

CONSTRUCTIONS OF CIVIL BUILDINGS

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ABSTRACT

This article is on the topic of constructions of civil buildings, it contains detailed information about the structural elements that make up civil buildings and their place in construction.

Key words: Roof, Siding, Stairs, steps, Sinch, beam, load-bearing wall, semi-basement, attic, mansard, technical floor, floor

INTRODUCTION

A building is a surface structure with an internal volume that satisfies the material and spiritual needs of a person or society (residential buildings, production facilities, public buildings, etc.) The term "building" cannot be used for above-ground structures that do not have an internal volume (a bridge, a transport overpass, etc.).

The interior of the building is often divided into separate rooms, and this volume is surrounded by walls on all sides. The floor of the building is made up of rooms with floors on the same level.

Individual floors are called by certain names:

The floor where the ground fiber or coppice is underground;

semi-basement or basement - a floor where the floor level is lowered to less than half the height of the room;

floor located on the surface of the ground - is located above the ground level

Attic - the floor located between the roof and the roof of the last floor;

mansard - a floor located in the attic, bounded by all sides, the ceiling surface is more than 50 percent of the floor surface, and the height of the sloping part is not less than 1.6 m;

technical floor - a floor designed for placing engineering equipment and conducting communications. It can be located in the lower, upper or middle part of the building. the height of the floors depends on the appearance of the equipment and communications located on them, and the conditions of use.

The floors and other rooms described above are elements of the volume-planned structure of the building .

Each structure of the building has an important function. External walls are divided into load-bearing and protective types, depending on their function in the building structure. Examples of this include internal and external load-bearing walls and columns. The task of load-bearing structural elements is to receive all types of loads and transfer them to the base, which consists of horizontal and vertical structural elements of the building, through foundations.

Protective structures divide the internal volume of the building and protect it from the external environment. If the walls perform only a protective function, they are called non-load-bearing walls. They, in turn, are divided into self-supporting and hanging wall types.

The foundation is an underground structural element of the building, which transfers the load from all vertical structures above to the base. The foundation is a layer of soil located under the foundation and carrying the load from the building or structure through it.

Girders are a horizontal structure that divides the building into floors, and at the same time performs the function of load-bearing and protection. Depending on the location, partitions are divided into inter-floor partitions (separating the building into floors) and roof partitions separating the topmost floor from the roof. The membrane that separates the lower layer (the layer separating it from the soil layer) is called the upper membrane of the basement.

The roof is the highest structure that protects the rooms of the building from the outside environment. Its upper waterproof part is called roof overhang.

Pardevor is an almost thin floor partition that separates the rooms from each other between the floors.

A staircase is a large structural element that provides vertical connections in buildings and structures. Usually, stairs are installed in separate rooms called stairwells.

The structural elements of the building include, in addition to the above structures, a number of additional structural elements: bay window, loggia, porch, veranda, tribune, lanterns, sanitary-technical and engineering equipment.

The constructive solution of the building is determined at the initial stages of design, by choosing its structural and building systems. The structural system is a set of interconnected load-bearing structures that ensure the strength, integrity and stability of the building. When the structural system of the building is selected, the static role of each structure in it is determined, when the construction system of the building is selected, the material of the structure and the restoration technique are determined.

The load-bearing constructions of the building consist of vertical and horizontal elements that depend on each other. The horizontal load-bearing structure (roof and intermediate roof) transmits all vertical loads to inter-floor vertical load-bearing structures (walls, columns), which, in turn, transfer the load to the foundation of the building. Such constructions, as a rule, play the role of diaphragms of virginity in the building.

Horizontal load-bearing structures of civil buildings with more than two floors should be made of non-flammable or non-flammable materials in accordance with the requirements of fire protection standards.

Among the main structural systems, mixed structural systems are also widely used. In this case, vertical load-bearing structures are assembled from various elements.

The structural scheme of buildings is a certain variant of the composition of the structural system and the location of the main load-bearing structures (for example, longitudinal or transverse arrangement of load-bearing structures). This scheme is selected at the initial stage of design, taking into account constructive solutions and technological requirements. Three structural schemes are used in Sinchli buildings: condalang or bollama with and without girdles. (Fig. 1)

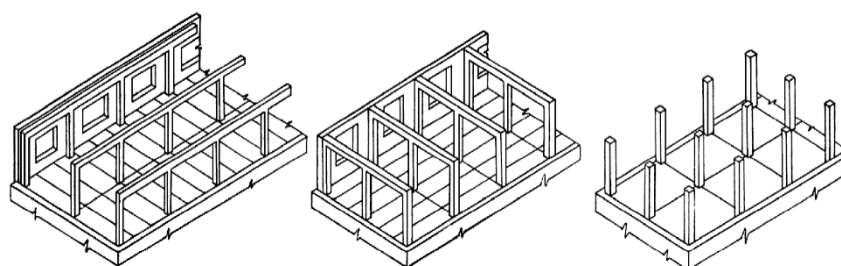


Fig. 1 Structural schemes of Sinchli buildings:
a – tying rigelli; b - cross bar; d – without rigel.

In addition to technical and technical-economic requirements, architectural-compositional requirements must also be met in order to select structural and construction systems in the design of buildings. These requirements are often related to ensuring freedom in choosing the form of the building. There are different opportunities and limitations in terms of composite solutions in the constructions of buildings of different systems.

Understanding the foundation of the building. The foundation is a layer of soil located under the foundations and carrying the load from the building or structure through them. Loads create a state of stress in the base, and when this stress reaches a certain level, it causes deformation (sinking) both in the base and in the foundations. A imperceptible and uniform deformation is not very dangerous for the building. Swelling and mainly non-uniform deformation are dangerous and can cause cracks, damage to structures, and catastrophic situations in buildings and structures.

The layer of the soil in its natural state serves as the basis, and since the use of buildings and structures depends on the condition of the basis, strict requirements are imposed on them in design and construction. The foundation should be sufficiently load-bearing, the material should be homogeneous, non-spreading, resistant to the effects of flowing and seeping water, dangerous biological factors. The surface layer of the soil cannot be the basis, because it is weakened under the influence of organic waste and other factors. It is also impossible to install foundations on a frozen soil layer. Soil as a base can be natural or artificial. There are stone and non-stone types of soil as a natural basis. Rocks are igneous, metamorphic and sedimentary.

REFERENCES

1. Жураев У.Ш., & Ходжиматова Г.Д. (2022). Формирования и определения рациональных объемно-планировочных и конструктивных решений Кувинского района Ферганской области. Экономика и социум, (11-1 (102)), 550-555.
2. SH.A.Egamberdiyeva, A.M,Abdurahmonov “Yog’och konstruktsiyalar”, o’quv qo’llanma, Andijon, 2023y.
3. SH.A.Egamberdiyeva, A.M,Abdurahmonov “Metall konstruktsiyalar”, Darslik, Andijon 2023y.