

título de investigación

Architectural Examination of Student Accommodation in Russia And the CIS

Архитектурное Исследование Студенческого Жилища в России и СНГ
Examen arquitectónico de alojamiento de estudiantes en Rusia y el CIS

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Abstract

Based on the analysis, generalization and systemization of the experience of Russia and the Soviet Union, as well as several CIS countries (Kazakhstan, Ukraine, Belarus), in the architectural formation of student accommodation, certain indicative volumetric-planning solutions of complexes, buildings and premises have been identified; their advantages and disadvantages have been revealed. Moreover, quantitative correlations of different types of architectural organization of student accommodation in Russian and Soviet practice have been defined. The analysis made it possible to conclude that the quality of the architecture of the student accommodation is quite poor. It does not meet modern requirements for the living environment and does not correspond to the nature of scientific and educational work. Life in student accommodation is associated with lack of comfort and unproductive use of time.

The object of the study is buildings and complexes of buildings intended for the accommodation of higher school students.

The subject of the study is collection, systematization, and processing of data on typical architectural solutions of student accommodation buildings and complexes in Russia and the CIS.

The aim of the study is to obtain generalized and reliable data on existing buildings and complexes of student accommodation, their standard space-planning solutions based on an examination of the representative sample.

Study objectives include the following: analysis, generalization, and systematization of student accommodation formation practice; determination of typical kinds of architectural

Resumen

Sobre la base del análisis, la generalización y la sistematización de la experiencia de Rusia y la Unión Soviética, así como varios países de la CEI (Kazajstán, Ucrania, Bielorrusia), en la formación arquitectónica de alojamiento para estudiantes, ciertas soluciones indicativas de planificación volumétrica de complejos, se han identificado edificios y locales; Sus ventajas y desventajas han sido reveladas. Además, se han definido las correlaciones cuantitativas de diferentes tipos de organización arquitectónica del alojamiento de estudiantes en la práctica rusa y soviética. El análisis permitió concluir que la calidad de la arquitectura del alojamiento de los estudiantes es bastante mala. No cumple con los requisitos modernos para el entorno de vida y no se corresponde con la naturaleza del trabajo científico y educativo. La vida en el alojamiento de los estudiantes se asocia con la falta de comodidad y el uso improductivo del tiempo.

El objeto del estudio son los edificios y complejos de edificios destinados al alojamiento de estudiantes de escuelas superiores.

El tema del estudio es la recopilación, sistematización y procesamiento de datos sobre soluciones arquitectónicas típicas de edificios y complejos de alojamiento para estudiantes en Rusia y la CEI.

El objetivo del estudio es obtener datos generalizados y confiables sobre los edificios existentes y los complejos de alojamiento de los estudiantes, sus soluciones estándar de planificación del espacio basadas en un examen de la muestra representativa.

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solutions for buildings and individual spaces of student accommodation in the Russian practice, assessment of their arrangement features.

The most typical examples are given and analytical conclusions are drawn based on the study results.

Keywords: campus, student quarter, student accommodation, dormitory, university, temporary accommodation, academy, institute, higher education, youth, student.

Los objetivos del estudio incluyen lo siguiente: análisis, generalización y sistematización de la práctica de formación de alojamiento de estudiantes; determinación de los tipos típicos de soluciones arquitectónicas para edificios y espacios individuales de alojamiento de estudiantes en la práctica rusa, evaluación de las características de su disposición.

Se dan los ejemplos más típicos y se extraen conclusiones analíticas basadas en los resultados del estudio.

Palabras claves: campus, barrio estudiantil, alojamiento estudiantil, dormitorio, universidad, alojamiento temporal, academia, instituto, educación superior, juventud, estudiante.

Аннотация.

На основе анализа, обобщения и систематизации российского, советского, а так же некоторых стран СНГ (Казахстана, Украины и Республики Беларусь) опыта архитектурного формирования студенческого жилища выявлены характерные объемно-планировочные решения комплексов, зданий и помещений, определены недостатки и достоинства, а также количественные соотношения различных типов студенческого жилища в отечественной практике. Анализ позволил сделать вывод о недостаточном качестве архитектуры студенческого жилища, ее несоответствии современным требованиям к жилой среде и несоответствию характеру научно-образовательного труда. Быт в студенческом жилище характеризуется низким комфортом и большими непроизводительными затратами времени. Объектом исследования являются здания и их комплексы для проживания студентов вузов. Предметом исследования является получение, систематизация и обработка данных о характерных архитектурных решениях зданий и комплексов студенческого жилища в России и СНГ. Целью исследования является получение обобщенных и достоверных данных о существующих зданиях и комплексах студенческого жилища их характерных объемно-планировочных решениях на основе обследования репрезентативной выборки. Задачи исследования: проанализировать, обобщить и систематизировать практику формирования студенческого жилища; выявить характерные типы архитектурных решений зданий и отдельных помещений студенческого жилища в отечественной практике, оценить особенности их организации; По результатам исследования приведены наиболее характерные примеры и сформулированы аналитические заключения.

Ключевые слова: кампус, студенческий городок, студенческое жилище, общежитие, вуз, временное жилище, университет, академия, институт, высшее образование, молодежь, студент

Introduction

To analyze the experience of the arrangement of student accommodation at higher education institutions an examination of 297 modern student accommodation facilities located in the territory of four countries (the Russia, Kazakhstan, Ukraine and the Republic of Belarus) was conducted. Geographical location of the examined objects is shown in Figure 1. The research involved actual examination and study of written sources.

The most typical examples are given and the analytical conclusions are drawn based on the study results. The full list of facilities examined during the study, including photographs and main parameters of each facility, is given in the author's work "Principles for Architecture Formation of Student Accommodation at Higher Education Institutions" (Popov, 2018d).

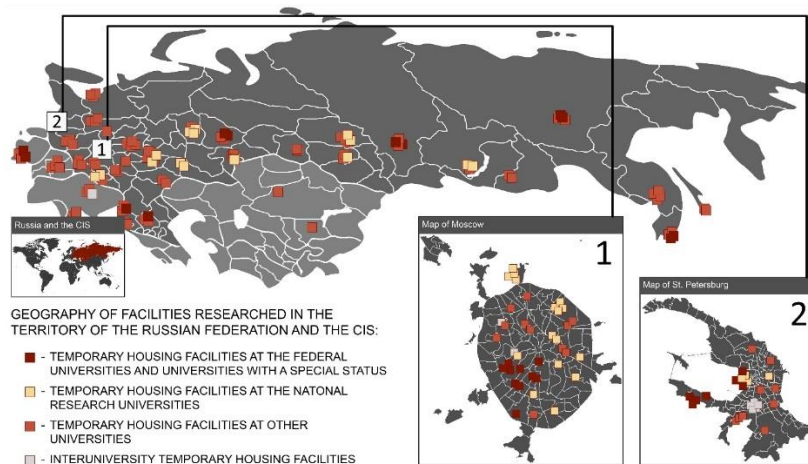


Figure 1. Geography of facilities under research in the territory of Russia and the CIS.

The research methods include the following:

- systematic analysis allowing considering various factors of object formation and development in interrelation;
- full-scale inspection of student accommodation facilities;
- research of archival documents from library collections and open sources related to existing buildings and complexes of student accommodation;
- photo registration of facilities;
- method of design solution integrated assessment.

In light of the author's research on both the architectural formation of student accommodation in general (Popov, 2018b; Popov, 2018d) and on separate sociological (Popov, 2014b), psychological, economic (Popov, Kazaryan, 2018a), environmental (Popov, 2014a), time-saving (Popov, Sorokoumova, 2018) and other issues (Popov, 2018a; 2018c; 2019a; 2019b; Popov, Kazaryan, 2018b) affecting space-planning solutions, as well as a number of works by other authors (Danilina, Slepnev, 2018; Gerasimova, Melnikova, 2018; Popov, 2018d; Rodionovskaya, Popov, 2014), it is important to systematize the practice of designing of such accommodation.

Features of the architectural arrangement of campuses

Based on the results of the study, it was concluded that some dormitory buildings are a part of a complex – campus. Such complexes can be located at the university, or stay detached; they can be designed for students of one university, or, less often, for students from different institutions. Examples of interuniversity campuses include the interuniversity student campus in St. Petersburg on Basseynaya Street, the micro-district in Kharkov on Tselinogradskaya Street, etc.

Regardless of location and settlement, the campus usually includes several dormitory buildings, a club and an outdoor sports ground on a shared territory. As a rule, the territory is not equipped with parking spaces, recreational and communication zones. The complexes lack or have no lanterns, benches, tents, and other small architectural forms. Functional potential of the territory in most of the existing campuses is not used to the fullest extent (Figure 2).

Often there are no service companies at all; in some cases, there is a catering service – a canteen. Students have to spend a lot of time travelling to service centers in the nearest city districts to satisfy their daily household needs. In some cases, in the campus, there is a store and/or barbershop, which, as a rule, are not provided by the initial design and occupy the premises that were rearranged for these purposes. On the territory of most of the campuses examined in the study, there were no grocery or appliance stores, pharmacies, barbershops, beauty salons and other enterprises serving everyday and periodic household needs of students, which significantly reduces the functional comfort of living.



Figure 2. The campus of Moscow State University of Civil Engineering in Moscow. Functional potential of the complex is not revealed.

There are no leisure facilities, except for a student club. On the territory of most of the campuses examined in the study, the author did not find any cafes, restaurants, cinemas, bars, theaters and other leisure facilities for youth. The above-mentioned club, as a rule, is used mainly for meetings, social events, so that the need for leisure of the majority of students is not satisfied.

Thus, having generalized the practice of designing campus complexes in Russia and CIS and having considered the architectural and functional arrangement of these facilities and experience of using them, one can draw the following conclusions:

- Existing student accommodation complexes – campuses – are characterized by a poorly developed infrastructure of domestic services. They do not have any stores, barbershops, laundry services and other similar facilities.
- Existing campuses are marked by a poorly developed infrastructure of cultural services – there are no cafes, clubs, bars, cinemas that are essential for the leisure of youth.
- Territory and public spaces of existing student campuses have a poor quality of the recreational environment, a low degree of use of recreational and communication potential of the campus areas. There is a lack of spaces for independent education, work with information, as well as zones for communication.

- Most campuses have sports facilities, although their amount and diversity are not significant.

Examination of Russian and CIS practice of forming the architecture of student accommodation complexes illustrates the need for comprehensive development of their environment, its equipment with modern means, components and tools conforming to current scientific and technological progress and modern youth's needs. To achieve this goal, new approaches, principles, and techniques for architectural formation of such facilities and their living environment for ensuring their functionality should be developed.

Features of the architectural arrangement of student accommodation buildings

Based on the results of the examination of 297 student accommodation buildings (the list of facilities including photographs and basic parameters is given in (Popov, 2018d), which involved an actual examination, as well as work with written sources, the following conclusions illustrated with charts were drawn.

Distribution of the examined buildings by the number of floors (Figure 3) is characterized by the prevalence of medium-rise buildings and multi-storey buildings (mostly five- and nine-storeyed), as well as the low prevalence of low-rise buildings (1-2 floors) that had not been found among the examined facilities. High-rise buildings are located mainly in Moscow, St. Petersburg, and some other large cities.

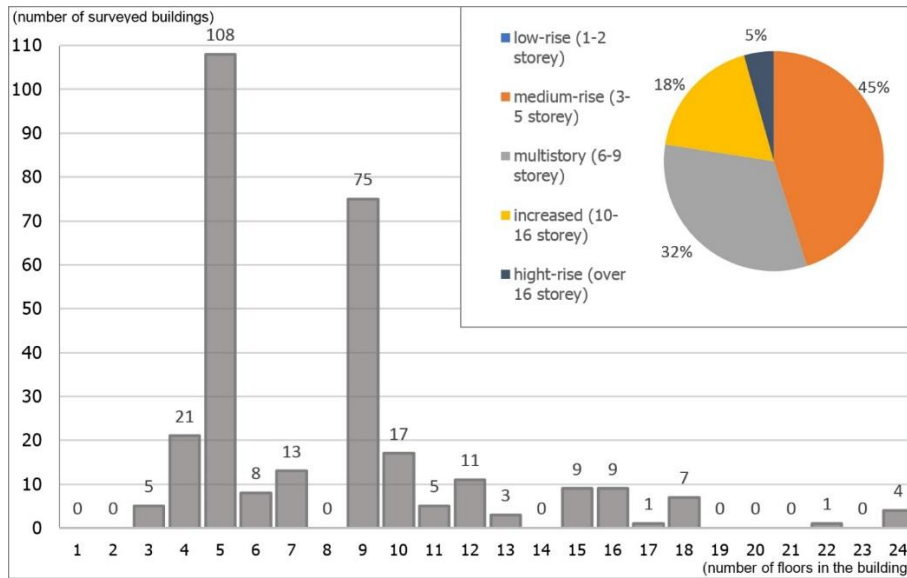


Figure 3. Chart of distribution of the buildings by the number of floors.

By the kind of space-planning arrangement, the examined buildings can be divided as follows:

191 – corridor type, 106 – sectional type, 0 – gallery type (Figure 4).

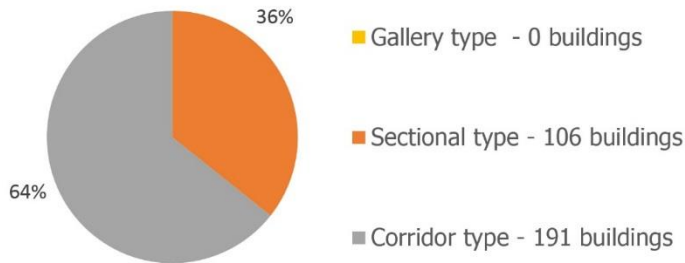


Figure 4. Chart of distribution of the examined buildings by the kind of space-planning arrangement.

In terms of the structure of the accommodation unit, in 168 buildings, accommodation units are rooms with direct access to the corridor (to the

staircase); in 129 buildings, rooms are united into accommodation blocks (Figure 5).

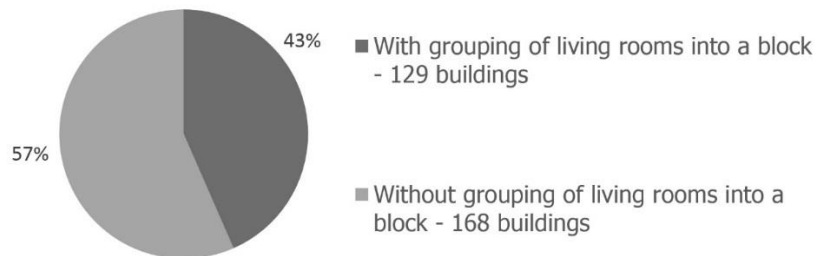


Figure 5. Chart of distribution of the examined buildings by the structure of the accommodation unit.

Examples of typical design solutions

Generalization of data of the examined student accommodation buildings sampling allows presenting typical design solution examples.

Currently, the most common space-planning structure of student accommodation buildings in Russia is a long corridor-type building with rooms that have direct exit to the corridor and are

united with the service premises through it. Most of these buildings are five-storey dormitories built from bricks or less often large blocks in the 1950-1970s. A common example of a building having the structure described above is the dormitories constructed according to standard projects of All-Union application – series 1-300 (1-300-1, 1-300-2, 1-300-3 and 1-300-4 – differing in capacity). Dormitories of this series

are five- or four-storey corridor type buildings. The majority of residential quarters in these buildings are designed for three persons to live (area 15-18 m²); there are also rooms for two (11-12 m²) and for four students (20-22 m²). Toilets, washrooms, and kitchens are located far from the accommodation rooms, on each floor. Shower rooms are located on the ground or on the basement floor (Figure 6).

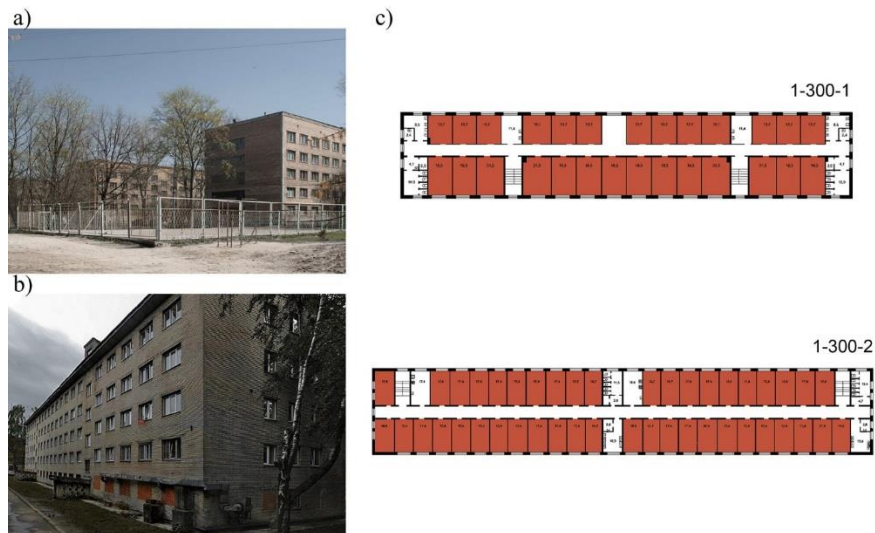


Figure 6. The standard design of a dormitory for All-Union application (series 1-300) (a – a complex of dormitories of Moscow State University FDS on Lomonosovsky Avenue in Moscow, b – Dormitory No. 6 of Moscow Institute of Physics and Technology in Dolgoprudnyi, c – plans of typical floors 1-300-1 and 1-300-2).

A typical example of accommodation premises united into blocks is the standard design of the dormitory for All-Union use – 164-80-4 (Figure 7). Dormitories of this design are widespread across the territory of Russia. 43 out of 297 examined buildings were built according to this design. Dormitories of 164-80-4 series are separate nine-storey sections with or without cultural and service units attached to them.

Residential floors are standard. Accommodation premises are divided into two types: double rooms (11-12 m²) and triple rooms (16-18 m²). A block consists of two residential quarters (or, more rarely, four) and has a toilet, a shower, and a wash sink. Kitchens are common and arranged on every floor. Construction period – the 1970-1980s.



Figure 7. A typical project of a dormitory for All-Union use (series 164-80-4) (a – typical floor plan, b – dormitory No. 2 of Northern State Medical University in Arkhangelsk, c – dormitory No. 1 of Perm National Research Polytechnic University in Perm, d – applied section arrangement options in the plan).

It is also interesting to consider one of the later Soviet projects that is widespread in Moscow – I-III-3 re-application project developed by workshop No. 18 of Mosproject-1 and used in the 1980-1990s (Figure 8). Buildings constructed under this project have a corridor space-planning structure. Their residential quarters are united

into residential blocks consisting of two rooms (double room with an area of 12-13 m² and triple room with an area of 19-21 m²). There is a bath, a toilet, and a washbasin in the block. There are a common kitchen and leisure rooms on the typical residential floor.

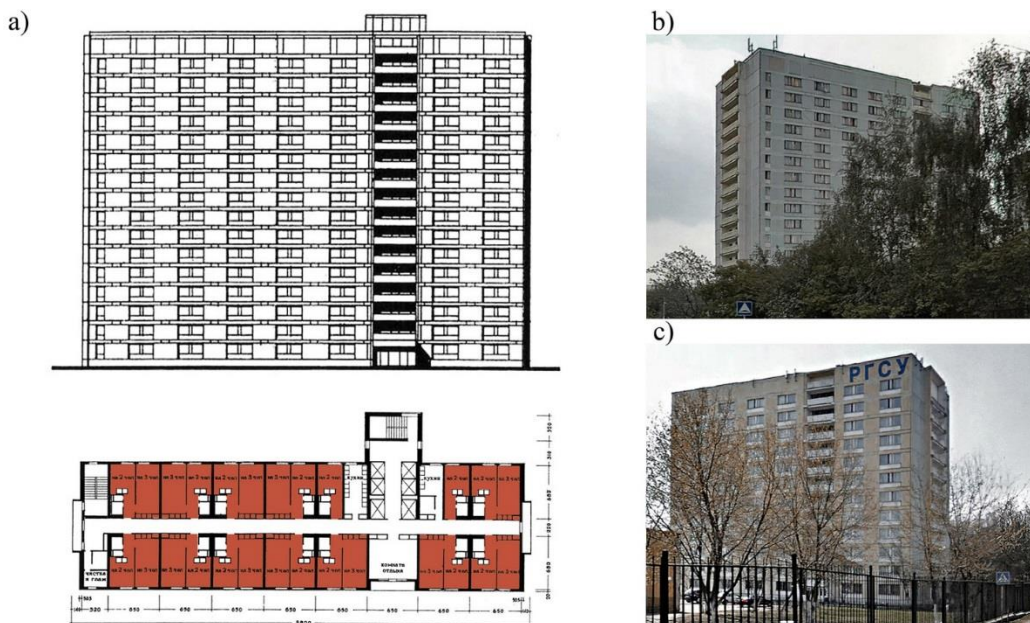


Figure 8. The project of I-III-3 re-application dormitory (a – facade and plan of the standard floor, b – dormitory of the Russian State Humanitarian University in Moscow, c – dormitory No. 2 of the Russian State Social University in Moscow).

Parameters of many other student dormitory buildings erected in the 1950-1990s are similar to the above examples and are given in (Popov, 2018d).

Generalization of the examination results allows drawing the following conclusions:

- The main solutions are corridor and sectional dormitories with closed inter-floor and inter-store utility lines based on the climate of Russia and the need for their year-round use.
- Typical projects and re-application projects prevail. Medium-rise and multi-storey buildings are the most widespread.
- Buildings of temporary accommodation, as well as complexes of them, are characterized by a poorly developed infrastructure of domestic and cultural services.
- The overwhelming majority of premises of the examined buildings are designed for shared use, which entails increased sanitary and epidemiological hazard and high sickness rate in the building. Utility premises, as a rule, are located remotely from the residential quarters, which entails a lot of time wasted on moving around the facility.
- Buildings often have low architectural expressiveness: the monotony of facades is caused in particular by monofunctionality of the internal content and uniformity of the premises.
- Specifics of modern scientific and educational work are usually not taken into account in the building and complex designs. Dormitories for students and employees are often built according to one standard project,

despite the fundamental difference between the activities of these groups.

Features of the architectural arrangement of student accommodation premises

Generalization of the study results (Figure 9) allows concluding that 94.6% of the examined

residential quarters lack service facilities and conveniences. In 43.1% of cases, a washbasin and a toilet were located in a block and shared among several rooms (including 35.1% of cases when the block included a bathroom or a shower room as well), and in 56.9% – all appliances and amenities were located remotely on residential or serving floors.

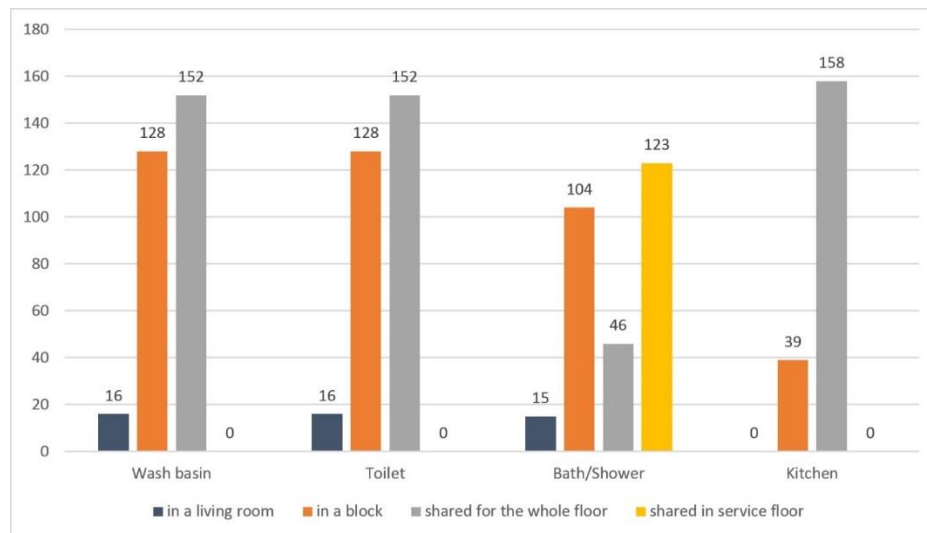


Figure 9. The location of appliances and service areas in the examined buildings.

In most of the examined buildings, there were residential quarters in various areas, designed for a different number of students. Data on the arrangement of residential quarters in the buildings, depending on the estimated number of residents, are shown in Figure 10. In most buildings (85.5%), triple rooms are found; a quantitative prevalence of triple rooms in the buildings with different room kinds can also be noted. Four-bed rooms (59.5%) and double

rooms (53.1%) are also widespread; single rooms (6.0%) and five-bed rooms (1.7%) are the rarest. Most of the single rooms found in the research are located on the campus of the Far Eastern Federal University on Russky island (11 buildings out of 18); however, even there, in one of the most modern student accommodation facilities in Russia, single rooms form an absolute minority of the living premises and are allocated to students for extra charge.

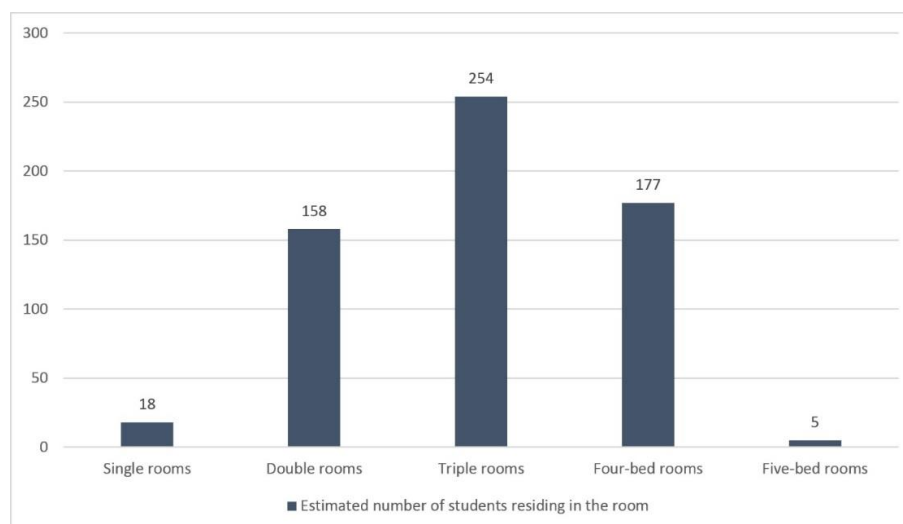


Figure 10. The availability of rooms with different capacities in the examined buildings.

The study allows to present a standard kind of a residential quarter with the most common set of furniture (Figure 11) – a triple room with an area

of 16-18 m² with three beds, three bedside tables, three chairs (stools), one writing desk, and a cabinet (often a built-in cabinet).



Figure 11. A typical arrangement of residential quarters (a – residential quarter in the dormitory of Russian University of Friendship of Peoples in Moscow, b – dormitory of V.I. Ulyanov St. Petersburg State Electrotechnical University, c – typical plan of a student accommodation room in Russia).

Prevailing placement of three persons per room (or, less common, two and four persons), with the average accommodation space of 5.5-6 m² per person leads to lack of space, which prevents independent execution of home tasks or some individual activities creating inconvenience and discomfort. Lack of space is worsened by spontaneous extension of rooms with functions that are not stipulated by the initial project and are added due to the unwillingness to move to the shared premises offering these functions. Thus, the rooms, in spite of the project, are supplemented with kettles, microwave ovens, PCs, TV sets, multicookers, fridges, portable electric cookers, additional tables, shelves, racks, etc. Significant inconvenience and daily conflicts cause the need to agree on the daily routine and schedule for several, often psychologically different, persons.

Classrooms are usually shared and designed for 20-50 persons, with the standard area of 0.4 to 1.4 m² per person (Figure 12). The classroom plans are similar to those of the hall premises for practical classes at a higher school or a secondary school classroom. They are almost never used according to their intended purpose because of the nature of the educational work that requires attention focusing, as well as due to disturbances and noise, arising from other people in such shared premises. Besides, premises for study in the existing dormitories are often not designed for application of electronic appliances for working with information and are not equipped with modern information interfaces. It seems that the architectural arrangement of these premises is outdated and does not correspond to the modern nature of the learning process.

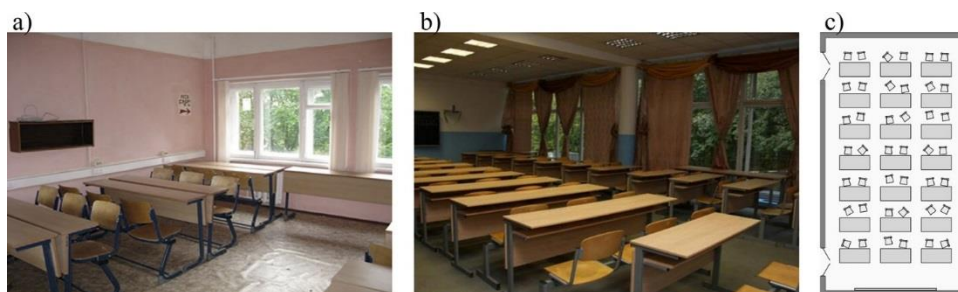


Figure 12. A typical arrangement of premises for independent study (a – premise for independent study in the dormitory of the Higher School of Economics in Moscow, b – the premise for independent study in the dormitory of Russian University of Friendship of Peoples in Moscow, c – typical plan of a premise for independent study in Russia).

In most Russian dormitories, toilets are also located remotely from the residential premises and are designed for a large number of persons (usually for residents of the entire floor). Toilets may have different arrangement plans and are often organized as a premise with four or five sanitaryware items (booths) in a row, separated

by a partition from the premise with a washbasin. The toilets located in a residential block are usually arranged as a separate premise with a sanitaryware item.

Shower rooms are arranged as follows:

- for the whole building; intended to be used by all residents of the building and located on the ground or basement floor;
- for several floors; intended to be used by students living on these floors and located on the service floor or on one of the residential floors;
- for one floor; intended to be used by students living on the floor and directly adjacent to the residential quarters;
- for a room block; intended to be used by students living in several adjacent rooms, i.e. for 2-9 persons;
- for a separate room – located in a residential quarter and intended to be used by 1-4 persons.

Kitchens are divided into two following types:

- kitchens located remotely from the residential quarters, on the residential floor (92.5% of cases); such kitchens entail significant increase in expenditure of time spent by the residents in the morning and are one of the main reasons of disturbed dietary regime of students; standard area makes 0.2-0.5 m² per person (examples of such kitchen plans are shown in Figure 13);
- kitchens intended to be used by one residential block (7.5% of cases) and located directly in the residential block. Despite much lower outspread, this option is more preferable.

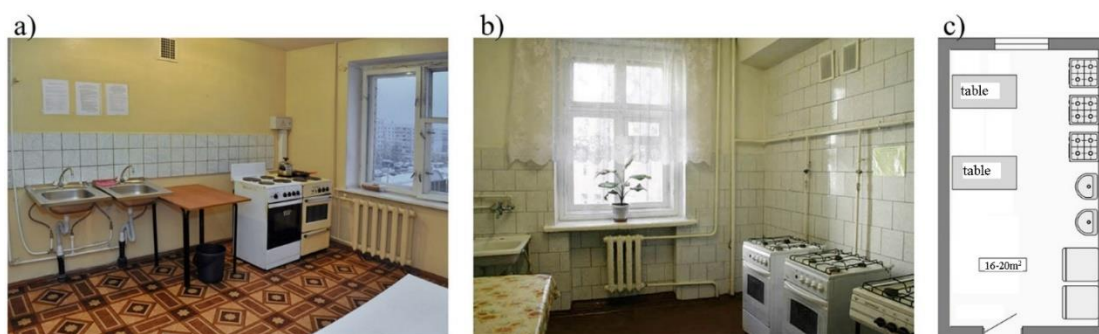


Figure 13. A typical arrangement of kitchens (a – kitchen in the dormitory No. 6 of Yaroslav Mudry State University in Veliky Novgorod, b – kitchen in the dormitory No. 4 of Don State Technical University in Rostov-on-Don, c – typical kitchen plan in a student dormitory in Russia and CIS).

No kitchens located directly in the residential quarters, as well as no kitchen-studios and kitchen-cabinets, were found within during the study; however, placement of multicookers, microwaves, kettles, and small electric cookers by students in the residential quarters allows to conclude there is a need for such kitchens.

Rooms for cleaning and ironing, as well as laundry, are intended for all students living in a building (standard area of 0.3-0.5, sometimes up to 0.8 m²/person).

The above examination of facilities in Russia and CIS allows to state that the overwhelming majority of premises in the examined buildings (often all premises in the building) are designed for shared use and most of the servicing premises are located remotely from the residential quarters. Such architectural organization of the student accommodation has the following drawbacks:

- The need to harmonize the processes and "schedule" everyday life of students

living together, as well as a negative overlay of their various emotional and psychophysical conditions causing functional inconveniences and discomfort;

- A significant amount of time spent on moving around the building in order to satisfy household needs;
- Overall mismanagement of the premises with a large number of users;
- Increased sanitary and epidemiological danger and high rate of disease spread;
- Deterioration of the criminal situation: minor household theft (food, personal hygiene products, cosmetics, etc.); household corruption (bribes to dormitory administration for settling in single rooms, additional electrical appliances in the room, etc.); domestic conflicts;
- Poor quality of implementation of functions in the shared premises caused by unintentional or deliberate disturbances from the others (for example, talks and noisy movements in

the premises intended for study and preparation of home tasks and designed for 20-50 persons; cooking of dishes with a strong odour in public kitchens, etc.);

- Increased psychological stress caused by constant staying in society (impossibility to stay alone);
- A large number of shared premises entails increased requirements for control (up to inspection), strict access control (often complete ban on visits). For example, to visit a dormitory of Moscow State University of Civil Engineering, any person not residing in it, even a teacher, has to submit a written application. There are other restrictions imposed on residents and caused by the need to support order in the shared premises required for their use and increase the safety of a large amount of property that is used collectively. Prohibition of visiting the dormitory resident by his/her friends was not found in any of the foreign dormitories;
- Residential quarters marked by the lack of functions stipulated by design plans resulting in a lack of space and inconvenience.

Functional properties and comfort of the student accommodation are determined, first of all, by design plans of the residential and service premises; therefore, the revealed low quality of architectural arrangement of these premises in Russian and CIS countries' practice enables to state insufficient quality and lack of comfort in the student accommodation as a whole.

Conclusions

Based on the conducted examination, the types of rooms, buildings and complexes prevailing in the Russian and CIS countries' architectural practice of student accommodation organization were identified. The indicative space-planning decisions of buildings and individual premises were provided.

According to the examination results, the following main shortcomings of the existing architectural and planning solutions of student accommodation were identified:

- under the existing architectural organization focused on collective life, the psychological and sociological aspects of personality formation during the period of study at university,

functional and psychological discomfort, inconveniences, threats to the health of residents, which affect both educational and professional activities, as well as socio-cultural and spiritual development, are not taken into account;

- buildings and complexes, in general, do not take into account the specifics of modern scientific and educational activities; dormitories for students and employees are often built according to one typical project, regardless of the fundamental differences;
- buildings and complexes of student accommodation are characterized, in general, by an insufficiently developed infrastructure of consumer and cultural services;
- existing service premises, as a rule, are located remotely from residential premises and service and supply enterprises are located outside of campuses, which entails a large amount of travel time and discomfort;
- buildings often have a low architectural-figurative expressiveness; the monotony of the facades is caused, in particular, by the mono-functionality of the interior and the uniformity of the premises;
- the existing organization of leisure and maintenance does not take into account modern methods of work and rest, thereby the corresponding buildings and premises are often not used for their intended purpose.

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