

REFURBISHMENT OF SOCIAL BUILDINGS IN BULGARIA- SPECIFIC PROBLEMS AND SOLUTIONS

arch. Rossen Savov
arch. Valentina Beloeva

The rejection of the centralized single-party political system and the establishment of democratic principles in the management of the social and economic processes brought about a replacement, within a short period of time, of outdated, existing for several decades relations and habits with new ones which are expected to provide optimal economic and social stability.

New principles of interaction between administration and citizens were anticipated to be set in the society. Without reducing its responsibility and high degree of concern, the state had to reduce sharply its influence on the processes in the sphere of economic relations and to guarantee the social prosperity of the individual within an environment of competition and equality.

Particularly, through such actions the number of people placed at the risk of poverty and social inequality may be brought about to a minimum, a higher level of social and regional understanding to be secured, and a society observing the solidarity between/within the generations in the process of improving the quality of life to be set up.

This is one of the main tasks of the European Union's Strategy for Sustainable Development updated in 2006 – "... for long-term improvement of the living environment both for current and future generations, for establishment of sustainable societies capable to efficiently manage and utilize resources and to benefit from the ecological and social innovative potential of economy, providing prosperity, nature preservation and social agreement".

The experience of all countries speaks for the fact that the housing sector is one of the key components of every economy and economic activity as a whole, and may be used as a driver for sustainable development.

The well-balanced and harmoniously developing living environment is a factor and indicator of the society's sustainable development and vice versa – a deformed, full of deficiencies, tension and degradation processes housing sector is an indicator of instability.

Housing, however, is subject to wear and should be regularly refurbish in order for its service life to be prolonged.

In the context of the title "Refurbishment of Social Buildings in Bulgaria" we will limit the analyses within the scope of the subject "social buildings". The very name suggests that the accent is put on the economic status of the occupant, but which one – who is only an owner of a dwelling, who is owner and occupant of a dwelling, or the one who does not possess a dwelling. If we assume the last option, then, given the fact that 96.5% of the housing in Bulgaria is a private property, the issue is reduced to some 3.5%.

Obviously, the issue is more complex and the scope of the subject "social building" should be specified.

Let's consider a residential building in a very narrow sector – a concrete panel building on the territory of Sofia Municipality - and from the point of view of several criteria only:

- The condition of the existing concrete panel housing;
- Varieties of ownership;
- Age characteristic and financial status of users;
- Legislation.

CONDITION OF THE EXISTING CONCRETE PANEL HOUSING

A/ Housing available – large-panel residential buildings

The volume of the existing housing in the country is considerable, compared to the number of inhabitants. According to data from the National Statistical Institute, by 30 June 2004 there have been 3 697 322 dwellings in the country located in 2 125 250 residential buildings erected under different building and structural systems.

One fifth of them are of the so called panel type – Large Panel Residential Building (LPRB). These are 731 000 dwellings located in 11 128 blocks of flats, 5-9 storey ones.

There are 517 436 dwellings in the capital city, 324 403 of them being reinforced concrete ones, incl. 185 000 of the concrete panel type occupied by roughly 700 000 people.

B/ History of the large-panel residential buildings

3500 dwellings have been built by 1919, and 14 000 dwellings – in the period between 1919 and 1945. In the period 1945-1990 a total of 67 500 dwellings have been built. After 1990 the volume of construction of residential buildings is sharply reduced, and the LPRB system is no more used.

C/ Analysis of the technical condition of the large-panel residential buildings

The analysis is made on the basis of the requirements towards buildings, set in Art. 169 of the Spatial Planning Act (ZUT), namely:

1. *Bearing capacity, fire safety, noise protection* - the large-panel residential buildings are designed and erected in compliance with the current regulations at the time of erection. Some of the criteria have been subsequently enhanced. Since 1987, there is a new zoning scheme of earthquake regions in Bulgaria, and Sofia is located within a zone of expected earthquakes with a magnitude of 9 according to the Richter's scale.
2. *Energy efficiency* – according to national statistical data for 2004, about 40% of housing erected in the period 1919 – 2000 has been built by 1950; 50% is built in the period 1961-1991, and the remaining 10% - in the period 1991-2000. The first “Guidelines for Design and Execution of Thermal Insulation in Buildings” are published in 1960, while the Regulations for development of the part “Thermal Engineering Efficiency of Cladding Structures of Buildings” are published in 1992, updated in 1999 and amended in 2004.

According to analyses made in 1981 for the thermal engineering parameters of the existing housing by 1980, some large-panel residential buildings do not meet the current thermal engineering regulations for the cladding components and structures.

Today, the insufficient thermal resistance R of those buildings, taking into account the requirements of 2004, varies from $0.50 \text{ m}^2\text{K/W}$ to $1.60 \text{ m}^2\text{K/W}$, depending on the type of the cladding components.

3. *Easy access* – with respect to the access of disabled people, the concrete panel buildings are unsuitable, due to the fact that they had been built several decades before the regulations for easy access came into force....

VARIETIES OF OWNERSHIP

The housing in our country is almost entirely a private property. The citizens possess 96.5% of it, the remaining part being state and municipal property as well as property of other economic and non-economic entities.

The peculiar point here is that the physical persons (owners), to a great extent occupy the dwellings they possess, while in the EU member countries, although to a different extent in the different countries, almost the half or maximum two thirds of the population live in their own dwellings. Probably this is related with the traditional adherence of our people to the home, to their own house and the desire to find security and peace in it.

AGE CHARACTERISTIC AND FINANCIAL STATUS OF OWNERS – OCCUPANTS OF CONCRETE PANEL RESIDENTIAL BUILDINGS

Age composition

Out of the total of 1 170 842 inhabitants in Sofia, 172 114 are up to 16 years of age, 737 820 inhabitants are 16-61 years old men and 16-56 years old women, and 260 908 inhabitants are over this age. The total number of disabled groups is 39754 which makes 4% of the people in the city, while the romes in Sofia number 17885, i.e. 1.5% of the city's inhabitants.

By 2003, 43.45% of the inhabitants of Sofia are in non-working age (of them 28.65% are retired persons and 14.8% are under 16 years of age).

Financial status

The average annual remuneration in the sphere of economic activities for 2003 is 3441 – 4682 Lev (monthly remuneration 287-390 Lev).

In 2003, the retired persons are 335 459, with average annual pension of 1164 Lev (97 Lev per month).

The average annual remuneration in case of disability, disease and labour accident is 1262 Lev (105 Lev per month).

CONCLUSIONS

Yet at the design level, 90% of the concrete panel buildings do not meet the regulations of 1992, and by 2004 they have considerably worse thermal engineering characteristics of the cladding structures. The problem is even worse, taking into account the following facts:

- **Firstly**, the obvious faster aging of the concrete panel buildings compared to ones built under the traditional methods, due to:

A/ implementation of technologies without sufficient theoretical knowledge and experience with respect to panel structures, especially in the first years of construction;

B/ insufficient observance of the technological procedures in construction, even missing some operations;

C/ reduction of construction costs through the application of low-cost and less durable materials as well as using new materials without having sufficient experience in their behaviour for a longer period of service;

D/ faults admitted in the application of waterproofing and thermal insulation, joints sealing, etc.

- **Secondly**, many cases of incorrect service as well as breaking the integrity of the building through reconstructions and renovations carried out without structural investigations and approved construction documentation.

The high percentage of private property in the housing sector and the large number of owners occupying their dwellings leads to a very narrow market of rented dwellings and inadequate economic mechanisms for rent relations, which generates considerable economic and social problems:

- Economic inability for the owners to maintain their dwellings in compliance with the ever growing occupational demands;
- Citizens with a low economic status are not able to meet the occupational costs;
- Citizens with a higher economic status are practically unable to buy a dwelling of the existing housing.

Furthermore, the poor technical condition of the existing housing, the slow rate of increasing the number of new buildings (up to 1% per annum) on the one hand, and the existence of groups in the lowest income brackets on the other hand, adds another dimension to the problem.

An important issue is the management and maintenance of residential buildings under a joint ownership (block of flats). Each owner, in proportion of his/her share of the common parts is obliged to take part in the expenditures needed for repairs and restoration.

In the time of acquiring these concrete panel dwellings, their owners have been in working age, while today they are retired persons with rather limited income. Therefore, they can not meet the expenditures needed for normal heating and can not maintain their living comfort, namely:

- Over 40% of the households can not afford heating of the whole flat during the cold season;
- Over 50% of the households can not afford keeping the standard temperature in the rooms.

According to some estimates, the application of energy saving measures will amount to 135-150 Lev / m² of useful floor space, and taking into account that this price does not cover the installation works, quite a few owners could afford the costs.

The residential buildings' energy efficiency issue becomes increasingly significant: on the one hand, the energy carriers' price is a heavy burden for the household budgets; on the other hand is the global endeavour for energy saving in the context of efforts for reaching sustainable development, because heating covers 70% of the household energy consumption.

Therefore, the housing management in the country should be realized in a new economically and socially well-grounded way. Politics of sustainable development is amongst the most adequate approaches to the complex problems of refurbishment of residential buildings and their environment in urban territories. Such politics in Bulgaria follow the governmental and municipal administration.

At practical level very different projects are under execution in the country. In the capital city of Sofia during the period of 2003-2004 and 2005 were experimented projects for improvement and effective maintenance of the house buildings and their environment in very different conditions. In the old peripheral district of Zaharna fabrica was accomplished a pilot project for refurbishment of an existing social residential building with private ownership of the apartments. The successive result was achieved with the partnership between the owners, Bulgarian and Dutch associations for housing politics, the Dutch Ministry of Housing Politics and the Bulgarian Ministry of Regional Development.

In another district of Izgrev took place a sequence of sessions of A Municipal Forum organized with the initiative of the local administration citizens, nongovernmental organizations, Swiss Agency for Development and Partnership. The aim of the Forum working was the improvement of the new urban

planning and construction as well as the saving of the existing favourable environment, especially the greenery, in the Izgrev district. A method of dialog between different stakeholder groups – investors, inhabitants, professional architects and engineers, local and metropolitan administration, was used for determining the crucial problems and solutions. Groups of participants came to selforganization and elaborated projects which after expert assessment and free vote of all the participants in the Forum were proposed financing and realization.