Trends in the Design of Hospices and Palliative Centers in the Russian Federation

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Abstract. This article examines a brief history of the spread of hospice care, studies the specifics of the architecture of palliative medicine centers and hospices. Attention is paid to the current state of hospices and palliative centers in the world and in Russia. The research results are presented in the form of basic recommendations on the hospice territories design and their improvement, architectural, planning, interior features of hospice design. The schemes of functional relationships in the hospice, variants of space-planning solutions and the design of 1 to 4 place hospital rooms are given. These results can be used in the architectural practice of designing palliative care centers and hospices, as well as in the educational process as methodological recommendations for the design of hospices and palliative care centers. The analysis of the problems of the architectural-planning and urban organization of hospices will allow to improve the structure of such architectural objects, to study their typology, for further development. The involvement of the public in the direction of the development of the current of palliative care, including from the point of view of their architectural and spatial organization, focuses people's attention not only on the entertainment culture, which is now in absolute dominance, but also on human duty and dignity.

1. Introduction
Ancient doctors considered helping the terminally ill an insult to the gods: a person should not doubt the decision of the gods about the death of a patient. It was only with the development of early Christianity that the origins of the hospice movement began to emerge (for example, the opening of a hospice for patients by the Roman matron Fabiola).

The original meaning of the word "hospice" (from Lat. hospes) is "a guest or a stranger, a traveler". This word denoted the attitude of the host to the guest, when he treated him with warmth and care. Later, the place where this happened was also called this way. Another meaning of this word was-benevolence, a warm welcome in your home. Only in the 19th century, when Jeanne Garnier opened a hospice for the care of the dying in Lyon (France, 1842) in memory of her deceased family, the concept of "hospice" began to be applied in the sense of caring for the dying (Figure 1) [1,2]. In the 20th century, the word "hospice" acquired the meaning of "shelter". This is the meaning that was recorded in the great English-Russian dictionary in the 20th century. After that, hospices appeared rarely and accidentally only thanks to the humanity of some individuals. In 1977, an information center was launched in the hospice of St. Christopher (Figure 2), its purpose was to promote the
hospice movement, and the ideology that was to help seriously ill people. This hospice was organized by Cicely Saunders in the UK.

Thus, it was only since the late 1960s that the "hospice movement" was born in Europe and the United States - a palliative care service for patients based on the following principle: "If a patient cannot be cured, it does not mean that he cannot be helped."

Since the beginning of the 1980s, the ideas of the need to develop hospices have been spreading everywhere. Today, the world practice is rich in hospices and palliative care centers with various spatial planning and architectural and artistic principles of their organization (Figure 3a-d).
Now the word "hospice" is firmly in use, but its exact and modern interpretation sometimes eludes understanding. It should be understood that hospices are organized to help only cancer patients, while "palliative care" is help for all seriously ill people. According to researchers [1-4], hospice is, firstly, a philosophy that helps doctors and volunteers to get closer to understanding one of the most difficult issues - life and death, and the struggle for life develops medicine. Secondly, it is a home, a haven for cancer patients and their loved ones.

In 1903, in Russia, Professor L. L. Levshin founded a hospice, where the work of doctors was motivated only by medical duty. This gave an incentive to the development of medical science, and now the modern Moscow Research Oncological Institute named after P. A. Herzen is located in the building of this hospice.

The beginning of palliative care in Russia began to be created in the 1990s. The first institutions were opened only on enthusiasm, because there were no samples whose experience could be adopted, there were no legislative norms and design recommendations.

The first hospice in the Russian Federation in St. Petersburg was opened in 1990 by the efforts of Viktor Zorza (Figure 4a). At the same time, the Russian-British Hospice Charity Society was created in Moscow to provide professional support for the development and distribution of hospices in the Russian Federation. In 1994, the Perm Public Charity organization "Hospice" was established (Figure 4b) [5].

![Figure 4. Architecture of the first palliative care centers in the Russian Federation.](image)

The architectural and spatial organization of these important, but individual objects is characterized by chaotic nature, dependence on the features of the old object in which the hospice was organized and extreme economical and typical solutions for new construction. Palliative medicine centers and hospices have recently been extremely rare objects in the portfolio of Russian architects.

However, in recent years, several boarding houses and hospices have been built in Russia, the customers of which were large charitable foundations, which embody a new humane and meaningful approach to the design of such buildings (Figure 5). Ideas for the development of palliative care centers continue to spread throughout the country. But in order to meet the needs of the population, their number must grow many times. With the increase in life expectancy, the percentage of oncological diseases also increases. Scientists from the Global Burden of Disease Cancer Collaboration found that in the period from 2007 to 2017, there was an increase in cancer diseases by 33%. There are about 70 hospices operating in Russia today, and according to world statistics, there should be about 600 hospices in the Russian Federation to meet the needs of the population [5-9]. At the same time, unfortunately, many interesting architectural projects remain unfulfilled.
a. Children's hospice "House with a lighthouse". (IND Architects)

b. Children's hospice project. (Moscow, Architectural workshop "GRAN") 2013.

c. Izmalkovo Manor (Restoration project of the arch. bureau "Rozhdestvenka" 2015) — the Samarins' noble estate, after restoration and partial reconstruction, will turn into a boarding house for outpatient treatment of children with oncohematological diseases.

d. House of Mercy of the blacksmith Lobov (Porechye-Rybnoye settlement, Rostov region, 2018)

e. Hospice project for adults 4 km from Kazan in Zelenodolsk district

f. The project of reconstruction of the school building for a children's hospice (Kleinewelt Architekten).

**Figure 5.** Architectural projects of modern palliative care centers (hospices) in the Russian Federation.
2. Materials and methods

The materials and methods of this research provide for the search and analysis of foreign and domestic scientific, literary sources and project materials. They also provide for the use of data from sociological surveys and taking into account the influence of medical, sociological aspects, existing legal norms, etc. on the architectural design of hospices.

Despite the existence of individual facilities, the organization of assistance to patients with complex forms of the disease remains one of the most difficult and unresolved problems today in Russia. According to the statistics of the World Health Organization, Russia is at the level when there are separate palliative care centers in the country, it is not introduced into the general system of medicine and healthcare. Palliative care, in the modern sense, remains a relatively new component of healthcare in Russia.

According to experts, in Moscow, palliative care is available only to 1/4 of those in need. The situation is much more difficult in the regions [10]. 90% of cancer patients in Russia receive symptomatic care and die at home. The last months of treatment, which can take years, are accompanied by a painful progression of the disease. All this has a significant negative impact on the psychoemotional background of the patient and his environment. According to research, if there is a person with cancer in the family, up to 10-12 people (relatives, friends) will be involved in this problem. Finding a patient at home carries psychological stress, suicidal thoughts, relatives and relatives are in a state of prolonged psychological trauma (according to researchers, the percentage of mortality of relatives and friends of a patient with cancer increases by 40%) [1,11-14]. This problem is especially acute for industrial cities with a complex environmental situation.

At the current time, a multi-factor all-Russian standardization of this type of medical care is necessary to expand the real availability of palliative services for the population. The existing regulations [15-17] are largely outdated, do not fully reflect the modern models of organization of palliative services, their specifics, the nomenclature of premises and the required parameters, the required equipment, etc. The directive documents do not specify or standardize the work of hospices, the number and form of staff training, etc., that is, there are no complete concepts about the functional responsibilities of hospice staff. The order of the Ministry of Health of the RSFSR dated 01.02.1991 No. 19 "on the organization of nursing homes, hospices and nursing departments of multidisciplinary and specialized hospitals" led to terminological confusion of the concepts "hospice", "palliative center", "nursing home". In this regard, there is a need to see well-organized help centers from an architectural point of view. In the post-industrial era, taking into account the ever-increasing needs and comfort of life, the development of palliative centers stands still. The specifics of such institutions are not taken into account. The initially set characteristics and parameters that are worth upgrading are still used in design.

A suitable environment for the dying is a comfortable place where responsive, professional and positive staff works – this determines a lot for the dying. But we cannot reduce the importance of the architectural living environment of patients, which would be based on the basic philosophical provisions of the hospice concept.

The main architectural, planning and urban planning provisions of hospice design are presented in regulatory documents [15-17], but due to the prescription of the introduction of this document, in our opinion, some provisions and requirements for the design of hospices need to be updated.

3. Results

The results of the study are presented in the form of recommendations for the design of hospice territories, identified by the analysis of regulatory documents, scientific articles, guidelines for the organization of palliative services, etc. according to their landscaping, architectural, planning and interior features.
3.1. Design of the hospice territory

The preferred location of the hospice building is assumed to be in green areas in the city environment, or in the suburbs, since the natural environment is a significant factor of physical and psychological comfort for patients, their relatives and staff.

Optimal conditions for hospice placement (as separate institutions or in multi-specialty hospitals) do not find unanimity among researchers [10]. The analysis of the data allows us to identify three acceptable options for hospice placement, which have their positive and negative sides:

1) **On a separate territory** - in new buildings (implementation is possible if there is free space in the locality) or in reconstructed and adapted for hospice purposes. The privacy of the territory, the feeling of a home environment creates the most comfortable psychological state for patients with this accommodation option.

2) **In the form of a detached building on the territory of medical institutions** - in new buildings (implementation is possible if there is free space at the medical institution) or in reconstructed and adapted for the purposes of hospice. With this accommodation option, quick contact with the staff of the medical center is provided and a psychological state of average comfort is created for patients.

3) **As part of a medical institution** - it is provided by the adaptation of part of the premises of the medical center for the purposes of palliative care. With this placement option, quick contact with the staff of the medical center is provided. The level of psychological comfort is lowered, because patients have been living in a hospital environment for the last few days.

On the land plots of hospices, access roads should be provided to the main entrance, exit service, food preparation service, a room for storing corpses and other services and premises requiring transport support, with limited visual access from the windows of the hospice hospital wards.

The proximity of the hospice to the existing religious object is a positive measure, since, as practice shows, the vast majority of volunteers are formed from among the parishioners of churches, ministers of monasteries, etc.

3.2. Requirements for the improvement of hospice territories

The territory of hospices should be landscaped. When designing a garden and park zone of hospice territories, one should strive to achieve the effect of a natural picturesque landscape. It should be provided by means of landscape architecture for the device of convenient recreation places and walking routes for patients using a variety of small architectural forms: gazebos, fountains, small reservoirs, lamps, benches, etc.

The projects should take into account the high-strength coating of pedestrian zones for patients and relatives, the corresponding marking for MGN throughout the territory. It is important that the hospice territory has at least two detours, preferably three. They should unite all areas with entrances to the hospice, but at the same time do not intersect with the area of patients and the area for employees, specialized equipment and field teams.

The main entrance must be provided through the checkpoint and provide access to the reception rooms and the main entrance. The second entrance should ensure the actions of brigades and special services vehicles, and also serve to load the food store. The movement of emergency vehicles or for economic purposes should be limited by the planning solution. The entire perimeter should be provided with a fence of the site from $h=2.5$ m with sliding gates and a barrier at the entrances.

Elements of landscaping should allow you to conveniently and aesthetically receive psychological relief. If there is a children's department in the walking areas for the children's block, playgrounds with specialized equipment available to the MGN should be provided. Walking areas for staff should be provided separately.

3.3. Architectural and planning features of hospice design

Low-rise buildings of hospices are one of the most fundamental conditions for their design, since high-rise buildings, even if there are elevators, are a stress and overstrain factor for physically weakened
people. At the same time, a small range of premises and their parameters allows us to initially design them as a low-rise building, which allows us to solve the problem of humanizing the architectural environment without any difficulties, because a small object gives an unhindered opportunity for hospice patients to interact with nature.

The capacity of a hospice is determined by its bed capacity and is determined by the regional health authority. The study and analysis of data on the issue of the hospice functional structure allowed us to propose the following enlarged recommendation structure for the hospice (Figure 6):

- Lobby;
- Reception;
- Recreation;
- Premises for cooking, dining room;
- Hospital (adult and / or children's department);
- Medical department;
- Administrative department;
- Household department;
- Cultural and educational department;
- Field service;
- Funeral rooms.

After analyzing the foreign and domestic experience of the formation of hospices, we can distinguish three options:

- A hospice, in which the wards are placed in separate volumes and are detached houses (Figure 7). The advantage of this location is that a positive psychological atmosphere will be built for patients—a densely landscaped area, cozy courtyards between the buildings. Patients will feel at home. The disadvantages include the location on a larger territory; the increase in the cost of construction and the maintenance of energy consumption.

- A hospice in which the wards are connected to the main medical building by corridors (Figure 8). Departments with wards can form non-closed courtyards. This option is more convenient for employees and design staff. Patients from the psychological side will communicate more with each other, which will also have a positive effect on them.

- A hospice in which there is a closed isolated courtyard (Figure 9). Studying the design experience, this option is most preferable, since patients have the opportunity to be in a somewhat isolated calm environment. On the external façade, which will face the street, it is preferable to place corridors, office premises, medical offices. In this case, the windows of the chambers will face the courtyard.

![Figure 6](image.png)

**Figure 6.** Scheme of the functional relationship of modules in a hospice.

![Figure 7](image.png)

**Figure 7.** A space-planning solution of the hospice with the removal of wards in separate volumes (Arch. Klochko A. R., Papilova O. S.).
Figure 8. A space-planning solution of the hospice in which the wards are connected to the main medical building by corridors (Arch. Klochko A. R., Papilova O. S.).

Figure 9. A space-planning solution of a hospice with a closed courtyard (Arch. Klochko A. R., Papilova O. S.).

One of the important trends in the modern design of hospices can be attributed to the departure from the appearance of a hospital ward or an administrative building. Modern hospices can resemble small country houses, cozy villas with a courtyard that will remind you of a country village, or just objects that cause pleasant and positive emotions.

The atmosphere of comfort at home has a positive impact on hospice patients and their loved ones, and can be created by the following basic architectural and planning measures:

- It is desirable to give preference to wards with 1-2 (in rare cases - 4) beds, since the internal environment of the hospice should contribute to the desire of patients for communication and isolation. At the same time, the area of the ward for 1 bed should be taken at least 14 sq. m, the area of the wards for 2 beds or more should be taken at least 10 sq. m per 1 bed (Figure 10)
- it is required to organize separate entrances for all elements (zones) of the building. At the same time, all openings in the rooms where patients will be located must be taken with a width of at least 1.1 m;
- it is necessary to have open areas for unhindered contact with the environment (verandas, terraces, green walking areas);
- it is necessary to ensure the possibility of access to patients of their relatives and premises for their communication, as well as areas for family members to stay, including at night;
- it is necessary to have a multifunctional hall for holding entertainment events, master classes, conferences, meetings, lectures, etc.;
- it is desirable to have paintings, sculptures, miniatures in the interior that create an atmosphere of home comfort, etc.

The approximate composition and area of the hospice premises with a hospital for 30 beds is given in MGSN 4.01-94.
3.4. Architectural and interior features of hospice design

The main task in designing a hospice is to create favorable conditions for a long stay of patients. All types of care should be aimed at providing the necessary care, minimizing pain and fear of death,
while preserving the patient's consciousness and intellectual abilities as much as possible. It is no secret that architecture has a significant impact on a person, on his formation. Aesthetics really plays a big role in the psychology of personality. Thus, when designing the hospice space, it is extremely important to remember about the psychological needs of a person regarding the environment, about the construction goals and the very specifics of the projected building. A hospice should evoke a sense of calm, peace. This is a place where people can feel at home. The architectural appearance of the hospice building should not resemble a standard hospital or administrative building. The human appearance of a hospice is a kind of country house, which, with its archetype, would rather resemble an individual housing or a holiday home, rather than a medical institution for the terminally ill.

It is important to correctly draw up a functional zoning plan and appropriately treat such an important point as the color scheme of interiors, the use of natural materials, the visual component of the facade solution. The feeling of home is created by a certain range of colors and materials. For example, such a combination of materials as wood, decorative stone, glass, tiles can help in achieving the desired sensation and perception. And a certain architectural expressiveness of the facades can be given by such elements as wooden colorful slats, or a system of slats, voluminous decorative tiles on the facades. The missing dynamics can be given to the shape of the building by parametric systems made of wood, and in combination with glazing strips that partially repeat the entire shape of the building, you can get the desired result.

4. Conclusion
Palliative care is an urgent humanitarian need worldwide for cancer patients. The current level of development of the Russian economy is able and should ensure high-quality design, construction and operation of hospices in each region. Palliative care should be integrated into the existing medical care system and harmonized with existing cultural and socio-economic conditions and traditions. The involvement of the public in the direction of the development of the current of palliative care, including from the point of view of their architectural, spatial and urban planning organization, focuses people's attention not only on the currently dominant entertainment culture, but also on human duty and dignity, on the understanding of life and death that awaits everyone. We must not forget that good health does not always accompany a decent life of a person and is determined by his preferences and behavior. But a decent life is necessarily based on the humanity of society.

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