Trends in the low-rise housing development in the rural settlements’ projects in Southern Russia

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Abstract. One of the main tasks stipulated by the government federal target program “HOUSING” for 2015-2020 is to provide the population with comfortable housing. In the course of its implementation, the state housing policy legal and organizational frameworks were developed, its priority areas were identified and the implementation mechanisms were developed. The funds amount envisaged in the Russian Federation constituent entities budgets and local budgets to finance the sub-program activities has significantly increased.

Introduction
Low-rise housing construction is an integral part of the investment and construction complex in Russia, including the southern region of the country. At present, the town-planning policy is focused on the development of plans for the planning the rural settlements with the land plots allocation in the areas free from development for individual housing construction. Territorial planning and urban zoning documents provide up to 60 percent of the total housing construction for an average low-rise housing entry. At the same time, special attention is paid to integrated development projects [1].

However, when developing projects for the rural settlements’ territorial development, modern social factors are not taken into account. The studies conducted in the country show that there are various social groups currently requiring a different approach to housing design. Namely, the inclusion in the social issues design process and functional modeling of housing for rural areas. All of the above-mentioned indicates this study topic relevance and the need for a theoretical problem solution.

Modern trends in the housing construction development in the south of Russia.
In each region of the country, including in the south of Russia, various regulatory documents have been adopted concerning the urban planning norms and standards for substantiating the calculated indicators of providing favorable conditions for people to live in specific territories and regions. Combine all the southern region territories with the main target indicators of state programs aimed at implementing measures to finance local expenditures (provision of subsidies) from the federal and regional budgets for complex compact arrangement of settlements with social and engineering infrastructure objects and public roads with hard surface. The housing construction volume and structure is based on statistical data for the urban district and indicators of the billing period, determined by the settlement general plan. At the same time, recommendations on the allocation of individual housing stock, housing stock of social use and specialized housing stock are made. For example, for the Neklinovsky district of the Rostov region, regulatory requirements determine the requirements in the residential areas territories according to the norms (number of hectares per 1 thousand people) and the maximum allowable land
plots sizes provided to the citizens for individual housing construction in low-rise housing development [2].

In order to implement the subprogram “Sustainable rural territories development in the Neklinovsky district of the Rostov region for 2014-2017 and for the period up to 2020” (hereinafter referred to as the Program) with the state sub-program support of the Rostov region “Sustainable development of rural territories”, the Neklinovsky district administration has taken measures to select the promising territories for development. The most effective in economic development were the parts of the Neklinovsky district territory, which were identified as the growth points in housing construction. These are such rural settlements as Pokrovskoye, Nikolayevskoye, Novobessergenevskoe, Sambek, Sinyavskoe, Primorskoe, and Troitskoye.

Modern project proposals for the territorial sustainable development program implementation

Currently, a number of projects for the housing development in rural areas of the southern region have been developed. The project proposals analysis showed that in the design process all the regulatory requirements are fulfilled without taking into account the existing social groups of the population.

On the Trinity rural settlement example in the Neklinovsky District of the Rostov Region, the experience of designing a promising development land plot with an area of 210000 m² is shown for low-rise housing construction in the framework of the of the Rostov region “Sustainable development of rural areas” State program development.

The Troitskoye agricultural land array adjustment rural settlement general plan was included in the line of the village for low-rise housing (Fig.1). In order to highlight the planning structure elements, establish the land plots boundaries, establish the boundaries of the capital construction objects planned location zones, in accordance with the requirements of the rules, a project of planning and land surveying was developed and approved. (Fig. 2).

The planning project of the Territory determined the location of transport infrastructure facilities, engineering infrastructure facilities, calculated the need for engineering resources for the projected area, the need for social and cultural facilities.

The design of the plan made it possible to accurately determine the estimated cost of design and exploration work and to carry out the “integrated” design of engineering and transport facilities. Within the project framework for the integrated provision of engineering infrastructure, water supply, gas supply, sewerage, power supply and street lighting networks, roads were designed. Integrated design has greatly helped to save on survey work.

Also, the planning project identified the need to provide the Troitskoye settlement with an additional educational institution for 600 seats. Subsidies under the Program are provided for the financial support purpose in the execution of expenditure commitments arising from the social infrastructure construction and reconstruction, including the educational institutions network development. Within the Program framework, design estimates have been developed for the object “Construction of a general education organization for 600 places in a village Troitskoye, Neklinovsky District”, received a positive conclusion of the project documentation state examination. The school construction has been started. Citizens, including young families and young professionals are provided 91 land for low-rise housing.

The program provides the social benefits to the citizens for the housing construction or the subsidy for co-financing the expenditure obligations of municipalities for the housing construction provided to young families and young professionals under contracts for renting residential premises. The analysis shows that typical projects for the population have been developed without taking into account the socio-economic factors that have changed in the country.

Socio-demographic factors determining the housing formation in rural settlements. The socio-economic and town-planning reforms carried out in our country changed the whole Russian society architectonics and its economy. For rural settlements, these radical reforms are of particular importance, primarily because the lack of employment places reduces the population size, which negatively affects the social indicators of fertility and mortality.
Conventional notation

The project area boundaries

The projected zone

**Figure 1.** Troitskoye settlement general plan

Conventional notation

Premium-class housing with green territory within the section

High-quality housing

Affordable housing

**Figure 2.** The project of planning the territory with low-rise residential buildings of different comfort conditions
By the Government order of the Russian Federation No. 669-p dated April 14, 2016, we developed an action plan for implementation in 2016-2020 “On the demographic policy Concept approval in the Russian Federation for the period until 2025”, approved by Decree of the President of the Russian Federation dated October 9, 2007 No. 1351. The resolution addresses the issue of improving regional programs for resettlement of compatriots in order to attract more highly qualified specialists, scientists, students and prospective youth from among Russian compatriots living abroad to the constituent entities in the Russian Federation.

In the current socio-economic conditions, to meet the needs of the population various segments and attract people to rural settlements, it is necessary to develop the principles for the development of territories and projects for planning sites for construction, as well as for building projects taking into account comfortable conditions for all the citizens categories.

Research has established that in recent years various social groups have emerged in the country. They are dominated by the lower class (80-85%), which includes a small part of the lower class (about 10%) and a significant part (about 70%) of the potentially middle class (or below the average). In turn, the stable middle class (10-19%) and the highest (up to 4%) stand out [4,5].

Housing consumers can be a significant part of the rural settlements’ population, including the potentially middle class of the administrative and managerial contingent of the population and specialists. In order to attract the leading specialists, researchers and young specialists to the village, it is necessary to lay down a certain percentage of elite housing that can be provided for them in planning projects.

Therefore, the low-rise housing construction classification concepts analysis in this study is “tied” to the social and property classes of the rural consumer, which will make it possible to more accurately determine the architectural and consumer dwelling characteristics. As criteria for the quantitative comparison, a special scale of housing provision, proposed by prof. K.K. Kartashova in the dwelling formation socio-demographic foundations studies [3]. A generalized analysis of the studied indicators makes it possible to identify three main classes of housing for the rural population predominant sections:

1. Affordable social housing (for 77-85% of the population);
2. High-quality housing (for 10-19% of the middle class);
3. Premium class housing (up to 4% for wealthy villagers and visiting specialists of the highest category).

On the basis of the dwelling selected main classes, adjustments were made to the territory planning project (Figure 2). And there are suggestions for the housing typology for rural settlements (Fig. 3).

Summary
Based on the conducted research, it can be concluded that when developing business plans and projects for the residential areas’ development in rural areas, it is necessary to carry out a conceptual idea: “social client - architectural potential - housing security”.

One of the basic principles of such housing design is the territory areas allocation with the differentiation of premium housing, high-quality housing, affordable social housing, as well as the highly artistic living space formation with an original unique architectural and planning solution.

The housing differentiation should also take into account the architectural and planning decisions quality, the building materials quality, the housing cost, the provision amount with residential and total area.
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