



## Characteristics and Significance of the Design of Modular Housing Advantages and Disadvantages of Modular Houses

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**Abstract:** Analysis of the necessary conditions for the emergence of mobile housing. Against the backdrop of difficult economic and demographic conditions of the modern world, the possibility and legitimacy of introducing the concept of mobile housing as an example of permanent living space in the emerging urban environment are determined.

**Keywords:** modular houses, economic and demographic conditions, mobile housing, accessibility, advantages, disadvantages.

It is human nature to develop and improve oneself and the environment, and the desire for knowledge is a natural feature of any intellectually rich being. This is an integral part of all living things, a process determined by the historical vector of the development of the Universe. Throughout the long evolution of human life, there has been a desire to create comfort, and home improvement, and ensure the safety of the family. The course of these historical processes induces humanity in one way or another to change the conditions for the existence and development of all living things.

To date, humanity has made significant progress in construction activities, but we are improving our skills and technological base to create the most comfortable living environment under any circumstances.

Floods, tornadoes, earthquakes, fires and natural disasters can happen without warning. Time is of the essence when it comes to disaster relief, and at a time like this, we need modular homes. Modular homes can be delivered 50% faster than traditional construction. Another reason disaster relief organization choose modular construction is its affordability. After a natural disaster or pandemic, most areas are short on money and are looking to save as much as possible. That's where modular homes come in to help with emergencies.

Modular houses, which are the cheapest to build, are widespread in America and Europe.

Modular houses are prefabricated structures, consisting of individual sections, which are manufactured at the factory and delivered to the assembly site in finished form. In fact, the process of modular homes is similar to assembling a constructor. Modular houses are based on a light steel structure with thin walls. Due to the ease of construction, an expensive heavy foundation is not required, the cost of construction is reduced by 40% compared to brick houses. In addition, modular homes can be easily modified to expand living space.

The lack of a regulatory framework and design estimates for the design and construction of temporary modular housing facilities does not indicate a bad consequence, a poor level of knowledge of this type of housing, but it also slows down modern construction activities and stimulates development and development. In addition, in modern conditions, it is necessary to develop the concept of mobile housing, and the design of a temporary foundation for such



residential cells is the most important component in the development of new housing. the type of housing and its modern construction activities are most organically included in the typology of housing. Also, certain difficulties may arise when introducing new types of construction projects in an undeveloped city.

In the context of modern climate change, the unstable economic and demographic situation in a number of regions, as well as increased mobility of the population, there is a need to develop the concept of mobile housing, as well as to design temporary accommodation facilities. The placement of mobile homes on the road is an important part of the process of developing a new type of housing and its most organic inclusion in the housing typology of modern construction activity.

The criteria for designing modular housing complexes on wheels in the urban space are generalized for the subsequent use of the information obtained in construction practice.

Socioeconomic and sociodemographic factors that determine the type of dwelling determine the set of functional processes carried out in the dwelling. In the conditions of an unstable economic and social situation in a number of regions, the concept of modular housing can become a global solution to the problem, allowing for a short period of time to change the place of residence of a person, family, or an entire district or city new, more favorable conditions for life.

For the most convenient implementation of the concept of modular housing in the existing system of construction activities in a temporary residential building, it is advisable to place it near residential buildings and cultural and public places, like a parking lot. services, as well as being close to motorways and transport interchanges. By many criteria, the most preferred areas for placement are the centers of urban areas.

In addition to parking spaces for mobile homes on wheels, temporary facilities for the creation and leisure of various groups of residents, playgrounds, laundries, and multifunctional kitchens, atriums and sports halls should be provided. It is necessary to observe the rules of insolation and aeration, to develop the improvement of territories.

The main advantages of modular houses are:

- to be ready in a short time;
- wallet;
- the possibility of installation without foundation;
- ease of installation and dismantling;
- the ability to change the installation location;
- ideal compatibility with any climatic conditions;
- full compliance with sanitary and fire regulations and requirements;
- the presence of a developed ventilation and heating system;
- the ability to quickly install windows, doors, lighting systems;
- installed plumbing, and electrical equipment;

In addition, the advantages of modular houses are that factory production ensures high quality of construction and finishing works, and reduces costs per square meter. The record speed of construction of a fully operational building attracts buyers from both industrial and tourist companies. Interest in them is growing among construction companies involved in building and



selling land. According to realtors, the decline in the solvency of the population has increased the demand for economy-class houses. (Picture 1).



Example of modular dwellings

For example, in 2015, the Chinese company Zhuda approached with a proposal to build low-rise modular houses in Russia. The German Knauf company is establishing a joint venture with the Russian group Sveza with the intention of investing about \$7 million in production. His accounting forecast shows that the demand for such houses will increase, and investments will bear fruit.

**Disadvantages of modular homes** Not all modular homes have benefits. Modular houses are not very flexible in terms of form. They generally avoid the bizarre forms that their direction may require. It is very important to study the site urbanistic, to get acquainted with the created conditions and these buildings, and to analyze what the modular house will be like in those environments and conditions.

In conclusion, we can say modular homes are good in every way. Unlike traditional construction, which may have limited functionality due to a natural disaster, modular buildings can be used almost anywhere. Standard building projects can also be difficult to complete in areas devastated by bad weather. However, with modularity, this is not a problem.

The construction of inexpensive modular frame houses is a completely new idea for our country, that is, this type of house is developed in Europe. If this is applied to Central Asia, very good results can be achieved. Modular houses have a lot of advantages both for the country and for people. As a result of natural disasters, many residential buildings were damaged and many people were left homeless. After that, he will not be able to afford to buy expensive houses. At the time, because modular homes were fast and cheap, the need for housing quickly fell away. After the recent earthquake in Turkey, many people were left homeless. Now they need fast and high-quality placement.

If we introduced modular houses to Central Asia and implemented them, we would find a solution to such problems.

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4. The National Manufactured Housing Construction and Safety Standards Act of 1974. The HUD code governs the construction as well as installation of manufactured homes.
5. Analysis in the “What Is Stopping Us?” section beginning on page 20 shows market share totals for new single-family home construction.
6. As described above, “factory-built homes” includes modular, panelized, and pre-cut homes while excluding manufactured homes as a separate category due to its orientation around HUD code.
7. <http://www.arhplan.ru/buildings/mobile/factory-formirovaniya-mobilnogo-zhilischa>> Факторы формирования мобильного жилища - статья из категории «Здания» на сайте www.ARHPLAN.ru
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