

## CLASSIFICATION OF CIVIL BUILDING STRUCTURES

**Sayfi Rajabovich Bakoev**

Tashkent State Transport University

<https://doi.org/10.5281/zenodo.7197268>

**Abstract.** This article reflects the theoretical foundations and features of buildings, reveals the features of the classification and the main elements of buildings, as well as the load and impact on the building and its structural elements.

**Keywords:** buildings, residential and public, hoist.

### КЛАССИФИКАЦИЯ ГРАЖДАНСКИХ СТРОИТЕЛЬНЫХ КОНСТРУКЦИЙ

**Аннотация.** В этой статье отражает теоретические основы и особенности зданий, раскрывает особенности классификации и основные элементы зданий, а также нагрузки и воздействия на здание и его конструктивные элементы.

**Ключевые слова:** здания, жилые и общественные, тельфер.

### INTRODUCTION

**Classification of buildings** Buildings are ground structures with premises for housing and public needs. According to a number of features, all buildings and structures can be classified into separate groups. According to their purpose, buildings are divided into civil (residential and public), industrial (industrial) and buildings and structures for special purposes.

### MATERIALS AND METHODS

Residential buildings. This group of buildings includes: residential buildings for workers and employees, designed for apartment-by-room settlement by one family; hostels designed for room-by-room settlement.

Apartment buildings are divided into: one-, two-, four-apartment one-story, multi-apartment buildings with two or three floors.

The main factor that determines the choice of a particular type of residential building is economic feasibility.

### RESULTS

During the construction of a house, care must be taken to radically improve the living conditions of workers and employees, to create certain amenities for them.

The development of personal plots with one- and two-family houses allows you to freely build outbuildings for livestock, poultry, inventory, create vegetable gardens, gardens. But with such development, large expenses are required for the creation of a network of streets and engineering equipment (water supply, sewerage, heating, radio, electrical networks). Residents of any village built up with one- and two-apartment houses do not have the opportunity to use all the elements of improvement.

The development of two-three-story residential buildings for 8, 16, 24 apartments is the most appropriate. In this case, the costs for the improvement of the village and engineering equipment are significantly reduced, for each apartment a small plot of land and the minimum necessary outbuildings are provided. Public buildings. Public buildings are of exceptionally great importance in the organization of cultural and community services for the population. This diverse group of buildings can be subdivided into:

on public catering buildings - canteens, bakeries, vegetable stores, glaciers;

on the buildings of cultural and educational institutions - schools, kindergartens, clubs, libraries;

on the buildings of the communal network - baths, laundries, hairdressers, sanitary facilities;

on the buildings of the healthcare network - hospitals, outpatient clinics, maternity hospitals, nurseries, pharmacies;

on the buildings of the trading network - shops, stalls, stalls;

on buildings of administrative and service purposes - offices, post office, guard booths.

## **DISCUSSION**

Public buildings can have a corridor system with rooms located on one side (schools, hospitals), or on both sides of the corridor (offices), or a concentrated system in which smaller rooms are located around a large room (auditorium).

The composition of the premises in schools, kindergartens and nurseries is quite definite. Various versions of these buildings differ from one another in the number of students or preschool children accommodated in the building.

Industrial (production) buildings. These include: depots and garages, mechanical repair shops (RMM), power plants, dryers, warehouses for fuel and lubricants (fuel and lubricants), forges, sheds and sheds, sawmills and woodworking shops, fire stations.

At logging and sawmill enterprises, production buildings are built as one-story buildings.

For one-story industrial buildings, an enlarged 3m module is used. The most advantageous distance between reinforced concrete columns or frames in the longitudinal direction is 6 m. In the transverse direction, the spans are taken as multiples of the module (column spacing), i.e., 6, 9, 12, 15, 18, 24, 27, 30m.

The height of the premises from the level of the finished floor to the bottom of the supporting structures of the coating in buildings without overhead cranes with external water drainage is set to 4-5 m; with internal water drainage 5-6m.

The height from the floor level to the head of the crane rail in buildings with overhead cranes is 6.8 and 10 m; at the same time, the distance from the floor to the bottom of the supporting structures should be a multiple of 0.2 m.

For industrial buildings and structures of mass construction, a nomenclature of prefabricated reinforced concrete products has been established (for mandatory use).

In industrial buildings (or at them) household premises are arranged: dressing rooms for storing clothes, washrooms and showers with cold and hot water, latrines, chambers for drying clothes. In addition, at RMM, sawmills and woodworking shops, large depots, first-aid posts and office space can be provided.

Separate buildings can be equipped with the simplest intrashop transport - monorails or beam cranes used to move goods within a building or shop.

A monorail is a lifting and transport device (with a manual or electric winch), which moves along one crane beam suspended from the ceiling, to which the rail is attached. A beam crane is also a lifting and transport device, but it moves not along one, but along two rails, located in parallel and suspended from the ceiling.

In addition, production facilities can be equipped with crane beams laid on the brackets (shoulders) of reinforced concrete columns, as well as cantilever cranes mounted on a stationary or swivel (by 180°) column.

Console cranes are supplied with lifting winches with remote blocks or electric hoists.

Telfer is a mobile motor hoist, consisting of a winch and a trolley moving along a single-rail overhead track with a rigid rail.

As the simplest intraschool transport, trolleys moving along a narrow-gauge railway track or forklifts can be used.

Landscaping. The concept of "improvement" of the territory of a settlement or area of industrial buildings includes: parks and green spaces, public and industrial sites, water supply networks, sewerage, heating, street networks, power lines and communications, as well as structures attached to them. capitalization and performance of buildings. Capitalization of buildings is characterized by the degree of fire resistance and durability of the main structural elements. The operational qualities of buildings are characterized by the composition of the premises, the norms of their area and volume, interior decoration and technical (sanitary and electrical) equipment.

According to the totality of signs of capitality and performance, buildings of each type are divided into three classes, denoted by Roman numerals I, II, III. Special architectural requirements for buildings are indicated by index A (class I-A, class II-A, etc.). Buildings of class I must meet increased requirements, class II - medium and class III - minimum requirements. The assignment of individual buildings to a particular class is made depending on the national economic significance, size and capacity of a complex object (populated area, industrial enterprise).

## CONCLUSIONS

Depending on the terms of operation, buildings are divided into durable (capital) and temporary. For buildings designed for a long service life, durable materials and structures are used: stone, brick, concrete, reinforced concrete. Temporary buildings and structures are built from less durable, cheap materials.

According to fire resistance, buildings are divided into five degrees (I, II, III, IV, V). The degree of fire resistance of a building is characterized by the flammability group of building elements and the minimum fire resistance limit in hours. According to the degree of flammability, materials and structures are divided into three groups: fireproof, hardly combustible and combustible.

Depending on the material from which the walls are made, stone and wooden buildings are distinguished, and depending on the number of storeys, one- and multi-storey buildings.

The classification of buildings aims to facilitate the selection of the most cost-effective design solutions.

## REFERENCES

1. E. Yaxshiyev, G. Ismailova, F. Zokirov THE AREA OF RATIONAL USE OF BRIDGES OF VARIOUS TYPES FOR HIGHSPEED HIGHWAYS // SAI. 2022. №A6. URL: <https://cyberleninka.ru/article/n/the-area-of-rational-use-of-bridges-of-various-types-for-highspeed-highways> (дата обращения: 11.10.2022).
2. E. Yaxshiyev, G. Ismailova, F. Zokirov THE AREA OF RATIONAL USE OF BRIDGES OF VARIOUS TYPES FOR HIGHSPEED HIGHWAYS // SAI. 2022. №A6. URL: <https://cyberleninka.ru/article/n/the-area-of-rational-use-of-bridges-of-various-types-for-highspeed-highways> (дата обращения: 11.10.2022).

3. Saidxon S., Fakhridin Z., Nodirbek A. A NEW TYPE OF CONSTRUCTION OF THE CARRIAGEWAY OF ROAD BRIDGES USING NON-TRADITIONAL WATERPROOFING MATERIALS //Science and innovation. – 2022. – T. 1. – №. C3. – C. 208-213.
4. Yaxshiev E. T., Zokirov F. Z., Karimova A. B. RESEARCH OF SYSTEM CONDITIONS FOR FORMATION OF FAILURE ON MATHEMATICAL MODELS BY THE RESULTS OF THE RESEARCH OF REINFORCED CONCRETE BRIDGES //Journal of Tashkent Institute of Railway Engineers. – 2019. – T. 15. – №. 3. – C. 36-41.
5. Raupov C. S., Malikov G. B., Zokirov J. J. FOREIGN EXPERIENCE IN THE USE OF HIGH-STRENGTH EXPANDED CLAY CONCRETE IN BRIDGE CONSTRUCTION (LITERATURE REVIEW) //Eurasian Journal of Academic Research. – 2022. – T. 2. – №. 10. – C. 125-140.
6. Raupov C. S., Malikov G. B., Zokirov J. J. Foreign experience in application of high-strength expanded clay concrete in buildings and structures (review of published studies) //Science and Education. – 2022. – T. 3. – №. 9. – C. 135-142.
7. Ergashev A. S., Raximjonov Z. Q. MUTAXASISILIK FANLARINI OQITISHDA INNOVATSION TEXNOLOGIYALARNING QOLLANILISHI //Central Asian Academic Journal of Scientific Research. – 2022. – T. 2. – №. 5. – C. 31-34.
8. Normurodov, Shahboz Ulug‘Bekovich, Tayirov, Shopulat Shomansur Ug‘Li GEODEZIK PUNKTLAR MARKAZLARI SIFATIDA VIBRATSIYALAB TO‘LDIRILADIGAN SVAYALARDAN FOYDALANISH // ORIENSS. 2021. №5. URL: <https://cyberleninka.ru/article/n/geodezik-punktlar-markazlari-sifatida-vibratsiyalab-to-ldiriladigan-svayalardan-foydalanish> (дата обращения: 11.10.2022).
9. Miralimov M. et al. Numerical approach for structural analysis of Metro tunnel station //E3S Web of Conferences. – EDP Sciences, 2021. – T. 264. – C. 02054.