

QUICK RELEASE INFECTIOUS MEDICAL COVID-19 TREATMENT CENTERS

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In connection with the coronavirus pandemics, the need for the construction of modular hospitals for the treatment of patients with COVID-19 has increased. One of the best solutions for this are modular pre-fabricated hospitals, modular medical facilities, polyclinics, and coronavirus medical centers. The robust designs are designed for intensive use, while the thoughtful ergonomic design ensures comfort and hygiene. These high-tech pre-fabricated buildings are a worthy alternative to concrete buildings at a significantly lower cost and a short construction time.

All prefabricated prefabricated hospitals were manufactured in accordance with European standards based on WHO requirements.

Advantages of prefabricated hospital building:

- Fast production and installation in accordance with European standards. Thanks to the modular system, prefabricated hospital buildings are quick and easy to assemble. This construction method is especially preferred during pandemics such as COVID-19.
- Specially designed for healthcare facilities. All interior fittings and decorations are designed according to the bed capacity and equipment used during diagnosis and treatment.
- Manufacturing using a high-tech quality control system. Since healthcare facilities must be isolated from water and heat, our prefabricated hospitals have been specially designed to perform best in bad weather conditions.
- Economic solutions. Modular and prefabricated materials used in buildings are generally more economical than standard residential building materials. For this reason, pre-fabricated infectious diseases hospitals and medical centers are more cost effective.

On the basis of this and following the example of their Chinese colleagues, the authorities of the Russian Federation announced their readiness to build pre-fabricated infectious diseases hospitals throughout the country. So, the Ministry of Defense of the Russian Federation initially laid the foundation for 8 military infectious diseases hospitals in different cities of Russia, and the first such infectious diseases hospital was commissioned on a turnkey basis and put into operation within 57 days from the start of construction. Currently, in the military districts of this department, including in Moscow, 16 such infectious diseases hospitals are already actively functioning.

A similar and larger new clinical coronavirus center has appeared in New Moscow, in the village. Voronovskoe. This is a unique infectious diseases clinical hospital, which has no analogues in the world, was put into operation in just 1 month from the date of preparation of the construction site until the day the facility was commissioned on a turnkey basis (Fig. 1). It occupies a territorial area of about 40 hectares, on which 30 one-story medical and diagnostic buildings with a zonal and airlock security system, 14 two-story dormitory buildings and a separate helipad for medical aviation have been erected. The total operational area of the premises was more than 80,000 m² (Fig. 2). The clinical complex was developed in compliance with all necessary safety measures and modern international requirements and standards. About 11,000 workers and engineers and more than 1,500 pieces of equipment worked on the construction site every day and around the clock.





Figure: 1 - Appearance of the territory and parts of the main buildings of the pre-fabricated infectious diseases hospital.

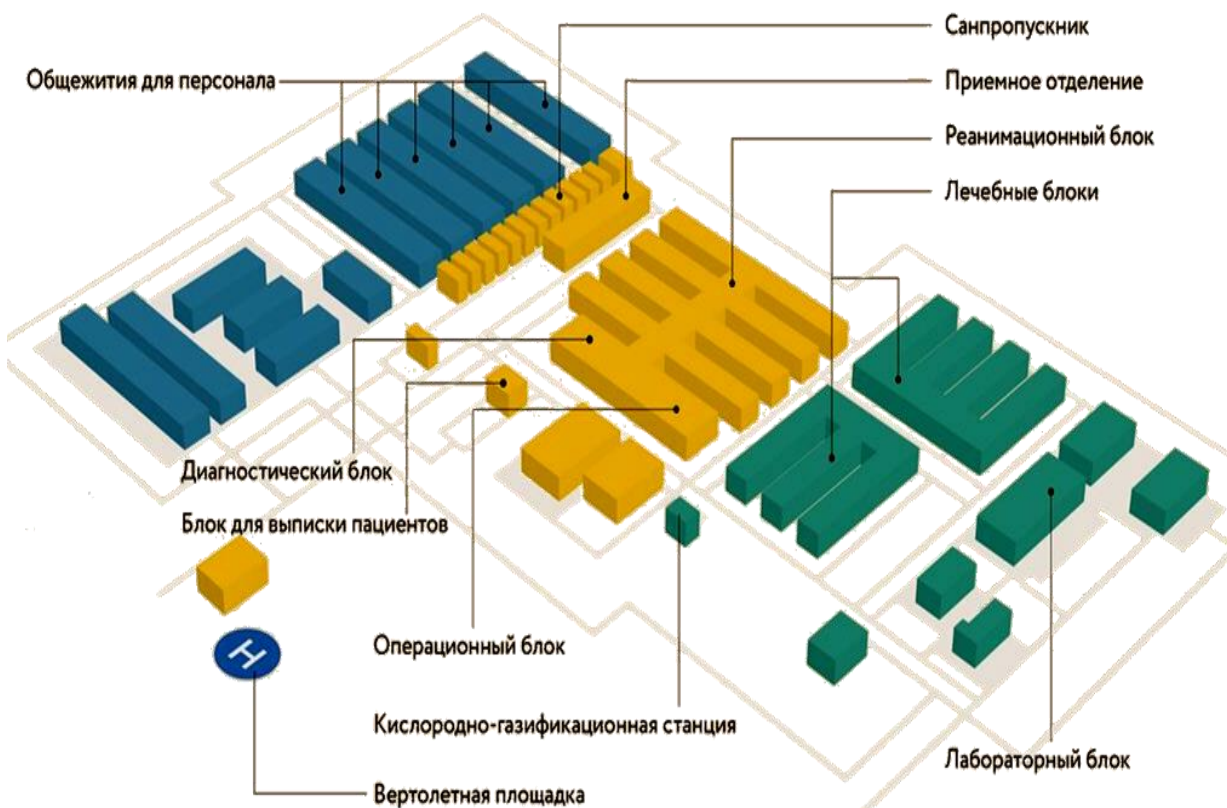


Figure: 2 - Layout of structural divisions of the new infectious diseases hospital.

The center is designed for 800 beds, and if necessary, the capacity can be increased to 900 beds, which within 24 hours are completely converted into intensive care beds with ward medical posts. The clinical center employs more than 1,000 medical specialists, including doctors, nurses and nurses.

Doctors have the opportunity to carry out comprehensive diagnostics and treatment of patients as in an inpatient specialized medical complex. For this, more than 100,000 units of modern medical and auxiliary equipment, furniture and inventory, as well as sets of personal protective equipment for personnel were purchased. Workplaces are computerized and equipped with systems and means of digital radio and telemedicine communications. The system for maintaining working documentation by the medical staff has been automated.

All beds in the wards are equipped so that it is possible to supply medical gases to them and additionally install the necessary individual medical and diagnostic equipment. This is very important for prompt assistance to patients with coronavirus infection who develop pulmonary insufficiency or have other serious complications. Oxygen supply to the chambers is provided by its own oxygen-gasification station installed on the territory of the complex.

The air supply systems for medical enclosures are completely sealed. The air is decontaminated at the entrance and exit in each room.

The entire volume of necessary clinical and instrumental studies is carried out in fully equipped specialized diagnostic rooms in a separate building, where surgical departments with operating and dressing blocks are also deployed. Clinical and laboratory research is carried out in a separate building, where its own high-tech modern laboratory is deployed. Its capacity allows to carry out more than 10 thousand studies per day.

The buildings also provide separate gateways for patients and staff, which greatly reduces the likelihood of possible spread of infection.

A comfortable hostel for 1,300 people has been built for the staff on the territory of the complex, which are accommodated in single and double rooms. There is a sports ground next to the complex.

A security perimeter has been established around the hospital. Inbound and outbound vehicles undergo special sanitization. Sewage drains are discharged into autonomous treatment facilities, also equipped with disinfection systems.

The entire territory and objects on it are equipped with automatic fire and security systems, as well as round-the-clock dynamic video surveillance.

Despite the fact that the construction of a new infectious medical center in the form of this hospital is financially considered very costly due to pre-fabricated construction technologies, nevertheless this approach is the most acceptable and economically viable.

Thus, the most cost-effective and most effective method of deploying an infectious medical institution in modern pandemic conditions is the construction of pre-fabricated buildings on a separate land area in the form of an autonomous medical and preventive institution using new construction technologies and equipping its structural units with new high-quality medical and auxiliary equipment and property. This is a guarantee of uninterrupted and high-quality medical care for the population in any difficult situation in the economy and society.