UDC 631.173

THE MAIN DIRECTIONS OF RECONSTRUCTION OF REPAIR SHOPS

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Statement of the problem. The Ukrainian economy suffered significant losses. But the war already raises the issue of post-war reconstruction, taking into account construction and dismantling works, waste processing. One of the main principles of restoration is optimized project solutions, which include the implication of waste, the ability to reconstruct, add to, and change the functionality of buildings; modularity and unification of structures; compatibility and interchangeability when used as necessary for another purpose [1]. All these measures also apply to the repair and maintenance base of the agricultural industry.

Reconstruction projects are developed after an examination of the existing repair shop, which determines its physical wear and tear. The drawings of the inspected buildings must contain the characteristics of the main structures. The survey of the production activity of the main parts of the workshop consists in the collection of materials characterizing the existing technological process, operating equipment and technical and economic efficiency of production.

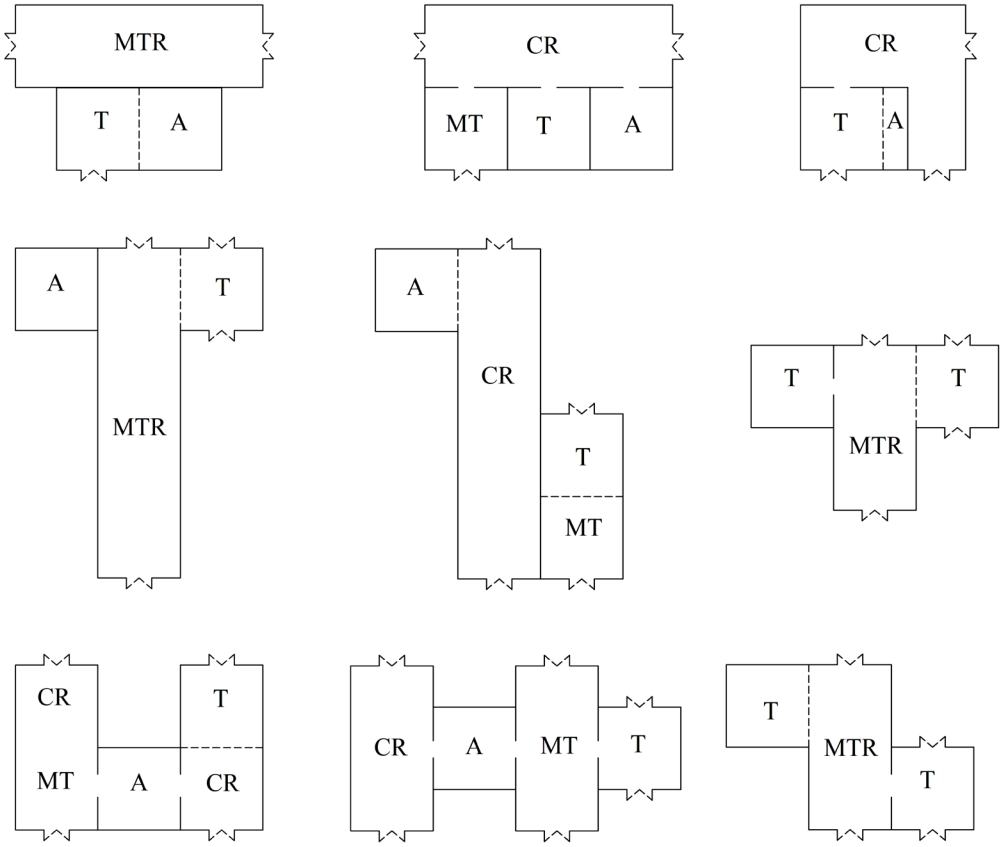
The initial data for the reconstruction is the annual work program, the fleet of cars that will be serviced, the types of repairs and other work that is expected to be performed. During the reconstruction, all its economic, technological, construction, sanitary-technical and organizational tasks should be solved [2].

The objectives of the reconstruction are to reduce its cost and make products cheaper by carefully justifying the need for new buildings; grouping production sites and auxiliary premises into one building with admissible reduction of their area and volume; application of the most economical constructive solutions and materials; installation of modern equipment, development of advanced technological processes and production methods that reflect the achievements of modern technology and ensure high labor productivity.

The main research materials. The analysis of existing buildings of farm repair shops, built according to individual and typical projects, showed that in most cases they did not meet the existing needs in terms of outturn. In addition, repair shops, as a rule, were created in the form of mono-block structures, which made their reconstruction difficult. They also have disadvantages from an economic point of view, since the one-time

diversion of significant funds for the construction of a shop presented significant difficulties for farms. These and other shortcomings of the existing shop projects served as the basis for the development of new principles of their design based on the so-called modular design and reconstruction with the introduction of additional capacities through the sequential construction of the required number of block modules.

The essence of modular design is that the repair workshop consists of specialized sections that are parts (modules) of the workshop that perform one or more separate functions [3]. The specialized module is not only a technological object, but also a construction object. As a construction object, it should be standardized, have certain construction dimensions, which will allow industrial production of construction structures and use production methods of their construction (Figure 1).



T – thermal block-module (forge, welding, vulcanization sections),
MT – machine maintenance block-module,
CR – block-module for current repair of machines,
MTR – block-module for maintenance and repair of machines,
A – block-module for auxiliary premises

Fig. 1. Examples of planning solutions for the mutual combination of block modules

When creating new and reconstructing existing shops, the most promising option is the sequential implementation of individual block

modules. At the same time, the main block-module, which determines the capacity of the workshop, is the repair and assembly module.

In the process of reconstruction, it is necessary that the structural solution of the shop building ensures the use of universal reconfigurable repair and technological equipment for the purpose of rapid reconfiguration of production, formation of technological and transport flows in accordance with planning options.

Conclusions. Application of the block-module principle in new construction and reconstruction of repair shops of agricultural enterprises is a progressive and promising direction. Based on the principle of modular design, typical workshop projects for farms with different tractor fleets should be developed.

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