

Interior designs of medical rooms for disabled people

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Abstract. This article is devoted to the specifics of space planning in medical institutions for disabled people and the impact of these factors on the interior solution. The space-planning solution of such institutions should be easy-to-read, without a complicated plan. Communication zones should not have the function of a waiting area. It is offered to specially organize such zones with the installation of various information and announcement systems. Within the zones of space perception by disabled people, there should be handrails with tactile information, light-signal designations and other fixtures to facilitate the movement of disabled people. It is advisable to relocate disruptive equipment in the form of light switches, different maintenance boards, fire hydrants, and other equipment from this zone, which will result in the requirements for change in a number of regulatory documents. Special equipment should be installed in the lavatories and wards for disabled people. The color solution can be close to the solution of a dwelling unit.

1 Introduction

Increasing importance is attached to the arrangement of the environment of any public building. The correctness of the space planning is more and more actively brought into the consciousness of the public. Numerous sources of information offer a great deal of information about interior design. Information is strongly sought-for, and many Russians are using practical advice for the organization of their own dwellings, while at the same time not remaining indifferent to the spaces of public buildings.

There is an interest in absolutely all public spaces. Public demand for the organization of the environment has considerably increased. This also applies to public health facilities [1-3]. The requirements of citizens as consumers of medical services are one of the factors for change of the environment in medical institutions. Another important factor is the tremendous upgrowth of medical sciences, other industries related to human health and the development of medical technology and hardware, which requires entirely new approaches to architectural and space-planning solutions [4, 5].

In addition, increased emphasis is being placed on the accessibility of any public space for all population groups [6]. The principles of universal design and barrier-free environment

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promote the free movement and development of space by different groups of disabled people [7-9]. Nowadays, it is one of the most crucial tasks in medical institutions.

2 Study materials and methods

The authors carried out an analysis of the current state of the space planning of medical institutions. The demand for qualitative changes in the environment of such institutions has been detected. Notably, disabled people continue to experience difficulties in orientation and movement in these institutions. Changes in the space planning are suggested.

3 Results

Currently, four groups of disabled people are to be taken into account in the planning structure of medical institutions. There are even more persons with reduced mobility. The M1 group includes disabled people who can move independently, but have hearing problems. The M2 group includes visually impaired persons, persons with mental disabilities and elderly people. The M2 group includes disabled people who use additional supports in the form of crutches and other devices. The M4 group includes wheelchair users [5].

As of today, all the techniques that contribute to the independent movement of disabled people are quite well proven. Overseas experience has been taken into account, since foreign specialists had begun to deal with these problems earlier. The means and techniques are unified and standardized within the worldwide requirements. Pictograms, signs, designations and other elements are made as road signs for motorists and pedestrians, and are common for most countries in the world.

Since the share of disabled people and persons with reduced mobility is quite large, and public health facilities are of primary importance to them and they often attend them, the changes in the space-planning and functional solutions are required first of all.

It is necessary to pay attention to communication routes. For example, now the corridors in outpatient clinics are filled with seats and serve as a waiting area near the offices, while the evacuation and communicative qualities of the corridors are significantly reduced, even for ordinary nationals. It is more reasonable to leave them as communication routes, and to add more waiting areas as separate premises in the form of halls and recreations to the structure of medical institutions. It is possible to provide for vertical circulation between these waiting areas. There will be no redundant movement in such areas, they need to be equipped with information systems, other equipment and furniture, which is likely to result in the appreciation of the facility, but will significantly improve communication links.

The majority of disabled people seek medical care on a scheduled basis, therefore the areas of medicine such as traumatology, acute pains and emergency care should be singled out into independent zones, where disabled people could appear only as the patients of this medical care.

In general, the space-planning solution and space layout in medical institutions should be simple and easy-to-read for consumers of medical services and, first and foremost, for patients who are disabled people. Unfortunately, it is difficult to adhere to this principle in a number of facilities for various reasons, but sometimes even state-of-the-art healthcare facilities are designed as brain-teasers where it is very difficult to orient. The outpatient clinic in Pechatniki (Mosproject-4) can serve as an example. The building was built on a completely vacant land lot in a new microdistrict, but the plan is expressly contrived (Fig. 1). The patients are poorly oriented in the building of the outpatient clinic [10].

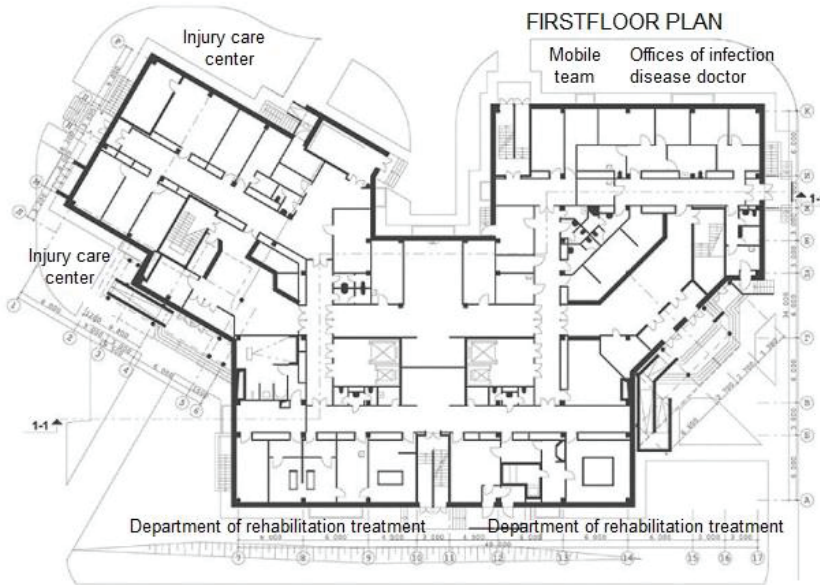


Fig. 1. Plan of the first floor of the outpatient clinic in Pechatniki (Moscow).

The interior solution of the state-of-the-art outpatient clinics and other public health facilities also significantly complicate spatial orientation. Benches and seats along the walls do not allow to install handrails. The walls have a lot of unnecessary stands with information of little interest, tactile paving is absent and there are many details that just prevent from orienting in space.

Obviously, the approach to the interior solutions of public health facilities should have special features. So, for example, the tactile paving on the floor can create obstacles for other groups of disabled people and it is more expedient to have a completely smooth floor. Orientation for visually impaired persons can be arranged by means of handrails along the walls, in which case the handrails can have Braille script and tactile symbols. On the communication routes, one wall with handrails can be singled out, unnecessary disorienting objects can be removed, or the system of their installation can be changed (e.g. the light switches, electric maintenance boards and other equipment).

Finishing materials of the finished floor should be either self-leveling or rolled.

The lavatories for disabled people should have a sufficient number of functional devices: handrails, enclosures and other devices [3]. They should not have sharp corners. The layout of sanitary ware should take into account the specific nature of the movement of wheelchair users (Fig. 2 and Fig. 3).



Fig. 2. Lavatory for disabled people.



Fig. 3. Specific features of equipment in the lavatory for disabled people.

The space planning of ward departments has a tendency towards approaching the space formation according to the principle of a dwelling unit. Therefore, the color scheme of a ward need not differ from that of any room in an apartment. It is possible to provide for a multi-version solution of the ward interiors in one department, both using light colors and in more saturated versions (Fig. 4 and Fig. 5). However, the furniture arrangement should take into account the accessibility for a wheelchair user. The ward should have specific equipment that

helps a disabled person to move from a wheelchair to a bed or other options. The above examples of the interior solution are quite acceptable for M1, 2, 3 groups of disabled people.



Fig. 4. Ward.

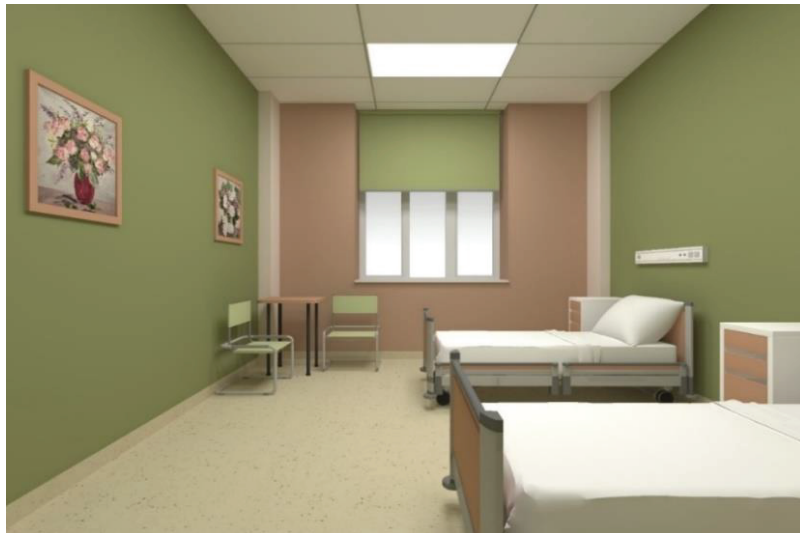


Fig. 5. Ward with a more intense color scheme.

As for the interiors of doctor's offices where the patients are accepted, surgery blocks and manipulation rooms, this group of premises has own medical equipment and any auxiliary facilities for disabled people are likely to be used here in a mobile form, occasionally, if necessary.

4 Discussion of results

Public demand for the improvement of the environment of medical institutions is a topical course of change of such structures. However, there are still situations where the space

planning of these institutions is not accessible for all categories of citizens. The state-of-the-art equipment and devices make it possible to use the space by any categories of people. There is a need for greater introduction of such equipment and the amendment of a number of regulatory documents on the placement of such means in combination with other equipment for the facility life support, which will inevitably result in the specific features of interior solutions.

5 Conclusion

Medical facilities refer to the spaces where the use of various means to assist disabled people reaches a maximum. However, there are peculiarities, for instance, the floor tactile paving in the street and in the building of a medical institution should be used in various ways. The color scheme of interiors, with rare exceptions, can be developed on the basis of general human needs. The key peculiarity is a greater saturation of interior designs with technical means, devices and equipment. These include handrails, entrance ramps, elevating platforms, light-signaling systems and many other equipment to help disabled people and the specific features of the interior design.

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