


## Healthcare networks in Ukrainian cities in the 1920s-1930s: architectural and urban planning insights

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### Abstract:

This study explores the architectural and spatial organisation of medical services in Ukrainian cities during the 1920s and 1930s. The introduction of a new healthcare system, the expansion of medical facility typologies, and their strategic integration into the urban fabric allowed the state to overcome devastating post-war epidemics – including plague, smallpox, and cholera – while significantly reducing mortality rates. This historical experience remains uniquely relevant today, offering potential insights for contemporary pandemic management. Focusing on the then-capital Kharkiv and other industrial centres of Ukraine, the article examines a wide range of medical facilities, from district dispensaries to specialised research institutes and large-scale multifunctional hospital complexes. The study analyses the hierarchical logic behind the placement of these facilities within the urban structure. The research methodology is based on a comprehensive analysis of rare archival documents, authentic blueprints, and professional periodicals of the interwar period. Furthermore, the study incorporates field surveys of the current state of these surviving architectural and urban-planning landmarks to assess their enduring cultural and functional significance.

### Keywords:

healthcare architecture; Ukrainian Constructivism; medical typology; urban spatial organisation; architectural heritage

## 1. Introduction

Contemporary challenges associated with pandemics that sweep across entire countries and continents make it increasingly relevant to revisit the experience of past eras in combating and preventing epidemic outbreaks and safeguarding public health. Such historical perspectives can help us discover new approaches to today's pressing problems.

In this respect, the situation that emerged in Ukraine's healthcare system in the 1920s is of particular interest. Today we ask: how did our predecessors manage, within such a short time, to overcome devastating epidemics of typhus, cholera, and malaria, to stop the spread of tuberculosis and venereal diseases? How did they succeed in reducing child mortality and improving public health during the difficult years that followed the First World War, the Revolution, civil war, foreign intervention, famine, and destruction? What role did innovative changes in architecture and urban planning play in this? And in what ways were the urban healthcare system and the typology of medical facilities developed in response to the challenges of the time?

This research focuses on architectural and urban-planning approaches to safeguard public health. This understudied yet valuable historical experience can be reconsidered in the context of contemporary challenges.

In the 1920s and early 1930s, healthcare in Ukraine was under state supervision. Medical buildings were designed based on a new typology closely linked to the system of universal free healthcare introduced in those years, known worldwide as the "Semashko System" [1,2]. Many buildings constructed during the interwar period are still in use today, proving their long-term functional viability. Their architectural appearance reflects the distinctive aesthetics of the Soviet avant-garde, as this period marked the peak

of modernist architecture and urban planning in Ukraine. Nearly a century later, the modernist transformations in medical buildings and complexes still seem to be underappreciated. Although the Law of Ukraine "On the Protection of Cultural Heritage" (*Pro ohoronu kul'turnoi spadshchiny*) has been in effect since 2000 [3], its provisions have had little impact on the preservation of medical architectural heritage. Many sites have either not been granted landmark status or have had their status ignored due to the perceived necessity of modern medical adaptation, which is often carried out without regard for their cultural, historical, social, and aesthetic significance.

The aim of this research is to establish the architectural and typological value of healthcare institutions from the 1920s to the early 1930s in Ukraine as an integral part of cultural heritage, with an emphasis on recognising their significance as evidence of an effective response to the challenges of that era in public health improvement.

## 2. Methodology

The research is based on a comprehensive interdisciplinary methodology aimed at identifying and scientifically verifying the historical and architectural value of the extensive system of medical institutions in Ukraine from the 1920s and 1930s. This system is examined not merely as a utilitarian network of buildings, but as a unique heritage of Modernism, reflecting global shifts in social engineering and avant-garde architecture. To justify the status of the studied objects as cultural heritage, the methodological framework is aligned with international standards:

- Criteria of Integrity and Authenticity based on The NARA Document on Authenticity (1994) [4] and the Operational Guidelines for the Implementation of the World Heritage

Convention (UNESCO, 2003) [5]. This allowed for the evaluation of objects through the lens of “authenticity of design” and “authenticity of function”, which is critically important for healthcare facilities.

- The Madrid-New Delhi Document (ICOMOS, 2017) [6]. These principles define approaches to the conservation of 20th-century heritage, in which architectural form is inextricably linked to the era's progressive ideas.
- UIA-PHG (Public Health Group) Initiatives [7]. Drawing from the International Union of Architects' guidelines, which allow for the interpretation of the hierarchical typology of medical institutions as a “therapeutic environment” created at the intersection of Modernist hygienic standards and the urban planning strategies of industrial centres.

The study was implemented through a consistent algorithmic sequence of actions:

1. Heuristic stage (archival research): collection and systematisation of primary sources from the 1920s–1930s. The database comprises unpublished materials from the funds of the Central State Scientific and Technical Archive of Ukraine (TsDNTA of Ukraine), the Central State Archive-Museum of Literature and Art of Ukraine (TsDAML of Ukraine), the State Archive of Kharkiv Region, and the Rare Book Department of the Kharkiv State Scientific Library named after V.G. Korolenko. The work included the analysis of design documentation (original perspectives, drawings, author's sketches, “blueprints” of working drawings), explanatory notes, government decrees, and periodicals of the era.
2. Analytical reconstruction: a comparative analysis of the collected material, including a cross-examination of the working drawings of specific objects with the standard (prototypical) designs proposed by the People's Commissariat of Health of the Ukrainian SSR in 1930; graphical reconstruction of selected illustrations was conducted to extract and highlight essential spatial and graphic information.
3. Field surveys: photo-documentation and a technical-aesthetic audit of the current state of preserved objects in the industrial centres of Ukraine were conducted. Buildings representing a wide typological spectrum and possessing the highest degree of preservation of their original architectural appearance were selected for survey.
4. Synthesis and systematisation:
  - Comparative analysis: contrasting archival data with field survey results to determine the degree of authenticity of the objects.
  - Typologization: identification of a hierarchical classification of medical institutions (including district dispensaries and hospitals, large regional hospital complexes, specialised medical research institutes, etc.) and the periodisation of their design within the context of the development of major industrial centres and the formation of “new cities” in Ukraine. Although sanatorium and resort facilities, as well as medical institutions for the protection of motherhood and childhood, were vital components of the hierarchical healthcare system, their analysis has been reserved for subsequent publications.
  - Generalisation: identification of sustainable design principles and techniques that shaped the unique character of Ukrainian medical constructivism.

The integration of in-depth archival research with international evaluation tools from UNESCO and ICOMOS enables a reassessment of the significance of Ukrainian medical architecture dating from the 1920s–1930s. This research elevates these objects from understudied building stock to the status of recognised heritage, requiring protection at both the national and international levels.

### 3. Literature review

Discussions regarding healthcare facilities as valuable cultural heritage, along with the challenges of their preservation amidst the need to adapt historical buildings to modern medical requirements, have gained significant momentum in recent years, expanding both geographically and thematically. Research across numerous countries confirms the critical importance of the Modernist period in the evolution of medicine, as well as the mutual influence between medical progress and Modernist architecture. The international relevance of this topic is further evidenced by the fact that the entirety of *Docomomo Journal* no. 62 (2020) was dedicated to modernist healthcare heritage. Ana Tostões, then-President of Docomomo International, noted in her editorial that “Health at the core of Modern Movement Architecture considers larger societal concerns, particularly those related to cultural concepts, the sense of belonging and identity”. She emphasised that Docomomo highlights this “innovative heritage, focusing mainly on healthcare facilities under threat” [8].

Building on this, Daniela Arnaut [9], in “Cure and Care at the Cradle of Innovation”, outlines three essential phases for addressing 20th-century healthcare heritage. She identifies systematic documentation as the primary step, serving as the requisite foundation for the second phase: developing collaborative intervention strategies. Finally, she emphasises the need to anticipate 21st-century medical requirements to facilitate informed decision-making regarding the adaptive reuse of these structures.

The socio-political dimension is elaborated by Barry Doyle [10], who examines hospital expansion in the 1930s across Europe, highlighting how modernist infrastructure became a battleground for identity. Key examples include the *Cité Hospitalière* in Lille, whose 25-story skyscraper design was rejected as “un-French”, and the ethnic tensions in Prague, where Czech and German medical faculties led to the planned duplication of facilities at Karlovo náměstí. Discussing the ambitious hospital construction plans across Europe, North America, and Australasia in the 1930s, Doyle describes this interwar period as an “era of significant expansion in hospital infrastructures”. At the same time, he persuasively demonstrates that issues of belonging and exclusion dominated the discourse and policy that framed institutional development. He concludes that in a world of scarce resources and extreme political views, hospitals often became contested sites where boundaries solidified, defining who was – and who was not – considered a “suitable case for treatment” based on national, municipal, or ethnic identity.

Canadian scholar Annmarie Adams [11] reveals the importance of specialised medical buildings in architectural history, demonstrating how hospital design fundamentally influenced the evolution of 20th-century medicine. This is echoed by Elizabeth McKellar, who analysed the expansion of The German Hospital in Hackney in the 1930s. McKellar highlights features such as floor-by-floor functional separation, roof gardens for convalescents, and ribbon windows, asserting that these additions were “at the forefront of medical and architectural thinking of the time” [12].

The 2023 issue of the French journal *In Situ*, dedicated to the heritage of hygiene, Lila Bonneau [13] examines the Beaujon Hospital in Clichy (1935) as Europe's first vertical healing machine (machine à guérir). Despite its pioneering status, the hospital faces decommissioning by 2030, a paradox Bonneau addresses by advocating for its adaptive reuse. She asserts that preserving the building's structural logic is essential to maintaining the collective memory of public health's spatial manifestation.

In a regional context, Piotr Gerber [14] characterises the historical hospitals of Poland as forgotten heritage, noting that in Lower Silesia, they account for 30% of all operating facilities. Gerber argues that revitalisation must preserve the urban and spatial integrity of these sites. Rafał Strojny, Natalia Przesmycka, and Zoriana Lukomska [15] identify technical obstacles in the Lubelskie Voivodeship and advocate for a shift toward a holistic adaptation strategy.

The theoretical evolution is summarised by Julie Willis, Philip Goad, and Cameron Logan [16], who trace the hospital's journey from a traditional shelter (*nosokomeion*) to a high-tech health machine (*hygeia*). They view interwar Modernism as the ultimate synthesis of aesthetics and technology. However, Inken Gaukel provides a stark warning regarding the physical loss of this heritage. His article is dedicated to the work of the German architect Richard Döcker, a prominent representative of the Neues Bauen movement, whose name has been nearly forgotten today due to the destruction of his buildings. Among his lost legacy was the Waiblingen District Hospital (1928) – a project far ahead of its time – which was demolished in 1959 [17].

A review of Ukrainian sources demonstrates their scarcity, reflecting the underdeveloped nature of the topic. The large-scale study “Architecture of Avant-Garde Modernism in Ukraine: Genesis and Heritage”, conducted by the author of this article, arguably represents a pioneering step in this direction, in which healthcare facilities from the 1920s–1930s are considered a valuable part of the modernism/constructivism heritage [18]. This was followed by the work of Hlib Semiakin [19], who proposed a methodology for categorising the value of constructivist objects. While his purely quantitative approach to heritage value remains debatable, his study provides rich factual material. In contrast, research by other Ukrainian authors [20], though focused on the historical evolution of hospital systems, largely overlooks the modernist period, briefly characterising the early 20th century without detailed architectural analysis.

The striking contrast between the robust international discourse and the fragmentary nature of local studies underscores the urgency of this article. While global scholarship has moved toward holistic strategies for preserving healing machines, Ukrainian healthcare facilities of the interwar period – true cradles of innovation in their own right – remain largely undocumented and unprotected. By aligning with Denis Arnaut's call for the primacy of systematic documentation, this study aims to prove the architectural and typological value of these objects. They are not merely utilitarian structures but essential monuments, representing a sophisticated architectural response to the societal challenges of their time and a vital contribution to the nation's history of preserving health.

## 4. Historical context

### 4.1. Healthcare in Russia and Ukraine in the early 20th century

At the beginning of the 20th century, the Russian Empire, which controlled the territory of present-day Ukraine, ranked

first in Europe in the prevalence of infectious diseases. Epidemics of smallpox, plague, cholera, typhus, malaria, intestinal infections, and others caused enormous damage to the country's economy and public health. In 1912, approximately 13 million cases of infectious diseases were registered. Over a period of ten years (from 1901 to 1910), 414,143 people died of smallpox in Russia, and in 1910 alone, 165,265 cases were recorded [21].

The primary cause of high child mortality was childhood infections. Thirty-five per cent of cities had no hospitals at all, and the number of hospital beds in existing medical institutions was severely limited [22].

World War I and the Civil War, along with the military intervention in Ukraine from 1918 to 1920, worsened the situation and created an extremely severe sanitary and epidemiological crisis. According to approximate estimates, around 2 million people died from infectious diseases during the Civil War in Russia. Between 1918 and 1922, 20 million people contracted typhus. Every second child died from diphtheria and other childhood infections. In 1923, 12.5 million cases of malaria were recorded. The territory of present-day Zaporizhzhia Oblast was considered one of the most malaria-prone regions in Ukraine, with up to 150,000 cases per year. There was an acute shortage of qualified medical personnel, healthcare facilities, and medications nationwide.

During the Civil War and the period of devastation, the situation became so critical that the government resorted to sanitary dictatorship. In 1920, Extraordinary Sanitary Commissions were established and granted special powers to combat epidemics. However, this was not enough. As a result, local authorities began organising cleanliness weeks, bathhouse weeks, community cleanup days (“subbotniks” and “voskresniks”), involving the population and various organisations in cleaning streets and courtyards, repairing wells, and removing waste.

Sanitary education became widespread during this period. Public health campaigns received significant attention as a means of preventing epidemics and promoting a healthy lifestyle. Vaccination programs were conducted both in the army and among the civilian population.

In 1918, the state authority for health administration – the People's Commissariat of Health (Narkomzdrav) – was established in the Russian Soviet Federative Socialist Republic (RSFSR). It was headed by the physician Nikolai Semashko, whose model laid the foundations of a centralised healthcare system. The so-called Semashko System was built on several key principles: state control over healthcare, a preventive approach to public health, free and universally accessible medical care, priority attention to childhood and motherhood, the integration of medical science and practice, the elimination of social causes of disease, and the active involvement of workers and public organizations in the development and operation of the healthcare system.

Urban improvement, the protection of soil, water, and air, the development of public catering based on scientific and hygienic principles, the creation of sanitary legislation, and other measures were also regarded as among the primary objectives and essential components of the reform.

### 4.2. Perspectives on the Semashko system

Scholars have offered divergent assessments of the Semashko System. Its shortcomings are often attributed to the fact that reforms initiated at the central level did not always reach the periphery due to the vast size of the USSR [23]. Some

researchers argue that the system was able to meet only the initial demand for improved medical care – mainly by preventing infections, epidemics, and appalling sanitary conditions [24] – but proved less effective in addressing noncommunicable diseases [25]. The Semashko model significantly improved basic medical care for the overwhelming majority of the population, particularly in the postwar period, yet it was unable to fully satisfy the more advanced health needs generated by modern industrial societies [2].

Most scholars agree that the system emerged under wartime conditions, when forced internal migrations, epidemics, famine, and institutional collapse created both an acute need for public health measures and profound structural constraints within the sector. The experiment with a fully socialised model of healthcare thus represented a pragmatic response to these extraordinary circumstances. The foundational principles of the Semashko system exerted a major influence on global debates concerning the organisation and financing of healthcare, and its legacy continues to shape health policy across Central and Eastern Europe [2].

Krementsov [1] emphasises that, between the two world wars, Russia transformed from a country with the highest mortality and morbidity rates in Europe into one of the world’s leading centres of medicine and public health—evoking admiration, envy, and criticism worldwide.

It is also important to consider the impartial views and impressions of contemporary observers, whose accounts provide valuable external perspectives on Soviet medical reforms of the late 1920s. The American Journal of Public Health published two such documents offering firsthand insights. The first, *Quite Outside Our Imagination: Alan Gregg Diary Entries During His Trip to the Soviet Union, December 1927*, edited and introduced by Fee and Brown [26], is based on Gregg’s original diary preserved in the Rockefeller Archive Center. The second, *The Essence of the Soviet Health System*, was also published by Fee and Brown [27] and includes excerpts from Henry Sigerist’s book *Socialized Medicine in the Soviet Union* [28].

Alan Gregg, a key figure in public health, worked in the Paris office of the Rockefeller Foundation between 1924 and 1930, overseeing its fellowship programs and initiatives to support medical education and research across Europe. Following his

visit to the Soviet Union in the mid-1920s, he observed: “One gets the impression very early that Government Health Service and Medical Schools are permeated with Preventive Medicine to a quite unusual degree” [26].

Henry E. Sigerist, a renowned historian of medicine who played a key role in American health policy during the 1930s and 1940s, visited the USSR in the mid-1930s. In his book, as a supporter of socialised medicine, he expressed his admiration for the Soviet system of state healthcare [29]. Sigerist found the Soviet model of social insurance particularly just, as it guaranteed workers full medical care and social security at the employer’s expense. Sigerist identified four points that, in his opinion, “represent the most characteristic features of the Soviet healthcare system:

- (1) Medical service is free and therefore available to all.
- (2) The prevention of disease is at the forefront of all health activities.
- (3) All health activities are directed by central bodies, the People’s Commissariats of Health, with the result that
- (4) health can be planned on a large scale” [27].

### 4.3. The early development of healthcare in Soviet Ukraine

In 1919, the difficult struggle for power in Ukraine culminated in the proclamation of the independent Ukrainian Socialist Soviet Republic, with its capital in Kharkiv. In 1922, it became part of the USSR. The main task of the newly established People’s Commissariat of Health under the Ukrainian government during this period was the fight against epidemics. Urgent measures were taken to promote sanitary education among the army and the general population. Artists were engaged in anti-epidemic work to design posters, leaflets, and brochures that explained, in an accessible way, the nature of diseases and the methods of their prevention and treatment (Fig. 1).

Local health administrations adopted the reformist Semashko model, emphasizing preventive medicine, urban sanitation, and the expansion of hospitals, outpatient clinics, maternity wards, and childcare institutions. The new approach sought not only to restore medical services but also to integrate health planning into the architectural and urban development of Ukrainian cities.

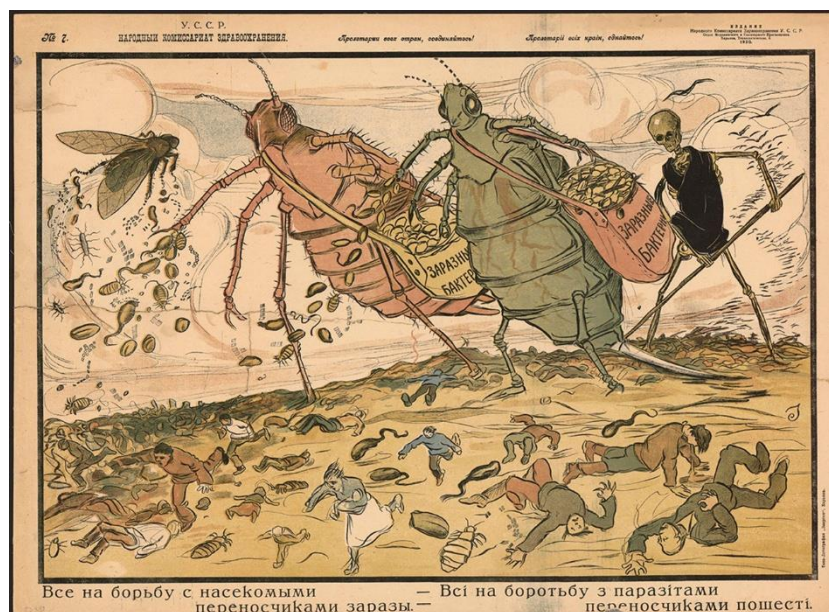


Fig. 1. Poster “Everyone to Fight Insects – Carriers of Infection”, 1920. Colour lithograph, 53 × 72 cm. People’s Commissariat of Health of the Ukrainian SSR, Department of Medical and Sanitary Education, Kharkiv. Source: [30]

The formation of the national healthcare system in the early 1920s, however, took place under severe sanitary and economic conditions. The famine of 1921–1923 critically undermined public health, while the transition from “war communism” to the “New Economic Policy” (NEP) in 1921 led to reduced state funding for medical services. Due to financial shortages, several hospitals were transferred to industrial enterprises and insurance bodies, while others introduced paid services [31].

Within the People’s Commissariat of Health of the Ukrainian SSR, a Department of Workers’ Medicine (rabmed) was created – an institutional prototype of insurance-based healthcare focused on industrial workers and employees. The rabmeds were responsible for improving workplace conditions, preventing occupational diseases, and providing specialised medical care. Improving the health of the industrial proletariat was viewed as a state priority. In 1923–1924, 79% of allocations from the Ukrainian Reserve Fund were directed toward strengthening the material base of workers’ medicine, with the largest contribution coming from the Donetsk region [31].

The rabmeds assumed control over the best hospitals and clinics, while new outpatient facilities and medical stations were established at industrial enterprises. However, following the containment of major epidemics and the stabilisation of the economy, the rabmed system was dissolved in 1927 by the decision of the Council of People’s Commissars of the Ukrainian SSR. Medical services for workers were incorporated into the general healthcare network, marking the transition from a mixed, insurance-oriented model to a centralised state system.

Nevertheless, the emphasis on workers’ health persisted beyond 1927. As V. George and N. Manning [32] note, by 1928, with the rapid onset of industrialisation and the launch of the first Five-Year Plans, “medical services were now clearly and explicitly oriented toward the needs of industrial development” (quoted in [2]). Contemporary Ukrainian researchers further confirm this disparity: “Medical care for the urban population was relatively better than for the rural population. The network of medical institutions that developed during the 1920s and 1930s primarily covered cities. However, there were sanitation problems there – overcrowding, poor-quality drinking water, pollution, and inadequate sewer systems. This was especially true in the country’s industrial regions” [33]. This shift toward a centralised state system would soon find spatial and functional expression in the healthcare infrastructure of new industrial cities and districts.

In 1920, the Ukrainian People’s Commissariat of Health also established a Department for the Protection of Motherhood and Childhood. By 1928, it supervised 74 infant homes, 513 women’s consultation centres, 200 nurseries, 188 milk kitchens, and 1,124 seasonal childcare institutions. Specialised medical and preventive facilities were also expanding: by 1928–1929, the Ukrainian SSR operated 103 dermatovenerological and 118 tuberculosis dispensaries [34].

The rights and responsibilities of the sanitary service were defined by the 1922 decree On the Sanitary Organs of the Republic, which affirmed its state-controlled character. The number of sanitary doctors in Ukraine increased dramatically – from 95 in 1913 to 544 in 1928. Bacteriological institutes played a crucial role in this system, including long-standing ones in Kyiv, Katerynoslav (now Dnipro), and Kharkiv, as well as newly established institutions in Odesa and Chernihiv.

A network of medical research institutes developed rapidly, largely through the founding of new scientific centres and laboratories. These institutions addressed pressing public health

challenges and reflected the growing specialisation of medical science in interwar Ukraine.

The consolidation of a centralised healthcare system during the 1920s not only transformed the administrative and institutional landscape of medicine in Soviet Ukraine but also profoundly influenced its spatial organisation. The integration of public health priorities into urban planning and architectural design became a key principle of the new socialist city. Hospitals, dispensaries, maternity wards, and sanitary-epidemiological stations were increasingly conceived as components of a unified urban organism, reflecting both the functional logic of the Semashko model and the broader ideological ambition to construct a healthy, productive society.

## **5. The architectural and spatial reform of healthcare in Ukraine**

### **5.1. Creation of a hierarchical typology of medical institutions**

The active design and construction of medical facilities in the Ukrainian SSR began in the mid-1920s, significantly expanding both their typological diversity and architectural-planning solutions. A hierarchical system of healthcare institutions was established to ensure unified medical care for the entire population, from small settlements and villages to the capital. Key levels of this hierarchy, in ascending order, included feldsher-midwifery stations (FAPs), district polyclinics (dispensaries), district hospitals, regional hospitals, and specialised institutions. Departmental facilities serving railway workers, miners, the army, and other professional groups continued to operate alongside this system.

The essence of this hierarchy was universal accessibility: everyone could receive basic medical care locally and, if necessary, be referred to specialised institutions or higher-level hospitals for extended treatment. This network also integrated the sanitary-epidemiological service, institutions for maternal and child protection, health education centres, and preventive and restorative facilities such as sanatoriums. As Sigerist observed, “The general idea is to supervise the human being medically, in a discrete and unobtrusive way, from the moment of conception to the moment of death. Medical workers and medical institutions are placed wherever anyone, in the course of his life, is exposed to dangers” [27].

Implementation in Ukrainian cities relied both on adapting existing buildings and constructing new facilities. In Kharkiv, the capital of the Ukrainian SSR, the population had grown 2.5 times by 1931 compared to 1913, while the labour force – particularly industrial workers – had increased twelvefold, raising the working population share to 52%. According to the Kharkiv City Council, “All activities of the health authorities were reorganised to ensure comprehensive medical and sanitary care primarily for the urban proletariat and the socialist sector of the countryside” [35].

By 1931, the city’s outpatient and polyclinic network accommodated 5.2 million visits, with plans to expand to 7.5 million in 1932. Kharkiv operated 18 polyclinics, 106 medical points, 10 tuberculosis dispensaries, and several dietetic and narcological dispensaries. Hospital beds were to increase from 3,120 in 1931 to 4,235 in 1932, averaging one bed per 154 residents. Several sanitary-epidemiological facilities were opened, and construction continued on a large hospital complex with 1,500 beds [35].

The structure of the new healthcare network becomes particularly evident in the planning of new towns that were built

in large numbers across Ukraine during the years of rapid industrialisation. In 1930, construction began near the Ukrainian capital on the Kharkiv Tractor Plant (KhTZ), designed to produce 50,000 tractors annually. This industrial giant required 25,000 workers, and it was urgently necessary to provide housing for them and their families. To meet this need, a new city for 100,000–120,000 inhabitants – “New Kharkiv” – was planned.

Rare documents preserved in the archives illustrate the significant attention paid to healthcare issues at that time. The establishment of a network of medical and preventive institutions had been envisaged even before the start of design work in the *Assignment for the Preparation of the General Plan and Development Project of the Socialist Settlement at the Kharkiv Tractor Plant* [36].

The proposed network was complex and well-structured, designed to meet the projected needs of both the adult and child populations. It was to include two polyclinics (one of them central), two hospitals (for adults and children), three sanatoria (a day sanatorium, a bone-tuberculosis sanatorium, and one for trauma patients), two occupational health centres, five pharmacies, an ambulance station, a city disinfection station, an epidemic bureau near the railway station, a sanitary station with laboratories, and a sanitary inspection post with a disinfection facility and a dormitory located near the railway station, among others.

Given the specifics of tractor production, characterised by full mechanisation, urban healthcare had to account for an increased risk of occupational injuries. The terms of reference, therefore, proposed the establishment of an Institute of Traumatology at the Central Polyclinic to study morbidity patterns in mechanical workshops and to develop measures to address noise and fatigue.

Public health education was to be provided through the House of Sanitary Culture, which would host a permanent sanitary and hygiene exhibition, and the House of Health Education. The network for maternal and child welfare included the construction of milk kitchens, two maternity hospitals, several children's night sanatoriums, nurseries in communal houses, and the Mother and Child House.

For preventive purposes, the document also stipulated the organisation of first-aid stations within hazardous industrial workshops and at every “zhilkombinat” (a residential complex comprising a group of apartment blocks with integrated social and cultural facilities).

### 5.2. Hospitals and hospital complexes

In the final design of the future city of “New Kharkiv”, a large hospital complex with 900 beds was planned. Its general plan (Fig. 2) included a detailed list of individual buildings and departments: administrative, physiotherapy, emergency, obstetric and gynecological, pediatric somatic, therapeutic, tuberculosis, dermatovenereal, surgical, and laboratory units; one infectious disease building with 50 beds and two with 60 beds each; two isolation and sorting pavilions; a central kitchen, a central laundry, and several auxiliary facilities.

The requirement to locate medical institutions away from urban noise, within green zones, was explicitly stated in the design assignment. On the general plan of the city, the hospital was situated in the southern part, in a green area, yet still close to the city centre.

Large hospital complexes of that period were built according to individual designs, employing the pavilion system, in which separate medical departments, a food unit, and administrative and

utility sections were arranged on the site in dedicated one- or two-story buildings. Together with residential houses for doctors and service staff, they formed a comprehensive medical campus – for example, the regional hospitals in Kharkiv, Donetsk (then called Stalino), Luhansk, and other cities [18].

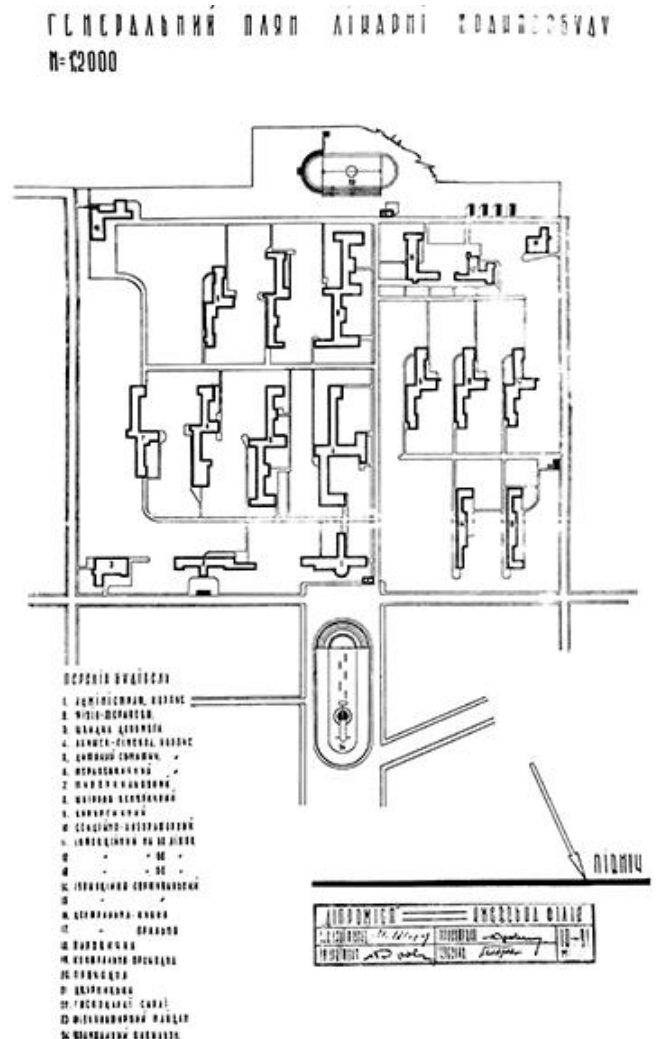
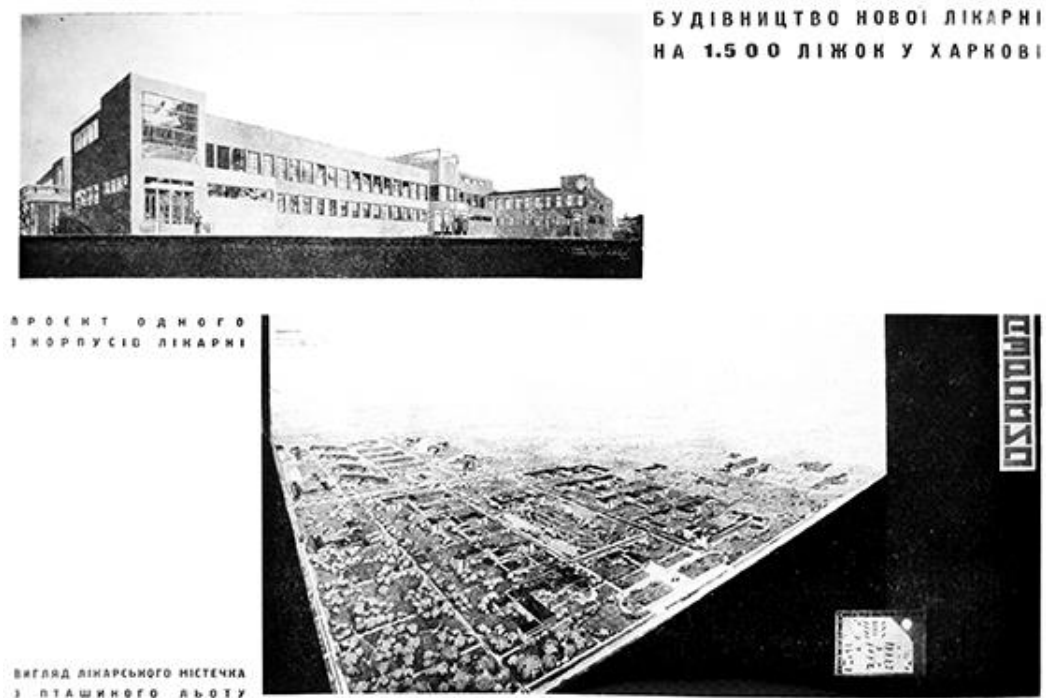


Fig. 2. General plan of the 900-bed hospital for New Kharkiv, 1930. Source: [37]. Published for the first time

These urban planning principles were also applied in the design and construction of the 1,500-bed medical campus of the regional hospital in Kharkiv. The construction site, covering 50 hectares, was selected in the forest-park area of Pomerky. It had favourable soil conditions, gentle topography, and good wind protection, fully meeting sanitary and hygienic requirements for hospital construction [38]. The site was connected to the city centre by a highway that continued the city's main street.

The complex consisted of 17 buildings – therapeutic, obstetric-gynaecological, surgical, scarlet fever, diphtheria, tuberculosis, and others – along with auxiliary structures (Fig. 3). All hospital buildings were limited to three stories, which was considered optimal for medical facilities at that time. The pavilions were surrounded by greenery. The complex also included dormitories for medical personnel, a bathhouse, and a club. Construction began in 1930, and within three years the hospital was already serving 300 patients. By 1937, it had reached full operational capacity.

During the Second World War, many of the buildings were destroyed, and not all were subsequently restored. However, the hospital remains in operation to this day (Fig. 4).



**Fig. 3.** Page from the album “Kharkiv buduie” (Kharkiv Builds), published by the Kharkiv City Council in 1931 to showcase the city’s achievements in constructing buildings of various functions. The page presents photographs of the 1,500-bed hospital project in Kharkiv: a perspective view of one of the hospital buildings and an aerial view of the entire complex. Source: [35]



**Fig. 4.** Surviving and still functioning hospital buildings. Source: own study, 2020



**Fig. 5.** City Hospital in the Sixth Settlement of Zaporizhzhia. Architect: L. Yurovsky. Photo by I. Kosarevsky, 1947. Source: [39]

A particularly interesting example from an architectural standpoint is the Ambulatory and Hospital Complex in the 6th Block of the Sixth Settlement of Zaporizhzhia, constructed between 1929 and 1932 (Fig. 5). It has largely preserved its

modernist yet highly distinctive appearance, spatial layout, and functional purpose – it still operates as the 3rd City Hospital. The complex was built to serve the workers and residents of the Sixth Settlement, erected for the DniproHES construction. The hospital ensemble included an ambulatory (polyclinic), a hospital with inpatient facilities, a pharmacy, and a service block. Large glazed areas, rounded staircases, a column-supported gallery connecting the buildings on the second floor, and specific planning features – all typical of early modernist architecture – were used in this medical facility. Yet it also possessed a unique, unmistakably local character – its façades were clad with natural tuff stone, the same material used for the main turbine hall of the DniproHES.

Ambitious in scale and pace, hospital construction faced the harsh economic realities of the industrialisation period. As archival documents indicate, the implementation of the first phase of the hospital in “New Kharkiv” – comprising five buildings (surgical, three infectious disease wards, and an obstetric-gynaecological department) with a total of 460 beds – began in 1931, with commissioning scheduled for the first quarter of 1933. However, construction was suspended in 1933 due to a lack of funding. Resources for constructing the “new socialist city” were insufficient, primarily resulting in underfunding of cultural and community facilities. In a “Memorandum on Economic and Cultural Construction in the Kharkiv Tractor Plant (KhTZ) Workers' Settlement”, prepared in early 1933 by the Planning Commission of the Kharkiv City Council Executive Committee, completing the first phase of the hospital topped the list of the most urgent needs for KhTZ workers: “It is necessary to identify sources of funding for the hospital's construction as soon as possible, as such a situation regarding the medical care of workers is no longer tolerable” [40].

### 5.3. *Unified general dispensaries (district polyclinics)*

To implement the ideas of the new healthcare system, it was necessary to create new types of medical institutions and to ensure their rational distribution within the urban structure. On the one hand, these new institutions had to meet the principles of high qualification and specialisation in both medical-preventive and sanitary-hygienic care, which required substantial financial resources. On the other hand, they were intended to serve large segments of the urban population and therefore had to be economical in terms of construction and operation.

These contradictory principles were embodied in a new type of hospital building – the “unified general dispensary/outpatient clinic” (later known as the district polyclinic). It was conceived as “a unified organisation providing comprehensive medical services for the population of a specific area, covering all branches of pathology, both in the field of medical and social assistance and in disease prevention” [41].

The unified dispensary/outpatient clinic was to provide the population living within its catchment area (district) with all forms of medical, preventive, and sanitary-hygienic services, not only through its own resources but also by engaging facilities of a higher level. This structure enabled the implementation of the principle of cost efficiency, provided that the district had sufficient population density within a relatively small radius. The number of inhabitants served by a single unified clinic/dispensary was estimated at 30,000–40,000, with a daily capacity of 1,000–1,200 patients. The service radius of each outpatient clinic was determined by the health authorities and construction organisations for each specific case, taking into account local conditions such as population density. Its functional program and the number of consultation

rooms in individual medical departments were calculated using statistical data, including the types of diseases for which residents most frequently sought medical assistance and the number of recorded visits.

There is some confusion in contemporary interpretations of the terminology used in the 1920s–1930s to denote types of medical institutions. Dr I. Kovalev, in his 1929 article [41], clearly explained what was meant by the term “unified general dispensary”, which can now be equated with the concept of a district polyclinic. Apparently, in those years, the term “polyclinic” did not always correspond to the principle of serving a defined population radius or to its integration into the hierarchical system of urban healthcare, which was only beginning to take shape. Later, the term “polyclinic” came to mean this and replaced the cumbersome designation “unified general dispensary”. Moreover, during that period, the word “dispensary” in medical terminology often referred to institutions specialising in specific types of diseases (for example, tuberculosis or neurological dispensaries), a meaning that has persisted to the present day.

The author of this article has discovered a rare archival document dated 1930 – Program of Design Tasks for a District Unified Dispensary in a City and Industrial Centres [42]. The document defined the scope and structure of the unified dispensary. It was intended to serve an urban district with 10,000–12,000 workers and up to 35,000 residents, with a maximum daily capacity of 1,500 visitors.

The internal structure of the unified dispensary included:

1. Administrative and utility unit with an information bureau and registry.
2. Departments: sanitary-epidemiological, social-pathological, statistical, and patronage.
3. District physicians' department with a bureau for home visits.
4. Department for maternal and infant health.
5. Department for child and adolescent health.
6. Department of sanitary education.
7. Department of social diseases and preventive treatment, comprising groups of rooms for:
  - surgery, orthopaedics, urology, and gynaecology;
  - otorhinolaryngology;
  - dentistry;
  - neurology and narcology;
  - tuberculosis;
  - dermatovenereology;
  - oncology.
8. Radiology group.
9. Department of specialised offices: cardiology, functional diagnostics, and rheumatology.
10. Laboratory group.
11. Department of electro- light-, and mechanothermal therapy.
12. Service group for dispensary personnel (combined with the administrative unit).
13. Dietary department with a kitchen and canteen for patients requiring special diets, including a separate section for tuberculosis patients and diagnostic wards for dietetic, cardiac, and tuberculosis cases.

The General Design Instructions for the dispensary provided detailed requirements for each type of space – reception areas, operating and dressing rooms, treatment rooms, laboratories, etc. They specified room height (3.5 m), maximum depth, lighting (orientation toward cardinal points and illumination ratio),

ventilation, and heating. The Instructions also included a comprehensive schedule of all premises with their floor areas. Special attention was given to the arrangement of entrances and exits. For instance, the departments for maternal and infant health and for child and adolescent health were required to have a separate entrance, a filter-isolation room, and direct outdoor access.

Additional sections of the dispensary – the dietary canteen, tuberculosis canteen, diagnostic inpatient ward for 20–25 beds, food laboratory kitchen, and a children’s sanatorium – were to be located in two separate buildings.

The search for the most efficient and expressive architectural and planning solutions for healthcare institutions reached its peak in the late 1920s and early 1930s. A remarkable example from this period is the surviving building of the 4th “unified dispensary” at 59 Moskalivska Street in Kharkiv (now Polyclinic No. 22). Constructed in 1931 near the “Svitlo Shakhtarja” factory, it was designed to serve both the plant’s workers and the local residents. The building was realised according to an individual project by architect Petro Frolov, with consultation by Victor Estrovich.

The building is skillfully integrated into its urban context. Situated at the intersection of two streets, it is set back slightly from the corner to preserve visibility. Two symmetrical wings of complex, curved configuration converge on a central cylindrical

volume that serves as both a compositional and functional pivot. Although only two stories high, the building remains to this day the dominant architectural and urban landmark of its area.

Its design clearly demonstrates the characteristics of Kharkiv Modernism of that period: brick walls plastered to imitate concrete, extensive glazing in the central part encircled by a balcony, minimalist inscriptions and emblems as façade graphics, and a tall parapet that creates the illusion of a flat roof, concealing the pitched one (Fig. 6).

The functional and spatial organisation of the dispensary is particularly well thought out, reflecting both the technological logic of medical processes and the comfort of patients. Two symmetrical entrances lead into a bright, spacious vestibule on the ground floor. The interior is articulated by exposed reinforced-concrete ceilings. Curved corridors visually guide visitors into two opposite wings, while glazed staircases lead to the upper and basement floors or the courtyard. Above the vestibule is an assembly hall, preceded by a large, well-lit foyer. The corridor system, with rooms on both sides, is enlivened by small naturally lit niches that create a sense of cosiness and provide comfortable waiting areas for patients.

The building’s total usable area today is 1,472 m<sup>2</sup>. It remains one of the few outstanding examples of modernist medical architecture in the former Ukrainian capital that has preserved its authenticity (Fig. 7).



**Fig. 6.** Photographs of the 4th “unified dispensary”: a – after its construction in 1931, source: [35], and b – the current state of the building in 2013, source: own study



**Fig. 7.** Current state of the interiors of Polyclinic No. 22 (formerly the 4th “unified dispensary”) in Kharkiv. First floor lobby. Source: own study, 2013

#### 5.4. Standard designs of medical and preventive institutions

The transition to standardised designs for medical institutions of various types and capacities was considered essential to reduce construction costs. Leading Ukrainian specialists in hospital architecture were involved in the development of these designs, including engineers-architects Alexander Molokin and Estrovich, who was a recognised expert and consultant for many medical buildings constructed in Ukraine at that time. Architects, in collaboration with engineers and physicians, worked on defining the composition, layout, orientation, and principles of grouping and interconnection of spaces within medical and preventive care institutions.

In 1930, the People's Commissariat of Health of the Ukrainian SSR published an album of hospital designs [43]. It contained 32 projects divided into eight groups:

1. Ambulatory and polyclinic institutions;
2. Rural hospitals;
3. District hospitals for 300 beds;
4. Infectious-disease hospitals;
5. Institutions for maternal and child health protection;
6. Sanitary-type institutions;
7. Sanitary education centres;
8. Combined self-supporting pharmacies.

Each group included several design variants. The first group, for example, comprised outpatient clinics for 50, 100, 200, 1,000, and 1,200 visits per day, while the fourth group featured

infectious-disease hospitals, isolation wards, and sanitary-epidemiological stations. The appendices to the drawings contained summary tables with area standards for individual rooms, usable and auxiliary space, building volume, and other parameters, enabling evaluation of the economic efficiency of the projects.

These first Ukrainian standard designs and their planning principles deserve closer examination. One notable example was the standard hospital with 300 beds (Fig. 8). All buildings were embedded within a 7-hectare landscaped park. The layout included two access points – a main and a service entrance. The buildings were logically arranged and grouped: the administrative building was placed near the entrance, providing convenient connections with other hospital units, the service yard, and the main road. The surgical building, which included the maternity ward, was also located near the entrance, while the infectious-disease buildings were set deeper within the site. The residential area for medical personnel occupied a separate plot with its own entrance, garden, and service yard.

The arrangement of buildings on the master plan was based on the prevailing northeast winds typical of the Ukrainian regions for which the design was intended (particularly the Kharkiv area). The facades containing the hospital wards were oriented southeast, providing optimal natural sunlight throughout the day – a key factor in hospital design. Patient rooms were designed with a standard of 10 square meters per person, while double rooms measured 18 square meters.

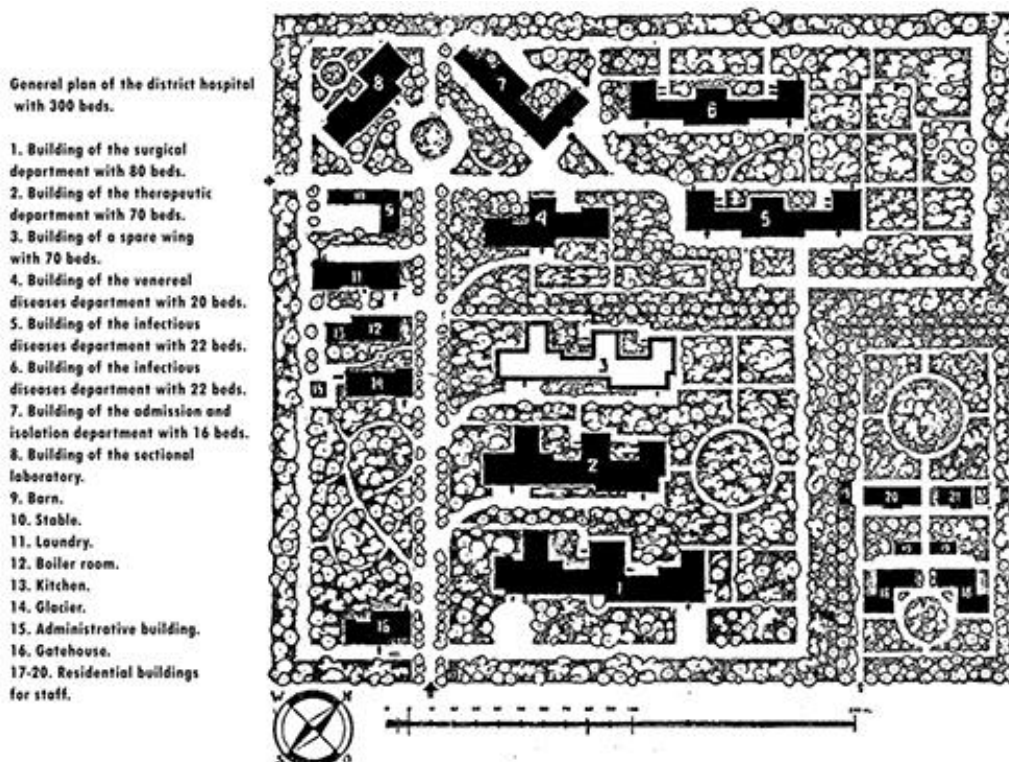
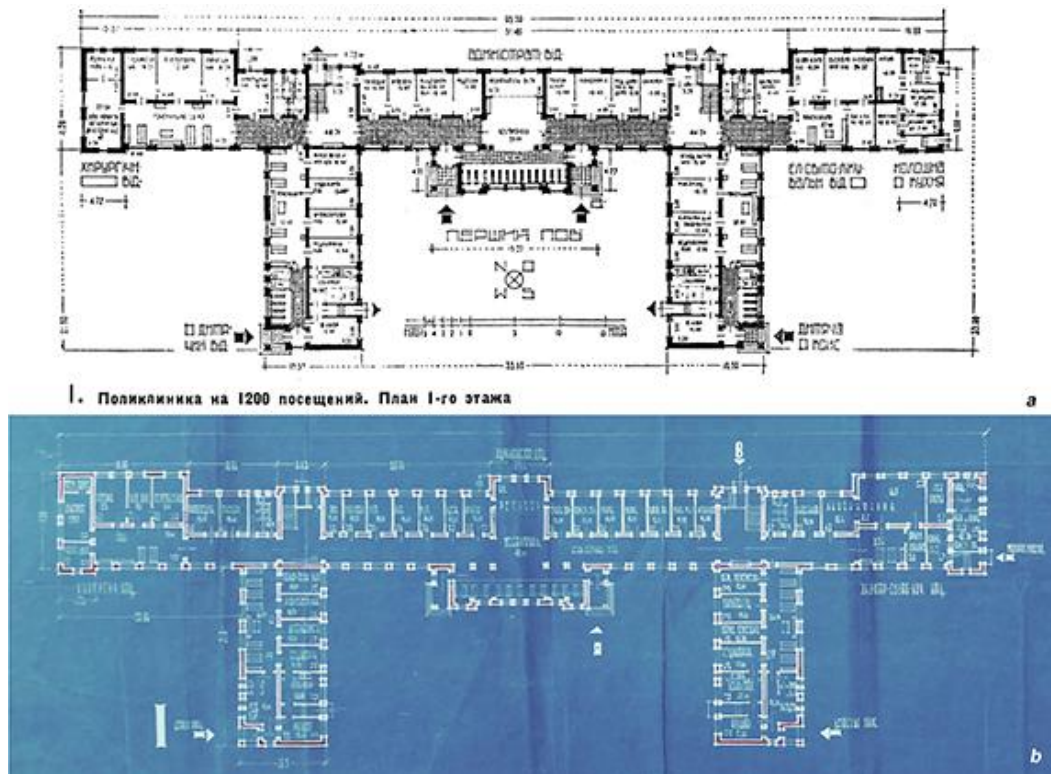


Fig. 8. Master plan of a standard district hospital for 300 beds. Engineer-architect Prof. A. Molokin. Source: [43]

The publication of this album marked a significant milestone in establishing standards for healthcare and preventive institutions in architecture and urban planning. It became an essential reference for the design and construction of medical facilities across Ukraine. Archival materials provide evidence of its immediate practical application – in particular, a working design for a polyclinic for 1,200 visits per day in Yenakiiievo (1930–1931) [44].

A comparison made by the author between the Yenakiiievo design and the plans of the standard polyclinic-dispensary for 1,200 visits (architect Estrovich) from the album of the People's Commissariat of Health of the Ukrainian SSR reveals a striking similarity. This indicates that Estrovich's standard project was, in fact, quickly adapted to local needs and implemented in Yenakiiievo shortly after the album's publication (Fig. 9).



**Fig. 9.** Comparison of the ground-floor plans for two polyclinics for 1,200 visits: a - the standard polyclinic designed by Professor Estrovich, source: [43]; b - the standard polyclinic designed for Yenakiyevo, 1931. Source: [44]

### 5.5. Medical research institutes

Institutions occupying the highest positions within the hierarchical structure of the Semashko healthcare system – namely, scientific research institutes and centres built in the interwar period in the Ukrainian SSR – deserve dedicated research and separate study. Their architecture was designed to accommodate a complex set of functions: combining scientific research with the provision of specialised medical care to the population at an advanced professional level.

One example of such a building, which has retained both its original function and architectural features to this day, is the

Radiological Institute in Kharkiv (now the S. P. Hryhoriev Institute for Medical Radiology). The project was designed in 1930 by the Ukrastroy design bureau with the participation of Estrovich. The building's complex architectural and spatial composition is based on an interplay of volumes (Fig. 10). A deep courtyard (cour d'honneur) on the side of Skovorody Street creates additional open space in front of the institute's main entrance. The façades are dominated by large glazed window openings. The project incorporated innovative structural solutions for its time, including “large-span coffered monolithic reinforced-concrete floors and prefabricated reinforced-concrete structures for the amphitheatre of the conference hall” [45].



**Fig. 10.** The building of the Radiological Institute in Kharkiv (S. P. Hryhoriev Institute for Medical Radiology), designed by “Ukrastroy” under the consultation of Estrovich. Façade with main entrance from Skovorody Street. Source: own study, 2019

### 6. The agency of design: organisations and key figures

The design of healthcare facilities in Ukraine was transferred to state-run design organisations. Specifically, the development

of projects for various types of medical institutions in the cities and settlements of Donbas, as well as the Ukrainian capital, was actively carried out by the All-Ukrainian Joint-Stock

Construction Society “Ukrpaibud”. Organised in June 1927 in Kharkiv within the system of the People's Commissariat of Internal Affairs (NKVD) of the Ukrainian SSR, it was later reorganised in 1930 into the Ukrainian State Trust for Civil Construction “Ukrsvyilbud”, subordinate to the Supreme Council of the National Economy of the Ukrainian SSR.

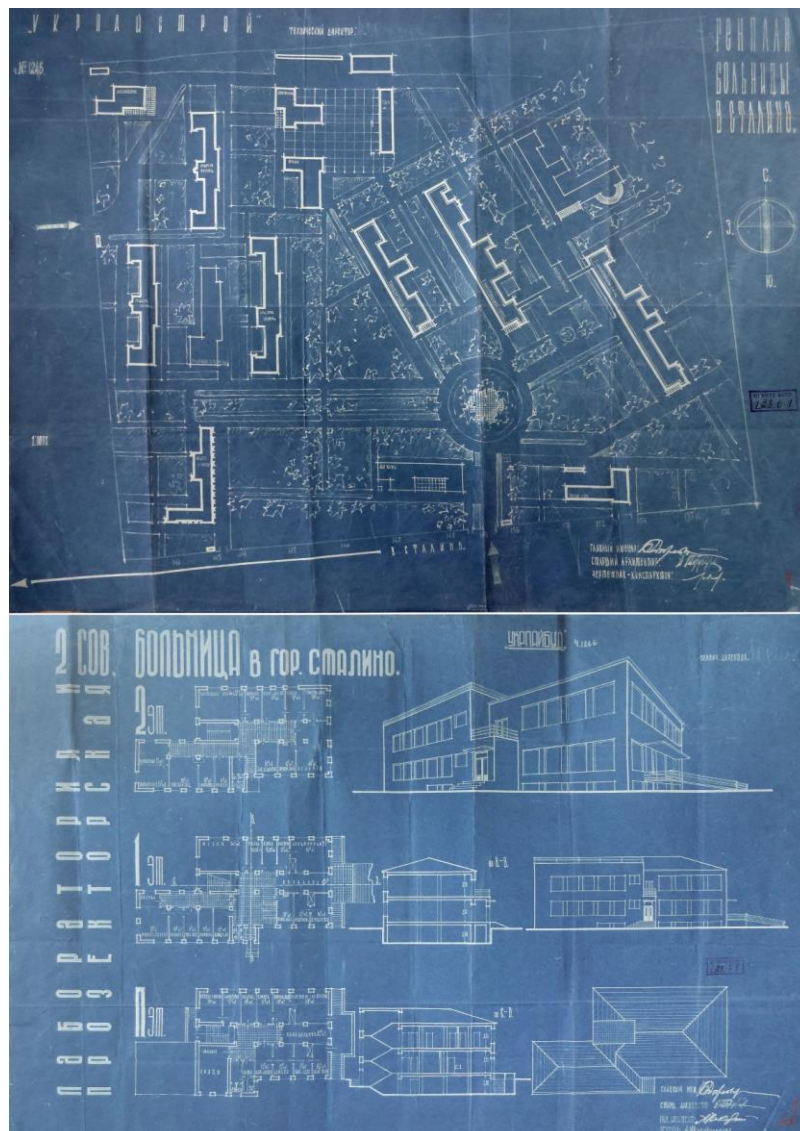
Between 1927 and 1931 alone, this organisation developed a wide range of medical facility projects, including:

- disinfection station in Stalino (now Donetsk);
- polyclinics for Yenakiieve, Luhansk, and Makiivka in Donbas;
- hospital complexes for Kharkiv, Horlivka, Makiivka, and Stalino (Fig. 11);
- hospitals in Donbas settlements (Rutchenkove, Shchehlovo, and Chystiakove) based on standardised designs;
- sanatorium in Sloviansk;
- standardised designs for children's night sanatoriums in Kostiantynivka, Kadiivka, and Stalino;
- major specialised medical centres in Kharkiv, such as the X-ray and Radiological Institute, the Institute of Traumatology and Orthopaedics, and the Organo-Therapeutic Institute, as well as the Sloviansk branch of

the All-Ukrainian Research Institute of Orthopaedics and Traumatology.

Although the work of a design organisation presupposes the efforts of an entire team of designers, certain architects stood out in professional circles as recognised specialists in medical construction, serving as consultants on many healthcare projects.

Victor Estrovich (1881, Raseiniai – 1941, Kharkiv) graduated in 1907 from the Institute of Civil Engineers in St. Petersburg. In the mid-1910s, he moved to Kharkiv, where he lived and worked until his life was tragically cut short during the war. Prior to the revolution, he designed and constructed several multi-family apartment houses (dokhodnye doma). Between 1923 and 1929, he served as the chief architect for the State Bank of the Ukrainian SSR, later becoming the chief architect of the design and construction department of the People's Commissariat of Health (Narkomzdrav) of the Ukrainian SSR. In this role, he focused primarily on the design and consultation of healthcare facilities. During the 1920s and 1930s, he authored or consulted on the projects of several major healthcare institutions in the Ukrainian capital, including Polyclinic No. 3 (currently the main building of Hospital No. 2) on Heroiv Kharkiva Avenue, the Institute of Endocrinology on Alchevskykh Street, the Institute of Occupational Hygiene and Professional Diseases on Trinkler Street, and the Medical Institute on Nauky Avenue.



**Fig. 11.** Working project of a hospital in Stalino, executed by “Ukrpaistroy” in 1929: master plan of the entire complex and drawings of individual buildings. Source: [46]

Alexander Molokin (1880, Vilnius – 1951, Kharkiv) completed his education in 1910 at the St. Petersburg Institute of Civil Engineers. From 1914 to 1921, he served as the city architect of Kharkiv. During this period, he began his academic career training architectural and construction personnel at the Kharkiv Technological Institute, where he was appointed Associate Professor in 1917 and Professor in 1921. His pre-revolutionary portfolio includes the construction of Land Bank buildings in several cities (Kharkiv, Penza, Tambov) between 1909 and 1914. He gained significant experience in healthcare design with the 1,000-bed pavilion-type Hospital in Kharkiv (1915–1916). Numerous significant public buildings were erected in Kharkiv either according to his personal designs or under his leadership, including the “Printers” and “Communication Workers” clubs, the main building and staff residence of the Research Institute of Experimental Veterinary Medicine, the “Gigant” student dormitory, and the State Insurance (Gosstrakh) building, along with several major projects in other Ukrainian cities. The architect was also involved in designing standardised medical facilities. In 1935, Molokin was confirmed as a research correspondent for the All-Union Academy of Architecture, and in 1936, he was elected an Honorary Corresponding Member of the Royal Institute of British Architects (RIBA). He participated in the organisation of the Union of Architects of the USSR and, in the post-war period, dedicated himself to the reconstruction of Kharkiv.

No records have been preserved regarding the architect Petro Frolov, the author of the 4th “unified” dispensary in Kharkiv. In the course of archival research, the author of this article established that in the late 1920s and early 1930s, Frolov worked for the All-Ukrainian Joint-Stock Construction Society “Ukrpaibud”. Frolov’s personal signature was discovered on drawings of various building types dated 1929, including a school, a research institute, and a residential building, in which he signed the documents either as the chief engineer and senior project architect or as the author-architect. The renowned scholar Selim Khan-Magomedov, in his book *Architecture of the Soviet Avant-Garde*, mentioned Frolov as the author of the Automatic Telephone Exchange (ATE) building in Kharkiv. However, his signature was not found on the archival working drawings of the ATE developed by “Ukrpaibud” in 1929.

In addition to the aforementioned architects, the signatures of others whose biographies require further study – such as Dmytro Torubarov – were discovered on the archival drawings of healthcare facilities (Fig. 11).

## **7. The Ukrainian healthcare network of the 1920s–1930s: a comparative study within the All-Union healthcare infrastructure**

The construction of a healthcare network based on the “Semashko System” was launched on a wide scale across the neighbouring republics of the Soviet Union. In the 1920s, projects were developed on a competitive basis for the Botkin Hospital in Leningrad (RSFSR), a physiotherapeutic mud bath facility in Makhachkala (Dagestan), and a hospital in Samarkand – the capital of the Uzbek SSR, established in 1924. A series of sanatorium and resort facilities were also designed, including a sanatorium in Novaya Matsesta and a gynaecological sanatorium in Saky (Crimea). In Baku, the capital of the Azerbaijan SSR, the Kirov Physiotherapy Institute (now the Institute of Rehabilitation Medicine) was erected in the 1930s in a distinct constructivist spirit. Initial experiments in designing unified general

dispensaries were also undertaken in cities such as Bryansk, Bezhitsa, Nakhichevan, Leningrad, and Moscow [41].

Novosibirsk (RSFSR) serves as a compelling vis-à-vis to the Ukrainian capital, Kharkiv. During the 1920s and 1930s, Novosibirsk became the centre of the Siberian Krai and underwent rapid industrialisation. The high population growth rate in the “Siberian capital”, mirroring that of the booming Ukrainian capital, created an urgent need for medical services and specialised facilities. In late 1926, the Novosibirsk Healthcare Organisation Department announced an open competition for a polyclinic project. The competition program could be obtained from the Narkomzdrav of the RSFSR as well as from the Narkomzdrav of the Ukrainian SSR in Kharkiv, thereby confirming inter-republican professional links in medical construction [47]. In early 1927, an invited competition for an 850-bed district hospital was announced [48]. For comparison, the Kharkiv district hospital complex was planned with twice the capacity, at 1,500 beds. Both hospital complexes applied common design principles developed within the Semashko system during those years:

- location: siting hospital complexes within urban green zones;
- environmental integration: maximising the use of the site’s natural conditions, including consideration of prevailing wind directions and the orientation of hospital wings according to functional requirements for isolation (sunlight);
- zoning: strategic zoning of the master plan and a compact layout for the entire complex;
- pavilion system: utilising a pavilion system where buildings were grouped by disease type; buildings intended for patient visits were located closer to the main entrance and central alley;
- landscaping: extensive additional greening of the territory between buildings, transforming it into a hospital park;
- modern aesthetics: architectural forms of the buildings were strictly maintained in a constructivist style.

## **8. Conclusions**

The study reveals that until the mid-1930s – prior to the establishment of the People’s Commissariat of Health of the USSR – the Ukrainian SSR maintained a degree of autonomy in addressing public health issues, seeking independent strategies for disease prevention and epidemic control (notably, the introduction of “rabmed” health insurance). The adoption of the Semashko system represented a deliberate and positive step forward for Ukrainian healthcare during the challenging interwar period. The hierarchical network of medical facilities established during these years, combined with their strategic integration into the urban fabric, helped reduce mortality rates and address both the acute post-war epidemiological crisis and the urgent healthcare needs of a rapidly expanding urban population.

The 1920s and 1930s were an unprecedented era for the design and construction of numerous types of experimental medical institutions across the republic. The search for the best standardised solution for the key facility in the hierarchical healthcare network – the unified district dispensary (later, polyclinic) – followed an individual, competitive design path, with subsequent approbation of the realised buildings under actual conditions.

Unlike the trend toward constructing centralised high-rise hospitals observed in foreign practice at the time – such as New York-Presbyterian Hospital (1928–1932) or Beaujon Hospital in

Clichy, France (1935) – Ukraine employed a pavilion system when constructing large regional and city hospital complexes intended for long-term patient stays. This choice is explained by a strict adherence to modernist health principles: “sun, air, greenery”. The requirement to locate such complexes in urban green zones, which are optimal from the perspectives of geology and climatology, accompanied by mandatory landscaping and site improvements, became a design standard.

In contrast, specialised scientific research medical institutions in Ukraine and other Soviet republics were designed and erected as multi-story, centralised structures. These were often located in city centres, actively participating in shaping their architectural appearance.

While a single article cannot encompass the full typological diversity of early modernist healthcare facilities in Ukraine, the design of these buildings constituted a breakthrough in both architecture and urban planning, often lacking direct precedents in earlier practice. The search for optimal spatial and functional solutions – driven by stringent sanitary-hygienic requirements and the unique specificities of each building type – compelled architects to experiment with a new aesthetic of simplicity and clarity, embodied in avant-garde modernism (constructivism).

This research demonstrates that the architectural and urban planning heritage of medical institutions built in Ukraine during the 1920s and early 1930s possesses undeniable historical, aesthetic, and cultural value. These structures serve as tangible evidence of the profound transformations within the national healthcare system. The principles of a progressive, humanistic system of accessible public health were reflected in the urban medical networks and materialised in the architecture of individual facilities, including research institutes, large hospital complexes, district dispensaries, sanitary-epidemiological stations, and pharmacies.

Many of these institutions have proven their long-term viability, functioning successfully for nearly a century and continuing their humanitarian mission even under the extreme conditions of the current war in Ukraine. Both individually designed landmark buildings and early standardised (prototype) projects merit close attention, as they testify to the ambition to rapidly and widely disseminate new architectural typologies nationwide.

Currently, there is an urgent need to identify the surviving avant-garde modernist medical buildings and complexes in Ukraine, with particular focus on those whose original appearance can still be restored. These structures represent a national cultural heritage that Ukraine can and should take pride in. Their modernisation to meet contemporary healthcare standards requires a highly nuanced approach. Such efforts must respect their historical significance, unlock their inherent functional and spatial potential, and ensure the maximum preservation of their authentic stylistic features.

## References

- [1] Kremontsov N., The promises, realities, and legacies of the Bolshevik Revolution, 1917–2017. *American Journal of Public Health* 107(11) (2017) 1693–1694. <https://doi.org/10.2105/AJPH.2017.304092>
- [2] Heinrich A., The emergence of the socialist healthcare model after the First World War. In *International Impacts on Social Policy*, Nullmeier F. et al. eds. Cham: Springer International Publishing, 2022, 35–46. [https://doi.org/10.1007/978-3-030-86645-7\\_40-121](https://doi.org/10.1007/978-3-030-86645-7_40-121)
- [3] *Pro ohoronu kul'turnoi spadshchini*, Kiyv, Verhovna Rada Ukraini, 08.06.2000, 1805-III. (in Ukrainian)
- [4] ICOMOS, *The Nara Document on Authenticity*. Nara, 1994.
- [5] UNESCO World Heritage Centre, *Operational Guidelines for the Implementation of the World Heritage Convention*. UNESCO, Paris, 2003.
- [6] ICOMOS International Scientific Committee on Twentieth Century Heritage (ISC20C), *The Madrid-New Delhi Document: Approaches for the Conservation of Twentieth-Century Cultural Heritage*, ICOMOS, 2017.
- [7] International Union of Architects (UIA), *Public Health Group (UIA-PHG) Resources and Initiatives*, UIA Public Health Group. Available: <https://www.uia-phg.org/>
- [8] Tostões A., Health at the core of modern movement architecture. *Docomomo Journal* 62 (2020) 2–3. <https://doi.org/10.52200/62.A.6QVKSDMB>
- [9] Arnaut D., Cure and care at the cradle of innovation. *Docomomo Journal* 62 (2020) 4–5. <https://doi.org/10.52200/62.A.GVFC4HW1>
- [10] Doyle B., *Hospitals for all*, History blog archive. Available: <https://historyjournal.org.uk/2020/04/06/hospitals-for-all/> [Accessed: 26 February 2026].
- [11] Adams A., *Medicine by design: the architect and the modern hospital, 1893–1943*, NED-New edition. University of Minnesota Press, 2008. Available: <https://www.jstor.org/stable/10.5749/j.ctttv5mt>
- [12] McKellar E., *The German Hospital Hackney. A social and architectural history 1847–1987*. London: The Hackney Society, 1991. Available: <https://www.hackneysociety.org/publications/the-german-hospital-south-shoreditch/>
- [13] Bonneau L., Les valeurs de santé “ de l’hôpital Beaujon à Clichy (Hauts-de-Seine) entre 1935 et 2023. In *Situ* 51 (2023) 213–224. <https://doi.org/10.4000/insitu.39528>
- [14] Gerber P., Historical hospitals: forgotten heritage. *Wiadomości Konserwatorskie* 70 (2022) 117–130. <https://doi.org/10.48234/%20WK70HOSPITALS> (in polish)
- [15] Strojny R., Przesmycka N., Lukomska Z., Problems of the modernisation of 20th-century healthcare facilities based on the example of hospitals within the Lubelskie Voivodeship. *Budownictwo i Architektura* 22(2) (2023) 021–039. <https://doi.org/10.35784/bud-arch.3578>
- [16] Willis J., Goad P., Logan C., *Architecture and the Modern Hospital: Nosokomeion to Hygeia*. Routledge, 2018. <https://www.perlego.com/book/1380329/architecture-and-the-modern-hospital-nosokomeion-to-hygeia-pdf>
- [17] Gaukel I., Richard Döcker. Architekt des Neuen Bauens. *Denkmal pflege in Baden-Württemberg – Nachrichtenblatt der Landesdenkmalpflege* 49(1) (2020) 2-8. <https://doi.org/10.11588/NBDPFBW.2020.1.71971>
- [18] Smolenska S.O., *Arkhitektura avanhardnoho modernizmu v Ukraini: geneza ta spadshchyna*. Thesis, Lviv, Lviv Polytechnic National University, 2017. (in Ukrainian)
- [19] Semiakin H., *Metodika ocinki ta principy zberezheniya arhitekturnoi spadshchini 1920h–1930h rokiv na prikladi likuval'nih zakladi*. Thesis, Kharkiv, Kharkiv National University of Civil Engineering and Architecture, 2019. (in Ukrainian)
- [20] Bulakh I., Chala O., Divak V., Dynamics of architectural and urban planning hospital systems evolution. *Civil Engineering and Architecture* 8(4) (2020) 586–598. <https://doi.org/10.13189/cea.2020.080423>
- [21] Sysin A., Borba s epydemyiamy v SSSR. *Nashy dostyazheniia* 2 (1929) 12. (in Russian)
- [22] Sorokina T., *Istoriia meditsyny* 2. Moskva, Akademiia, 2018 264–273. (in Russian)
- [23] Solomon S.G., Hutchinson J.F., Introduction: The problem of health reform in Russia. In: *Health and Society in Revolutionary Russia*, Bloomington: Indiana University Press, 1990.
- [24] Schecter K., Soviet socialized medicine and the right to health care in a changing Soviet Union. *Human Rights Quarterly* 14(2) (1992) 206. <https://doi.org/10.2307/762424>
- [25] Rowland D., Telyukov A.V., Soviet health care from two perspectives. *Health Affairs* 10(3) (1991) 71–86. <https://doi.org/10.1377/hlthaff.10.3.71>

- [26] Quite outside our imagination: Alan Gregg diary entries during his trip to the Soviet Union, December 1927. *American Journal of Public Health* 107(11) (2017) 1740–1742. <https://doi.org/10.2105/AJPH.2017.107111740>
- [27] The essence of the Soviet health system. *American Journal of Public Health* 107(11) (2017) 1736–1738. <https://doi.org/10.2105/AJPH.2017.107111736>
- [28] Sigerist H.E., *Socialized Medicine in the Soviet Union*. New York: W. W. Norton, 1937.
- [29] Fee E., The pleasures and perils of prophetic advocacy: Henry E. Sigerist and the politics of medical reform. *American Journal of Public Health* 86(11) (1996) 1637–1647. <https://doi.org/10.2105/AJPH.86.11.1637>
- [30] *Plakatom po epidemiiam: zarozhdenie sovetskogo sanitarno-prosvetitel'skogo plakata*, 1920. Available: <https://www.rsl.ru/ru/all-news/plakatom-po-epidemiam> [Accessed: 29 September 2025]. (in Russian)
- [31] Duplenko Iu., Stanovlenie strakhovoi meditsiny: rabmedy na Ukraine v 1921–1927. *Byulleten' Natsional'nogo nauchno-issledovatel'skogo instituta obshchestvennogo zdorov'ya: tematicheskii vypusk* (2010) 66–68. (in Russian)
- [32] George V., Manning N., *Socialism, social welfare and the Soviet Union*. London, Routledge & Kegan Paul, 1980.
- [33] Murashova O., Zakhody radianskoi vlady u sferi okhorony zdorovia v Ukraini u 1920-1930-kh rr. *Scientific Papers of the Vinnytsia Mykhailo Kotsyiubynskyi State Pedagogical University Series History* (23) (2015) 55–60. <https://doi.org/10.31652/2411-2143-2015-23-55-60> (in Ukrainian)
- [34] Rozvytok okhorony zdorovia v Radianskomu soiuzi 1917-1940 rokiv. *Hismed*. Available: <http://hismed.net/node/130> [Accessed: 12 Oktober 2011]. (in Ukrainian)
- [35] *Kharkiv buduie*, Kharkiv: Kharkiv City Council, 1931. (in Ukrainian)
- [36] Al'oshin Pavlo Fedotovich. 1881-1961. *Central State Archive-Museum of Literature and Art of Ukraine (TsDAMLMU)*, f. 8, op. 1, spr. 260 119–121. (in Russian)
- [37] Al'oshin Pavlo Fedotovich. 1881-1961. *Central State Archive-Museum of Literature and Art of Ukraine (TsDAMLMU)*, f. 8, op. 1, spr. 264. (in Ukrainian)
- [38] Balisheva O., Alekseenko A., *Do istorii mista Harkova: budivnictvo, promislovist', nauka*. Kharkiv: Central State Scientific and Technical Archive of Ukraine (TsDNTA of Ukraine), 2004. (in Ukrainian)
- [39] Lebedev Georgij Oleksandrovich. *Central State Archive-Museum of Literature and Art of Ukraine (TsDAMLMU)*, f. 1042, op. 1, spr. 1. (in Russian)
- [40] Dokladnaya zapiska o hozyajstvennom i kul'turnom stroitel'stve na territorii rabocheho gorodka zavoda HTZ. *The Kharkiv Region State Archive*, f. P3770, op. 1, spr. 369, 7. (in Russian)
- [41] Kovalev I., Stroitelstvo edinikh obshchikh dispanserov. *Stroitel'naya promyshlennost'* (8) (1929) 679–684. (in Russian)
- [42] Al'oshin Pavlo Fedotovich. 1881-1961. *Central State Archive-Museum of Literature and Art of Ukraine (TsDAMLMU)*, f. 8, op. 1, spr. 264. (in Russian)
- [43] Tatarinov E., Bol'nichnoe stroitel'stvo. *Stroitel'naya promyshlennost'* (8–9) (1930) 656–662. (in Russian)
- [44] Poliklinika na 1200 poseshchenij v g. Enakievo. *Central State Scientific and Technical Archive of Ukraine (TSDNTA)*, f. 32, op. 1, spr. 1-28/645. (in Russian)
- [45] Leibfreid A.I. et al., *Khar'kov: Arkhitektura, pamiatniki, novostroiki: Putevoditel'*. Kharkov, Prapor, 1987. (in Russian)
- [46] Bol'nica v g. Stalino. Rabochij proekt. *Central State Scientific and Technical Archive of Ukraine (TSDNTA)*, f. 32, op. 1, spr. 1-28/621. (in Russian)
- [47] Kazus I. “Inzhener-arhitektor” P.A. Shchekin i zdanie gorodskoj polikliniki v Novosibirsk (1926-1929): domysly i real'nost', *Baladinskie chteniya XI* (2016) 193-202. (in Russian)
- [48] Grinberg A., Iz opyta sovremennogo bol'nichnogo stroitel'stva. *Stroitel'naya promyshlennost'* (1) (1929) 41–44. (in Russian)