Principles of Planning Organization of Dormitories for Migrant Workers in Moscow

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Abstract. The paper addresses the problems of accommodation of migrant workers in Moscow at the present stage. The authors offer specialized dormitories with certain planning parameters aimed at achieving balance between the maximum cost effectiveness and creation of adequate living and working conditions for migrant workers. The paper is focused on possible principles of planning organization of dormitories for migrant workers in Moscow. It contains recommendations on supplementing the RF regulatory framework with regard to organization of temporary accommodation houses and practical suggestions on designing such dormitories. These suggestions allow considering organization of the specialized dormitories for migrant workers both as new construction and in the existing city architectural environment by reconstruction of the existing residential buildings. The prospects of using the suggested temporary accommodation houses for migrant workers in megalopolises are addressed as well.

1. Introduction

The problem of migration of people from the poor countries to the countries with a higher economic level is one of the relevant world problems. Nowadays the problem of housing able-bodied population from other cities and countries is most pressing for any megalopolis.

The foreign experience of housing migrants can be useful for the Russian megalopolises. The European experience of housing refugees who are potential migrant workers demonstrates the four stages of their accommodation:

1. Camps for accommodation of refugees, which are tent sites on a fenced territory.
2. Restricted areas of container sites, which are similar to modular dormitories in Russia but have a higher degree of reliability and durability.
3. Complexes of closed-type dormitories, which are up to 4-floor permanent buildings with all the necessary infrastructure. The accommodation capacity is restricted and used with the maximum cost effectiveness according to the adequate level of living accepted in the European Community.
4. Provision of cheap social housing.

Construction of social housing in the European countries is supported by state financing through special funds, easy loans and tax reliefs for developers. In general, it can be said that in the European Community the municipal administrations provide housing for those people who cannot buy real
estate at market prices. However, this experience cannot be adapted to the Russian conditions as far as the modern Russian construction industry is not properly regulated and does not satisfy the needs of the basic population of the country. Besides, such districts in the European capitals often turn into slums or ghettos contributing to increase of criminality and deplorable sanitation of the urban environment.

The American experience of housing migrant workers despite of the vast amount of migrants arriving to the USA every year cannot be applied in the Russian reality due to the crucial differences in the legislative approaches and arrival conditions.

According to the Federal Migration Service’s data, now there are about 11 million foreign citizens in Russia, and 83% of them are the citizens of the countries of CIS. It should be noted that the United Nations Special Commission and other reputable sources give more significant numbers – from 15 to 20 million people. Less than a million of them work legally and have relevant permissions [1], [2]. The most part of the temporary accommodation houses existing today in the Russian megalopolises do not satisfy the normal conditions of accommodation of foreign migrant workers [3],[4]. It is required to create a network of dormitories for migrant workers, the planning characteristics of which will satisfy the migrants’ needs for life and work in Russia, will be both economically efficient and profitable in the urban environment of a megalopolis. It should be noted that migrant workers and related issues are permanent topics of discussion in columns of the prints and in other media.

2. Theoretical part

The comparative analysis of the norms of collective dwelling of people existing in Russia allowed us to formulate general requirements to the temporary accommodation houses and characteristics of dwellers (Figure 1) [5], [6] and a number of necessary planning requirements for the suggested type of dormitories:

1) The norm of a living area per a person shall be at least 6 m2.
2) Living rooms shall be designed to accommodate from at least 2 to 4 dwellers at most with the minimum room area 12 m2.
3) A dwelling unit can include 2-4 living rooms united by a shared WC facility and a hall; we suggest excluding kitchens and built-in kitchens from a dwelling unit and providing a space for a refrigerator in a hall or in rooms at a rate of 1 refrigerator per 4 dwellers. Such dwelling unit shall be provided with a required number of closets at a rate of 0.6 m2 of a standard closet per 1 person. Some closets can be placed in a dwelling unit’s hall if necessary.

For most compact and cost-efficient accommodation of married migrant workers in dormitories the preferable variant is family dwelling units containing from 2 to 4 rooms with the unit’s maximum accommodation capacity equal to 16 persons. A living room area of such family unit shall be designed according to the valid norms and shall be at least 12 m2. As opposed to dwelling units for single dwellers, we suggest placing a desk in a family dwelling unit.

4) We suggest the following norms of provision with sanitary ware: 1 shower room, 1 wash-basin and 1 toilet bowl for 8 dwellers maximum; combined WC facilities are excluded. With the accommodation of people based on the dwelling unit principle, there is no need to provide separate men’s and women’s WC facilities.

5) It is suggested to have meals in special dining kitchens located on the dormitory floors and equipped with all the necessary kitchen equipment: electric stoves, kitchen sinks, dish cabinets, tables and chairs, electric kettles. We suggest providing 1 dining place per 4 dwellers but the kitchen total area shall be at least 20 m2. Placement of tables in living rooms shall be allowed for family dwelling units only.

6) For “noisy” collective recreation of dwellers (watching TV, playing backgammon, etc) it is suggested to arrange recreation rooms with an area at least 20 m2 with appropriate furniture (sofas, TV) in the amount of 1 room for 30-40 dwellers. Such rooms can be provided with computers and tables.
7) It is suggested to extend and improve shared household and amenity rooms by adding a luggage storage room and rooms for storage, drying and cleaning of work clothes and shoes. The area of shared rooms for washing, drying and ironing shall be increased with addition of closets for clean clothes and linen. We suggest excluding rooms for dirty clothes in the type of dormitories in question.

8) The administration area shall be provided with a cabinet for one specialist receiving visitors (lawyer, social service specialist, etc), and reception and registration area shall be equipped with a security checkpoint and a turnstile.

| EXISTING (VALID) DESIGN NORMS | SUGGESTIONS |
|-------------------------------|-------------|
| **1. COMPARATIVE ANALYSIS WITH REGARD TO CHARACTERISTICS OF TEMPORARY ACCOMMODATION HOUSES' DWELLERS** | | |
| Single citizens | Mixed type: at least 25% of living rooms for family dwelling |
| Married couples - with and without children | 75% |
| Elderly people (pensioners) | 25% |
| Physically challenged people | |
| Without age restrictions | |
| Students, workers, office workers, tourists | |
| Young able-bodied people of 18 to 29 years old arriving to cities and megalopolises for earning | |
| Workers, services sector | |

| **2. ADDITIONS WITH REGARD TO FAMILY STATUS OF TEMPORARY ACCOMMODATION HOUSES' DWELLERS** | | |
| Single dwellers, married dwellers, married dwellers with children, | | |
| married dwellers without children, families of three generations | | |
| 100% | 75% |
| 25% | |

| **3. PROVISION OF ACCESSIBILITY OF TEMPORARY ACCOMMODATION HOUSES FOR PEOPLE WITH LIMITED MOBILITY** | | |
| Accessibility for people with limited mobility shall be provided | Accessibility for people with limited mobility is not obligatory |
| | |

| **4. COMPARATIVE ANALYSIS WITH REGARD TO A NUMBER OF FLOORS OF TEMPORARY ACCOMMODATION HOUSES** | | |
| Not regulated and shall be taken | Up to 5 floors |
| 1 | 5 |

| **COMPARATIVE ANALYSIS WITH REGARD TO OCCUPANCY LOAD/CAPACITY OF TEMPORARY ACCOMMODATION HOUSES** | | |
| Not regulated and shall be taken acc. to a design assignment | Up to 300 dwellers |
| ≥300 | ≤300 |
5. Comparative analysis with regard to the norms of a living area per a person for temporary accommodation houses

- 4 m²
- 4.5 m²
- 5 m²
- 6 m²
- 9 m²

Per 1 person: 4 m², 4.5 m², 5 m², 6 m², 9 m²

Per 1 person: at least 6 m²

6. Comparative analysis with regard to the living room area of temporary accommodation houses

- 9 m²
- 12 m²

For single accommodation - at least 9 m²
For collective accommodation - at least 12 m²

12 m²

Minimum: accommodation of 2 dwellers - at least 12 m²
Maximum: accommodation of 4 dwellers - at least 24 m²

7. Comparative analysis with regard to the living room capacity of temporary accommodation houses

- 2 - 20 dwellers in a room
- 2 dwellers in a room
- At least 2 dwellers in a room
- At most 4 dwellers in a room

8. Comparative analysis with regard to the dwelling unit capacity of temporary accommodation houses

Dwelling units - 2 rooms maximum
Dwelling modules - 10 rooms maximum

Women's WC facility
Men's WC facility

Dwelling units - 2 rooms minimum and 4 rooms maximum

9. Equipment of the living rooms of temporary accommodation houses

- The area of built-in closets is not included into the living room rated area:
  - 1 desk per 1 room;
  - stoves and kitchen equipment;
  - 1 lockable box;
  - 1 refrigerator per 8 dwellers.

- The area of built-in closets is included into the living room rated area:
  - 1 desk per 1 married couple; desks are not permitted in rooms for single dwellers;
  - stoves and kitchen equipment are not permitted in living rooms;
  - 1 lockable box;
  - 1 refrigerator per 4 dwellers.
Figure 1. Recommendations on supplementing the RF regulatory framework with regard to organization of temporary accommodation houses.

3. Suggestions and recommendations

We suggest organization of a dwelling unit consisting of 2-4 rooms with a shared hall and WC facility as a planning basis for designing dormitories for migrant workers (Figure 2). The designed models of dwelling units are variants of architectural planning diagrams that can be used as a basis in construction of temporary accommodation houses for migrant workers.
A dwelling unit is based on 2-4 rooms united by a shared hall and WC facility. A hall is an organizing room in a dwelling unit where a WC facility, refrigerators and closets for clothes, shoes and other belongings are located.

A dwelling unit hall can be:

a) of the minimal area without furniture – in this case closets and refrigerators are placed in living rooms;

b) spacious and functional – in this case closets and refrigerators are placed in a hall, which can also have a place for relax (sofa, TV); with a spacious hall living rooms can have the minimum area.

Such dwelling units are supposed to be cleaned and kept in order by dwellers themselves because people living in such conditions are likely to get acquainted quickly, agree upon cleaning of WC facilities and prevent possible thefts of belongings and food. If we take into account that migrants usually keep links to relatives and fellow countrymen, such way of organizing space in dormitories will be all the more beneficial.

Figure 2. Principles of architectural and planning organization of dwelling units in the temporary accommodation houses for migrant workers.
Model of dwelling unit No. 1 with two rooms, a hall and one separate WC facility inside a unit. The model is designed for accommodation of 4 to 8 dwellers at the same time. It provides for the minimum size of rooms of the same area with a spacious hall where closets, refrigerators and a place for rest (if necessary) are located. It is a cost-efficient model of living space suitable mainly for corridor-type buildings with a plane façade.

Model of dwelling unit No. 2 with two rooms of different area, a small hall and one separate WC facility inside a unit. The model is designed for accommodation of 4 to 8 dwellers at the same time. It provides for more spacious living rooms of different capacity/occupancy load and proportions allowing for placement of closets and refrigerators inside a room. This model is suitable for different (aliquant) number of permanently living dwellers. It is a cost-efficient model of living space that allows forming shaped, nonplane building facades.

Model of dwelling unit No. 3 with three rooms, a spacious hall, and one or two (depending on a number of dwellers) separate WC facilities inside a unit. The model is designed for accommodation of 6 to 12 dwellers at the same time. It provides for the minimum size of rooms of the same area with a spacious hall where closets, refrigerators and a place for rest are located. It is a cost-efficient model of living space suitable mainly for corridor-type buildings with a plane façade.

Model of dwelling unit No. 4 with three rooms, a small hall and one or two (depending on a number of dwellers) separate WC facilities inside a unit. The model is designed for accommodation of 6 to 12 dwellers at the same time. It provides for living rooms of different capacity/occupancy load and proportions allowing for placement of closets and refrigerators inside a room. It is a cost-efficient model of living space that allows forming variously shaped building facades, both plane and protruding ones.

Model of dwelling unit No. 5 with four rooms, a long corridor-type hall, and two separate WC facilities inside a unit. The model is designed for accommodation of 8 to 16 dwellers at the same time. It provides for the minimum size of rooms of the same area with a spacious hall where closets and refrigerators are located. It is a cost-efficient model of living space suitable mainly for corridor-type buildings with a plane façade.

Model of dwelling unit No. 6 with four rooms, a small hall (allowing for partial placement of closets and refrigerators) and two separate WC facilities inside a unit. The model is designed for accommodation of 10 to 16 dwellers at the same time. It provides for more spacious living rooms of different capacity/occupancy load and proportions allowing for placement of closets and refrigerators inside a room. It is a cost-efficient model of living space that allows forming variously shaped building facades, both plane and protruding ones.

Model of dwelling unit No. 7 with four rooms, a small hall and two separate WC facilities outside a unit. The model is designed for accommodation of 10 to 12 dwellers at the same time. It provides for rather spacious living rooms of different capacity/occupancy load and proportions with obligatory placement of closets and refrigerators inside a room. This model forms a small independent section from two symmetric dwelling units. These two dwelling units have a shared kitchen and a shared recreation room. It is a cost-efficient model of living space that allows forming independent cubic form buildings with variously shaped facades.

The suggested variants of the dwelling units’ models can be formed into larger planning structures – accommodation buildings of temporary accommodation houses with various occupancy load and configuration.

The main city-planning requirements for the suggested type of dormitories:

- The recommended occupancy load of a dormitory or a complex of dormitories shall not exceed 300 persons due to necessity to avoid heavy load of the newly arrived on adjacent city blocks.
- The recommended number of floors is up to 5 without an elevator; it will exclude expenses for installation and maintenance of the elevator equipment under increased risk of migrants’ vandalism.
A dormitory territory shall be off-limits to prevent unauthorized access. It shall include a security checkpoint, independent garbage disposal system, parking place for those who arrived by cars, parking place for bicycles, and smoking area. It is recommended to arrange a sports ground if possible.

More or less uniform distribution of dormitories over the megalopolis territory is suggested that will allow reducing conflict situations significantly and ensure proximity of migrant workers’ dwelling places and places of work.

4. Conclusions
The world experience of housing migrants and refugees is hardly applicable to the Russian reality. The European experience of organizing closed-type complexes of dormitories in the form of up to 4-floor permanent buildings with all necessary infrastructure, can be partially used.

The dormitory buildings are suggested to be designed with up to 5 floors without an elevator that will exclude expenses for installation and maintenance of the elevator equipment under increased risk of migrants’ vandalism; healthy young dwellers will have no difficulties with climbing to the 5th floor.

We suggest the method of designing dormitories based on a number of the planning diagrams taking into account all possible standard combinations of rooms in dwelling units according to the above norms. The suggested models of dwelling units can be arranged into temporary accommodation houses’ buildings of any configuration. The structural and architectural characteristics of temporary accommodation houses are based on the existing mass house-building systems in the megalopolises. It allows ensuring diverse and expressive architecture for unassertive and cost-efficient buildings and fitting the buildings into a site of any form.

The suggested planning solutions for temporary accommodation houses are rather universal and multi-purpose with various prospects of application [7], [8], [9], [10]. They can be used to satisfy the needs of internal migration or easily adapted for accommodation of many people in case of emergencies and pandemic. The dormitories can be used for accommodation of refugees. The family dwelling units of dormitories can be reequipped for accommodating mixed groups of population. Refugees with limited mobility can be accommodated on the lower floors. The suggested comfort level can be suitable for accommodating business travellers who arrive for a long time if their professional activity is planned outside dormitories [11], [12], [13]. The suggested principles of designing temporary accommodation houses have a high enough coefficient of planning sustainability in the conditions of development of the modern Russian megalopolises [14].

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