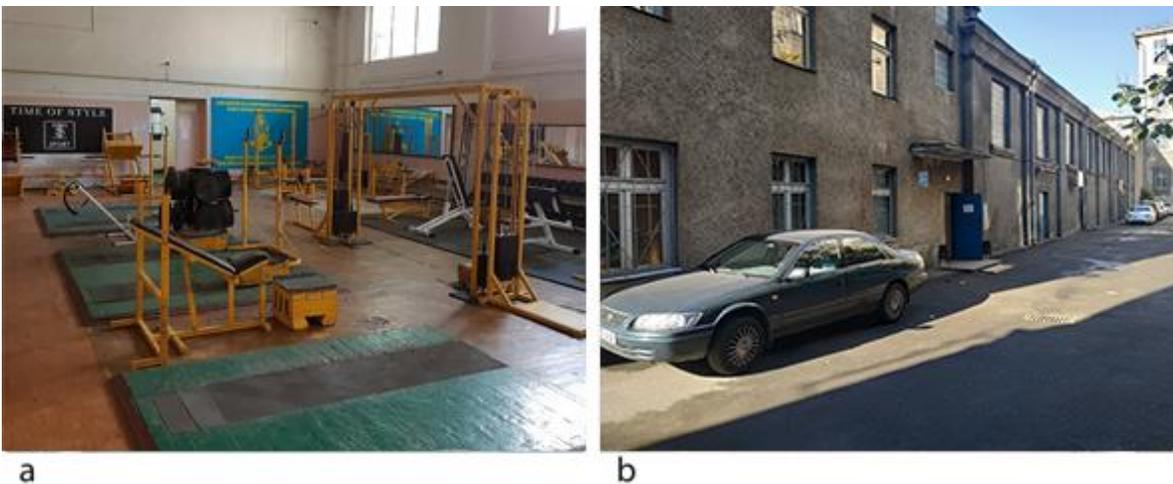


Fig. 2. The sports hall of the Odessa National Maritime University: a) the interior of the sports hall. Source: public domain; b) the facade of the gym. Source: photography by D. Kravtsov



Fig. 3. Sports hall of the Odessa State Academy of Civil Engineering and Architecture: a) the interior of the sports hall, b) the facade of the gym. Source: photos by D. Kravtsov

In the dormitory on the underground floor there is a sports complex that contains technical and storage facilities, and on the ground floor there is an lobby group, a library, a workshop, utility and sanitary rooms. On the second floor there are three gyms of various sizes and purposes, their auxiliary rooms and a sauna. On the third floor there is a foyer, cafe, equipment room, a number of auxiliary rooms and a balcony of the game sports hall.

Workshops and technical rooms are located on the basement level in the swimming pool building. The technical premises of the swimming pool, a number of halls and their service rooms are located on the first floor, and small gyms, sanitary facilities and administrative rooms of the pool are on the second floor (Fig. 4). Utility and auxiliary rooms are located on the third floor, and on the fourth floor there are gyms with rooms serving them (Zotkova V. A., 2010). The total area of the gymnasiums of the complex, excluding the pool, is 1724 square meters. m, which provides 30% of the standard indicator.

On the basis of the sports complex there are sports sections on handball, water polo, basketball, rugby, swimming, tennis and wrestling. The university's sports pool is open to visitors not only by students, but also by other sections of the population. The location of the sports complex directly on the territory of the hostels helps encourage students to engage in physical education by creating the appropriate "opportunities" within the campus environment.

It should be noted that despite the close proximity of educational institutions, their sports facilities do not provide for cooperative use.

The sports complex of the Odessa National Academy of Food Technologies (ONAFT) is one of the examples of the indoor sports complex, which is located on the territory of the dormitory of the educational institution. The educational buildings of the Academy are scattered throughout the city at a considerable distance from each other. The building of the sports complex is located at: Odessa, 112, Kanatna str. is next to the dormitories of the Academy and within a 15-minute walk from the main building. The convenient location in the structure of the educational institution allows us to solve a number of issues, such as: organizing the life of students and residents of nearby territories, stimulating and encouraging young people to engage in physical education and sports, improving and maintaining public health, and gaining financial profit by selling membership cards for visiting sports clubs etc. The presence of a nearby recreational zone represented by the Botanical Triangle Square is also a positive factor.



Fig. 4. The swimming pool of the sports complex of the National University "Odessa Marine Academy". Source: public domain.

Sports complex of Odessa National Academy of Food Technologies consists of two blocks: a main 4-storey block and a pool with a game sports hall (Fig. 5). In the basement there are a number of technical rooms serving the swimming pool, workshop and sports hall with auxiliary rooms. The first floor contains a number of administrative premises, a lobby, a swimming pool with locker rooms, inventory, showers and a sauna. A sports hall for playing sports, a sports club, a small gym, bathrooms and technical rooms are located on the second floor. The boxing room with its inventory room, and the balcony of the game sports hall are located on the third floor, and on the fourth floor there is a table tennis hall, bathrooms and technical rooms. The total area of the sports halls of the complex, with the exception of the pool and auxiliary facilities, is about 1371 square meters, which is only 17% of the area envisaged by regulatory requirements.



a



b

Fig. 5. Sports complex of the Odessa National Academy of Food Technologies: a) Interior of the sport hall of game sports. Source: public domain; b) Facade. Source: public domain.

It should also be noted that the main facade of the sports complex overlooking Kanatnaya Street has continuous glazing of the third and fourth floors. This decision makes the training process of boxing and table tennis halls located there visually accessible, which in turn helps encourage students and residents of nearby territories to play sports.

The sports complex of Odessa National Polytechnic University is located at 11 Shampansky Lane. It is a three-story building with an underground floor (Fig. 6). On the underground floor of this building there are gyms, a shooting gallery, an auxiliary, utility and technical premises. Lobby group, gyms, swimming pool, changing rooms with showers, equipment room and bathrooms are located on the first floor. On the second floor, there are also gyms and their auxiliary rooms. In addition to a small sports hall with its auxiliary facilities, balconies of gyms and a swimming pool are located on the third floor (Anufrieva, Ye. O., 2008).



Fig. 6. Sports complex of Odessa National Polytechnic University: a) Universal sports hall of game sports. Source: public domain; b) Facade of a sports complex. Source: public domain.

On the basis of the sports complex, students can enjoy sections of athletics, swimming, water polo, sports games, various types of wrestling, boxing, fencing and sports tourism. Also, for other segments of the population there is a fitness studio, a sports club and a regional youth sports school. The area of indoor sports halls is 3565 square meters, which, with a contingent of about 15,000 students, satisfies only about 30% of the calculated value.

The building of the sports complex is located next to the student dormitories of the university, which in turn helps to organize leisure activities for university students and residents of nearby residential areas. But, the remoteness of the complex from the main educational buildings makes certain adjustments to the organization of the educational process. A positive factor in the placement of the sports complex is its proximity to the Victory Park and the presence of an open stadium.

The above higher education institutions are only part of the network of educational institutions in Odessa, however, there are enough of them to generally consider the situation with the sports complexes of the university in the city. Common to all these universities is the problem of the lack of free urban areas and its negative impact on the state of their sports complexes. However, we can observe various decisions of sports complexes, their placement in the structure of the university. Among the examples there are sports complexes that are located on the territory of educational campuses, as well as beyond. The special attention is paid to the sports complexes of the university, which are located close to the student dormitories, they create more opportunities for the life of students and a more complete load of the sports halls of the complex.

Depending on the location relative to the main educational buildings of universities, the architectural solutions of the sports complexes presented in this article also differ, for example: sports complexes ONPU, ONAFT and ONMU are separate buildings; the sports complex NU "OMA" is an extension to the student dormitory; OSACEA sports complex is a dispersed network and provides for the location of gyms and their service rooms in other campus educational buildings, mainly on the underground or upper floors.

However, despite the diversity of the architectural and planning solutions presented, a characteristic feature of the sports complexes under consideration is the mismatch between the total areas of physical culture and sports halls and the approved gymnasium area per student, approved in (Ukrainian Building Norms) UBN V.2.2-3-2018. According to this normative act, the area of gyms, excluding auxiliary facilities and a swimming pool, should be 1.1 square m. per student with the contingent of the university is less than 4000 students and 0.8-1.0 square m. with a student contingent of more than 4000. The initial analysis of the ratio of the total area physical culture and sports facilities, with the exception of the area of the swimming pool and auxiliary facilities, the number of students in the above universities is, at best, almost three times less than the minimum allowed by the standards (Table 1.).

Also, it should be noted that in most of the sports complexes cited, their general neglect has a negative impact on their functioning in general and the motivation of students to engage in physical education and sports. On the basis of some of the sports complexes of the university-in the city, sports sections are open for visits by various segments of the population, it has a number of positive aspects, for example: the formation and maintenance of public health, the organization of everyday life of residents of nearby housing estates, the receipt of financial profits from the implementation of subscription to visit sections etc.

Table 1. The presence of functional blocks and visitor capacity of sports complexes of higher educational institutions in Odessa

name of the higher education institution		Odessa National Polytechnic University	National University "Odessa Maritime Academy"	Odessa National Maritime University	Odessa National Academy of Food Technologies	Odessa State Academy of Civil Engineering and Architecture
close location to:	main educational buildings	●	●	●	●	●
	student dormitory			●		●
availability of sports facilities	outdoor sports grounds	●	●			●
	indoor gyms	●	●	●	●	●
	swimming pool	●	●	●	●	
the presence of other structural elements of the sports complex	lobby group	●	●	●	●	
	changing rooms with showers and bathrooms	●	●	●	●	●
	inventory and storage facilities	●	●	●	●	●
	medical facilities		●			
	remedial gymnastics	●	●	●		●

	medical rehabilitation facilities	●	●	●		
	premises of the department of physical education	●	●	●		●
	lecture rooms		●			●
	club premises	●	●	●	●	●
	premises for servicing of spectators		●	●	●	
	recreation areas		●	●		
	areas for outdoor activities	●	●	●	●	
	the area of indoor sports spaces (excluding the swimming pool)	3565,5	1724,3	1414,4	1370,7	1017,85
	contingent of educational institution	15000	7000	5000	10000	3500
	% from the normalized area indicator of indoor sports spaces	29,70%	30,70%	35%	17%	36%

5. CONCLUSIONS

A review of sports complexes of higher educational institutions of Ukraine on the example of Odessa, which clearly demonstrates the predominantly poor state of such facilities was carried out. In particular, the visitor capacity of sports complexes is clearly emphasized and this negatively affects the conduct of academic classes in physical education on the basis of such complexes, as well as their attractiveness for visitors. The slurredness of architectural images and the poor condition of the facades of sports complexes also negatively affect their motivational ability and attractiveness for various segments of the population. The location of some of the sports complexes in the depths of the educational campus creates an undesirable intersection of the flow of visitors and, accordingly, makes it difficult for them to be used by students and residents. The prevailing poor condition of the interiors and equipment of sports complexes, their small adaptability and the inadequacy of the service premises to the needs of the educational process negatively affect the motivational ability and attractiveness of the complexes.

Thus, a review of the development trends of the physical education industry and the current state of sports complexes of higher educational institutions of Odessa allows us to highlight the following needs of the network of sports complexes of educational institutions of Ukraine:

Increase in visitor capacity, which provides for: construction of new complexes; reconstruction and modernization of existing ones; the formation of compensating sports complexes of a cooperative form of use at several closely located educational institutions; the formation of dormitories with small gyms with exercise equipment; increasing the versatility and adaptability of gyms through the use of transformation tools and the like.

An increase in the motivational ability of the subject-spatial component of sports complexes of a network of higher education institutions provides for: an interesting architectural and compositional solution of the complex; modern interior design; saturation of the environment with sports symbols; availability of recreational spaces; availability of leisure activities; visual accessibility of the training process; harmonious interaction of the complex with the environment; the presence of a full range of auxiliary facilities and the like.

The implementation of these areas will significantly improve the quality of the educational process, especially the use of architectural and artistic means of motivation and encouragement.

BIBLIOGRAPHY

- Anufrieva, Ye. O. (2008). Technical passport for a public house sports complex 11 Shampans'kyi lane., Odessa city. Odessa: Odeske miske biuro tekhnichnoi inventarizatsii ta reiestratsii obektiv nerukhomosti [in Ukrainian].
- Aristova L. V., Bykova G. I., & Golubinskij A. P. et al. (1999). Sports facilities. Moscow: SportAkadem-Press [in Russian].
- Baranov D. V. (2008). Martial arts in the system of physical education of students. Vesnik Mazyrskaha dziazhaunaha pedahahichnaha universiteta imia I. P. Shamiakina, 4 (21), 97-104 [in Belarusian].
- DBN B.2.2-3: 2018 Institutions of Education. (2019, September 1). Kyiv: Minrehion Ukrainy [in Ukrainian].
- Gibson, J.J. (1979). The Ecological Approach to Visual Perception. Boston: Houghton Mifflin.
- Kovalskiy L. M., & Kovalska H. L. (2011). Architecture of higher education institutions. Universities of the 3rd millennium. Kyiv: Osnova [in Ukrainian].
- Lebedev G. G. (1990). The principles of the formation of the system and the types of institutions of physical education for recreation and preventive treatment of university students in major cities (for example, Moscow). Extended abstract of candidate's thesis. Moscow: MOTKZ [in Russian].
- Manzhelej I. V. (2014). Environmental approach to the physical education of student youth. Obrazovanie i nauka, 2, 125–138 [in Russian].
- On approval of the National Target Social Program for the Development of Physical Culture and Sports for the Period up to 2020 № 115. (2017, March 1). Kyiv: Kabinet Ministriv Ukrainy [in Ukrainian].
- Petrenko H. I., & Honchar V. I. (2015). Analysis of directions of modernization of physical education of university students. Young Scientist, 2, 497–500
- Technical passport for the building of the sports complex on the street. Mechnikova 34: Archive number 121. (2005). Odessa: OOO "Rybagroservis", Proektno-tehnicheskoe proizvodstvo [in Russian].
- Technical passport of the building. Physical Education Training Corps complex of buildings and structures of the educational institution 112 Kanatna street, Odessa city. (2015). Odessa: TOV "ARKS-HRUPP" (subiekt hospodariuvannia) [in Ukrainian].
- Zotkova V. A. (2010). State act on the right of permanent use of land. Odessa: Odeske miske biuro tekhnichnoi inventarizatsii ta reiestratsii obektiv nerukhomosti [in Ukrainian].

AUTHORS NOTE

Sleptsov Oleg, Doctor of Architecture, Professor, Head of the Chair of Architecture and Architectural Design of the Kiev National University of Construction and Architecture, Kyiv, Povitroflotsky Avenue, 31, 03680. The main area of research: urban development complexes; architecture of residential and public buildings; reconstruction of facilities and buildings; sacral architecture; development and implementation of experimental architectural and structural systems.

Dmytro S. Kravtsov, Ph.D. Student of the department of Architecture of Buildings and Structures of Odessa State Academy of Civil Engineering and Architecture, Odessa, Didrihsona Street, 4, 65029. The main area of research: Architectural and planning organization of sports complexes of higher educational institutions.

Contact | Kontakt: info@licencearch.com.ua; kravtsovdima27@gmail.com