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MOBILE DWELLING: ON THE WAY FROM MOBILE TO SELF-ADAPTIVE

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This paper discusses issues related to the evolution of the mobile home from the simple prototypes to intellectual self-adaptive systems, as well as with the system of classification. A description of the author's concept of the unity of mobility, interactivity and adaptability in terms of their application to the basic principles of building a home for a temporary stay. Shows the author's concept of a universal classification model mobile home, Built on the basis of the isometric matrix interactions of combinations of factors responsible for the formation of its external and internal characteristics.

Nowadays, the concept of “mobility” is becoming more and more common in our daily lives. This happens, regardless of the scope of this concept: it is a connection, it is a transport dependenceman and the economy as a whole, this is just a life-support sphere.

However, there is an area in which this concept is included only slightly - it is a human dwelling. In spite of all the years that have passed since the beginning of the development in this field, and here it is impossible not to mention such theorists of mobile architecture as: I. Friedman, P. Maimon, group "7" consisting of K. Kikutake, N. Kurokawa, F. Maki , M. Otaka, N. Kavadzoe and K. Tanga, ARCHIGRAM group, Guy Gautier, D. Riedelbach, G. Krutikov, N. Ladovsky, K. Melnikov, N. Saprykina, E. Izrailev, L. Neyfakha, K Kartashova, S. Pamorova and others, this sphere of human activity remained almost at the level of theory. In real life, of the whole potential of knowledge and opportunities opened up by mobility, only a small fraction is used, and then only in the area of providing housing and technical facilities for certain types of national economic

activity, such as geological exploration and production of hydrocarbons, pasture cattle breeding, and scientific expeditionary activities.

Mobile housing for temporary stay, having passed the way of its development from collapsible huts and tents to modern conceptual projects of space settlements, has become an integral part of the global settlement system, using not only the Earth's surface, but also water and air environments as basing / transporting environments. Presented in the evolution diagram of mobile home development shows only the main ways of its development, while the full picture, including both typological subdivisions and individual, but, nevertheless, not unimportant, cases clearly indicates the whole grandeur of such a phenomenon as a mobile home.

In the course of its development, the concept of mobility has absorbed not only the ability to move a home, but also its transformability, means of transportation, adaptation, information-interactive component, etc. However, the possibility of moving the home remained throughout the history of its development. At the same time, there is a clear typological division of a mobile home, based on the degree of its mobility. As can be seen from the presented scheme, the mobile dwelling takes in them, basically, three boundary positions. At the same time, these positions are clearly structured:

1st (most extreme) level is an individually wearable minimum dwelling (space suit, "cocoon house"); housing, the minimum operational dimensions providing a minimum of comfort, protection and having a maximum rate of volume transformation.

2nd level - they are occupied by the actual "mobile dwellings" - dwellings that are capable of moving and are the basis for the further development of the settlements. Currently, this group is represented by modular type mobile dwellings.

3rd level - represented by this type of mobile home, as collapsible buildings. This type of building is characterized by the fact that in addition to quick installation at the site of operation, they combine mobility as the possibility of dismantling and dislocation to a new place, with signs of capital, allowing long-term operation in one place where no more movements of this dwelling occur.

Like any complex system, a mobile dwelling for a temporary stay required the creation of a certain classification system that organizes all the innumerable diversity of its objects. The creation of such classifications involved both individual researchers and entire scientific institutions.

Analysis of the evolution of the mobile home itself and its place in the structure of resettlement showed that the complex of previously used classification parameters is not enough to demonstrate the diversity of mobile home and its systematization. The full range of classification features and internal characteristics are presented in previously published papers [3, 4].

Given the volume of indicators that are vital for a complete classification of a mobile home and the formation of a complex of their characteristics, it is proposed to make some changes to their structuring system. The standardly used bidirectional matrix systems are represented as incompletely reflecting the entire set of registered factors and characteristics, because it allows determining the object of a mobile dwelling on the basis of a single pair of classifying elements from all their diversity. In this case, only the most obvious indicators of a mobile dwelling are selected, the rest are either not taken into consideration or moved beyond the scope of the classification. This leads to the fact that, having multiple classification decisions, we can not put together a single picture of a mobile home. This work is intended to try to unite all the previously performed titanic work of mobile home researchers into a single complex, as well as create a new, clearer and more comprehensive structure of the classification mechanism.

In the course of the conducted sociological research, the most important classification characteristics from the point of view of the consumer were identified, which made it possible to form a fundamental classification model of a mobile home for temporary residence. To increase the visibility of the classification mechanism in determining the parameters of a mobile home, considering the practical invariance of one part of the parameters relative to the other, it is possible to implement a two-part classification system based on the isometric structure and resulting from the identified classification features of the mobile home.

The basis of the developed structure is the following principles. In the direction of the isometric axes, the external (environmental) basic characteristics of the mobile dwelling are displayed, namely: characteristics of the operating environment, characteristics of the moving environment (transportation, deployment) and geographical characteristics of the region of operation. Each of the above parameters has a number of border divisions, respectively:

-The environment of operation (basing) divides the whole mass of mobile dwelling objects into: ground, water (including a submarine-based group), air, and extra-atmospheric basing. In this group, it is also possible to include such a parameter as "other", implying the possibility of the emergence in the future of new non-classification forms, for example: urban mobile housing - referring to "ground", but having significant distinctive features.

-The medium of transportation (dislocation) includes such transportation methods as: ground, water (surface and underwater), atmospheric, extra-atmospheric (subdivided into orbital and planetary), as well as amphibians and universal. The last parameter can include both a few defined and all listed environments.

-Geographic characteristics of the region of operation. The structure of this parameter includes six groups that differentiate the possible exploitation environment according to the degree of extreme impact, both on the person and on the mobile dwelling itself.

The zone obtained as a result of the intersection of the spheres of the above elements shows the permissible scope of a particular group of mobile dwelling objects or some specific, but still abstract object.

In the resulting point of the environment, which has a certain set of characteristics, it becomes possible to describe the object itself, revealing the main indicators in its structure with the definition of their final (internal) characteristics. With regard to the conditions of this study, it is proposed to adopt as such: a constructive type, the principle of mobility and a comprehensive measure of comfort:

-Constructive type (fundamental design solution of the object) divides the whole mass of mobile dwelling objects into: collapsible, modular (previously containerized), cluster, transformable.

-The principle of mobility includes such models as: non-mobile, mobile (transported), self-mobile, adaptable and mobile interior system.

- The group of the complex indicator of comfort includes such concepts as: capacity, level of comfort, level of technical equipment, environmental friendliness and indicator of autonomy. (In order to increase the visibility in the diagrams was divided into separate indicators).

Thus, with the imposition of these two systems, we can get a complete picture of the structure of a mobile home. In order to lay the foundation for further research, it is possible to make a proposal to replace the identification of certain parameters in each cell of the inner level with a system of three planimetric matrices that allows determining a greater number of parameters. However, the identification of such a complex system from the whole mass requires a more in-depth study and, at the stage of the present study, it may make it difficult to identify the main classifying parameters.

It is worth noting that, in spite of the large number of works dedicated to mobile housing, adaptable housing [1, 2] and interactive architecture, such properties as "interactivity" and "adaptability" inherent to these types of dwellings have never been considered as elements of a mobile dwelling system. As well as mobility, has never before been considered as an element of the adaptation process, as applied to housing. At the same time, the authors of studies devoted to these types of architecture mention a number of characterizing factors of mobile housing as the main directions for the development of adaptive or interactive housing. In particular, in his work L. Yu. Anisimov identifies the following basic conceptual models of an adaptable dwelling: a dwelling built from bulky elements - semi-finished products; growing home; housing with a transformable layout [1]. A similar typology is applicable to mobile housing, described in the works of other researchers. This remark equally applies to the basic principles of the formation of mobile and adaptive housing, which once again underlines their evolutionary interconnection.

The next step in the development of a mobile home is the transition from “relocatable” and “adaptable” to “adaptable”, “interactive” housing that is outlined in the latest conceptual developments and is able to independently adapt its internal environment to the changing requirements of its owner or the changed external conditions. taking into account the requirements of the consumer.

An alternative to this path may be the creation of a cluster system for recruiting the main volume of a mobile building, taking into account the changing needs of a human user at any given time; the creation of systems in which the possibility of assembling different in architecture and functional and technological schemes of a building from the same set of initial elements was originally laid.

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