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Architecture of Saint Petersburg hospitals: from petrovsky baroque on to hi-tech. Part VII. Constructivism

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ABSTRACT. The article continues the research project on hospital architecture in Saint Petersburg from a historical perspective: from baroque to hi-tech. The seventh part of the series is devoted to such architectural style as constructivism, the main task of which becomes the combination of laconism and rationality necessary for the full functioning of medical institutions. Soviet architects of 1920–1930 faced the task of designing new buildings that met the modern requirements of medicine and did not resemble those that existed before, while rejecting lavish and abundant decoration in favor of technology. The architecture of this period is characterized by active reformation of space, playing with geometric forms, external simplicity and the primacy of the functional content of the building over its form. In the construction of medical institutions in the Constructivist style, metal structures are actively used, and the main material is concrete, extensive glazing of facades. The stylistic features of buildings are considered on the examples of the reconstruction of the Aleksandrovsky contagious barrack hospital, which later was named S.P. Botkin Clinical Infectious Diseases Hospital, as well as the reconstruction of F.F. Erisman Hospital, the construction of preventoriums in the Moskovsko-Narvsky (Kirovsky) and Volodarsky (Nevsky) districts, and Teriyok Military Hospital. The application of constructivism in hospital architecture made it possible to dynamically renovate a number of medical facilities, which had a positive impact on the efficiency of healthcare in this period of time.

KEYWORDS: Saint Petersburg, hospital architecture, constructivism, Clinical Infectious Diseases Hospital named after S.P. Botkin, preventorium of Moskovsko-Narvsky (Kirovsky) district, preventorium “Textilshchitsa”

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Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть VII. Конструктивизм

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РЕЗЮМЕ. Статья продолжает исследовательский проект о больничной архитектуре Санкт-Петербурга в историческом ракурсе: от барокко к хай-теку. Седьмая часть цикла посвящена такому архитектурному стилю, как конструктивизм, основной задачей которого становится сочетание лаконичности и рациональности, необходимой для полноценного функционирования медицинских учреждений. Перед советскими архитекторами 1920–1930-х годов стояла задача проектирования новых, отвечающих современным требованиям медицины и не похожих на существовавшие ранее зданий при отказе от пышного и обильного декорирования в пользу технологичности. Для архитектуры этого периода характерно смелое реформирование пространства, игра с геометрическими формами, внешняя простота и примат функционального содержания здания над его формой. В строительстве медицинских учреждений в стиле конструктивизма начинают активно применять металлические конструкции, а в качестве основного материала — бетон, используется обширное остекленение фасадов. Стилистические особенности зданий рассмотрены на примерах перестройки Александровской заразной барачной больницы, получившей впоследствии название Клинической инфекционной больницы имени С.П. Боткина, а также реконструкции больницы им. Ф.Ф. Эрисмана, строительства профилакториев Московско-Нарвского (Кировского) и Володарского (Невского) районов, Терийокского военного госпиталя. Применение конструктивизма в больничной архитектуре позволило достаточно динамично обновить ряд медицинских сооружений, что положительно сказалось на эффективности здравоохранения в данный период.

КЛЮЧЕВЫЕ СЛОВА: Санкт-Петербург, больничная архитектура, конструктивизм, Клиническая инфекционная больница имени С.П. Боткина, профилакторий Московско-Нарвского (Кировского) района, профилакторий «Текстильщица»

Within the avant-garde movement of the first half of the XX century, a new artistic direction emerged — Constructivism[1]. The Soviet government's "grandiose plans" (gromad'ye planov, a phrase popularized by Mayakovsky) aligned perfectly with the innovative architectural principles of Constructivism. By the 1920s–1930s, this style had become dominant in urban development across the USSR. Soviet architects were tasked with designing buildings unlike anything that had come before — structures that served the needs of the proletariat, reshaped daily life, and redefined leisure. Cities saw the rise of experimental communal housing, workers' clubs, cultural centers, factory-kitchens, public baths, sanatoriums, and hospitals. Constructivist architecture fused form, function, and ideology, while the industrial and technological progress of the communist state gave birth to a distinctly Soviet aesthetic.

Today, we can easily identify these buildings by their simple geometric forms and functional designs. Characteristic features of Constructivism include ribbon windows (extensive facade glazing)[2], support pillars, absence of ornamentation, technological efficiency, practicality, and construction rationalism. The construction technologies of this period made concrete, glass, and metal the primary building materials. Constructivist architects rejected decorative elements and bright colors, instead using glazing and rough textures as decorative techniques. The predominant color palette consisted of white, gray, and light beige [7, 8]. As a new artistic movement, Constructivism promoted a vision of a new world and its new citizens.

The young Soviet state, following the Civil War, faced a complex set of challenges to address. One of the most pressing was combating infectious diseases. The existing network of medical facilities proved inadequate. By the mid-1920s, it became apparent that many older hospitals required either major renovations or complete reconstruction. Additionally, bed capacity needed expansion, particularly given the persistent threat of epidemic outbreaks.

In the 1880s, funded by the Society of Russian Physicians, an infectious diseases barrack hospital was built. Initially named Alexandrovskaya, it was later renamed after S.P. Botkin — its founding advocate (3 Mirgorodskaya Street). This hospital became Leningrad's sole specialized infectious diseases facility during the Soviet era. In pre-revolutionary times, its 700 beds remained constantly overcrowded. Workers' districts in imperial Petrograd were regularly devastated by epidemics of typhus, cholera, and other infectious diseases.

The hospital was situated near a horse market, prison, Cossack barracks, and railway station, occupying the Alexander Square territory — a location that, nevertheless, did not adversely affect its layout. Forty single-story wooden barracks featured stove heating and demonstrated rationally planned, well-considered placement across the grounds. However, after fifty years of service, the treatment pavilions had deteriorated, becoming unfit for purpose and, most critically, obsolete by contemporary standards. The new reality demanded a 1,000-bed hospital designed to treat patients with various infectious diseases. During epidemics, this central municipal infectious disease hospital needed capacity for rapid conversion to combat whichever infection became predominant.

The initiative to construct this urgently needed 1920s clinic came from the hospital's chief physician and leading infectious disease specialist, Professor Gleb Alexandrovich Ivashentsev (1883–1933). The new facility was to occupy the same site through gradual reconstruction of existing structures. Several additions from later phases remained in use, including two single-story stone pavilions with 25 beds each. Construction costs were significantly reduced by repurposing functional sewer and water lines, along with well-equipped biological wastewater treatment buildings, a laundry facility, and disinfection station. Crucially, the existing hospital had to maintain full operations throughout construction, with new buildings being commissioned in phases [9].

In 1926, the Provincial Health Department commissioned the Leningrad Society of Architect-Artists to organize an open architectural competition for a 1,000-bed infectious disease hospital design. The competition was won by L.V. Rudnev's project (Fig. 1), but medical professionals showed greater interest in the alternative proposal by D.L. Krichevsky (1894–1942), G.A. Simonov (1893–1974), and A.I. Gegello

[1] This article continues our series on St. Petersburg hospital architecture, previously published in Medicine and Healthcare Organization [1–6].

[2] Ribbon windows — a signature feature of Constructivism, where adjacent window panes abut with minimal dividing frames, forming uninterrupted horizontal bands across facades.

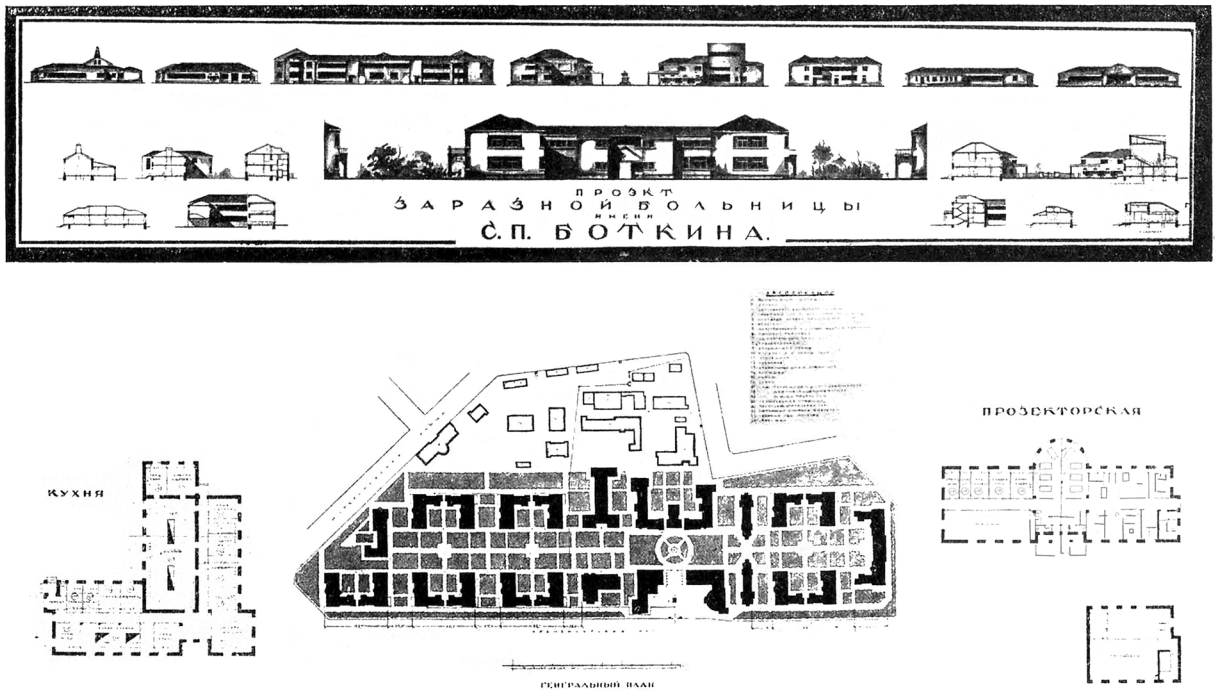

Fig. 1. L.V. Rudnev. Competitive project of Botkin Hospital in Leningrad. First prize. 1926 [10]

Рис. 1. Л.В. Руднев. Конкурсный проект Боткинской больницы в Ленинграде. I премия. 1926 г. [10]

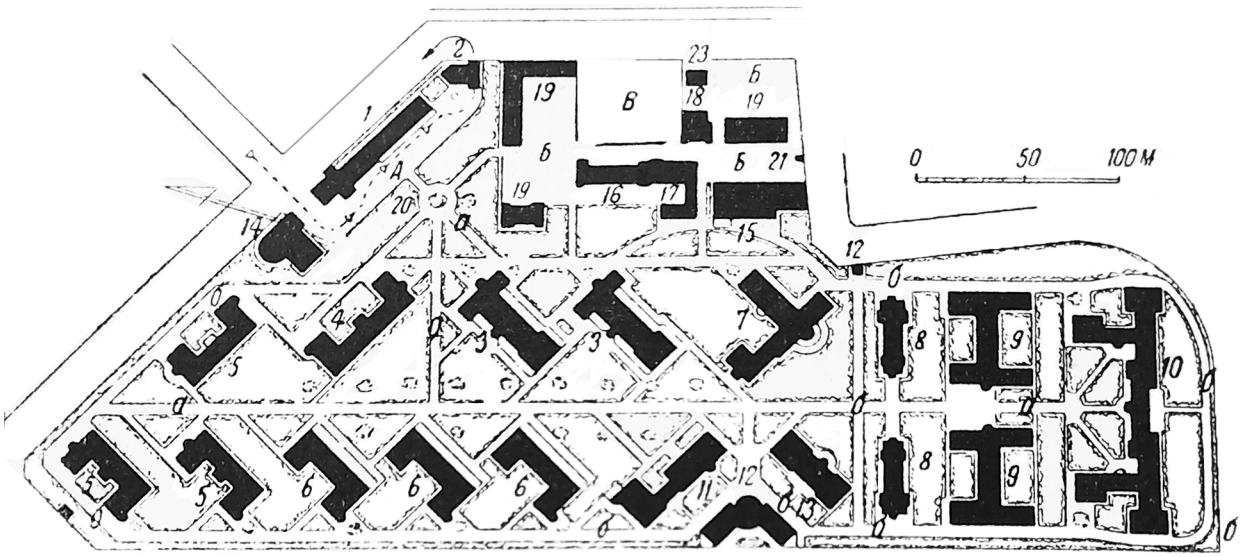

Fig. 2. The project of the hospital named after S.P. Botkin. General plan [11]

Рис. 2. Проект больницы им. С.П. Боткина. Генеральный план [11]

(1891–1965). Ultimately, the development of the Botkin Hospital project was assigned to Alexander Ivanovich Gegello.

The construction commission was headed by Professor G.A. Ivashentsev, the hospital's chief physician. In addition to architects, the commission included representatives from the Provincial Health Department, deputy chief physician N.G. Kotov, sanitary doctor A.I. Shtreys, and consultant specialists from various medical fields. The design team studied literature and modern hospital buildings. A.I. Gegello traveled to Moscow, while G.A. Ivashentsev spent two months examining the layout, equipment, interior finishes, and operational systems of hospitals in Germany. The commission's work culminated

Fig. 3. Infectious Diseases Hospital named after S.P. Botkin. Administrative building and emergency room. Southern facade [12]

Рис. 3. Инфекционная больница им. С.П. Боткина. Административный корпус и приемный покой. Южный фасад [12]

in a pavilion-style hospital design. Drawbacks included technically and logistically complex maintenance, expanded utility infrastructure requirements, and increased operational costs. However, its undeniable advantage lay in the pavilion-type design's capacity to replace aging facilities without interrupting clinical operations, even temporarily, during construction.

After evaluating several master plan options, the commission arrived at a final solution that optimally balanced medical, economic, and temporal factors[1] (Fig. 2).

Treatment of airborne infections was planned in six U-shaped pavilions (45×25 m), each housing 50 beds. The complex included three pavilions for adult patients (150 beds total) and three for pediatric cases of the most prevalent infections — diphtheria, scarlet fever, and measles (150 beds). Ward orientation differed by building: southwest-facing in one pavilion, southeast-facing in the remaining five. Both the triage unit and T-shaped surgical pavilion also faced southwest. Two isolation pavilions of identical T-shape featured northwest- and southeast-facing wards. The angled placement along Kremenchugskaya Street preserved three key internal thoroughfares of the historic hospital.

The functional advantages of this master plan proved substantial. The hospital wards were optimally oriented, with distances between buildings increased to 60–80 meters. Pavilion windows faced newly created open spaces and green zones. The design achieved complete separation of "clean" and "dirty" circulation routes across the hospital grounds. It enabled logical grouping of all hospital buildings by function and simplified both demolition of old pavilions and construction of new ones.

The guarded entrance gate and perimeter fencing prevented unauthorized access to the main hospital grounds while separating the courtyard and ancillary buildings from patient care areas. This secured zone contained a vehicle disinfection pavilion, administration building, admission ward (Fig. 3), educational building, laboratories, and student lecture halls. From the street, the courtyard remained freely accessible to patients and their relatives requiring medical documentation, visitors to the hospital administration and offices, off-duty medical staff, and students during theoretical and practical training sessions. The design also achieved isolation of the service buildings cluster, including the central kitchen facility.

Adjacent to the admission ward were triage departments: isolation units for airborne infections

[1] The finalized design incorporated the hospital's operational needs by positioning the main entrance on Mirgorodskaya Street, aligned with Zolotonoshskaya Street's superior road infrastructure (the area's best at the time), ensuring direct access from Nevsky Prospekt.

comprising 50 isolation cubicles and two standard 25-bed wards, while the non-airborne infection unit had 50 beds. The central area housed two 50-bed surgical pavilion wards alongside clinical laboratories, a pharmacy, radiology, and phototherapy units. Each occupying dedicated spaces, these buildings strategically blocked views of the autopsy suite and morgue from treatment pavilions. New enlarged pavilions for non-airborne infections were added — two with 100-bed capacity each, and one designed for 200 patients.

The planning also had drawbacks related to the need to maintain full hospital operations during construction. As a result, the triage pavilion for non-airborne infections was forced to be located at a distance from its designated group.

Contrary to the intended construction sequence, the autopsy suite and combined laboratory-pharmacy building were completed first. The original morgue was structurally unsound due to its advanced age and no longer met contemporary autopsy facility standards. Relocating the pharmacy and laboratory freed up the older but still serviceable barracks for conversion into patient care units.

Given its specialized function, the autopsy suite required a strategic location within the hospital complex: centrally positioned relative to treatment pavilions yet concealed from patient view[1]. The laboratory, pharmacy, radiology, and hydrotherapy pavilions formed a triangular plot where the autopsy facility was embedded, its distinctive design visible in Figure 4. Architects achieved a compact structure with maximized usable area while significantly reducing construction costs — a critical consideration for the period. The building's circular central core, which housed primary functional spaces, featured expansive glazing that progressively increased in height from basement to second-floor windows, culminating in a minimalist cornice with polochka-style detailing[2] (Fig. 5). Participating physicians insisted on higher windows to improve natural lighting. The second-floor dissection hall (8 m ceiling) featured two rotating autopsy tables positioned for optimal north-facing daylight during procedures (Fig. 6). A compact mobile metal amphitheater accommodated medical students within this space.

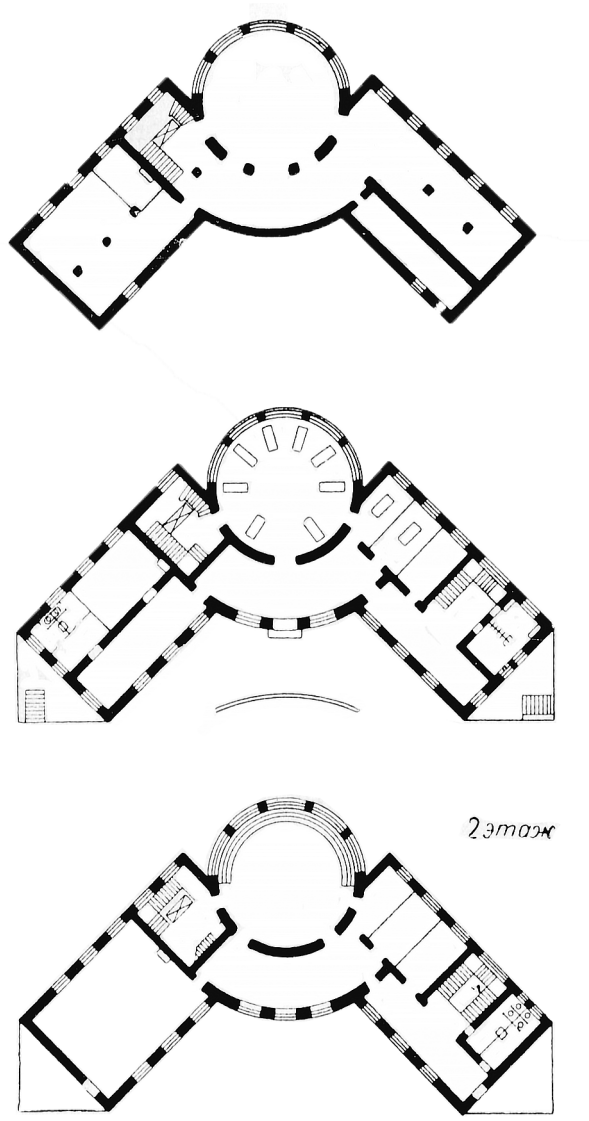

Fig. 4. Floor plans to the technical project of the prosector's office building [13]

Рис. 4. Поэтажные планы к техническому проекту здания прозекторской [13]

Rectangular wings extended from the circular central section on both sides (Fig. 7). To align the building with Kremenchuk Street, two triangular porch-terraces with balconies above were added. One porch provided access from the street for the deceased's relatives, while the other allowed hospital staff and students attending autopsies to enter from the hospital

[1] Given the hospital's specialization in infectious diseases, additional protocols were enforced: deceased patients were transported to the autopsy suite via an internal service road, completely segregated from "clean circulation" routes. Bereaved family access was strictly limited to an exterior entrance. These infection control measures necessitated the autopsy facility's peripheral placement at the hospital boundary.

[2] Polochka (from Russian polochka, lit. "shelf") — a narrow rectangular-profile architectural ledge.

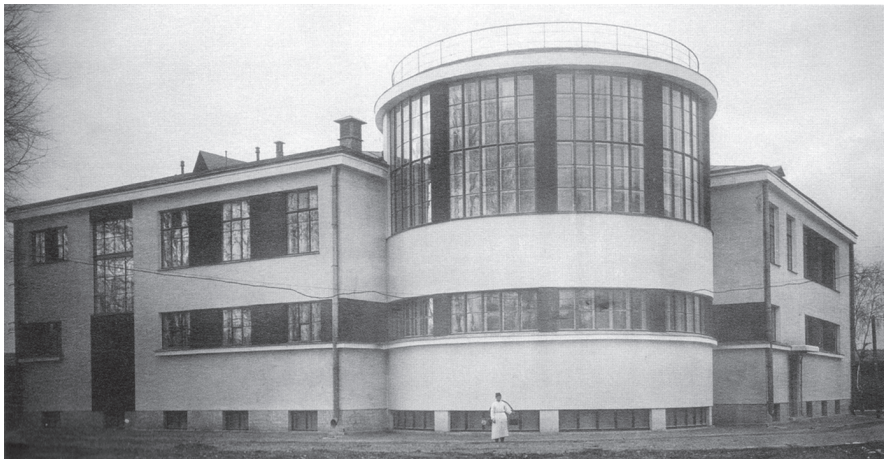

Fig. 5. The building of the prosector's office from the side of the hospital territory [12]

Рис. 5. Здание прозекторской со стороны больничной территории [12]

Fig. 6. Sectional prosector's room [14]

Рис. 6. Секционная прозекторской [14]

Fig. 7. The building of the prosector's office from the side of Mirgorodskaya Street [12]

Рис. 7. Здание прозекторской со стороны Миргородской улицы [12]

grounds. The left terrace served as an additional waiting area for funeral attendees, while the right terrace and balcony provided a rest space for staff and students. The second balcony remained unused but provided decorative symmetry to the building.

The autopsy building's facades were executed with the characteristic simplicity and minimalism of Constructivism, a design approach subsequently replicated in the hospital's later structures. The smooth, light-colored walls contrasted with the coarse texture and darker hue of the inter-window piers. This treatment created an optical effect where, under specific lighting conditions, the vertical mullions visually merged with the windows, producing an illusion of continuous glazing. Simultaneously, this design emphasized the building's horizontal elongation.

The economic conditions and construction capabilities of that period determined the structural design of all new hospital buildings. The foundations used rubble masonry, the plinths employed Putilov stone (a durable limestone from St. Petersburg quarries), walls were brick-built, beams were metal, floors were reinforced concrete, staircases had iron stringers with steps made of Putilov slab. More complex reinforced concrete structures were unfeasible due to cement and iron shortages at the time.

The isolation facility was constructed next. To optimize space utilization, buildings were designed as two-story structures, with the airborne infections ward placed on the second floor. The isolation unit required multiple external entrances and was therefore situated on the ground floor. The second floor was completely segregated from the first and featured an independent layout.

The ground floor incorporated dedicated external entrances with airlock vestibules to manage patient admissions and discharges for each isolation cubicle (Fig. 8). Additionally, the staff isolation cubicle required access from the ward's central corridor and a dedicated sanitation unit. This layout prevented patients from accessing any areas beyond their designated isolation cubicles during treatment. Such design permitted housing patients with undiagnosed conditions or rare infections.

The wards accommodated one, two, or four beds (Fig. 9). Designing such wards demanded particular attention from architects. Isolation cubicle wards enhance hospital infection control but require complete sanitary-technical installations and greater floor area. These units also necessitate increased staffing levels. First introduced in 1908, "Meltzer isolators"[1] gained approval from infectious disease specialists yet saw limited adoption in hospital construction. Subsequently, the rationale for isolation facilities was confirmed, and isolation cubicle ward design underwent refinements. Practice demonstrated that the higher construction and operational costs per cubicle bed were offset by reduced hospital-acquired infections and shorter average patient recovery times.

Fig. 8. Staff airlock for a single-bed box ward. View from the central corridor of the pavilion [12]

Рис. 8. Шлюз для персонала при однокоечной палате-боксе. Вид из центрального коридора павильона [12]

[1] Ernest Fedorovich Meltzer (1868–1922) — Russian architect, military engineer, and associate professor at the Nikolaev Engineering Academy (from the 1900s). Author of seminal works on hospital construction: Meltzer E.F. Pavilions for Contagious Hospitals. St. Petersburg: Khudozhestvennaya Pechat; 1906. (In Russian); Meltzer E.F. The Role of Hospital Building Types in Combating Infectious Diseases / preface by Prof. D.A. Sokolov. St. Petersburg: Tipografiya I.V. Leont'eva; 1909. (In Russian).

Fig. 9. Infectious disease hospital named after S.P. Botkin. Isolator-box (isolation ward) of volatile infections for three people. View from the central corridor of the pavilion [12]

Рис. 9. Инфекционная больница им. С.П. Боткина. Изолятор-бокс (изоляционная палата) летучих инфекций на трех человек. Вид из центрального коридора павильона [12]

A.I. Gegello, when designing the isolation facility, went beyond theoretical study by personally inspecting and evaluating various isolation unit types. He conducted surveys and measurements of isolation cubicles at Moscow's Morozov and Filatov Children's Hospitals, as well as Leningrad's (now St. Petersburg) F.F. Erisman Hospital and Railway Hospital. His research included analysis of architectural plans and descriptions of isolation wards in Paris, Edinburgh, and Vienna, the design of Alafuzov Hospital in St. Petersburg, and all of E.F. Meltzer's projects. The final design incorporated key features from the isolation cubicles at Erisman Hospital, Filatov Children's Hospital, and Railway Hospital (Fig. 10)[1].

The pavilion was T-shaped in plan (Fig. 11). Its horizontal bar accommodated service areas and staff quarters, while the vertical stem contained isolation cubicles. A central corridor ran through the structure, allowing on-duty staff to observe ward activities through fully glazed partition walls. This glass enclosure simultaneously provided natural lighting for the corridor itself.

Patients accessed the second floor via a dedicated staircase, passing through an admission checkpoint before being assigned to east- and southeast-facing wards. The southern section featured an internal staircase leading to a balcony and providing access to the flat roof. Given the multiple entry points to first-floor isolation cubicles, locating a ground-level walking area for second-floor patients was deemed impractical (Fig. 12). Instead, the architectural design incorporated a rooftop pergola[2] for patient recreation (Fig. 13). When the flat roof later

[1] When establishing minimum, yet functionally viable dimensions for the isolation cubicles, and lacking resources to construct full-scale mockups, the designers prototyped cubicle layouts using improvised materials to refine the spatial planning. For instance, they verified stretcher maneuverability through the airlock, vestibule, and ward doorway, while assessing optimal placement of bathtubs and toilets. The airlock-vestibules required both doors to be opened simultaneously to accommodate clothed patients being transferred to the sanitary unit for mandatory decontamination. Subsequent operational experience confirmed this design caused neither room cooling nor workflow disruptions.

[2] Pergola — a park structure in the form of an arbor or passageway with an open framework draped in climbing greenery.

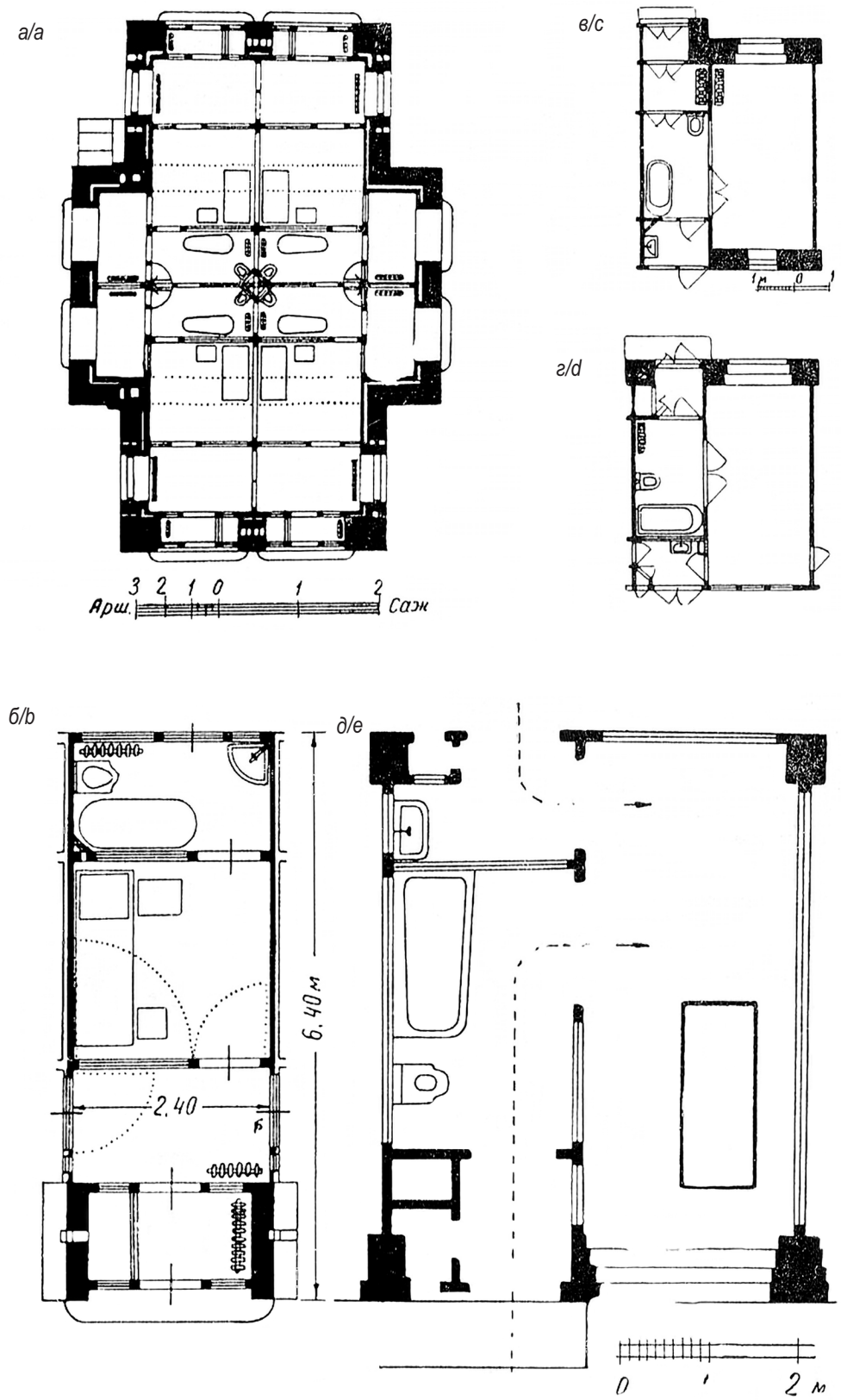

Fig. 10. Types of isolation boxes (isolation wards): *a*, *b* — Meltser's design; *c* — Railway Hospital in Leningrad; *d* — Children's Hospital named after N.F. Filatov in Moscow; *e* — preliminary design of Hospital named after S.P. Botkin [13]

Рис. 10. Типы изоляторов-боксов (изоляционных палат): *а*, *б* — инженера Мельцера; *в* — Железнодорожной больницы в Ленинграде; *г* — детской больницы имени Н.Ф. Филатова в Москве; *д* — эскизного проекта больницы имени С.П. Боткина [13]

Fig. 11.Plan of the ground floor of the isolation pavilion [13]

Рис. 11. План первого этажа изоляционного павильона [13]

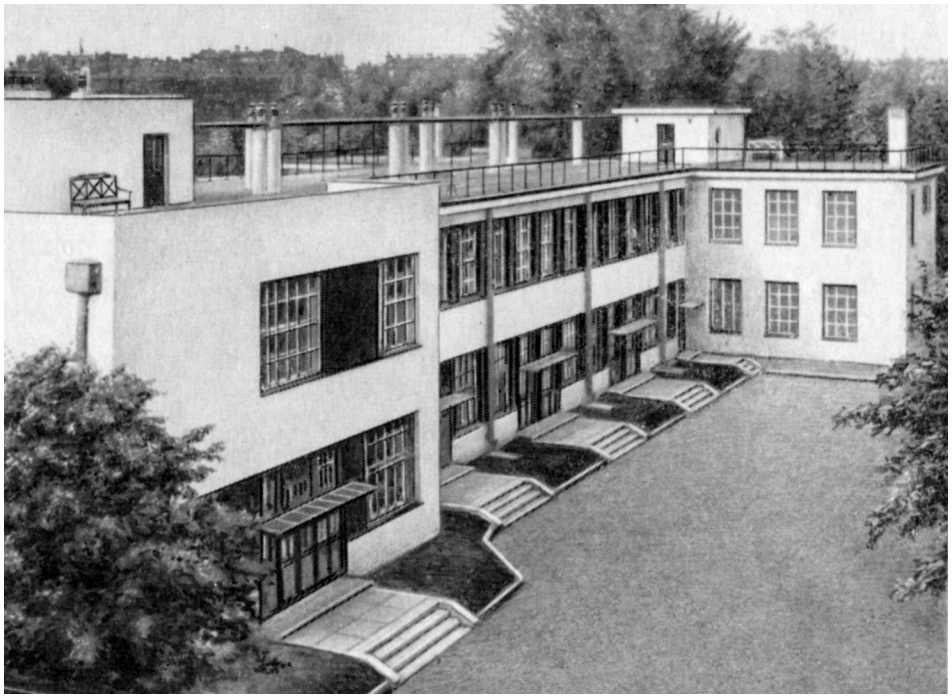

Fig. 12. Infectious diseases hospital named after S.P. Botkin. Isolation pavilion with a flat roof [13]

Рис. 12. Инфекционная больница им. С.П. Боткина. Изоляционный павильон с плоской крышей [13]

developed leaks, it was rebuilt as a pitched iron-clad structure[1].

In 1937, construction began on a second isolation pavilion replicating the first pavilion's layout, as operational experience had demonstrated its efficacy. To reduce costs, the roof design was modified and reinforced concrete structures were replaced with brick masonry.

The hospital construction spanned over a decade, with only half of the planned project completed. As socioeconomic conditions improved and epidemic outbreaks became increasingly rare, the demand for infectious disease wards diminished, leading to slowed construction progress at the S.P. Botkin Hospital. Today, these buildings form the historic campus of the S.P. Botkin Clinical Infectious Disease Hospital[2] [13, 15, 16].

A.I. Gegello also directed the reconstruction of several buildings at the F.F. Erisman Hospital[3] (6–8 Leo Tolstoy Street), initiated in 1925. The original structures were rebuilt in the progressive Constructivist style of that era. The renovations encompassed the main building and surgical clinic, with new operating suites added to the surgical department (Figs. 14, 15). New constructions featured an admission ward, triage unit, laboratory facilities, kitchen and boiler house (Fig. 16), all connected via interbuilding corridors.

The buildings' design employed Constructivist techniques combining variously sized rectangular forms with semicircular stair tower projections. Their horizontal expanse was accentuated by continuous window bands, where the piers between windows were painted in contrasting colors (Figs. 17, 18).

Since 1935, the F.F. Erisman Hospital has served as the teaching hospital of the First Leningrad Medical Institute (now the I.P. Pavlov First St. Petersburg State Medical University).

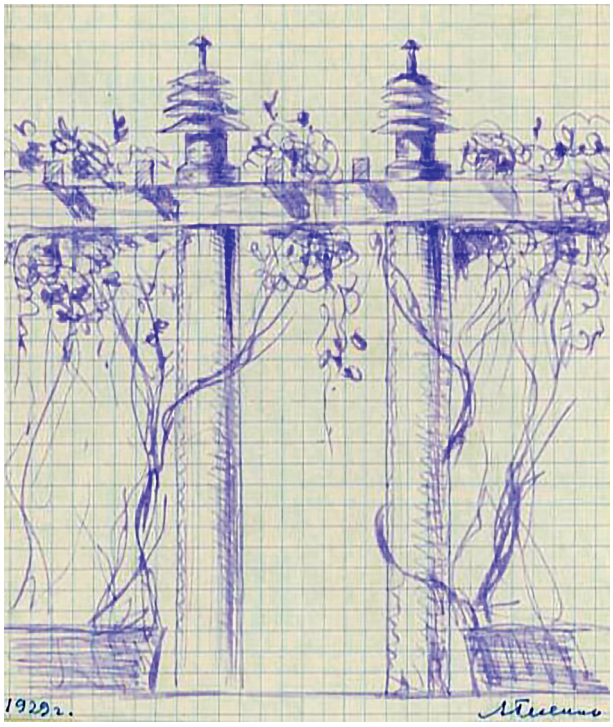

Fig. 13. Sketch of a flat roof pergola [12]

Рис. 13. Эскиз перголы плоской крыши [12]

The Soviet state accorded paramount importance to public health. Beyond health promotion campaigns, it implemented systemic reforms to healthcare infrastructure. Epidemic control necessitated reorganization of medical services, balancing treatment with prevention. People's Commissar of Health N.A. Semashko (1874–1949) pioneered dispensary networks, especially for industrial workers. This period witnessed rapid construction of specialized clinics and preventive medicine facilities integrated into urban designs near factories and workers' residential districts.

Until 1924, so-called "night sanatoriums" were established to provide treatment without interrupting industrial work. The concept was first proposed in 1902 by the renowned physician S.I. Glickman (1870 — not before 1915). His proposal to create "urban dust-free sanatoriums" for tuberculosis treatment and prevention failed to gain support. However, the idea of treatment without work disruption proved extremely valuable for the Soviet state amid labor shortages. The first "night sanatorium" was implemented in 1921 at the Zamoskvoretsky Tuberculosis Dispensary, later replicated elsewhere. Patients with closed forms of tuberculosis could fulfill and even exceed production quotas during the day,

[1] The roof failure in the isolation pavilion influenced the hospital's overall design, leading to the replacement of all flat roofs intended for patient recreation areas with pitched roofs in subsequent construction phases.

[2] Currently, the hospital operates across two autonomous campuses: the historic site (3 Mirgorodskaya Street) and the northern complex (49 Piskarevsky Prospect). Each location functions as an independent medical facility providing comprehensive care for infectious diseases.

[3] Originally named the Petropavlovskaya Hospital until 1918, the facility was constructed in 1833 and underwent multiple expansions throughout the XIX — early XX centuries through the addition of new wings and buildings.

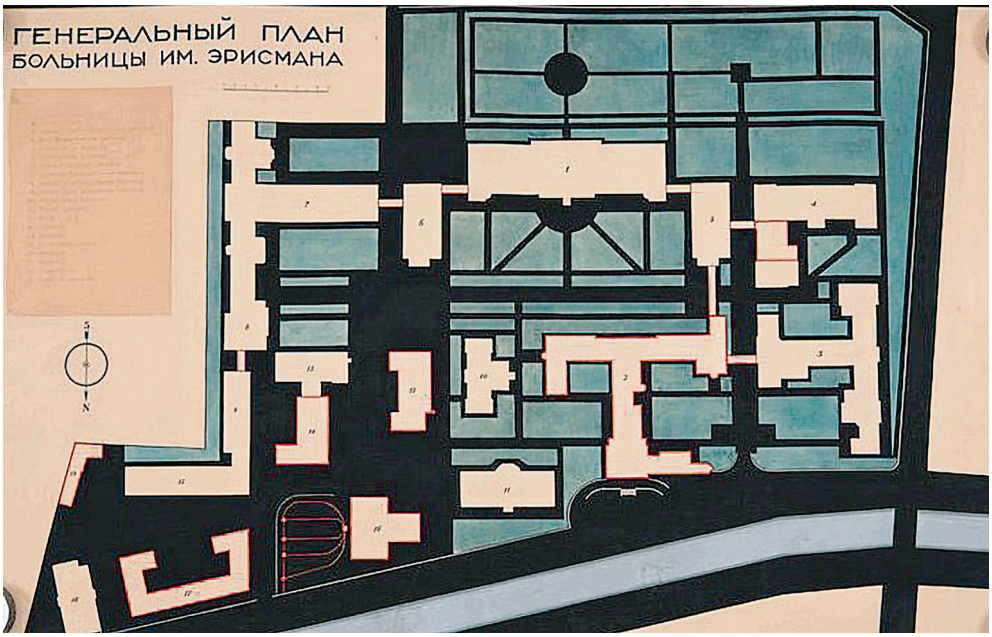

Fig. 14. General plan of the Hospital named after F.F. Erisman [12]

Рис. 14. Генеральный план больницы Ф.Ф. Эрисмана [12]

while spending evenings and weekends resting and receiving treatment at the sanatorium. They received enhanced nutrition and lived in conditions meeting strict sanitary-hygienic standards.

Beginning in 1924, profilaktoriyas (Soviet industrial preventive-medicine complexes) were officially established as a distinct category of healthcare institutions[1]. These facilities typically included a physiotherapy department, a night sanatorium, and a therapeutic nutrition cafeteria. Trade unions actively administered the profilaktoriyas, prioritizing workers and office staff with occupational or chronic illnesses. The standard treatment program lasted 24 days and provided comprehensive care, extended to 30 days for cases of inactive tuberculosis. To accommodate these institutions, existing mansions were adaptively repurposed through structural modifications, or new purpose-built medical complexes were constructed.

A prime example of this architectural type was the profilaktoriya in the Moskovsko-Narvsky District[2] (19 Kosinova Street). The design of this new medical institution was led by Academician L.V. Rudnev (1885–1956), with a working group comprising renowned architects O.L. Lyalin (1903–1974), I.I. Fomin (1904–1989), E.A. Levinson (1894–1968), and Ya.O. Svirsky (1902–1990).

In 1928–1933, the construction of new residential quarters and public buildings along Stachek Avenue included a profilaktoriy (Soviet preventive healthcare facility), its architecture exemplifying the period's dominant Constructivist style (Fig. 19).

The distinctive Constructivist layout ideally served the new medical facility's requirements. The style's geometric clarity and segmented organization perfectly accommodated the need to divide the building into specialized zones by disease categories and treatment protocols, featuring separate entrances and isolated treatment units (Fig. 20).

The main building of the profilaktoriy stretches extensively along Kosinov Street. From the three-story central block extend T-shaped wings and perpendicular projections, giving the entire structure an angular composition of right angles. The horizontality was further emphasized by signature Constructivist ribbon windows. During design development, however, continuous glazing was deemed impractical. Instead, window mullions were painted to match the glass's daytime

[1] In 1924, physician E.L. Shumskaya established Moscow's first profilaktoriya at the Polyansky Sanatorium — a comprehensive facility incorporating an outpatient clinic, therapeutic nutrition cafeteria, night sanatorium, and physiotherapy rooms [17].

[2] In 1934, the Moskovsko-Narvsky District was renamed the Kirovsky District.

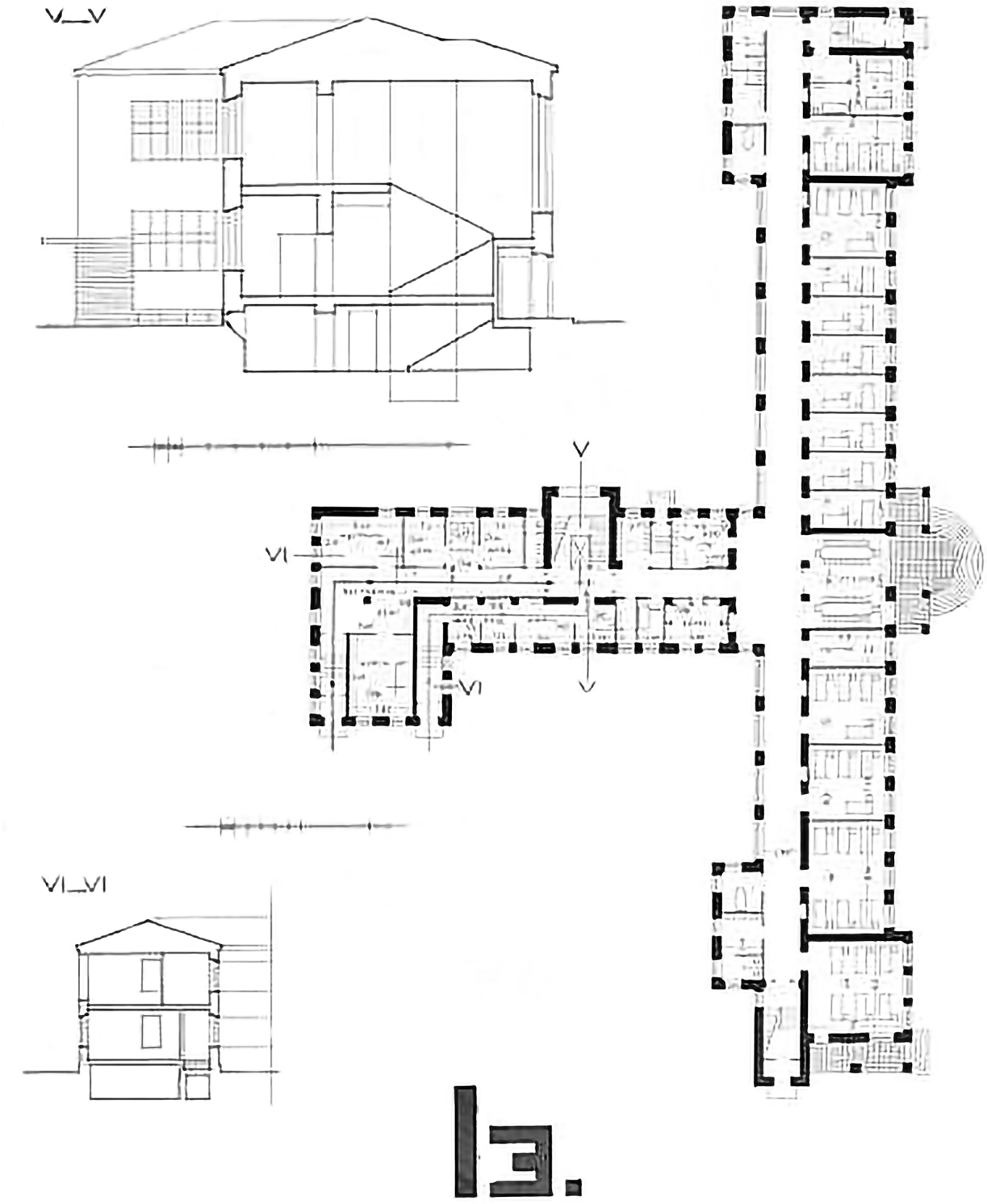

Fig. 15. Hospital named after F.F. Erisman. Surgical pavilion. Plan of the first floor, facade sections [12]

Рис. 15. Больница им. Ф.Ф. Эрисмана. Хирургический павильон. План первого этажа, разрезы фасада [12]

hue, creating an optical banding effect reinforced by longitudinal tyahka moldings[1]. The stair tower corners received vertical glazing, complementing the dynamic asymmetry characteristic of Constructivist architecture (Fig. 21).

The profilaktoriy had a daily capacity of 5,000 patient visits. Its medical facilities

[1] Tyahka (from Russian tyaga, lit. "pulled element") — a profiled plaster molding made by drawing a shaped template (lekal) through wet plaster to create decorative relief.

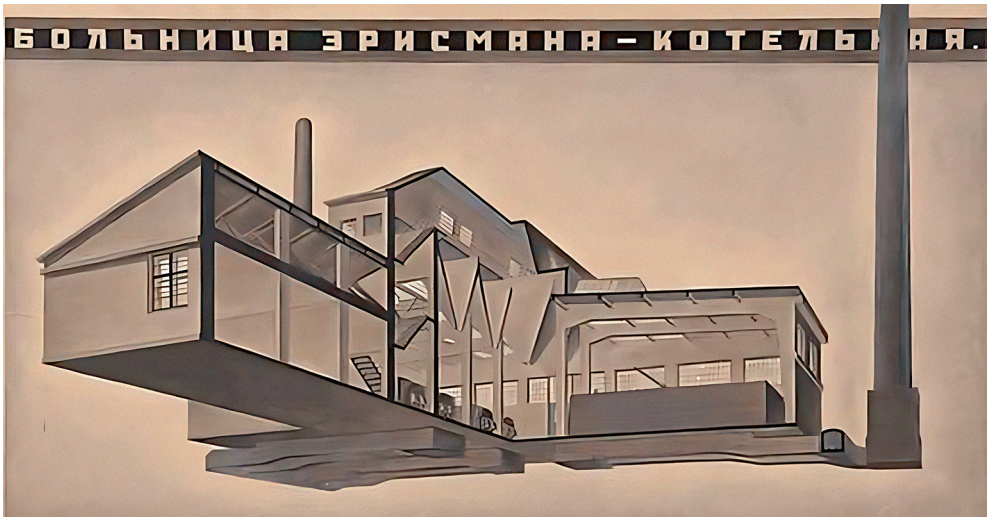

Fig. 16. Reconstruction project of the Hospital named after F.F. Erisman. Boiler house building. Section [12]

Рис. 16. Проект реконструкции больницы имени Ф.Ф. Эрисмана. Здание котельной. Разрез [12]

Fig. 17. Hospital named after F.F. Erisman. Facade [12]

Рис. 17. Больница им. Ф.Ф. Эрисмана. Фасад [12]

comprised a clinical laboratory, sanitary-bacteriological department, radiology unit, physiotherapy rooms, as well as light, hydro-, electro-, and mud therapy sections, along with a fully operational dental department.

Following its 1953 reconstruction, the building was adapted to accommodate the Volodarsky Hospital integrated with Polyclinic No. 23. The structure currently functions as City Hospital No. 14 (Fig. 22).

Another successful integration of Constructivist architecture with medical functionality is exemplified by the "Tekstilshchitsa" profilaktoriy (32 Elizarov Avenue). The facility was erected by the same architectural team responsible for the Moscow-Narva District profilaktoriy. Their design submission received an award from the Leningrad Provincial Health Department during the summer 1927 competition. Recognition was also granted to projects by I.G. Langbard (1882–1951) and Ya.M. Kovarsky (1883–1973) (Fig. 23).

Construction was completed in 1930. The main building runs parallel to Palevsky Prospekt[1]. A three-story wing extends from the western side, while a four-story structure adjoins the eastern façade. Multiple volumes of varying heights form the central core of the

[1] Since 1939 — Elizarovsky Avenue.

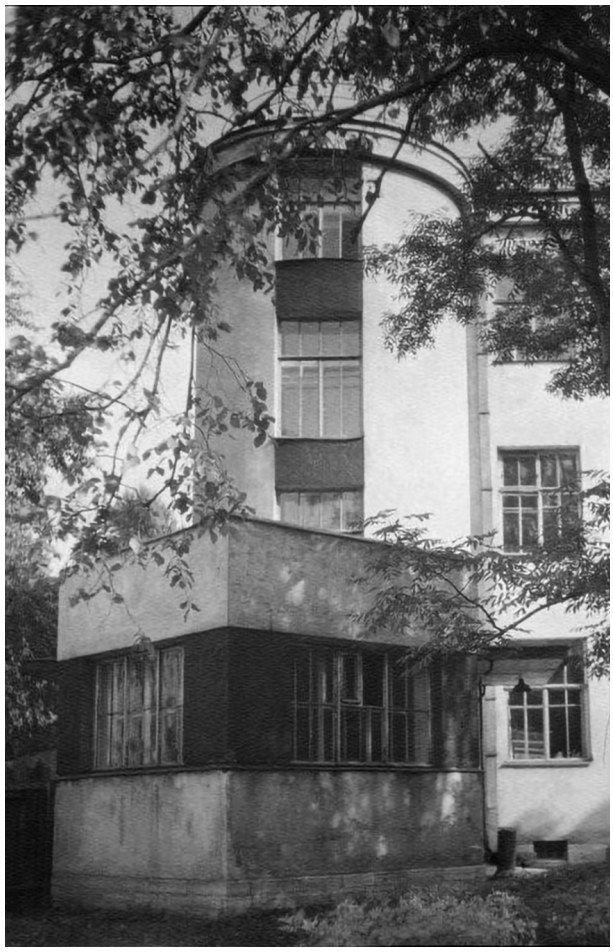

Fig. 18. Hospital named after F.F. Erisman [12]

Рис. 18. Больница им. Ф.Ф. Эрисмана [12]

building, where architects positioned the main entrance. The composition culminates in an L-shaped configuration of the wings (Fig. 24). This design demarcates the profilaktoriy's landscaped forecourt, separating it from adjacent urban fabric.

This complex layout resulted from housing multiple medical institutions within a single structure. Each facility's specialization and operational needs were carefully incorporated into the design (Fig. 25). The building combined: an adult polyclinic, pediatric clinic, milk kitchen, maternal and child health center, tuberculosis dispensary, sanitary-epidemiological service (SES) units, and mud/water therapy departments.

Each medical institution was allocated a dedicated wing to prevent patient flow intersections. In 1931, the facility was renamed the Volodarsky District Profilaktoriy[1]. The medical center served residents of the Tkachey Street and Palevsky Prospekt neighborhood, as well as those registered in the area between Obvodny Canal and Volodarsky Bridge. With a daily capacity of 3,500 patients, the building ranked among Europe's most advanced healthcare facilities of its time upon completion, excelling in functional design, workflow organization, and technical equipment standards (Fig. 26).

[1] Administratively part of Nevsky District since 1948.

Fig. 19. Preventorium of Moskovsko-Narvsky (Kirovsky) district [12]

Рис. 19. Профилакторий Московско-Нарвского (Кировского) района [12]

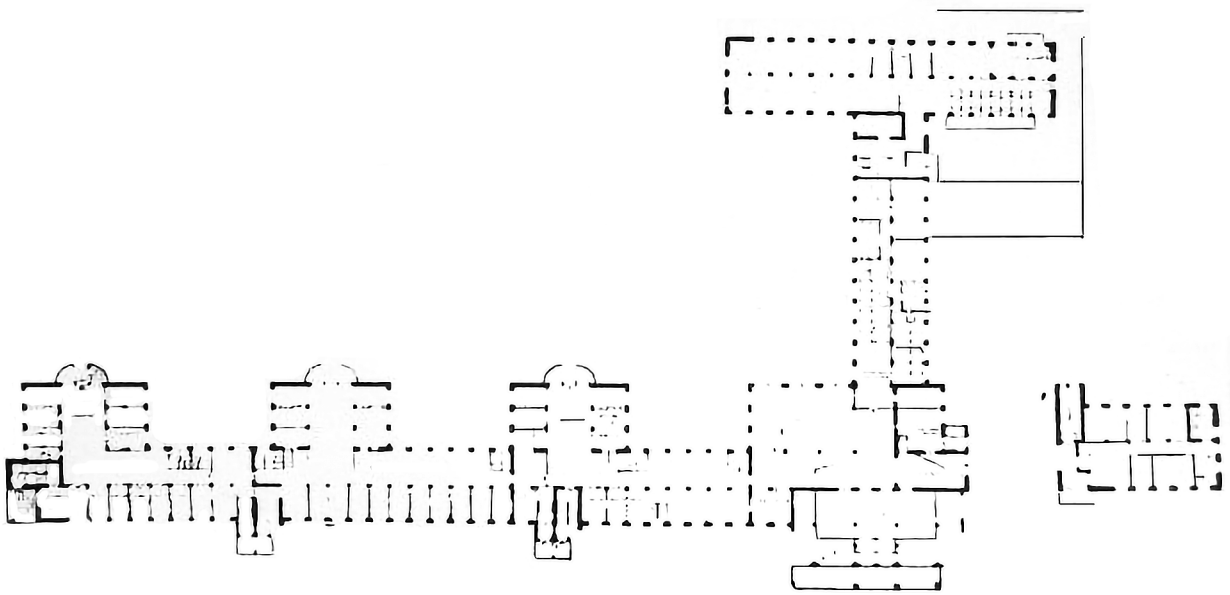

Fig. 20. Project of the Preventorium of Moskovsko-Narvsky (Kirovsky) district. Plan of the first floor [12]

Рис. 20. Проект профилактория Московско-Нарвского (Кировского) района. План первого этажа [12]

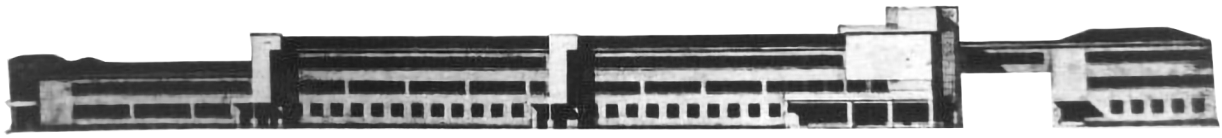

Fig. 21. Preventorium of Moskovsko-Narvsky (Kirovsky) district. Project [12]

Рис. 21. Профилакторий Московско-Нарвского (Кировского) района. Проект [12]

Fig. 22. City Hospital No. 14 [18]

Рис. 22. Городская больница № 14 [18]

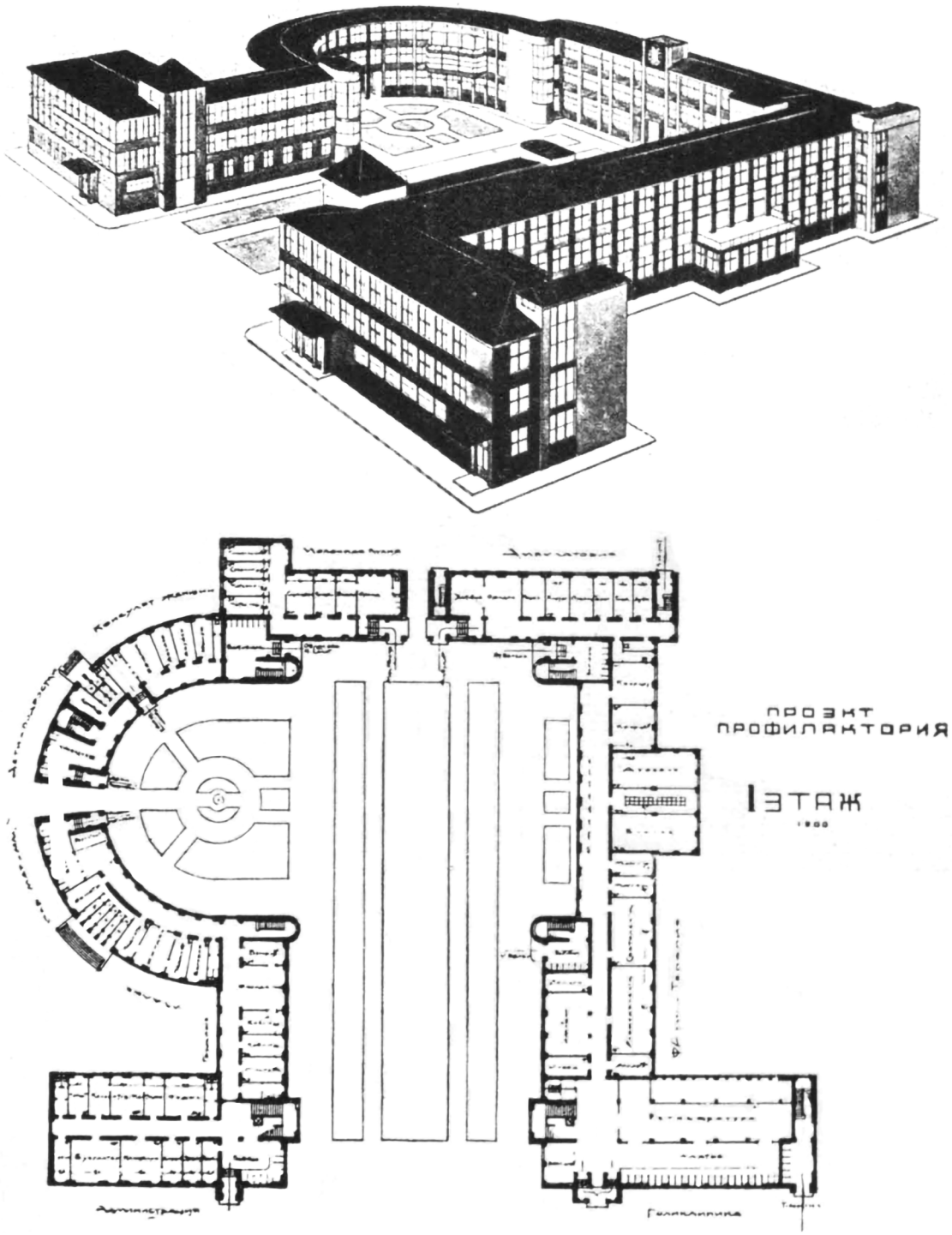

Fig. 23. I.G. Langbard, Y.M. Kovarsky. Project of the preventorium building in Leningrad (Volodarsky district) [10]

Рис. 23. И.Г. Лангбард, Я.М. Коварский. Проект здания профилактория в Ленинграде (Володарский район) [10]

Workers could undergo comprehensive examinations, including electrocardiograms (ECGs), specialist consultations, and obtain prescriptions for treatments, therapeutic procedures, physiotherapy, and other services — all available without leaving their workplace. The factory's medical unit maintained health records for ongoing preventive care. Upon completing profilaktoriy treatment, physicians forwarded discharge summaries to these records [19].

Currently, the Rehabilitation Center of the Hospital for War Veterans occupies this site (Fig. 27) [20].

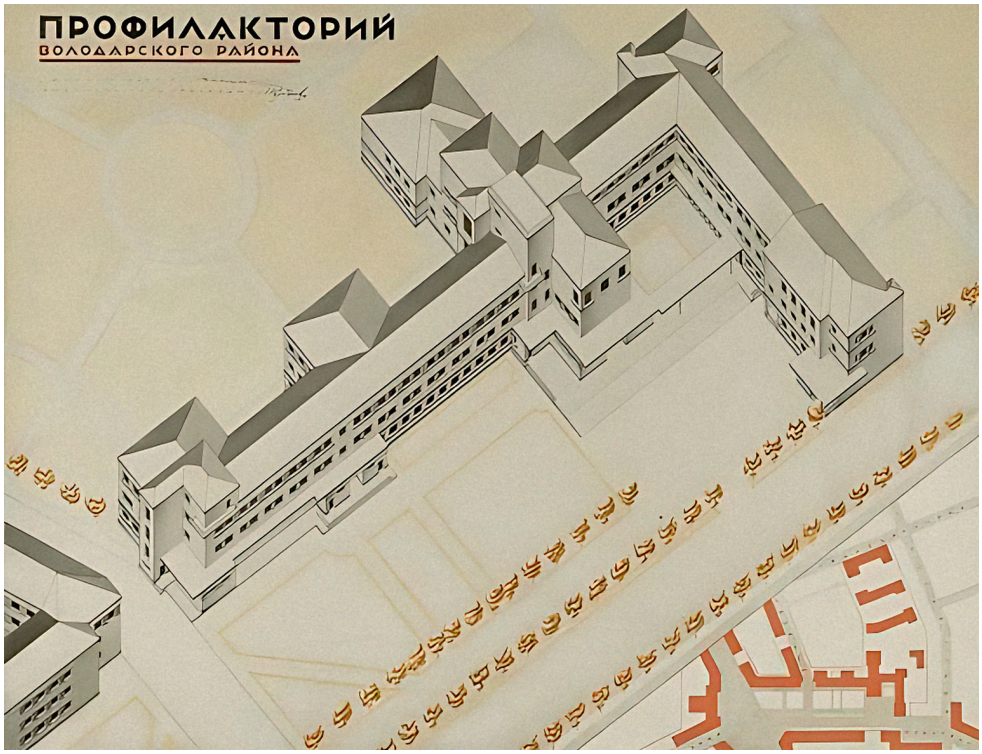

Fig. 24. Project of the preventorium of Volodarsky district. Axonometry. General plan [12]

Рис. 24. Проект профилактория Володарского района. Аксонометрия. Генеральный план [12]

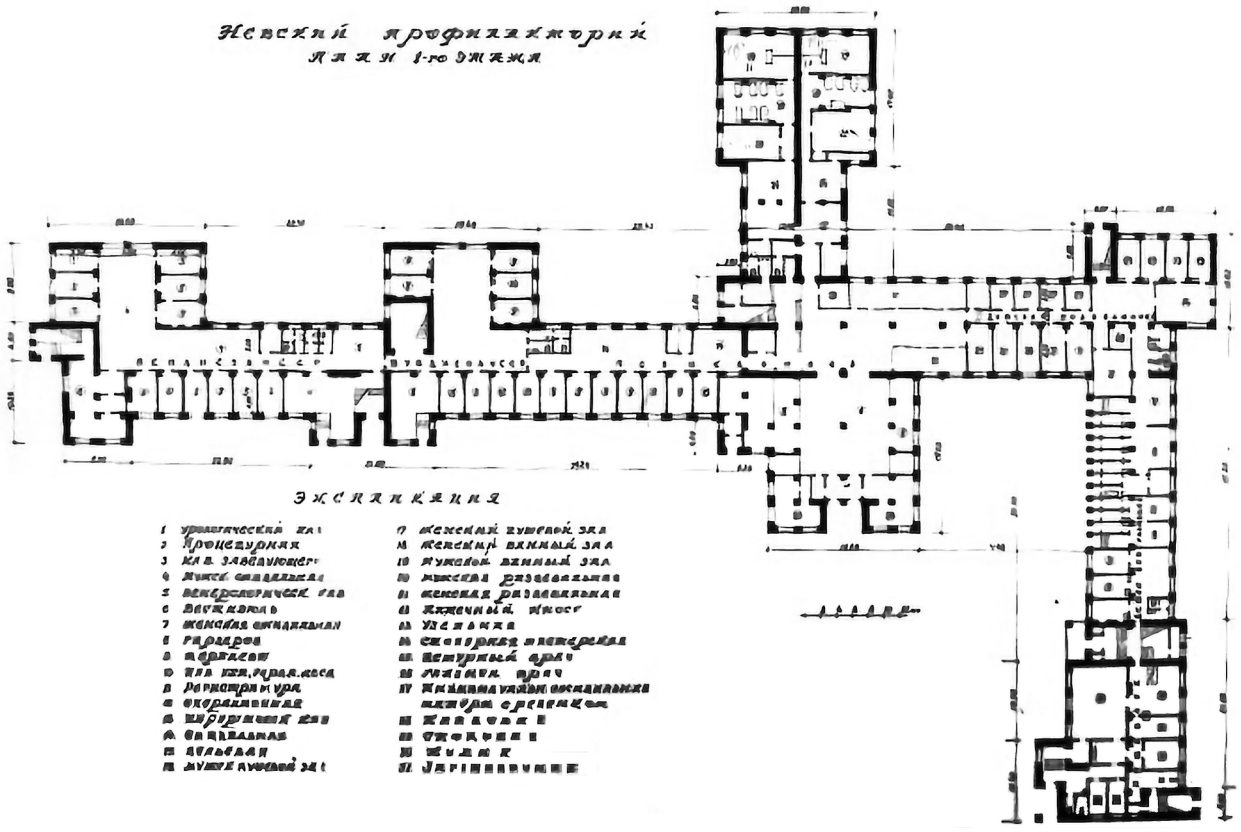

Fig. 25. Nevsky Preventorium. Plan of the first floor [12]

Рис. 25. Невский профилакторий. План первого этажа [12]

Fig. 26. Prevention centre of Volodarsky district [12]

Рис. 26. Профилакторий Володарского района [12]

Fig. 27. Rehabilitation centre of the "Hospital for War Veterans" [18]

Рис. 27. Центр реабилитации «Госпиталя для ветеранов войн» [18]

In territories of modern St. Petersburg that formerly belonged to Finland, one finds buildings exemplifying the functionalist style — an approach closely aligned with Constructivist principles[1]. A representative example is Zelenogorsk Polyclinic No. 69 (45A Krasnykh Komandirov Avenue, Zelenogorsk). Originally commissioned in 1938 by Finland's Ministry of Defense[2] to renowned architect A. Blomstedt (1906–1979), the hospital project was ultimately completed by H. Sysimetsä (1910–2004) and O. Kivimaa (1909–1998) following his departure. In 1938, a medical unit for the 1st Jäger Battalion, designed for 50 beds, was constructed adjacent to the military barracks. The two-story building

[1] Finnish "white" functionalism — an architectural style of the 1920s-1930s characterized by simplicity and minimalist design in both building forms and materials. Functionalism and Constructivism share the fundamental principle of strict correspondence between a building's form and its functional processes. However, unlike Functionalism, Constructivism exhibits greater formal diversity, employing cubes, parallelepipeds, circular windows, streamlined balconies, and multi-tiered sections in its architectural vocabulary.

[2] Between 1918 and 1940, Terijoki (modern-day Zelenogorsk) was part of Finland.

Fig. 28. Teriyok military hospital. Late 1930s. [18]

Рис. 28. Терийокский военный госпиталь. Конец 1930-х годов [18]

Fig. 29. Zelenogorsk Polyclinic No. 69 [18]

Рис. 29. Зеленогорская поликлиника № 69 [18]

featured a distinctive rectangular layout. A full-height glazed projection (risalit) marked the entrance area, incorporating an open reception hall for the medical facility. The end walls of the second floor were lined with continuous balconies running their full width (Fig. 28). During the Winter War (1939–1940), the structure sustained minimal damage, preserving its exterior integrity. Following renovations, the building housed the Terijoki Municipal Hospital from 1940 onward, later becoming Zelenogorsk Hospital. The original architectural composition was lost during late 1950s renovations when two symmetrical wings were added [21].

Until the late 1990s, the inpatient department accommodated 100 patients. The hospital contained various specialized units including obstetrics, pediatrics, and surgery, along with a radiology room, clinical diagnostics laboratory, and trauma center. The building was subsequently renovated and converted into a polyclinic (Fig. 29).

During the ascendancy of Constructivism, hospital architecture became wholly focused on structural integrity and functionality — the style was characterized by precise volumetric compositions and rational spatial planning. While eschewing superfluous ornamentation, the buildings retained distinct identities through simple, austere forms whose bold interplay created dynamic compositions. Through their scale and

aesthetic, these new medical structures transformed urban social environments.

ADDITIONAL INFORMATION

Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

Competing interests. The authors declare that they have no competing interests.

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Конфликт интересов. Авторы декларируют отсутствие явных и потенциальных конфликтов интересов, связанных с публикацией настоящей статьи.

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REFERENCES

1. Mikirtichan G.L., Likhtshangof A.Z., Lisenkova L.N., Makeeva V.I., Zhikorentseva P.A., Yuzhaninov V.N. Ar-chitecture of hospitals in St. Petersburg: from petrovsky baroque to hi-tech. Part I. Peter's baroque. Medicine and Health Care Organization. 2023;3:89–101. (In Russian). DOI: 10.56871/MHCO.2023.87.10.009.
2. Mikirtichan G.L., Lisenkova L.N., Makeeva V.I., Zhikorentseva P.A., Yuzhaninov V.N. Architecture of Saint Petersburg hospitals: from petrovsky baroque to hi-tech. Part II. Classicism. Medicine and Health Care Organization. 2023;4:118–143. (In Russian). DOI: 10.56871/MHCO.2023.50.60.011.
3. Mikirtichan G.L., Lisenkova L.N., Makeeva V.I., Zhikorentseva P.A. Architecture of Saint Petersburg hospitals: from petrovsky baroque to hi-tech. Part III. Eclectism. Medicine and Health Care Organization. 2024;1:95–127. (In Russian). DOI: 10.56871/MHCO.2024.15.96.009.
4. Mikirtichan G.L., Lisenkova L.N., Makeeva V.I., Nikitina A.E., Zhikorentseva P.A. Architecture of Saint Petersburg hospitals: from petrovsky baroque to hi-tech. Part IV. Brick style. Medicine and Health Care Organization. 2024;2:92–113. (In Russian). DOI: 10.56871/MHCO.2024.67.93.009.
5. Mikirtichan G.L., Lisenkova L.N., Makeeva V.I., Nikitina A.E., Savina I.A. Architecture of Saint Petersburg hospitals: from petrovsky baroque to hi-tech. Part V. Modern. Medicine and Health Care Organization. 2024;3:117–140. (In Russian). DOI: 10.56871/MHCO.2024.99.64.013.
6. Mikirtichan G.L., Lisenkova L.N., Makeeva V.I., Nikitina A.E., Jarman O.A. Architecture of Saint Petersburg hospitals: from petrovsky baroque to hi-tech. Part VI. Neoclassicism. Medicine and Health Care Organization. 2024;9(4):125–149. (In Russian). DOI: 10.56871/MHCO.2024.23.53.011.
7. Kirikov B.M. Architectural monuments of St. Petersburg. Styles and masters. Saint Petersburg: Beloe i Chernoe; 2003. (In Russian).
8. Lisaevich I.I., Isochenko V.G. St. Petersburg. Architectural portrait 1703–2003. Saint Petersburg: LOGOS; 2002. (In Russian).
9. Kozlov A.A., Korjagin V.N. "We will not waste a single minute of our precious time" — the story of the life and work of G.A. Ivashentsov — doctor, teacher, man. Medicine. XXI century. 2008;12:58–63. (In Russian).
10. Yearbook of the Society of Architects-Artists. Issue twelve: 1927. Leningrad: Izdanie Obshhestva arhitektorov-hudozhnikov; 1928. (In Russian).
11. Dunaevskij A.Ju. Architecture of medical buildings. Moscow: Gosudarstvennoe arhitekturnoe izdatel'stvo akademii arhitektury SSSR; 1940. (In Russian).
12. State Catalog of the Museum Fund of the Russian Federation. Moscow: Ministry of Culture of the Russian Federation. Available at: https://goskatalog.ru/portal/#/ (accessed: 09/25/2024). (In Russian).
13. Gegello A.I. From Creative Experience: The Emergence and Development of an Architectural Design. Leningrad: Gosudarstvennoe izdatel'stvo literatury po stroitel'stvu, arhitekture i stroitel'nym materialam; 1962. (In Russian).
14. Virtual Museum of the A.V. Shchusev State Museum of Architecture. Available at: http://vma.muar.ru (accessed: 09/21/2024). (In Russian).
15. Kirikov B.M., Shtiglic M.S. Architecture of the Leningrad Avant-garde. Saint Petersburg: Kolo; 2008. (In Russian).
16. Kotljarova S.I. Clinical Infectious Diseases Hospital named after S.P. Botkin: 140 years of service to people. Žurnal infektologii. 2022;3(14):6–20. (In Russian). DOI: 10.22625/2072-6732-2022-14-3-6-20.
17. Drozdov D.P. Bolshaya Polyanka, 52. Moscow Journal. History of the Russian State. 2021;3(363):28–37. (In Russian).
18. Citywalls. Available at: https://www.citywalls.ru (accessed: 09/21/2024). (In Russian).

19. Pervushina E.L. Leningrad Utopia. Avant-garde in the Architecture of the Northern Capital. Moscow–Saint Petersburg: Centrpoligraf; 2012. (In Russian).
20. Rehabilitation Center of the St. Petersburg State Budgetary Healthcare Institution “Hospital for War Veterans”, Elizarova Avenue, Building 32. St. Petersburg: St. Petersburg State Budgetary Healthcare Institution “Hospital for War Veterans”. Available at: http://gvv-spb.ru/bolnica-23 (accessed: 09/21/2024). (In Russian).
21. Bravo A.E., Travian E.M. Zelenogorsk/Terijoki. Dacha Life a Hundred Years Ago. Saint Petersburg: Centr Sohranenija Kul’turnogo Nasledija; 2016. (In Russian).

ЛИТЕРАТУРА

1. Микиртичан Г.Л., Лихтшангоф А.З., Лисенкова Л.Н., Макеева В.И., Жикоренцева П.А., Южанинов В.Н. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть I. Петровское барокко. Медицина и организация здравоохранения. 2023;3:89–101. DOI: 10.56871/MHCO.2023.87.10.009.
2. Микиртичан Г.Л., Лисенкова Л.Н., Макеева В.И., Жикоренцева П.А., Южанинов В.Н. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть II. Классицизм. Медицина и организация здравоохранения. 2023;4:118–143. DOI: 10.56871/MHCO.2023.50.60.011.
3. Микиртичан Г.Л., Лисенкова Л.Н., Макеева В.И., Жикоренцева П.А. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть III. Эклектика. Медицина и организация здравоохранения. 2024;1:95–127. DOI: 10.56871/MHCO.2024.15.96.009.
4. Микиртичан Г.Л., Лисенкова Л.Н., Макеева В.И., Никитина А.Е., Жикоренцева П.А. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть IV. Кирпичный стиль. Медицина и организация здравоохранения. 2024;2:92–113. DOI: 10.56871/MHCO.2024.67.93.009.
5. Микиртичан Г.Л., Лисенкова Л.Н., Макеева В.И., Никитина А.Е., Савина И.А. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть V. Модерн. Медицина и организация здравоохранения. 2024;3:117–140. DOI: 10.56871/MHCO.2024.99.64.013.
6. Микиртичан Г.Л., Лисенкова Л.Н., Макеева В.И., Никитина А.Е., Джарман О.А. Архитектура больниц Санкт-Петербурга: от петровского барокко к хай-теку. Часть VI. Неоклассицизм. Медицина и организация здравоохранения. 2024;4:125–149. DOI: 10.56871/MHCO.2024.23.53.011.
7. Кириков Б.М. Архитектурные памятники Санкт-Петербурга. Стили и мастера. СПб.: Белое и Черное; 2003.
8. Лисаевич И.И., Исоченко В.Г. Санкт-Петербург. Архитектурный портрет 1703–2003. СПб.: LOGOS; 2002.
9. Козлов А.А., Корягин В.Н. «Ни одной минуты драгоценного времени не потратим даром» история жизни и деятельности Г.А. Ивашенцова — врача, учителя, человека. Медицина. XXI век. 2008;12:58–63.
10. Ежегодник Общества архитекторов-художников. Выпуск двенадцатый: 1927. Ленинград: Издание Общества архитекторов-художников; 1928.
11. Дунаевский А.Ю. Архитектура лечебных зданий. М.: Государственное архитектурное издательство академии архитектуры СССР; 1940.
12. Государственный каталог музейного фонда Российской Федерации. Москва: Министерство культуры Российской Федерации. Доступен по: https://goskatalog.ru/portal/#/ (дата обращения: 25.09.2024).
13. Гегелло А.И. Из творческого опыта: Возникновение и развитие архитектурного замысла. Ленинград: Государственное издательство литературы по строительству, архитектуре и строительным материалам; 1962.
14. Виртуальный музей Государственного музея архитектуры им. А.В. Щусева. Доступен по: http://vma.muar.ru (дата обращения: 21.09.2024).
15. Кириков Б.М., Штиглиц М.С. Архитектура Ленинградского авангарда. СПб.: Коло; 2008.
16. Котлярова С.И. Клиническая инфекционная больница им. С.П. Боткина: 140 лет служения людям. Журнал инфектологии. 2022;3(14):6–20. DOI: 10.22625/2072-6732-2022-14-3-6-20.
17. Дроздов Д.П. Большая Полянка, 52. Московский журнал. История государства Российского. 2021;3(363):28–37.
18. Citywalls. Доступен по: https://www.citywalls.ru (дата обращения: 30.01.2024).
19. Первушина Е.Л. Ленинградская утопия. Авангард в архитектуре Северной столицы. М.–СПб.: Центрполиграф; 2012.
20. Реабилитационный центр СПб ГБУЗ «Госпиталь для ветеранов войн», проспект Елизарова, дом 32. Санкт-Петербург: Санкт-Петербургское государственное бюджетное учреждение здравоохранения «Госпиталь для ветеранов войн». Доступен по: http://gvv-spb.ru/bolnica-23 (дата обращения: 21.09.2024).
21. Браво А.Е., Травиан Е.М. Зеленогорск/Терийоки. Дачная жизнь сто лет назад. СПб.: Центр Сохранения Культурного Наследия; 2016.