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UDC 711. 346

**REVALORIZATION OF INDUSTRY TERRITORIES OF SUBURB RURAL SETTLEMENTS
AS A COURSE OF IMPROVEMENT OF ENVIRONMENT OF HUMAN VITAL FUNCTION***TAT'JANA KUZ'MENKO, VASILY LYAKH***National Technical Yuri Kondratyuk University, Ukraine**

Modern condition of productive territories of suburb rural settlements was observed, stages were defined, preconditions and courses of renovation, trick of transformation of productive territory and re-profiling it into living was mentioned on a real example.

The influence of economic crisis is sharply marked on productive territories both metropolises and suburban territories which are zones of common interests of territorial communities of city and village. The best part of subjects of business drop in production, consequently productive territories went into liquidation completely or partly. It concerns the most part of rural settlements – the emplacements of former departments of farm business, so-called “brigade villages”. These processes gain the intricate character both negative and positive. It is known from the analysis of project documentation and in-place tests of development of suburb rural settlements (SRS) that buffer breaks between residential areas and productive objects not always conform to the normative, but often absent at all. Lockup of such manufacture certainly is a positive occurrence for improvement of living environment not only rural population but urban population too. The problem of using white lands and their rational functional organization appears.

Studies by Biryuk S., Gabrel M., Donenko V., Zinchenko A., Korol Y., Mazur T., Silogayeva V., Semenova V., Shtompel N., Scherbyna L., Shtoda O. [1 – 5, 7] and other authors are dedicated to the problems of renovation of productive territories. The most part of these studies purpose researching the problems of industrial zones of cities, searching the ways of revalorization of industrial giants' territories of important industrial centers, cities and megapolises etc. Some approaches to the problems of reconstruction of productive territories principally farming of central village [6, 7] and reorganization of social infrastructure of village were outlined in the last researching conducted on the rural territories (Stepanyuk A., Ogonyok V.).

The purpose of the article is the analysis of modern state of productive territories of suburb rural settlements, finding of territories that can be subject of revalorization, foundation of renovation's courses.

The transition to postindustrial period which characterizes with stopping of extensive development of the factory-farm complex, polyfunctionalization of town-building space, alteration of socioeconomic orienting points of society, transition to the type of economy with predominance of service and high technology industry, with searching of directions of rising of efficiency using of existent industrial projects or redevelopment of those plants which went into liquidation [1] are taking place on the modern development stage. Functional transformation of productive territories comes through some stages in its development.

Owners of existent productive objects which greatly cut or completely went out of their business are giving in a lease to other subjects of entrepreneurial activity isolated playgrounds, buildings, building elements inside of which different of outset activity is implementing, on the starting. Owners of such objects have an intention to vest interest to use realty and siting with the aim of optimization of activity with the development of production. Partial transformation happens on the level of inner transition of building and facilities as the result of redemption of leased objects. Existence of few objects of production results to individualization all of them into detached object and accordingly disintegration of continuous territory on isolated areas. The functional transformation of productive object (fig. 1) happens as the result of such processes.

Renovation of these objects occur expedient in the case if productive objects were disposed with big normative sanitary break (from 300 metres: hog farms, fowl-farm, calf house, market-milk diary etc.), and direct in the residential area of settlement. The word “renovation” is understandable in the meaning of updating, adaptive using of building, facilities, and complexes under change of functional destination. Wasteland and nonfunctional productive territories help to save farming land at that and the process of transformation get features of self-organization, i.e. outlet from the orderless system (chaos) to the order.

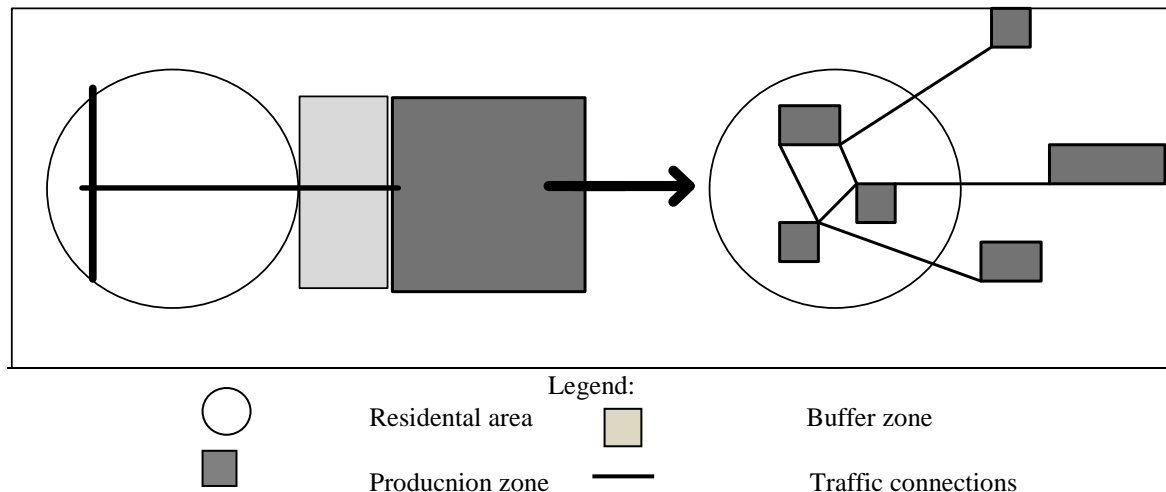


Fig. 1. Sort of fragmentation of productive zone on range of small firms and farms

Thereby such transformation is a promising course of improvement living environment. It defined such courses of renovation [2]:

- Change of function on living (social housing, loft apartments);
- Educational course (preschools and schools);
- Cultural diversions (cultural centers, concert halls, museums);
- Public-service industry;
- Sporting sanative course;
- Planting course;
- Administrative arrangements;
- Supporting centers which will keep for the account of funds, charitable foundations (for the vagabonds, homeless children, juvenile mothers, aged, former prisoners etc.).

It is found examples such transformation (villages Bayrak, Kalashnyky, Kovalivka, Machukhy etc.) with in-place tests of suburb rural settlements of neighbour surrounding Poltava city when factory farm divided on some farms. So livestock farm in the village Machukhy being situated in the center of the village with normative buffer zone 300m went into liquidation. The farm was far from the residential area only with a street that certainly is not enough. We have an example of environment's improvement with enhancement of ecological situation in this case. But it is permeated among the village negative attitude to the liquidation this farm. On the one hand – loss of jobs, on the other hand – evicted farm have sufficient unpleasant form over a distance of 20 years and tumble into ruins. Organization of enterprise of IV – V category which doesn't claim of great buffer break in these agricultural production buildings happens rational. Village Machukhy is situated at the distance of 12 km from Poltava city, trunk traffic with metropolis not worse than with its uptowns. Invention of such enterprise would have positive meaning both for city and for village: providing of people with job-placement, transit of production from the city with drawing it in close vicinity to residential of free labor resources (in the village Machukhy great reserve of free labor – 309 persons of unemployed people, and 1162 persons working in metropolis and make daily migratory relocations). There are many such rural settlements in the first belt (to 20 km) of Poltava city, for example Rossoshentsi, Abazivka, Shcherbani, Tahtaulove, Petrivka, they are a zone of common interests of metropolis's habitant and suburb rural settlements in a clear understanding. Released productive grounds of rural settlements are quite often being restructured into living territories. The example of such solution is in the village Verkholy – transformation of former productive territory of livestock farm and restructuring its into living.

This transformation passed in some stages:

- Producing department (cattle farm 300 head) went into liquidation;
- Housing district was constructed beyond of buffer zone in the northern part of village (building land for home building was allotted), agricultural production building which doesn't function, dismount;
- Block of integrated housing with civic center was planned on the white land;
- Another new block with building area 20 ha was planned on land reserve between two residential communities. Shopping and entertainment center next to thoroughfare and entrance to the settlement provided on the same territory. So

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forming of plan structure of village continues and simultaneously optimization of social amenities of suburban zone's habitants and metropolis's habitants continues.

It is defined preconditions of expedience of outfit's renovation in the rural settlements:

- Existence of great free labor;
- Positive demographic situation;
- Distance to the metropolis less than 20 km.

The potential of productive territories is so great that expedience their renovation has not only architectural but also economic and social implications. Renovation of productive territories of residential areas will improve on ecological environment and standards of population's living due to creation of new jobs. Improvement of environment occurs herein both in city and in village: providing the jobs for unemployment people and removing of production from the metropolis which claims great territories and dislocate integrity of development.

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UDK 69.04

STABILITY OF PLATES SUPPORTED BY STIFFENER

VICTOR KOSENOK, VALENTIN KISELEV
Polotsk State University, Belarus

Critical loads for plates depend on the cylindrical stiffness D . Stability can be increased by making the plate thicker. This solution is not economical. The best solution is to increase the rigidity of the introduction of stiffeners. As an example, consider a plate with freely supported edges, compressed by forces applied at the edges $x=0$ and $x=a$. Plate supported by a single stiffener (Fig. 1). Let's take the form of deformation during the loss of stability as:

$$W = A \cdot \sin m \frac{\pi}{a} x \cdot \sin n \frac{\pi}{b} y \quad (1)$$

Changing the potential energy of deformation δV will consist of the potential energy of the plate:

$$\delta V = \frac{1}{8} D A^2 \pi^4 a b \left(\frac{m^2}{a^2} + \frac{n^2}{b^2} \right) \quad (2)$$

and potential energy of deformation stiffener which bulges together with plate:

$$\delta V_s = \frac{1}{2} B \int_0^a \left(\frac{\partial^2 W}{\partial x^2} \right)^2_{y=\frac{b}{2}} dx \quad (3)$$

B – flexural rigidity.