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CURRENT TENDENCIES IN DEVELOPMENT OF MULTY-STOREY HOUSING ESTATES IN RUSSIA

Statement of the problem. In this country and abroad, there is a large body of research in the design of residential complexes. However, the study which explores the social aspects of accommodation establishments in the service structure of the housing estates (based on income level, social class) is absent. Consideration should be given to the modern practice of the domestic design and construction of residential complexes with the service which will articulate the key factors, issues and trends in the design of this type of housing in the current socioeconomic conditions. The objective of this research is to reveal major factors of formation of structure of multi-storey housing estates with service revealing typology of modern housing estates.

Results. The problems of formation of multi-storey housing estates with service for various levels of population are formulated. Using the results of studying of modern practices of building and designing of multi-storey housing estates major factors of their designing are revealed. The typology of modern housing estates is revealed.

Conclusions. The service organization in structure of housing estates taking into account level of incomes of the population will allow one to improve social efficiency and economic feasibility of dwelling designs.

Keywords: multi-storey housing estate, service system, infrastructure, functional-spatial organization of services.

Introduction

New social and economic circumstances in large cities and towns have been a growing urbanization, intense development of urban areas, growth in number of private vehicles and no consistency or balance in building designs, an insurmountable housing gap between differ-

ent groups of the population and a deeply flawed system of corporate, cultural and housing services. One of the ways to address those growing negative tendencies can be the construction of multi-storey houses with differential services which offer a perfect combination of dwelling, service and recreation with regard to the income level of the population.

Generally in this country and abroad there has been a great amount of research into housing construction (e.g., works by I.I. Anisimov, M.G. Barkhin, G.A. Gradov, S.S. Gorin, A.E. Gutnov, A.V. Krashennnikov, P.G. Rudakov, L.I. Sokolov, N.A. Fedyaeva and T.B. Nabokova) and particular aspects of housing construction and servicing were also studied in the context of building structures and practical guidelines were set forth as a result. However, there has not been a study of modern aspects of housing construction and services.

1. Problems of organizing housing and servicing for different population groups

It should be noted that in this country there has been no scientific research into the construction of multi-storey housing and servicing and social aspects have been left out of consideration (such as the income level, different housing demands, etc.). The problems of housing development for different population groups can be grouped in the following way:

- *construction in the city area* involves addressing the problems of housing construction in the city area depending on a social group it is targeted for and rational servicing and maintenance according to the city planning situation;

- *function and spacing* deals with the construction, organization and specification of functioning of servicing according to the financial capacities of a population group;

- *architecture and planning of housing construction* means that particular specification of housing complexes associated with social, spacing organization needs to be looked into [4] (Fig. 1).

There have now been decisions made as to the organization of public services that have in their heart multi-functional centers in the largest population and employment areas as well as extra catchment area services.

Multi-storey housing is a type of accommodation that helps to address a number of social, environmental and other issues. According to its original purpose, a housing complex is not only a place of dwelling, leisure, etc. but also a structure that serves a number of pur-

poses to provide for human wellbeing and wealth and thus making it a crucially important city object. A number of factors contribute to the spacing and functional structure of multi-storey housing (Fig. 2).

2. Designing and construction factors of multi-storey housing

A system of organizing services in large areas (e.g., shopping centers) provides a rational solution for a social model of multi-storey housing which is part of the first level of services. A number of factors (city planning, architecture and planning, social and demographic, economic ones, etc.) influence housing decision-making.

City planning factors are defined by functional and spacing organization of multi-storey housing. In residential areas connected with major pedestrian junctions, highways, etc. are more likely to function as open or semi-open areas. The ground level of such accommodation houses areas of acknowledged importance which would enhance the streetscape and the public realm.

The functional component of multi-storey housing is chosen based on its location. Areas with busy traffic will be likely to capitalize on trade and high public transport accessibility will see them become an important business hub. Multi-storey housing with a developed infrastructure takes up large areas (of over 2 hectares) and thus normally has large power consumption. While choosing a location for housing, it is necessary to make arrangements for ground and underground engineering facilities so that energy consumption at the construction site would pretty much suffice.

Architecture and planning factors show how open a residential area is and how multi-facet its functions are, what services it has to offer and what type of accommodation it houses. A planning structure is normally as follows: underground spaces – parking areas, car wash; ground level – communal pathways, recreational areas, etc.; ground floors – entrance groups, hallways, servicing areas, business areas; apartments are on the floors above; upper levels — winter gardens, luxury flats – penthouses; roofing is not always used but in some cases it houses outdoor areas adjoining the residential areas of penthouses or communal green areas (Fig. 3).

Social demographics factors are indicative of a need of providing housing accommodation to meet social and economic demands of the community.

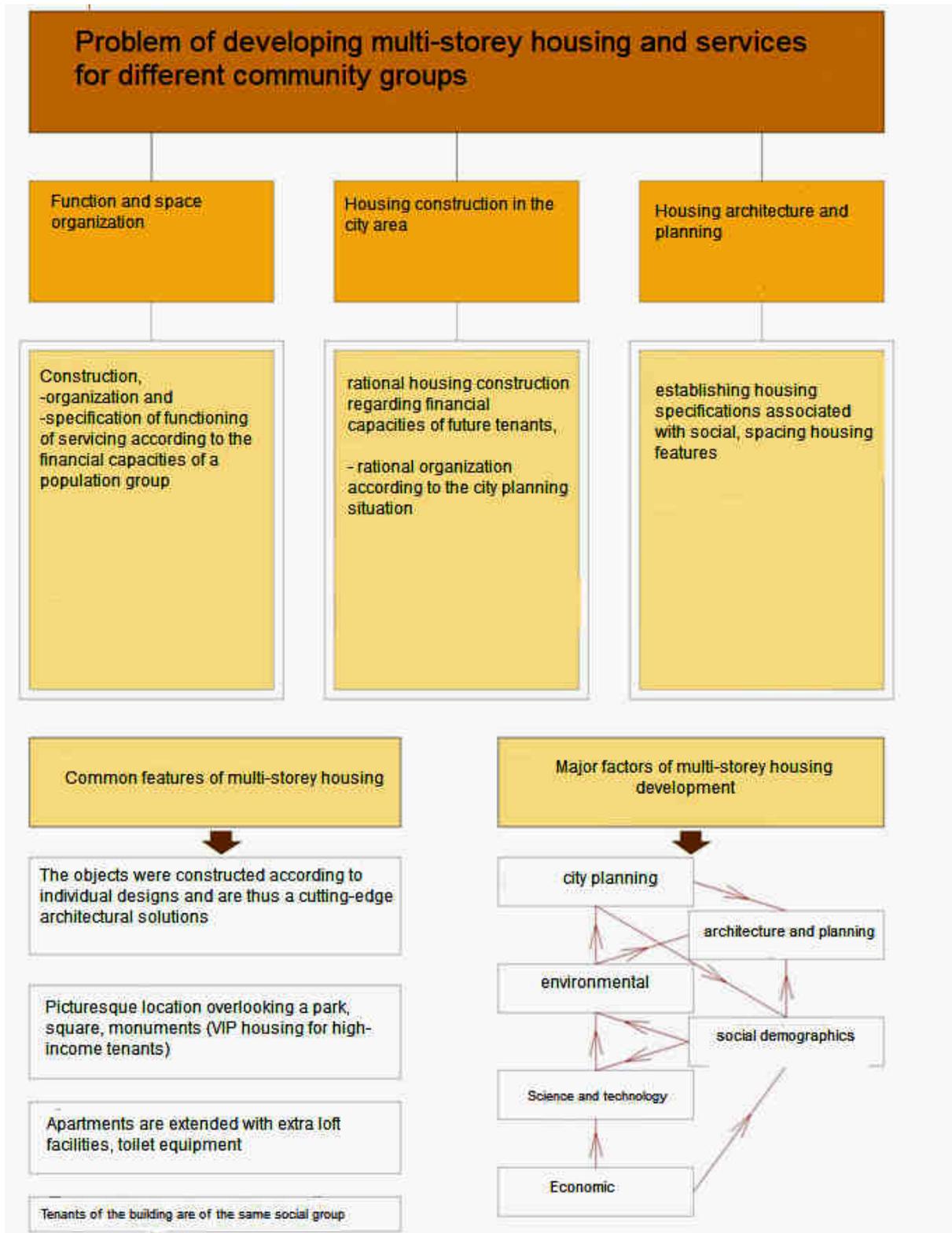


Fig. 1. Major problems and features of multi-storey housing and servicing in cities and towns

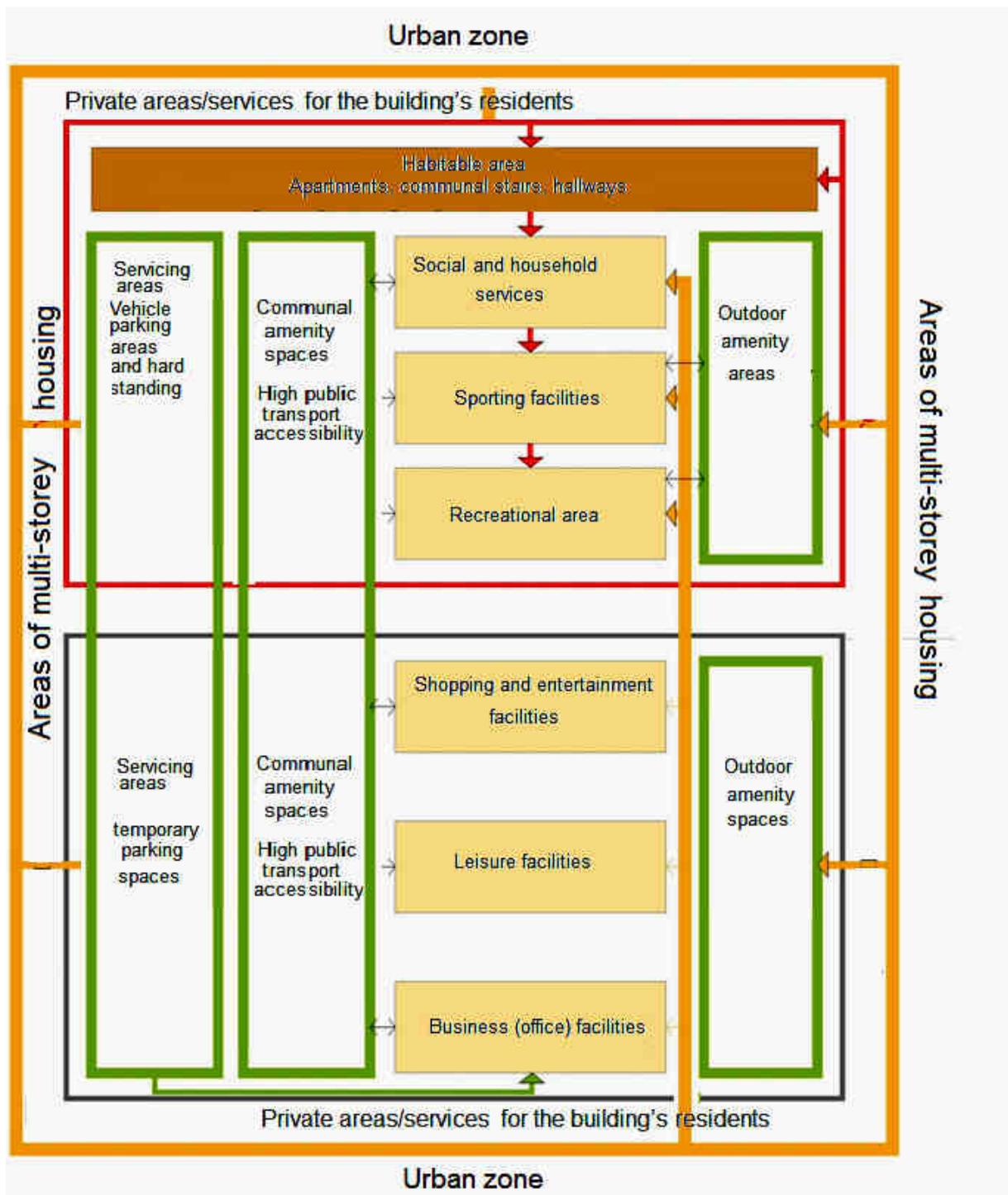


Fig. 2. Schematic of multi-storey housing and service development

Economic factors. Design and construction of multi-storey housing in urban areas draws individual investors, state and private organizations, could be a potential office facility for small and large businesses; can generate extra revenues for municipal residential construction; can save up lands by locating parking areas underground; address a number of city planning problems which cannot be currently funded by the budget; no maintenance costs are incurred as they pay their way back by condominiums (except for an urban engineering infrastructure); increase the construction density without adversely affecting the comfort and privacy of its occupants.

3. Modern tendencies in design and construction of multi-storey housing and services

A current tendency in the construction of multi-storey housing is a challenge for them to serve a number of functions (Fig. 4). Services and housing accommodations are brought together not in one single unit (as it used to be in the early stages of the multi-storey housing construction) but these are massive areas with the style of residential dwellings being in keeping with that of the overall infrastructure [1, 5].

There are currently no guidelines provided as to what the infrastructure components should be. E.g., in Moscow the first multi-purpose residential housing for high-income population included a wide range of services: beauty parlors, restaurants, gyms, snooker clubs, shops, saunas and pools with these areas being close. Nowadays high-income people prefer to go out to their favorite restaurants for a meal, do fitness in VIP gyms, etc. and this does not seem to depend on their location in the city structure. Therefore commercial businesses that accommodate the needs of the occupants of the building dominate the infrastructure. Therefore, multi-storey housing contributes to the development of the overall infrastructure.

The functional component of the housing accommodation is chosen based on its location. It is necessary that the specification of the area of choice, social infrastructure developed there are taken into account. Busy traffic locations are best for trading spaces and high transport accessibility will make it an excellent office facility [3, 4, 7]. There is a diversity of functional components that give rise to various types of multi-storey housing where the components (functional elements) can be autonomous or not. The structure of multi-storey housing comprises the following functional areas: habitable space (accommodation), office facilities (offices, bureaus, etc.), servicing areas (restaurants, concert halls, gyms, shops, etc.) and parking areas (other maintenance facilities).

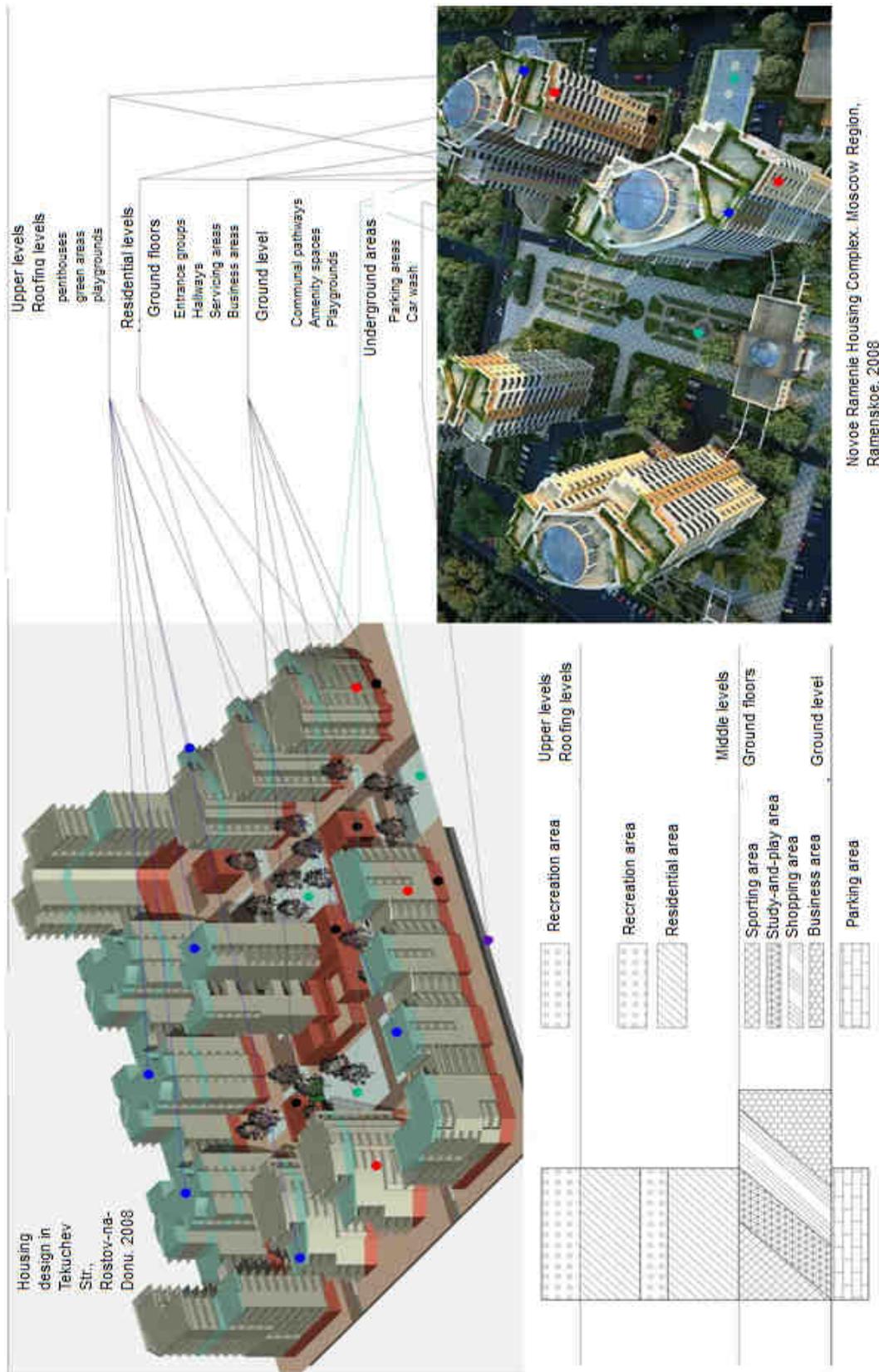


Fig. 3. Planning structure of a multi-storey housing and services

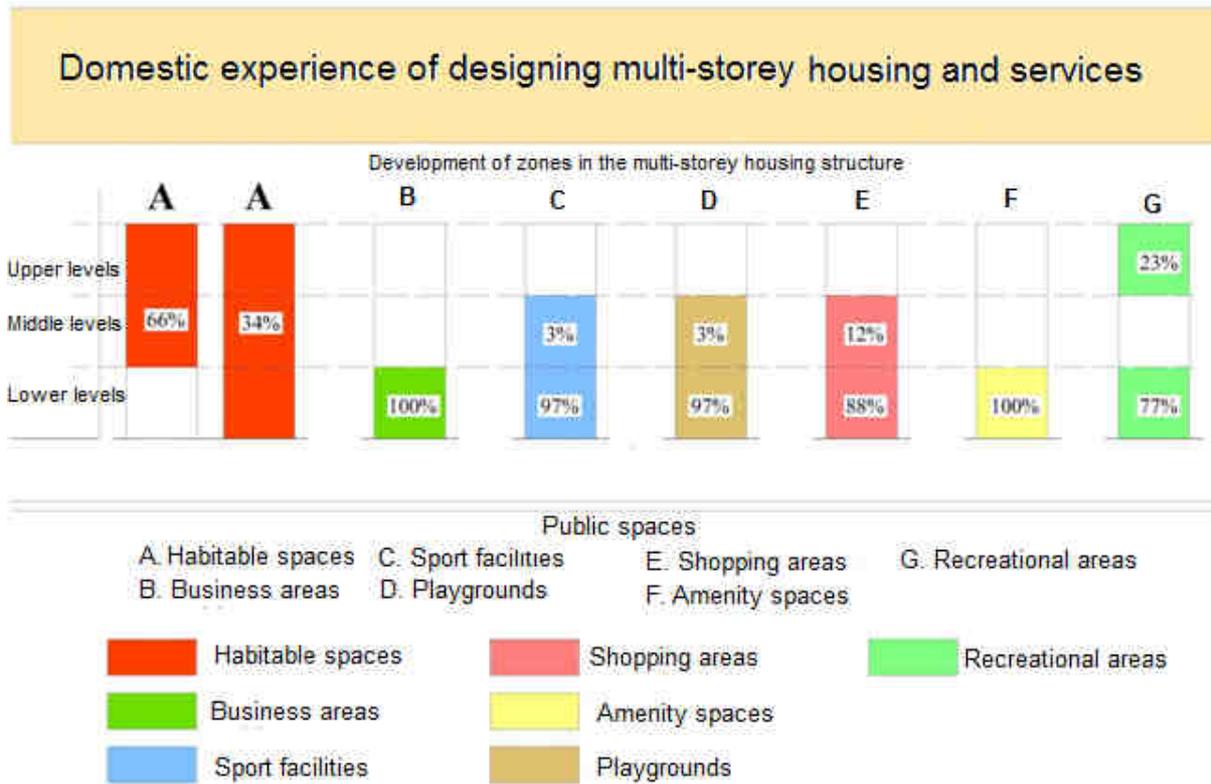


Fig. 4. Function and space organization of multi-storey housing and services (60% of the habitable space is in the middle level, 34% is isolated areas; 3% of the sporting facilities is in the middle level, 97% is in the lower level; 23% of the recreational area is in the upper level, 77% is in the lower part)

Modern housing saw the development of a new type of accommodation. They are pent-houses, luxury flats that are normally in upper floors. Depending on the type of the dwelling, there are open or close (with panoramic windows) terraces, panoramic floors or helicopter platforms. Another crucial feature of modern multi-storey housing is a large underground parking space as part of the infrastructure.

4. Type of modern multi-storey housing and services

The structure of modern multi-storey housing has a consistent concept behind it: in addition to essential outdoor spaces and parking areas, there is a number of servicing areas that accommodate the needs of the future occupants. Therefore there are three types of multi-storey housing according to the social status: club houses, luxury and commercial properties.

The interior structure of housing accommodation is peculiar. A club house features a reception hall, snooker room, sauna, gym, cellar (this is all free of charge for the residents and

guests as it is included in the operating costs); the residents are expected to hire the catering staff. The structure of luxury properties is in a way different from that of club houses: there is no space for the residents to gather and mingle with individuals from the community and self-service is much more developed and made available to the residents only. In commercial properties servicing areas are available not only to the residents; furthermore, there are office facilities as well [2, 7].

It should be noted that the construction of housing accommodation and services for middle and low-income groups is not in place. There are social housing constructions in only a couple of regions in Russia which are predominantly panel high-rises that feature some elements of the first level of services. New accommodation is constructed and occupied and only then amenity construction gets underway.

Conclusions

1. The design of services of multi-storey housing should have the interests of occupants of different social groups at heart and include the service elements that will meet the demands of low-income groups that are most enthusiastic about the development of the cultural landscape of their neighborhood.

2. Social differentiation in the present-day society calls for the development and introduction of services that will meet the demands of different social groups. The improvement of the use of urban lands and comfort gave a boost to the development of multi-storey housing due to a number of functions and purposes they serve.

3. The following factors contribute to the architecture and planning of multi-storey housing:

- *city-planning* define the location of multi-storey housing in the structure of the city;
- *architecture and planning* addresses environmental concerns of the city as well as the population demography, the level of income, etc., and is crucial to the type of the housing as well as its openness;
- *social demographics* determine the social community of residents of the accommodation; this is one of the most crucial factors in choosing the quantity and quality of services offered there as well as the living comfort.

4. The current stage of the design and construction has seen multi-storey housing as the most promising way of organizing human activities while bringing together a number of urban facilities and developing their applications. These tendencies need to be put in the context of a particular city and help to prioritize certain functional areas also depending on social factors involved. Economic factors are to be taken aboard for maximum service benefit.

5. The novelty of the current research is a comprehensive study of the organization and development of services in the multi-storey housing structure (in the residential area as well as in the dwelling structure) for people of different levels of income and identifying the type and factors involved in the design of multi-storey housing as well as the major tendencies of residential location and development.

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