



Architectural Change in Hospitals from the Ottoman Empire to the Republic of Türkiye¹

Büşra TONBULOĞLU ALTUNDAĞ^{1,*}, Nuran KARA PİLEHVARİAN²

¹ 0000-0003-2600-5590, Yıldız Technical University, Yıldız, YTÜ, Mimarlık Fakültesi, 34349, Beşiktaş/İstanbul

² 0000-0002-0021-2076, Yıldız Technical University, Yıldız, YTÜ, Mimarlık Fakültesi, 34349, Beşiktaş/İstanbul

Article Info

Received: 31/03/2024
Accepted: 10/09/2029

Keywords

*Late Ottoman
Architecture,
Nationalistic
Architecture,
Military Hospitals*

Abstract

The Ottoman Empire, which continued to develop and utilize the state system inherited from the Anatolian Seljuks, also initiated significant reforms in architecture primarily during the reign of Sultan III. Ahmed. These reforms began primarily in the military sphere before permeating into society and manifesting themselves in the field of healthcare. With the establishment of the Ministry of Evkaf and Ebniye in the early 19th century, traditional hospitals (darüşşifas) were replaced by new-style hospitals. During the radical transformation in the state system in the early 19th century, referred to in Ottoman sources as the 'Reforms of Mahmud II', various changes occurred in the healthcare sector as well. Traditional hospitals designed like madrasas were replaced by Military and Civil hospitals where infectious disease wards were separated by high doors. Subsequently, the infectious disease wards evolved into separate buildings, and hospitals were designed as independent units. From the mid-19th century onwards, traditional hospitals gave way to modern hospital buildings. These newly designed healthcare facilities, referred to as 'hospitals' in contemporary sources and inscriptions, introduced a new architectural typology. The architectural style of these hospitals initially followed neoclassical and eclectic styles, later transitioning to national architectural styles. With the advent of the Republic, needs were identified in various fields including politics, economy, society, education, and healthcare. Policies were formulated to meet these needs and achieve a contemporary structure. Wars and epidemics during this period highlighted the inadequacy of healthcare facilities, leading to the necessity of constructing new buildings. Furthermore, modifications and additions to existing structures and changes in hospital layouts to meet evolving needs played a significant role in the emergence of modern hospital buildings, often in the form of independent units (pavilions). Teams including prominent architects such as Kemalettin Bey contributed to the development of hospitals during the Early Republican period, serving as pioneers for future constructions. This study aims to examine the architectural changes experienced during the evolution of the darüşşifas, inherited from the Seljuks and used during the Ottoman period, into 19th-century hospitals, focusing on plan and façade arrangements. By presenting examples of the transition from traditional health institutions within the borders of modern Turkey to modern health facilities, significant changes are highlighted through architectural analyses based on plan diagrams. The findings reveal that the legacy inherited from the Seljuks was developed and utilized in Ottoman darüşşifas, and these structures were reorganized and planned according to the needs of the period. This process led to the creation of a new synthesis that advanced previous structures and, through these developments, demonstrated a significant evolution of health facilities up to the 19th century.

1. INTRODUCTION

In the Ottoman Empire, healthcare and medical education services were initially provided in darüşşifas (hospitals) and medical madrasas (schools) built during the Anatolian Seljuk period. Subsequently, based on the architectural knowledge inherited from the Seljuks, new darüşşifas were developed. Many of these hospitals were accompanied by medical madrasas, which ensured the training of physicians to provide

¹ The preliminary version of this paper was presented at the Mimar Kemaleddin Symposium organized by Gazi University Faculty of Architecture in Ankara on December 27-29, 2023.

* Corresponding author: tonbuloglubusra@gmail.com

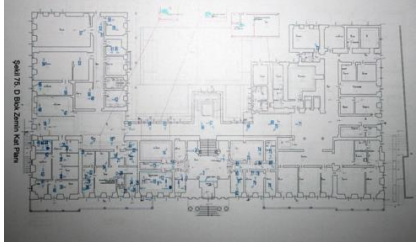
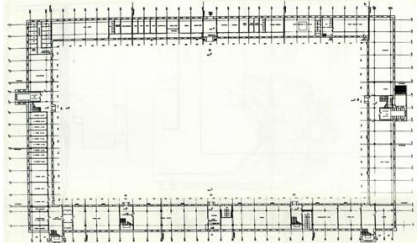
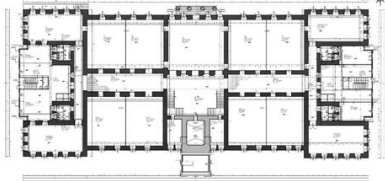
healthcare services. Thus, they served both as providers of public health services and as significant educational institutions in the field of medicine. The darüşşifas of the Anatolian Seljuk period were constructed as large, sturdy buildings adhering to the floor plan of madrasas, which were educational structures characterized by iwans (vaulted halls) and colonnaded courtyards. Many healthcare institutions established by the Seljuks continued their public duties during the Ottoman era. Darüşşifas built along trade routes to provide free healthcare services to travelers and merchants continued to be utilized during the Ottoman period. They laid the groundwork for future advancements in healthcare infrastructure and spearheaded progress in the field. Until the 18th century, darüşşifas in the Ottoman Empire fulfilled the need for healthcare services and remained operational. However, with the accession of Sultan Selim III to the throne, innovations were introduced in various domains, including the military and healthcare sectors, thereby influencing both architecture and healthcare practices. Subsequently, traditional darüşşifa structures gave way to Military Hospitals, which can be regarded as the initial step towards modern hospital buildings.

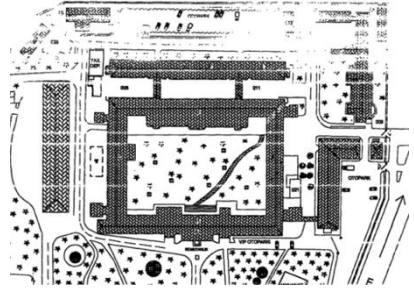
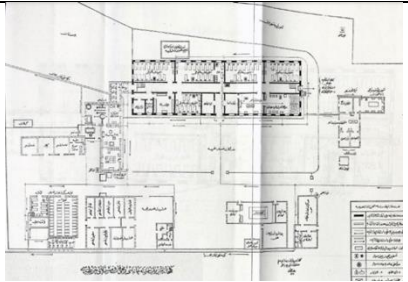
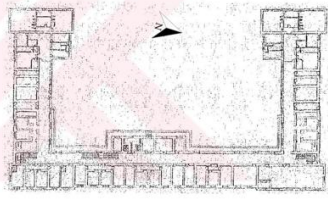

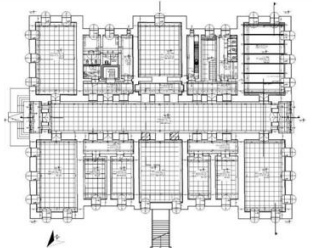
2. 19TH CENTURY OTTOMAN HOSPITALS

2.1 Military Hospitals as an Example of Transition to Modern Hospitals

With the onset of the reign of Sultan Selim III, the reflections of emerging and evolving technologies were evident in the military domain, prompting the initiation of steps towards establishing a modern army distinct from the Janissary Corps due to the inadequacies of traditional methods. This period witnessed a transformation that initially began in the military sphere before extending to society at large. Following the establishment of the Nizam-ı Cedid army, steps were taken towards modernizing military healthcare, with the opening of Military Hospitals in Istanbul, the capital of the Ottoman Empire, adhering to modern hospital standards, unlike the classical Ottoman darüşşifas.

Table 1. 19th Century Military Hospitals That Have Reached Present Day

Order	Hospital Name	Year	Period	Plans
1	Tersane-i Amire Hospital / Naval Central Hospital	1827	II.Mahmut	 <p>(Atasoy,2022)</p>
2	Maltepe Military Hospital	1827	II.Mahmut	 <p>(Akdeniz&Başagaolu, 2003)</p>
3	Bâb-ı Seraskerî Hospital	1828	Sultan Abdülmecid	 <p>(Istanbul University Archive)</p>

4	Haydarpaşa Military Hospital	1845	Sultan Abdülmecid	 <p>(Obtained from the Istanbul 6th Regional Directorate of Cultural Heritage Preservation Archives)</p>
5	Gülhane Military Hospital	1846	Sultan Abdülmecid	 <p>(Atasoy,2022)</p>
6	Gümüşsuyu Military Hospital	1849	Sultan Abdülmecid	 <p><small>Çizim 50: İstanbul Gümüşsuyu Askeri Hastanesi, Zemin Kat Planı (A. Çiftçi, 2004, s.211)</small></p> <p>(Çiftçi, 2004)</p>
7	Hadımköy Military Hospital	1891	II.Abdülhamid	 <p>(Sabuncuoğlu,2015)</p>
8	Zeytinburnu Military Hospital	1893	II.Abdülhamid	 <p>(From the Zeytinburnu Municipality Archives)</p>

Military hospitals were mostly constructed near barracks to serve the health needs of soldiers. Efforts to establish new regulations in the military domain, initiated during the reign of Sultan Selim III, continued into the era of Mahmud II, with the opening of military hospitals persisting. Although the majority of these hospitals have not survived to the present day, it is known that the earliest examples include the Tophane-i Amire Hospital, Levent Çiftliği Hospital, and the Bostancı Tüfenkçileri Ocağı Üsküdar Ortası

Hospital, all established during the reign of Sultan Selim III. Military hospital structures were further developed and constructed during the reigns of Mahmud II, Sultan Abdülmecid, and Abdülhamid II. These hospitals, which can be considered a synthesis of courtyard-style madrasas and barracks, feature a plan consisting of a closed corridor surrounding the courtyard and patient rooms opening onto this corridor. While the number of surviving hospital structures is limited, it is known that many hospitals were opened until the late 20th century. (Table 1)

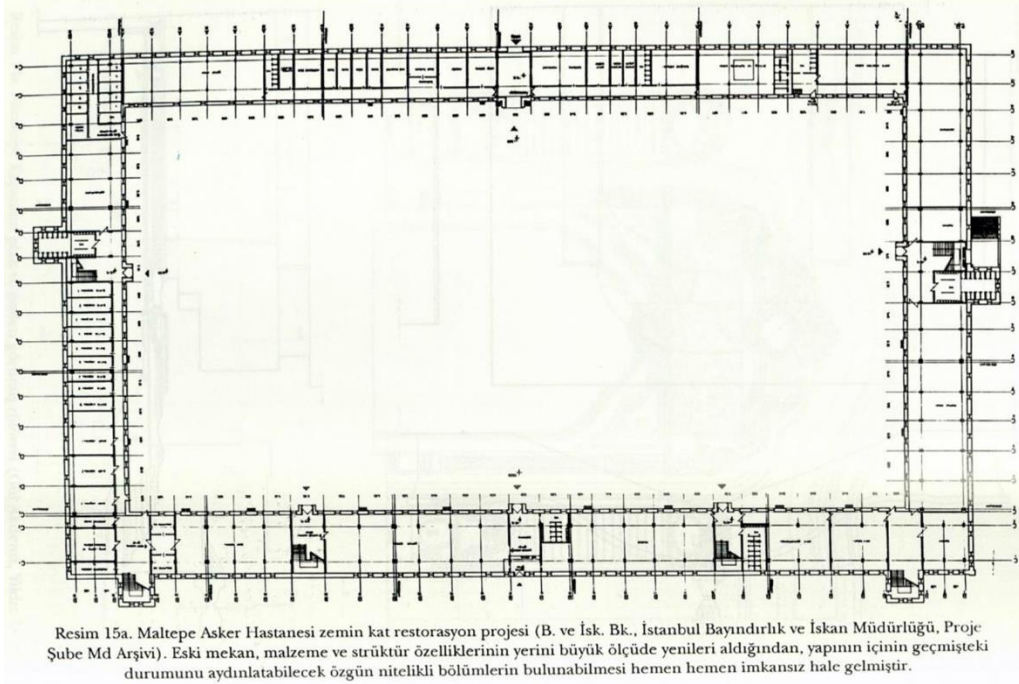


Figure 1. *Ground Floor Restoration Plan of Maltepe Military Hospital" (Akdeniz & Başağaoğlu, 2003)*

One of the most significant examples among the military hospitals that have survived to the present day is the Maltepe Asakir-i Mansure-i Muhammediyeh Hospital, built in 1827. One of the characteristics that make this structure remarkable is its design from the outset to be one of the largest hospitals in Istanbul. The use of structures and arrangements such as darüşşifa, şifahane, maristan, darüssihha, and bimaristan, with a courtyard surrounded by arcades facilitating the transition from semi-open space to rooms, continued until the era of Sultan Selim III and the establishment of the Nizam-ı Cedid army. Although the Maltepe Military Hospital is among the first examples of modern Ottoman hospitals, its layout, consisting of rooms opening onto a closed corridor from the central courtyard, bears many similarities to the traditional madrasa plan of darüşşifas (hospitals). Therefore, despite the changes made from darüşşifas to military hospitals, it generally maintains continuity with the barracks layout and the darüşşifa plan. Military hospitals, which continued to be opened until the end of the 19th century and were designed in a similar arrangement, were built especially during the reigns of Mahmud II, Selim III, Sultan Abdülmecid, and Abdülhamid II.

2.2 Gureba Hospitals as the First Civil Hospitals in the 19th Century

The first modern civilian hospitals were established in the 19th century, with the outbreaks of plague and particularly cholera playing a significant role in their establishment. Numerous outbreaks followed the first cholera epidemic in 1831, with the cholera epidemic in 1865 causing massive casualties, resulting in the deaths of around 30,000 people in Istanbul alone (Ayar, 2007). Improvements in healthcare services, which should be considered as part of the renewal efforts in the Ottoman Empire prompted by epidemic diseases, were reflected in the public's reception of the Gureba Hospitals. The first civilian hospital established under the name of Gureba Hospital in the Ottoman Empire was the Edirnekapı Gureba Hospital, which opened its doors in 1837 in the courtyard of the Mihrimah Sultan Mosque in Edirnekapı

(Yıldırım, 2014). Following this hospital, many hospitals were opened throughout the Ottoman territories to provide service under the name of "gureba"

Table 2. *Gureba Hospitals Constructed in Late Ottoman Period*

Order	Hospital Name	Order	Hospital Name
1	Bezm-i Alem Vakıf Gureba Hospital	12	Tarsus Gureba Hospital
2	Trabzon Hamidiye Military ve Gureba Hospital	13	Ordu Gureba Hospital
3	Balıkesir Gureba Hospital	14	Adana Gureba Hospital
4	İzmir Gureba-i Müslimin Hospital	15	Antalya Gureba Hospital
5	Erzurum Gureba Hospital	16	Karahisar-i Sahip Gureba Hospital
6	Mersin Silifke Gureba Hospital	17	İskenderun Gureba Hospital
7	Edirne Gureba Hospital	18	Isparta Gureba Hospital
8	Bolu Gureba Hospital	19	İnegöl Gureba ve Frengi Hospital
9	Ankara Gureba Hospital	20	Manisa Gureba Hospital
10	Rize Gureba and Military Hospital	21	İzmit Gureba Hospital
11	Kırklareli Gureba Hospital	22	Kastamonu Syphilis and Gureba Hospital

While the Edirnekapı Gureba Hospital emerged through the repurposing of an existing darüşşifa, the first known civilian hospital purpose-built for this function in the Ottoman Empire is the Bezm-i Alem Vakıf Gureba Hospital, which opened in Istanbul Yenibahçe in 1847. Answering the needs of the era and serving as the first modern institution for the destitute (gureba), this hospital was commissioned by the mother of Sultan Abdülmecid. (Kara Pilehvarian,2000)

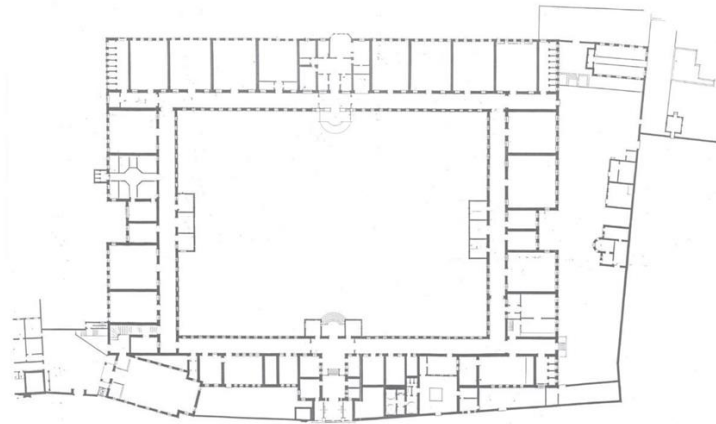


Figure 2. *Ground Floor Plan of Yenibahçe Bezm-i Alem Vakıf Gureba-i Müslimin Hospital* (Kara Pilehvarian, 2000)

Bezm-i Alem Vakıf Gureba Hospital, like military hospitals, adopts the barracks-style plan. Built for destitute male patients and considered the first modern example of "gureba" hospitals, Bezm-i Âlem Vakıf Gureba Hospital can be regarded as a transition from traditional darüşşifas with open arcades facilitating circulation to closed corridors. Its floor plan, consisting of patient rooms opening onto closed corridors surrounding a rectangular inner courtyard, aligns with the floor plans of traditional Ottoman darüşşifas. Only the open arcaded section in the traditional scheme has been converted into closed

corridors, with high and large doors placed at the beginning of each corridor, transforming them into independent four-sided wards. These high doors were designed to separate different clinics within the hospital and provide solutions to needs such as preventing the spread of contagious diseases as part of combating epidemic illnesses. (*Kara Pilehvarian, 2000*)

2.3 Hamidiye Hospitals of the Abdulhamid II Period

During the reign of Abdulhamid II, efforts to institutionalize modern healthcare services continued. Various floor plans were experimented with, and European standards, research, and implementation methods were closely followed. While the primary goal was to improve and expand existing hospitals, new typologies of buildings were also introduced with the opening of Hamidiye hospitals. Gureba hospitals, known as Hamidiye Hospitals during the reign of Abdulhamid II and later as Millet Hospital, Municipality Hospital, etc., aimed to promote public health, combat infectious diseases, and modernize vaccination technology.

Table 3. *Hamidiye Hospitals Built Within the Boundaries of the Republic of Turkiye During the Reign of Abdulhamid II*

Order	Hospital Name
1	İzmir Hamidiye (Mithatpaşa) Military Hospital
2	Samsun Canik Hamidiye Hospital
3	Urfa Hamidiye Hospital
4	İstanbul Hamidiye Etfal Hospital
5	Antep Hamidiye Hospital
6	Bursa Hamidiye Hospital
7	Trabzon Hamidiye Military ve Gureba Hospital

One of the world's first children's hospitals, Hamidiye Etfal Hospital provided free services to children aged 0-16 without discrimination based on religion or race. Designed by Frans Niebermann outside the city center, the hospital adopted a pavilion-type (independent units) floor plan, which, despite circulation and service difficulties, was considered the best solution for preventing epidemic diseases. The first hospital structure built in this floor plan arrangement in the Ottoman Empire is the Istanbul Hamidiye Etfal Hospital, completed in 1899.

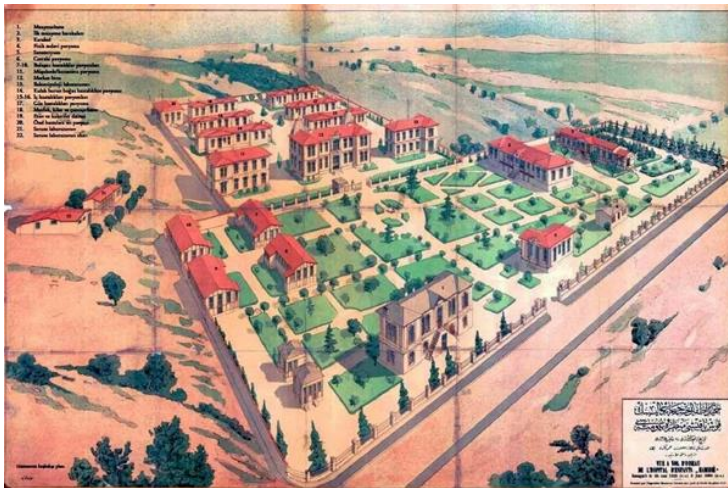


Figure 3. *Hand Drawing of Şişli Hamidiye Etfal Hospital Etfal Hospital (Yıldırım, 2010)*

Figure 4. *Hand Drawing of Şişli Hamidiye Site Plan (Yılmaz, 2008)*

According to a pamphlet published in 1902, Hamidiye Etfal Hospital was established drawing on advanced European experiences, specifically modeling after Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin. A German architect was commissioned for the hospital, and the plans were presented to Sultan Abdulhamid II. Following the death of Hatice Sultan, Dr. İbrahim Bey returned from Germany and presented the selected Berlin plans to the Sultan upon a decree. It is noted in the pamphlet that architect Franz Niebermann originally trained as a carpenter, with another German architect also involved in the project. Additionally, Ebaiye-i Seniyye engineer Nâri Pasha played a significant role in the hospital's construction process. Documents found in the Dolmabahçe Palace Archive indicate that the hospital's details were designed by French-born Valluary, with Italian-born architect D'Aronco initially tasked with construction, later passing the responsibility to engineer Felix Pellini due to other commitments (İrez, 1990).

The necessary installations and personnel arrangements for the hospital were finalized via the Saray Baş Kitabesi in May 1314 (1898-99). The selection and assignment of the healthcare team during the construction process could be considered forward-thinking even by today's standards. According to Hasan Rıza Zobuoğlu's memoirs, Dr. İbrahim Bey supervised the hospital construction daily and received compensation for this role. Unlike previous Ottoman hospital buildings, Hamidiye Etfal Hospital was designed in a pavilion layout, clearly reflecting the influence of German architecture in both its floor plan and facades. This innovative design departed from traditional Ottoman architectural styles, marking a significant shift towards modern European influences in healthcare facility design during the late 19th century (İrez, 1990).

The effort to separate the wings of the Bezm-i Alem Gureba-i Müslimin Hospital according to their functions in the floor plan, which started with this hospital, continued to evolve with the design approach of Hamidiye Etfal Hospital, which first transformed all functions into independent units. In the floor plan consisting of closed corridors connecting patient rooms to a courtyard or garden, doors constructed at the height of the corridor were initially introduced as the first solution against infectious diseases. Subsequently, patient wards and clinics were designed as completely independent units, thus preventing the rapid spread of disease and reducing contact. The main entrance of the hospital, which was the first children's hospital in the Ottoman Empire, is located in the west, and it consists of a total of ten separate independent units. (Umar & Sarı, 2023) Following the appearance of madrasa-planned hospitals in the Early Ottoman Period and the emergence of barracks-type military hospitals in the early 19th century, the hospital floor plan designed as separate units emerged as a new layout in the second half of the 19th century. This new plan type emerged to combat epidemic diseases. Although successful in combating epidemic diseases, its structure, which complicates service and patient care, led to changes in this floor plan type in later periods, yet it pioneered new experiments.

3. 20th CENTURY HOSPITALS

3.1 20th Century Ottoman Hospitals

The first steps towards transitioning from traditional madrasa-style education to modern medical education in the Ottoman Empire were taken during the reign of Mahmud II with the opening of schools under the name "Tıbhane." The locations of these schools were constantly changed, and with the inadequacy of the buildings used in the early 20th century, the construction of a new building, which also included a teaching hospital for medical education, became a necessity. The construction of the building, initially named "Mekteb-i Tıbbiye-i Şahane," began towards the end of the 19th century, and its inauguration took place in the early 20th century. In the planning of the Haydarpaşa Mekteb-i Tıbbiye-i Şahane building, Italian architects Alexandre Vallauray and Raimondo D'Aronco collaborated.

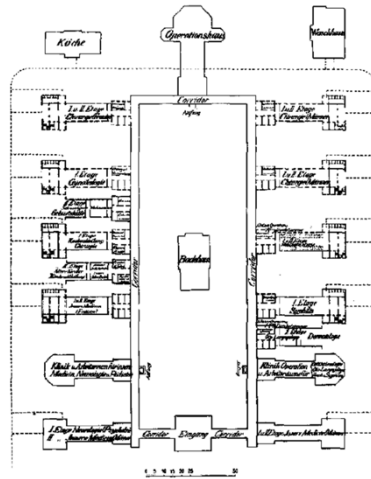


Figure 5. Haydarpaşa Mekteb-i Tıbbiye-i Şahane Building Plan (Yavuz, 1988)

Mekteb-i Tıbbiye-i Şahane Hospital, where independent units are connected by enclosed corridors, consists of initially designed two-story symmetrical pavilions positioned around a large rectangular courtyard surrounded by enclosed corridors, as well as other necessary service buildings. However, during construction, some changes were made, and the independent units were grouped into four blocks. An important feature of this hospital is that it provided the most functional solution to the problems seen in other hospital structures. Designed as independent units to combat epidemic diseases, the presence of enclosed corridors connecting the buildings facilitates service circulation. At the same time, it is a successful example in terms of separating different areas from each other. (Yavuz,1988) In the early 20th century, due to the inadequacy of Bezm-i Alem Vakıf Gureba Hospital to meet the period's requirements and patient capacity, a committee was established by Evkaf Minister Hayri Efendi with the participation of architect Kemaleddin Bey. Architect Kemaleddin Bey and Dr. Adnan Bey were sent to Germany for education and observation purposes, where they examined the Riksdorf Hospital. Following the project inspections, construction of the new hospital began in 1910. (Yavuz,1988)

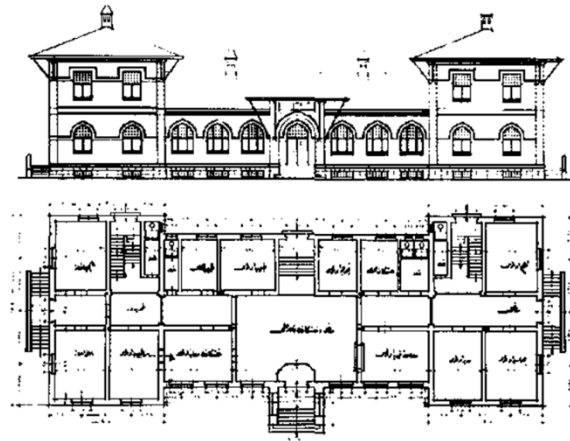
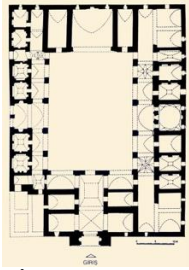
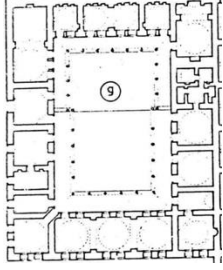
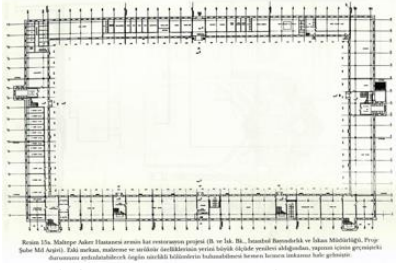
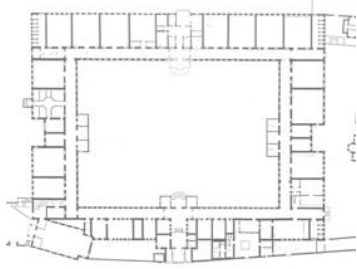

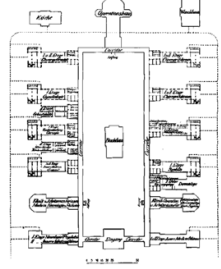


Figure 6. The Plan and North Elevation of the Additional Building to Bezm-i Alem Vakıf Gureba Hospital by Architect Kemaleddin Bey (Yavuz, 1988)

The current plans reveal that the hospital was designed as a larger complex, with three separate sets located at different levels. However, due to wars, only a portion of the structure was completed. The building was initially intended to be used as a polyclinic for Surgery and Internal Medicine, but due to the Balkan War and World War I, the completion of construction took a long time. In 1925, it was temporarily allocated to the Rabies Institute. (Yavuz, 1988)

Table 4. The Evolution of Architectural Plans in Ottoman Hospital Structures

İzzeddin Keykâvus Dârüşşifası	Atik Valide Sultan (Ottoman Darüşşifa)	Maltepe Military Hospitals
 <p data-bbox="248 636 564 667">(TDV İslam Ansiklopedisi)</p>	 <p data-bbox="727 636 916 667">(Cantay, 1996)</p>	 <p data-bbox="1038 636 1406 667">(Akdeniz&Başagaoglu, 2003)</p>
Madrasa plan type	Madrasa plan type	Barracks plan type
There is a central courtyard surrounded by semi-open porticos and the use of iwans in four directions.	While the general layout of the Seljuk darüşşifası is maintained, the use of iwans in four directions is not observed	The barracks layout is in continuity with the tradition of darüşşifa. It is observed that the semi-open porticoed sections in darüşşifası have been transformed into closed corridors
Bezm-i Alem Valide Sultan Gureba-i Müslimin Hospital	Şişli Hamidiye Etfal Hospital	Haydarpaşa Mekteb-i Tıbbiye-i Şahane
 <p data-bbox="539 1048 628 1272">(Kara Pilehvarian, 2000)</p>	 <p data-bbox="735 1413 900 1444">(Yılmaz, 2008)</p>	 <p data-bbox="1134 1361 1299 1393">(Yavuz, 1988)</p>
Barracks plan type	Pavilion plan type (independent units)	Combination of barracks and pavilion plan types
Innovations include floor-height doors at the corridor beginnings to separate the infectious disease ward, and features like the sterilization room (autoclave).	It is designed as independent units to combat epidemic diseases and to separate different illnesses from each other.	The structure, designed as separate units to combat epidemics, facilitates circulation by connecting pavilions with corridors.

In 20th century Ottoman hospital plans, the most suitable plan scheme for the era emerged as a combination of the closed corridor system influenced by military barracks, which was first seen in the II. Mahmud period military hospitals, and the independent unit system observed in the Bezm-i Âlem Valide Sultan Gureba Hospital, with its adaptation of military barracks. The reason why this plan solution is considered the most valid for the period is due to its provision of secure service transportation between patient rooms and clinics without the need for outdoor access, as well as the organization of units into separate sections for the purpose of combating epidemic diseases. Additionally, it is evident that the service between the kitchen, laundry, sterilization room, and outpatient clinic buildings, which were intended to be carried out independently from the hospital pavilions, was planned to be mechanically

provided through a road surrounding the structure from the outside, thereby separating service circulation from internal circulation.

3.2 Changes in Hospital Buildings in the Early Years of the Republic of Türkiye

"Gentlemen, our ideal is to ensure the complete tranquility of our nation; just as it is our primary duty as the government to take care of its health and, to the best of our ability, alleviate its social woes.

Mustafa Kemal Atatürk

(*TBMM Z., C., Session 1, Volume:18, (1 March 1922), pp.3-4. Atatürk's Speeches and Statements, Volume:1, pp.237-238.*)

After opening the Grand National Assembly of Türkiye shortly, Mustafa Kemal Atatürk, on May 3, 1920, established the Ministry of Health and Social Aid (Sihhiye ve Muavenet-i İçtimaiye Vekâleti/ Ministry of Health and Social Assistance) taking the first steps in the field of health. Following the successful conclusion of the War of Independence, Dr. Refik Saydam, the first Minister of Health and Social Aid of the Republic of Türkiye who also played a significant role in public health during the national struggle, prepared a program to meet the necessary requirements in the health sector and introduce innovations for public health. (Altay,2019) The objectives of this program are as follows;

- 1- Expanding the healthcare organization,
- 2- Training physicians, midwives, and health officers,
- 3- Establishing sample hospitals,
- 4- Opening pediatric clinics in sample hospitals,
- 5- Establishing a tuberculosis sanatorium,
- 6- Combating malaria, syphilis, trachoma, and social diseases,
- 7- Inviting foreign specialists to combat infectious and social diseases,
- 8- Enacting laws related to health affairs to increase the health level of the population and requesting a budget allocation of one-fortieth from the state budget,
- 9- Establishing the Republic of Türkiye Central Institute of Public Health and the School of Public Health.



Figure 7. Opening Ceremony of Haydarpaşa Numune Hospital Newspaper Article from 1936

Following the healthcare reforms of the 19th century Ottoman Empire, the newly established 'Gureba Hospitals' and 'Hamidiye Hospitals' were reorganized in 1924 under new regulations as 'Numune Hospitals'. Developed in accordance with the requirements of the time, these redesigned Numune hospitals were established in remote regions of the country to guide and set an example for local administrations, encouraging them to open hospitals themselves. These facilities, which played an effective role in combating infectious diseases, quickly gained the identity of educational institutions, contributing to the training of competent physicians.

Table 5. *The Gureba Hospitals Converted into Numune Hospitals*

Hospital Name	Before Conversion	Period Of Construction	Construction Year	Information
Ankara Numune Hospital	Ankara Gureba Hospital	II.Abdülhamid	1924	The existing structures, known as the central pavilion, stone pavilion, and external pavilion, have been renovated, while new pavilions named Refik Bey and Ismet Pasha Pavilions have been constructed.
Sivas Numune Hospital	Sivas Gureba Hospital	Mehmed Vahdettin	1924	The Gureba Hospital, established in 1919, was converted into a sample hospital starting from 1924. Later, due to the inadequacy of the old building, it was relocated to the American College building, and after a fire incident, it was moved to the Jesuit School.
Erzurum Numune Hospital	Erzurum Gureba Hospital	II.Abdülhamid	1924	Built with contributions from the people of Erzurum and based on the origins of the Gureba Hospital established by Sultan Abdulhamid II, the Gureba Hospital was converted into a Sample Hospital in 1924.
Diyarbakır Numune Hospital	Diyarbakır Gureba Hospital	II.Abdülhamid	1924	The existing buildings of the hospital, converted from the Gureba Hospital, were renovated and new additions were made. In 1936, a fire damaged many units of the central building, which was subsequently reconstructed in two blocks in 1937.
İstanbul Haydarpaşa Numune Hospital	Mekteb-i Tıbbiye-i Şahane	II.Abdülhamid	1936	The structure, the construction of which was initiated by Sultan Abdulhamid II in 1895, was converted into the Haydarpaşa Numune Training and Research Hospital in 1936.


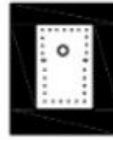
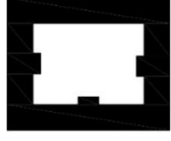
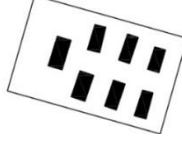

4. CONCLUSION

As a result, the transformation in healthcare structures from the Ottoman period to the early years of the Republic was shaped by the interaction of accumulated architectural plans and the requirements of the era. It can be said that the darüşşifa plans, originating from earlier Turk-Islamic states, shaped the hospital structures of the Early and Classical Ottoman periods. This plan type, which also included an educational institution, continued to be used in the 17th and 18th centuries. In the 19th century, following the reforms of Sultan Mahmud II, new schemes emerged for the first time in Military Hospitals, featuring separate wards for infectious diseases, sterilization rooms (etüv), and examples of education provided by certified instructors at the Mekteb-i Tıbbiye. These innovations, initially seen in military hospitals, were also evident in civilian institutions like the Bezmi Alem Valide Sultan Gureba-i Müslimin Hospital commissioned by Bezmi Alem Valide Sultan. In these examples (such as Maltepe Military Hospital, Bezmi Alem Gureba Hospital), the courtyards surrounded by porticoes seen in traditional darüşşifa plans were transformed into closed corridors with large windows opening onto the courtyard, sterilization (etüv) rooms were added, and large doors placed at the corridor entrances created independent units to combat infectious diseases. The next step in this transformation is the design model seen for the first time in Istanbul during the reign of Sultan Abdulhamid II, featuring independent buildings (pavilions) designed for different types of diseases. Thus, the hospital layout consisting of polyclinics and patient

rooms designed in separate buildings according to the type of disease emerged. However, it was observed that hospitals designed as independent units also created difficulties in circulation and services, leading to the emergence of larger-scale hospital plans connecting separate units with enclosed corridors. (Mekteb-i Tıbbiye-i Şahane) Following the establishment of the Republic after the National Struggle, the new-style Gureba and Hamidiye Hospitals established in the 19th century from the Ottoman era were developed and renewed to become Numune Hospitals, leading to new architectural syntheses during this period. This process laid the foundation for modern hospital structures capable of providing more effective and contemporary healthcare services by drawing inspiration from darüşşifa, military-planned, and independently designed hospital buildings.

Since the early 19th century, hospitals built in the Ottoman Empire were generally designed in a barracks-like layout and featured a simple facade. While some hospitals were constructed with the involvement of foreign architects, there was an overall synthesis of monumental neoclassical entrances with the general characteristics of Ottoman architecture in their plans and facades. Hamidiye Etfal Hospital holds particular significance. According to a treatise published in 1902, this hospital was inspired by the Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin and designed by drawing upon advanced European experiences. Commissioned by a German architect, its plans were presented to Sultan Abdulhamid II, showcasing a distinct approach compared to other Ottoman hospitals of the time and bearing traces of the German hospital model. Hence, Hamidiye Etfal Hospital exhibits significant German influences, representing an important example of interaction between Ottoman architecture and German hospitals of the era. Regarding Bezmialem Vakıf Gureba Hospital, despite debates suggesting that Architect Kemaleddin Bey drew inspiration from Riksdorf Hospital in Berlin, the hospital was built in a national style, continuing the tradition of Ottoman hospital layouts. Additionally, Mekteb-i Tıbbiye-i Şahane Hospital, designed by Italian-born architect Raimondo D'Aronco under the supervision of Dr. Rieder Pasha, adhered to the national style despite being designed by a foreign architect and remained faithful to traditional Ottoman hospital layouts.

Table 6. *Development of Hospital Plans from Seljuk Darüşşifas to the Late Ottoman Period*

					
Seljuk Darüşşifa	Ottoman Darüşşifa	Military Hospital	Gureba Hospital	Hamidiye Hospital	20th Century Hospital

In summary, the heritage from the Anatolian Seljuks was preserved through Ottoman Darüşşifas. Reforms during the reigns of III. Selim and II. Mahmud led to significant changes in healthcare structures and the establishment of military hospitals. Subsequently, hospitals evolved to meet contemporary needs, incorporating lessons learned from past experiences. This legacy, coupled with the demands of the period, led to further innovations in healthcare following the establishment of the Republic of Türkiye. The architecture of healthcare structures during the Atatürk era reflects these lessons and a quest for more suitable and effective solutions for future healthcare services. The foundations laid by Ottoman-era healthcare structures were crucial in the development of modern hospital buildings during the Republican era, contributing significantly to the advancement of Türkiye's healthcare sector.

REFERENCES

- [1] Akdeniz, G., & Başağaoğlu, İ. (2003). Architectural Structure of Maltepe Military Hospital. IV. Turkish Medical History Congress, September 18-20, 1996, Ankara, pp. 203-212.
- [2] Altay, S. (2019). Ottoman Hospitals Converted to Sample Hospitals in the Atatürk Era (1924-1938). Atatürk Research Center Presidency. Ankara.
- [3] Atasoy, S. (2022). Late Ottoman Hospital Buildings in Türkiye(1827-1923), (Unpublished Doctoral Dissertation/Social Sciences Institute), Pamukkale University, Denizli.
- [4] Ayar, M. (2007). Cholera in the Ottoman Empire: The Istanbul Example (1892-1895). Kitapevi Publishing. Istanbul.
- [5] Bolak, O. (1950). Our Hospitals: Historical and Architectural Study of Hospitals Built from Ancient Times to the Present, Istanbul Typography. pp.41-42.
- [6] Çiftçi, A. (2004). Military Architecture in the Ottoman Empire in the 19th Century and Military Structures Built in Istanbul. (Unpublished Doctoral Dissertation), Yıldız Technical University Institute of Science, Istanbul.
- [7] İrez, F. (1990). II. Abdülhamid Döneminden Bir Çocuk Hastanesi: Hamidiye Etfal Hastanesi (Şişli Çocuk Hastanesi). [PDF document]. Retrieved from <http://katalogtarama.cekulvakfi.org.tr/resimler/3/14/23132/m000002874.pdf>
- [8] Kara Pilehvarian, N. (2000). "Bezmiâlem Valide Sultan's Gureba-i Müslimin Hospitals". Eyüp Sultan Symposium III Proceedings, Istanbul, pp. 296-303.
- [9] Kara Pilehvarian, N. (2006). "The First Foundation Hospital: Istanbul Yenibahçe Gureba-i Müslimin Hospital". Foundations Journal, 2006 Special Issue of the Foundation Civilization Year, Ankara, pp. 111-115.
- [10] Kara Pilehvarian, N. (2006). "The First Foundation Hospital: Istanbul Yenibahçe Gureba-i Müslimin Hospital". Foundations Journal, 2006 Special Issue of the Foundation Civilization Year, Ankara, pp. 111-115.
- [11] Umar, N., & Sarı, F. Z. (2020). "Examination of the Development of Late Ottoman Health Buildings through the Example of Adana Province". Art-Sanat Journal, Issue 14, pp. 469-493.
- [12] Yavuz, Y. (1988). "Ottoman Health Institutions in the Westernization Period". METU Journal of Architecture Faculty, 8(2), pp. 123-142.
- [13] Yıldırım, N. (2010). History of Healthcare in Istanbul. Istanbul.
- [14] Yıldırım, N. (2014). From the 14th Century to the Republic: Diseases, Hospitals, Institutions - Health History Articles – I. Istanbul.
- [15] Yılmaz, Ö. F. (Ed.). (2008). Late Ottoman Hospitals in Istanbul. Çamlıca Printing Publishing, pp. 63.