

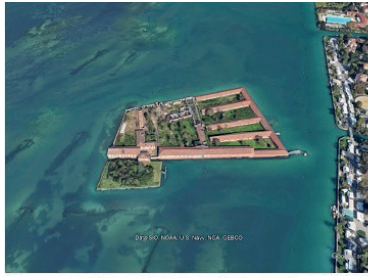
# HOSPITAL TYPOLOGICAL EVOLUTION IN ALGIERS, ALGERIA MAILLOT EL KETTAR HOSPITAL AND MUSTAPHA HOSPITALS

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## ABSTRACT

In the context of Algiers, this paper aims to examine the transformation of hospital types in three different cases: Maillot hospital, el Kettar hospital and Mustapha hospital. Originally, these hospitals served as suburban facilities, comparable in size to urban fragments. However, as the city expanded, they gradually integrated into the urban perimeter and became barriers to further urban growth.

On the other hand, these hospitals underwent a specific typological evolution, which can be attributed to the historical architectural culture of the 19th and 20th century in Algiers. Most of the pavilions were, indeed designed by avant-garde architects, making them significant landmarks in Algiers' architectural history. In addition, the evolution of their architectural form can also be considered within the broader developmental typological process of Euro-Mediterranean Hospitals.



Lazaretto Vecchio, Venice, 1423



Ospedale degli Innocenti, Florence, 1445



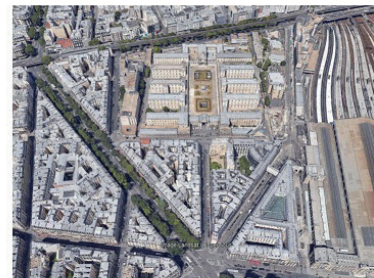
Ospedale Maggiore, Milan, 1456



Plymouth, Hospital, 1756.



Hôpital Saint-André, Bordeaux, 1826.



Hôpital Lariboisière, Paris, 1854

## Introduction

In order to infuse cities with light, sun, and greenery, modern urbanism replaced the compact historical urban forms with towering structures and open urban blocks. This transformation, illustrated by iconic projects such as the Haussmann renovation of Paris, the advent of garden cities and Ernest May's Siedlungen, as well as Le Corbusier's cité Radieuse, was often driven by health preoccupations (Panerai & al., 1997). The same phenomenon applies to the architectural form, including hospitals.

The objective is to analyze the evolution of hospital typology in Algiers, Algeria, with a specific focus on three hospitals: Maillot, El Kettar, and Mustapha Pacha. We employed a comprehensive research methodology that combines synchronic and diachronic analyses allowing us to examine the architectural evolution of the selected hospitals within the specific context of the late 19th and early 20th-century Algiers context, all while considering the broader urban environment<sup>1</sup>.

## Evolution of Hospital Typology in Response to Hygienism: From Cloister to Pavilion

Hospital typology has evolved significantly over time. The hospital model evolved from a cloister model characterized by courtyard design to a detached block system, known as the pavilion model. In the Middle Ages, charity houses often developed near the monasteries, giving rise to the cloister model in hospital typology (Laget and Salaun, 2004).

By the 14th century, the recognition of contagious nature of leprosy, cholera, and plague led to the establishment of quar-

*Figure 1. Typology evolution of hospitals.*

*Source: Author's elaboration from Google Maps images, 2023.*

<sup>1</sup> This work was carried out by the 3rd-year undergraduate students (Licence in Architecture) in the Group 4 during the 2021-2022 academic year as part of the 'Urban Planning Workshop' module at the Saad Dahleb Institute of Architecture and Urbanism, Blida 1, under the supervision of the author.

antine stations called lazarettos in extra-urban areas. The first documented lazaretto was constructed in Venice (Laget and Salaun, 2004; Bataille and Brouqui, 2017). However, regular hospitals could still be located within the city centre such as the Ospedale degli Innocenti di Brunelleschi in Florence. Lazaretto Vecchio in Venice already resembled a linked pavilion or a finger plan typology. The Ospedale degli Innocenti of Florence on the other hand seems to be derived from the courtyard renaissance palaces.

According to Durand (1825), a teacher in the polytechnic school of Paris, the Hospital of Milan (designed by Antonio Filarete in 1456) and later Plymouth Hospital (designed by Rovehad in 1756) exemplify the perfect hospital distribution. The Milan Hospital (Ospedale Maggiore) is a multi-courtyard structure inscribed within a checkerboard grid, while Plymouth Hospital marks the beginning of the isolated pavilion typology, which enables the specialization and the classification of the pavilions by pathologies. A colonnade serves to interconnect these pavilions and in the same time to avoid the spread of the diseases. It follows an axial pattern with the church in the symmetry axis (Buchanan, 2005). This typology influenced hospitals in the 18th and 19th century. Most French Hôtel-Dieu hospitals follow this model, such as the hospitals of Saint-André of Bordeaux (1826), l'Hôtel-Dieu of Nantes (1856), and Lariboisière in Paris (1846-1854) all consisting of linked pavilion. The latter has become, in turn, a model to replicate. (Laget, Salaun, 2004 ; Buchanan, 2005). This process laid the groundwork for the generalization of the pavilion hospital's type in the early 20th century (fig. 1). Today, hospitals are designed in a variety of shapes and sizes, including mono-blocks, multi-blocks, podiums, and slabs models. Design considerations increasingly include aesthetics and stylistic choices. Modern hospital programs aim to create liveable environments for patients and their families, integrating buildings into the urban fabric (appropriate scale constructions, well connected with other urban fragments, including non-medical functions...).

### **Hospitals within Algiers' Architectural History: 1830-1962**

By their own admission, French doctors acknowledge that Muslims cities have always had hospitals. The first documented public hospital in Muslim countries was established in Bagdad in 805 AD. In Cairo, the legendary Salaheddine's bimaristan was built in 1284. By 1688, in North Africa, cities like Oran and Béjaia in Algeria already hosted hospital structures. Tlemcen, another Algerian city, hosted two hospitals for Venetians, one for Genoese, four for the Moorishs and six for foreigners (Bertherand, 1855).



Figure 2. Al-Kharratin Hospital, Map of Algiers, 1830.

Source: © Gallica, Bibliothèque nationale de France

After the capture of Algiers, new hospitals were established. They were established in Bab-Azoun Street, within a Kharratine barracks, in another barracks on Macaron Street, at Fort-Neuf on the esplanade of Bab-el-Oued, at the Citadel of Kasbah, and also at Mustapha-Pacha Residence in Mustapha-Supérieur, which later became the Orphanage of Saint-Vincent-de-Paul. In close proximity to the latter, some shacks were constructed (Klein, 1914).

At the same time, a significant number of villas in the outskirts of Algiers, including villa Abdellatif, were transformed into infirmaries. Some mosques were converted into hospitals, such as the Kharratine Hospital, which integrated the Mezzo-Morto Mosque in 1830 which was unfortunately destroyed later in 1836 (Klein, 1914). Situated on Bab-Azoun Street, this intramural hospital was already depicted on the 1833 map (fig. 2). It had inherited the former Janissaries barracks and posed a public health risk during epidemics (Lespès, 1930).

Among the numerous medical facilities managed by the military engineering corps in 1832, two external hospitals were recorded, including the Dey's gardens in Bab el Oued (Lespès, 1930). In 1857, the hospital expands: to the primi-



tive barracks, scattered in the old gardens, are succeeded by comfortable masonry pavilions (current Maillot Hospital) (Klein, 1914).

In 1854, in response to the growing medical needs, Kharra-tine Hospital was relocated to the Mustapha shacks (current Mustapha Hospital) (CDHA, 2015). In the inventory of the General Government of Algeria Hospital Administration 1857-1946, El-Kettar, along with Parnet and Birtraria, are designated as annexes of Mustapha Hospital (ANOM, ark:/61561/1216565).

As we explore the architectural history of Algerian hospitals, it is important to note that from 1830 to 1962 during the French colonization, three predominant tendencies co-existed to different degrees in architecture: neo-classicism, orientalism and modernism (Deluz, 2010). These architectural styles played an important role in shaping the design of hospitals and other urban facilities in Algeria.

From 1830 to 1930, the neo-classicism prevailed with the emblematic development of Algiers' waterfront by Chasséri-au (1860-1874). Around the turn of the century, most public buildings had been realized by architects who were influenced by the academic school. The architectural simplicity, the checkerboard pattern of the façade and the double exposure prefigure the "non-style" of modern architecture. Most Algerian hospitals, especially the first pavilions of Maillot and Mustapha hospitals belong to this category (Deluz, 1988). The hospital of Constantine (1841) does as well.

On the other hand, some architects, fascinated with local architecture adopted a neo-Moorish style with different declinations that varied from an adaptation of classicism like the Jonnart style (1900 to 1914) to mimic traditional houses. Algiers Post Office and the prefecture building constitute the most known examples of this tendency (Deluz, 2010). According to some ancient postcards, many "indigenous Nursery-Hospitals" seem to favor orientalism especially in the south of the country. Nursery-Hospitals of Béchar, Béni Abba, Mechria, Ain Safra, amongst others, appear to date back to this period.

1930 and 1933 constitute an important inflection in the history of Algerian architecture. 1930 coincides with centennial colonial festivities, and 1933 corresponds to the CIAM's meeting in Algiers in which Le Corbusier took part. Although the latter did not actually build in Algiers, his theories had a great impact through his disciple's realizations. The CIAM Algiers was composed of architects like De Maisonseul, Miquel, Simounet, Emery, Bourlier, Geiser... (Deluz, 1988).

From 1930 to 1945, the expression of modern architecture

has generally been mixed with classicism and orientalism (Deluz, 1988). In addition, Auguste Perret (1874, 1954) as a pioneer of reinforced concrete, constituted an important, especially that he is the master of Le Corbusier. The Perret Agency composed of the brothers Gustave, Claude, and Auguste has completed diverse buildings in Algiers like the hospital of Setif realized in 1934 (Pouillon, 2008). In Algiers, the “Perrettism” (Deluz, 1988) can be noticed in buildings like the dispensary Barbier-Hugo (Picardie Street behind Maillot Hospital) conceived by Etienne in 1936-1937 and the contagious pavilion of El Kettar Hospital conceived by Guiauchain in 1938 (demolished since then). Another example is the Béni Messous Orphanage conceived by Lathuillère in 1933 and that has been transformed afterward into a children’s Hospital (Deluz, 1988).

As for the orientalism, it can be found in the hospital of Adrar of the beginning of the fifties conceived by Luyckx who was a Perret disciple (Deluz, 2010). The influence of which is perceived in the classical composition using the rigorous geometry in the centred plan and symmetry (du Chazaud, 2019). After 1945, modern architecture aimed at addressing the housing crisis became oversimplified, resulting in repetitive towers and blocks. In contrast, TEAM X which emerged from the critical perspective on the CIAM 1953 held in Aix-en-Provence, had little impact in Algeria.

As a result of this stratified history, some hospitals appear to constitute composite complexes with overlapping diverse architectural styles. For example, the hospital Al Attaf where neo-Moorish architecture is juxtaposed with modern buildings, was first been founded in 1874, and has undergone multiple modifications including those in 1890, 1932, and especially of 1934 in which the hospital was modernized with the intervention of Bienvenu (*L’écho d’Alger* of 08/03/1934).

### **Analysis of the three Algiers hospitals**

Situated in Bab el Oued suburb, Maillot Hospital is one of the oldest hospitals in the area. It consists of a complex of courtyard colonial buildings. The hospital is characterized by the integration of a pre-colonial Moorish villa (a traditional “fahs house” commonly found in Algiers’ surroundings, (fig.3) which is a courtyard house that belonged to the Moorish governor, known as “the Dey”. While many of the Moorish dependencies have been demolished over the years, the principal residence still stands as a testament this stratified history.

Mustapha Hospital was also constructed on the site of a Dey’s djenane (rural house, fig.2). Unfortunately, nothing remains



Figure 3.

Left : Gener et Bayot, *Hôpital de Mustapha Pacha*, 1831.

Source: *Feuillets d'El-Djezaïr, hors-série*, 1937, p.2

Right: *Hôpital Maillot, Pavillon des Officiers*.

Source: *ancient postcard*.

from this original structure. After the relocation of Kharra-tine Hospital in 1854, Mustapha hospital was composed of some shacks, comprising 600 beds. In 1874, architect Voinot designed a plan that included twelve pavilions, increasing the hospital's capacity to 14,000 beds. In 1959, Mustapha Hospital was one of the first healthcare institutions to become a University Hospital Center (cdha, 2015).

El Kettar hospital was built in 1896 by J.Voinet, an influential architect in Algiers that realized the Observatory of Bouzareah. The hospital is composed of diverse pavilions, an amphitheatre and a body of building dedicated to the medical staff (Pouillon, 2008).

The contagious diseases' service of el Kettar was built in 1937 by J. Guiauchain (Pouillon, 2008), another influential architect. It was built in the immediate proximity of the traditional city walls according to the pavilion model.

These three study cases correspond to different stages of urban growth and illustrate the evolution of the hospital type. As avant-garde architects built them, they constitute important landmarks in Algiers' architectural history. This generation of architects was reflecting on "an Algerian style" centered on creating a new architectural aesthetic while drawing inspiration from the classical architecture.

We started with the synchronic analysis, which consisted in a site survey, including photo-reportage and architectural surveying. As suggested by the thematic literature, we, first, classified buildings into courtyard, slabs, block, and multi-block forms. Then, we analyzed the compositional rules of the three hospitals. After that, we examined the formal transformations of each hospital. In doing so, we implemented regular typological and morphological analysis, combining a synchronic and a diachronic analysis.

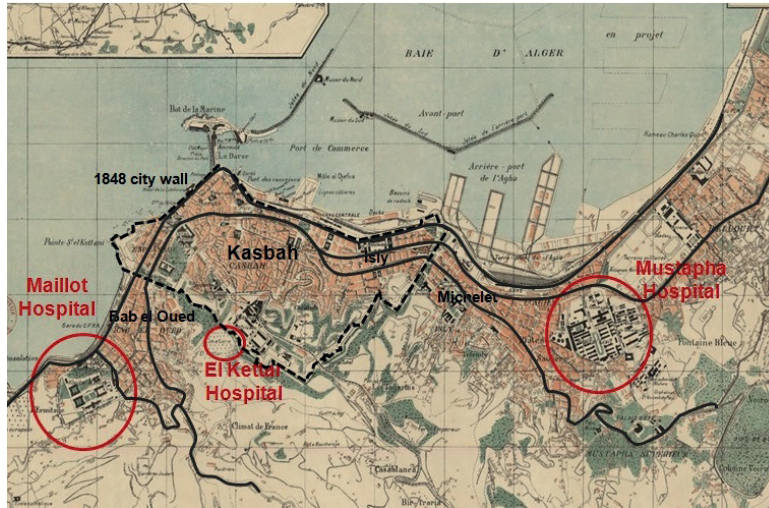


Figure 4. Location of the selected hospitals. Author's annotations on *Ville d'Alger et environs*, 1924.

Source: © Gallica, Bibliothèque nationale de France

### Urban challenges of Algiers Hospitals

Not only did the architectural form of the three hospitals change over time, but the urban growth of Algiers brought new urban challenges, including shifts in their location within the city (fig. 4).

Initially, Al kharratine Hospital was part of the traditional urban area (intramural perimeter). However, as the need for larger and more specialized medical facilities grew, hospitals transformed into suburban complexes. The hospital, as a modern healthcare structure, evolved into an isolated entity that constrained urban expansion in its vicinity. In this context, a hospital can be conceptualized as a non-nodal specific building type, equivalent in size to an urban fragment.

All three hospitals are situated alongside territorial routes, near natural barriers. This peripheral positioning is confirmed by the presence of other anti-nodal facilities, such as cemeteries and barracks. El Kettar Hospital stands out as the most inaccessible, due to its location on a site with multiple barriers: kasbah, barracks, steep slope, and cemetery.

Nowadays, these three hospitals are, all incorporated in the urbanized perimeter of Algiers, with Mustapha Pacha, in particular, serving as a vital urban center.

### Synchronic Analysis: Contemporary Hospitals Forms

At Maillot Hospital, the central area is composed of three courtyard buildings that constitute a grid pattern, including the Moorish villa. Slabs and block forms are rejected in the periphery. El Kettar Hospital is mostly composed of slabs, meanwhile, Mustapha Pacha Hospital uses different kinds of forms. In all three cases (fig. 5), main buildings are arranged in a classical composition alongside a perspective axis enclosed by a monumental building.



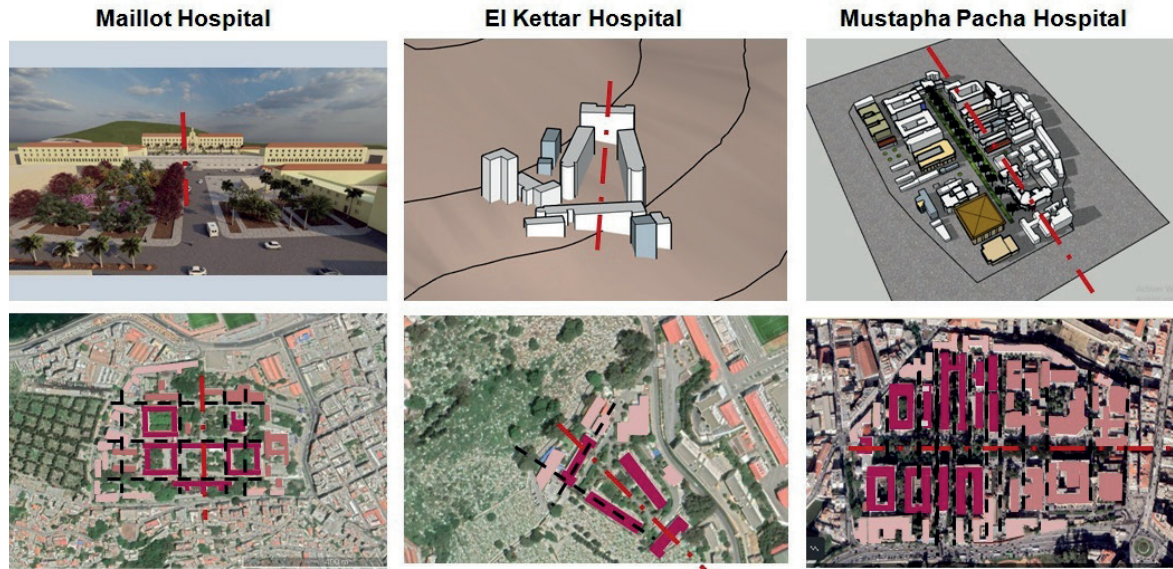


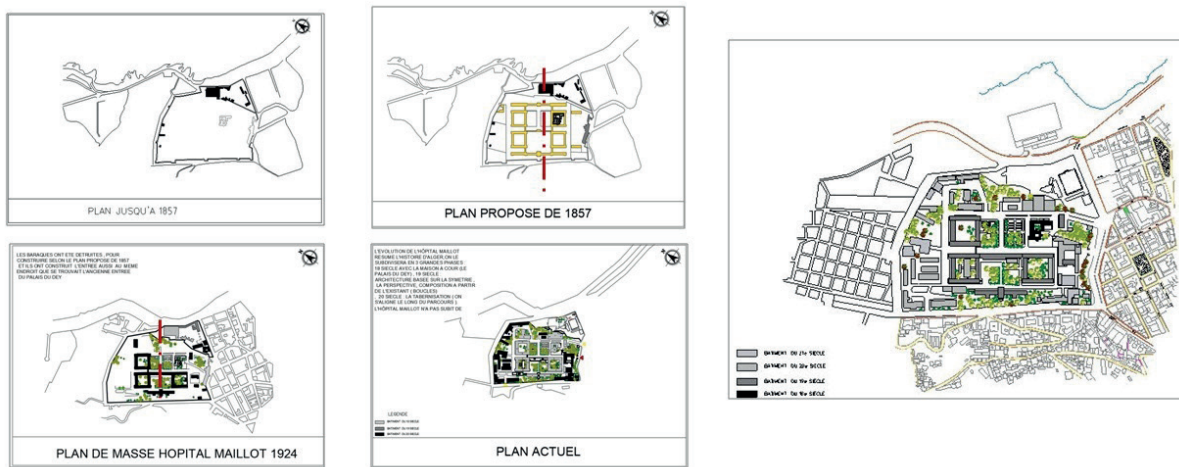
Figure 5. Synchronic analysis: the functional typology and geometry and composition. Source: Group 4 supervised by the author, 2021-2022.

### Diachronic Analysis: Historical Evolution of Hospitals Forms

In Maillot Hospital, the functional-based classification is consistent with the historical evolution (fig. 6). The oldest buildings, which include three courtyard structures, are situated within the internal part of the site. Despite the partial implementation of the 1857 plan, which adhered more closely to the classical perspective order, the latter remains discernible. However, this architectural principle does not correspond to the site's form. In contrast, the most recent buildings composed of slabs and block-form buildings are positioned along the routes.

In El Kettar Hospital (fig. 7), theoretical and historical developments do not match. El Kettar is a hybrid style facility in which modernist buildings are structured in a classical composition. At the beginning, due to hygienist considerations, this contagious diseases hospital was built according to the pavilion model. It was completely rebuilt after 1959 using slabs forms composed in a perspective order and located in the central area of the site. New extension buildings are again situated alongside the site limits.

The evolution of Mustapha Pacha Hospital (fig. 8), on the other hand, is harder to conceptualize as it underwent multiple radical modifications. Initially, it was built with slab forms and organized within a grid layout. Finger and courtyard forms appeared afterwards. However, one can still discern the perspective logic in the older formal layout with some buildings already aligned with the routes. In the meantime, there were still undeveloped areas within the hospital site. After this latter reached saturation, the most recent buildings were constrained to the alignment.



**Conclusion**

Despite the non-implementation of the 1857 plan, Maillot Hospital remains an interesting example of composite Moorish-European complexes in Algiers. The Moorish rural residence of the Dey was intended to be incorporated within the courtyard of one of the buildings. However, the original architectural logic is still be discernable: Combining characteristics from both Milan and Plymouth Hospitals, Maillot Hospital features a multi-courtyard structure integrated into a checkerboard grid, with a gallery that links the detached courtyard buildings.

El Kettar Hospital has undergone a long process of destruction-reconstruction, always adhering to a pavilion type layout. In its latest version, it is coherent enough to be considered a good example of avant-garde classical modernism in Algiers.

On the other hand, Mustapha Pacha Hospital has experienced a chaotic evolution. Despite the presence of some interesting pavilions, the overall layout appears as a juxtaposition of disparate forms.

In conclusion, we propose several issues for further reflection, including:

- Linking the functional-based classification of the hospital’s form to historical pandemics,
- Analyzing the resilience of hospitals’ forms to pandemics by defining specific resilience criteria and exploring the functional strategies adopted to adapt to the pandemic contexts.
- Exploring the connection between the formal development of Algiers’ hospitals and local epidemic episodes.

*Figure 6. Diachronic analysis: Maillot Hospital. Supervised by the author.*

*Source: Merrouche Sami, Balahouane Imed Eddine and Kwizera Elinga Pacifique supervised by the author, 2021-2022.*

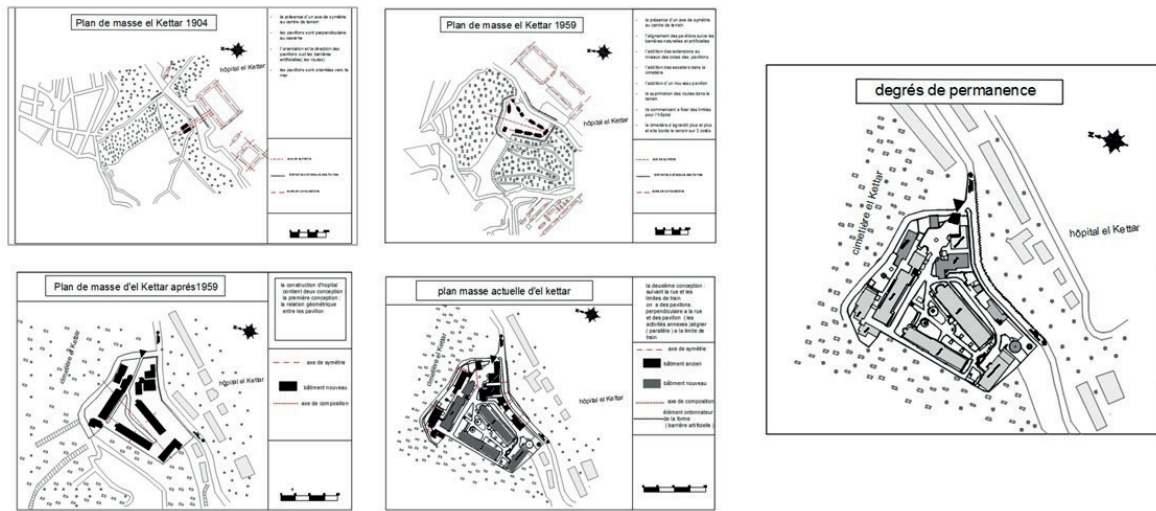


Figure 7. Diachronic analysis: El Kettar Hospital.  
 Source: Kouidri Nour Elhouda and Abed Ouissem supervised by the author, 2021-2022.

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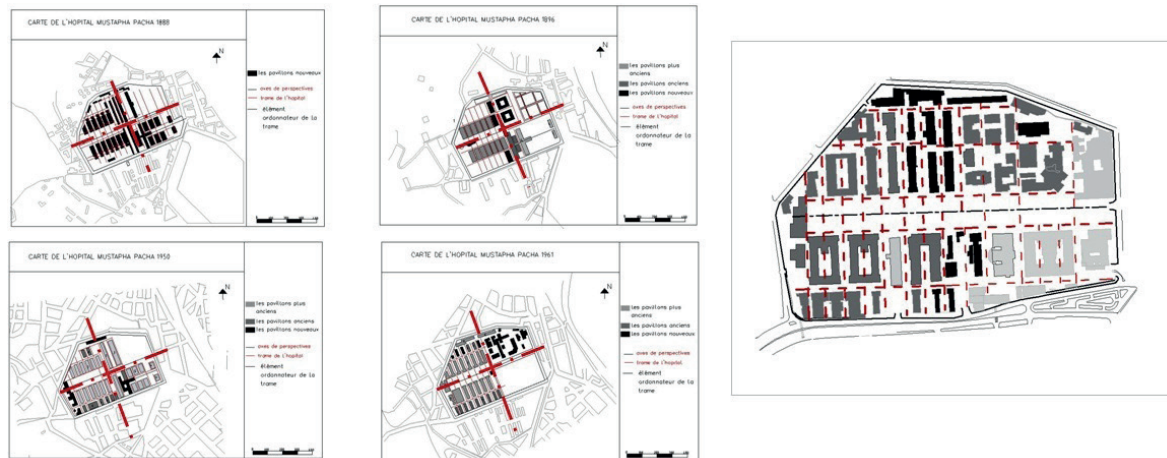
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*Figure 8. Diachronic analysis: Mustapha Pacha Hospital. Source: Ameer Aziza, Abid Nour El Houda, Sadoune Lina and Ghouli Hanane supervised by the author, 2021-2022.*