

Urban morphology of the Medina of Tangier, Morocco: Evidence of the Islamic and Portuguese invasions from the 15th to the 20th centuries

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ABSTRACT

This work aims to present aspects of the urbanization process by Arab and Portuguese colonizers in Tangier, an important Moroccan port city, located on the Strait of Gibraltar. By consulting bibliography and cartographic bases in a time frame from the 15th to the 20th centuries, we presented some hypotheses about the permanence of the ancient in current urbanism, identifying the most relevant architectural facts of the Medina of Tangier from the urban morphology point of view. Urban heritage is highlighted, including the urban march, the limits of the walls, the expansion axes, the new centralities, the military architecture, the religious architecture and the squares. Those are changes of use in historic buildings, and memories of European time that “reverberates” in the present. We conclude with a synthesis of the urban elements brought by the colonizers that contributed to its current architectural identity.

KEYWORDS: Urban morphology; Urbanization Processes; Memory of urbanism.

1. INTRODUCTION

Urban Morphology is an interdisciplinary line of research, which had its origins within the area of knowledge of geography, but has proven to be fundamental to urbanism for carrying out urban interventions, as it detects principles, rules and types that constitute the layout of cities. (DEL RIO, 2000) As described by Rego and Meneguetti (2011): “It is the study of the physical environment of the urban form, the processes and the people who shaped it” (REGO; MENEGUETTI, 2011). Urban morphology is an internationally disseminated area of study, and will be addressed in this research as a factor for analyzing the transformations in the urban form of the city of Tangier, in Morocco.

According to BARKE (2018, p. 11), the importance of urban morphology is argued in three perspectives: philosophical, cultural and practical. The author highlights that understanding it is a must for raising awareness of urban aesthetics and the layers of meaning linked to urban landscapes. Practically, the study of urban morphology performs an essential educational function. Through the detailed study of urban form, one learns both what not to do and how to make better decisions, a vital objective for achieving successful urban management. The urban morph provides a unique appreciation and training for integrating closely related fields of practical application such as urban design, planning, architecture, and conservation.

This research therefore intends to evaluate the urbanization process of the city of Tangier, based on the cartography available throughout the time frame between the 6th and 20th centuries, considering the alternation of domination of the city by different colonizers, with different cultural backgrounds. In this context, the aim is to evaluate which urban elements have greater resilience in the face of such changes. And in addition, we aim to verify the aspects that are part of the memory of the urbanism of the city studied.

The other objectives of this research on the Medina of Tangier are: to identify legacies left by the Portuguese and Muslims in urban morphology considering its dynamism; select the main prominent urban facilities, understand their adaptations and changes to the plot, in addition to their areas of influence; identify existing limits, full and empty, and establish relationships with the

densification and use of public and private spaces; observe and point out the hierarchy of roads, their characteristics and transformations within the urban agglomeration, their religious and administrative equipment; carry out a reading of the contemporary city and understand the consolidation and general modifications of traditional and imposed morphological processes in the city's urban fabric; rise some considerations about the densification process and its relationship with the emergence of new streets and alleys.

2. CASE STUDY: MEDINA OF TANGIER, MOROCCO

Tangier is an important city located in northern Morocco. Its strategic geographic location, between Africa and Europe, means that it was, over the years, visited by the Phoenicians, Romans, Vandals, Visigoths and the Ottoman Empire before finally joining modern Morocco. Its location made it a cultural crossroads and led to its continuous development until today (MEDINA, 2020). Successive wars and commercial disputes caused Tangier to constantly change its nationality.

The Portuguese presence in Tangier lasted from 1471 to 1661. In 1662, Tangier was donated as part of a dowry for Catherine of Bragança and her marriage to Charles II, the King of England. The British had control of Tangier for 22 years, and then it was returned to Morocco. During the Protectorate Era (1912-56), Tangier remained an International Zone. (TNGER, 2020). Struggles about power over the centuries transformed the urban layout of the Medina of Tangier. Figure 1 illustrates the city of Tangier today, and it is possible to see that the History characterizes its urban landscape.

Figure 1 View of Tangier from the Medina to the port.



Source: Disponível em: <https://www.journalofnomads.com/where-to-stay-tangier-best-hotels/> Accessed on: 11 feb. 2020.

The Medina of Tangier is the medieval part of the city, it has five neighborhoods and it is divided into two distinct parts: the Medina and within it the Kasbar, the ancient Citadel (MEDINA, 2020). This article aims to analyze the old part of the city, and how its urban elements have changed

over time. It is also intended to identify landmarks that are part of the memory of its urbanism, which still characterize the current city.

The old Medina is the most interesting part of Tangier, it's really worth spending some time here and discovering its little secrets. The streets that appear unexpectedly dead ends, the traders, the squares with fountains, the busiest main roads and many others with some local inhabitants. Here you don't hear the sound of the handcrafters, just like in Fez or Marrakesh where they make their pieces. (LEONARDO, 2019)

The section of the city studied is also known as "old Medina", and it has mystical characteristics, as the author reports above, mainly due to its unexpected, even labyrinthine, layout. It is the result of several changes, imposed by different colonizers. Taking all this in consideration, the methodology of analysis was established, considering this peculiar urbanization process.

3. METHODOLOGY FOR ANALYZING URBAN FORM FROM THE 15TH TO THE 20TH CENTURIES IN THE MEDINA OF TANGIER

This research establishes a time frame between the 15th and 20th centuries to evaluate urban changes resulting from the impositions of different colonizers. For this study, cartographic bases of the Medina of Tangier are used, associated with the concepts and references of urban morphology for the Portuguese colonial city versus the traditional Islamic city.

Urban morphology tries to identify the laws that determine the organization of the city's fabric in different periods, since its development is not random. (REGO; MENEGUETTI, 2011). This analysis can be cognitive, which explains the urban form; or normative, which aims to explain how a city should be. (GAUTHIER; GILLILAND, 2006).

In the case of this research, we use the explanatory and cognitive approaches proposed by the geographer M. R. G. Conzen (2008), from the English school, who seeks to describe how the city is in its form, and highlight the transformations in the fabric of its elements throughout periods of time.

The Popperian hypothetical deductive method is also used to analyze the transformation of this territory (POPPER, 1975). By this method, the investigation is guided by initial hypotheses that seek to be confirmed or rejected, by means of "testing" previous conjectures. Therefore, the analysis of the cartographic bases provided (along with the other references consulted) was based on the following reading and hypotheses:

Proposed Reading: Resilience of roads in the urban fabric and urban equipment (from the 15th to the 20th century). Portuguese and Islamic heritage in the formation of the urban layer.

Observe the contemporaneity of the form from the web of its elements that get transformed (CONZEN, 2008): prominence and hierarchy of roads, continuities and interruptions in the layouts, spots of occupation, borders, full and empty spaces.

Hypothesis: The main axes of connection and separation of contemporary Tangier are established in European time (made or reused in it) while the fabric tends towards the Islamic city (dense, tortuous, semi-public, for the pedestrian).

Always starting from the current map for analyses: the maps from the 17th and 14th centuries are fundamental, the representations from the 15th and 16th are essential for understanding elements of permanence (acropolis and city, kasbah and medina).

As a final synthesis of the analyzes carried out, two tables are prepared to interpret the results obtained: (1) Summary of the Main permanent elements left by the Portuguese; (2) Permanence or Modification of Urban Elements in Medina of Tangier. These two seek to prove the central hypothesis mentioned above, and also identify which urban aspects are more resilient considering the time frame analyzed.

4. ISLAMIC CITY MARKS IN TANGIER MEDINA

According to Oliveira (2016, p. 54), many Islamic cities are cultural descendants of the Sumerian cities of ancient Mesopotamia. Morris (1972) apud Oliveira (2016, p. 54) distinguishes original elements that were shared with ancient cities and were the determinants of the urban form of Islamic cities. For the author these original determinants include topography, climate and building materials (all three originated from what he calls the "natural world"). In addition to these, there is also the absence of orthogonal grids, legislation in the sense of a formally codified civil law, self indulgence and considerations of civil aesthetics and social segregation. For the same author, the subsequent determinants comprise the urban guidelines contained in the Qur'an and the Hadiths (the sayings of the Prophet) which together form the basis of the Shari'a (Islamic Holy Law) which covers all aspects of public and private, community life and personal of Muslims. Therefore, according to the same author, all elements of the urban form of the Islamic city were influenced by the Shari'a ("Islamic Law")

Permanent elements of the Islamic city: walls, streets, mosque, souq, squares

- a) **Wall:** The defensive system of an Islamic city differed little from that of a medieval European city (pre-artillery), and included a relatively simple wall, reinforced by towers, with defensive additions at the gates. With few exceptions, the Kasbah (the citadel of the ruling elite) was positioned against or steps away from the city wall, a feature apparently inherited from ancient Mesopotamia, which was in direct contrast to the form of Western Europe where the citadel was at the center. The wall of the Medina, generally more rugged than that of the Kasbah, is built, in some cases, to encompass the buildings that grew spontaneously (obeying a road hierarchy) and presents some cuts related to both the existing housing and the topography.

In the maps analyzed and in those consulted in bibliographies on the subject, the wall occupies a prominent place, closing off the Medina. Its construction adapts to the topographic conditions of the region. Built in a strategic location, the wall's main function is to protect its population from external attacks and control movements of arrivals and departures by sea. The layout of the wall is characterized by a regular rectilinear mesh, a regular urban mesh, which contains doors at strategic points to control entry and exit to the sea.

- b) **Kasbah:** It was a place for the local leader to live and a defense when a city was under attack. A kasbah has high walls, usually without windows. Sometimes they were built higher up so they could be more easily defended. Some were placed near port entrances. Having a kasbah built was a sign of wealth for some families in the city. The word kasbah can also be used to describe the old part of a city. The Spanish word *alcazaba* names the equivalent building in Andalusia or Moorish Spain. In Portuguese, it evolved into the word *alcáçova*. In Turkish and Urdu, the word *kasaba* refers to a settlement larger than a village but smaller than a city; in short, a citadel. The doors in the Kasbah wall depend on their size and the functions they perform. There are normally two doors: one articulated with the interior of the Medina, generally associated with an important road; and the other, called *Treason*, which faces the outside, and would serve as a last escape in the event of an invasion. The wall of the Medina, generally more rugged than that of the Kasbah, is built, in some cases, to encompass the buildings that grew spontaneously (obeying a road hierarchy) and presents some cuts related to both the existing housing and the topography. This can be seen in Figure 6.
- c) **Road system:** The intricate street system, determined by the aggregation of residential buildings, was mainly composed of two types of streets: the roads, with a width of 7 cubits⁴ (3.23 - 3.50 m), allowing the passage of two camels loaded; and the cul-de-sac, with a width of about 4 cubits (1.84 - 2.00 m), allowing the passage of a loaded camel. In this system of extremely narrow streets, the presence of a square, facing a mosque or comprising a market, would be an exceptional element of public space. This aspect is observed in Figure 6.
- d) **Souqou souk:** is an open-air market or shopping district in cities in the Middle East and North Africa). The equivalent Farsi term is "bazaar". He was a key element that provided the sale of different commodities. There was an established hierarchy of location in relation to proximity to the Mosque. The individual stores that make up the souq were small in size and could vary from 1.5 m or above. They were organized in different ways: linear souqs on both sides across the street from a city gate to the Mosque; souqs where the back side faces the back of another place and there are gates for security at night and souqs where the shops were against the perimeter wall of special buildings. (MORRIS, 1972 apud OLIVEIRA, 2016, p.54)
- e) **Mosque:** the Mosque is the fundamental building of the Islamic city. Its general arrangement consists of a covered prayer room along one side of a courtyard. Sometimes it had an open courtyard with one or more fountains for purification before prayer. It also included one or more minarets. There were a number of other types of buildings related to the Mosque, including the Hamman (public bathhouses used separately by men and women) and the Madrasa (college for advanced study of Islamic law and sciences). (Morris 1972 apud Oliveira, 2016, p. 54).
- f) **Land parceling:** The parcels of Islamic cities were very irregular in terms of both shape and size. With the exception of a courtyard, the building's roof was extremely high and

each house would occupy the entire site. The Islamic city house was deeply rooted in the ancient Mesopotamian house, promoting the privacy of the domestic domain. The house was structured by a courtyard and was divided into two parts, the salamlik (public part) and the haramlik (private part, reserved for the family). In larger houses, these pieces were physically separated and structured around different courtyards, while in smaller houses they corresponded to different floors. The front of the building was very simple, contrasting with the richness of the interior. Climatic comfort was one of the house's main concerns, including a series of measures to achieve this purpose. For example, each room could change its function according to the time of year (SCHOENAUER 1981 apud OLIVEIRA, 2016, p. 54).

5. CHRONOLOGICAL ANALYSIS OF THE CONTINUITY OF URBAN ELEMENTS

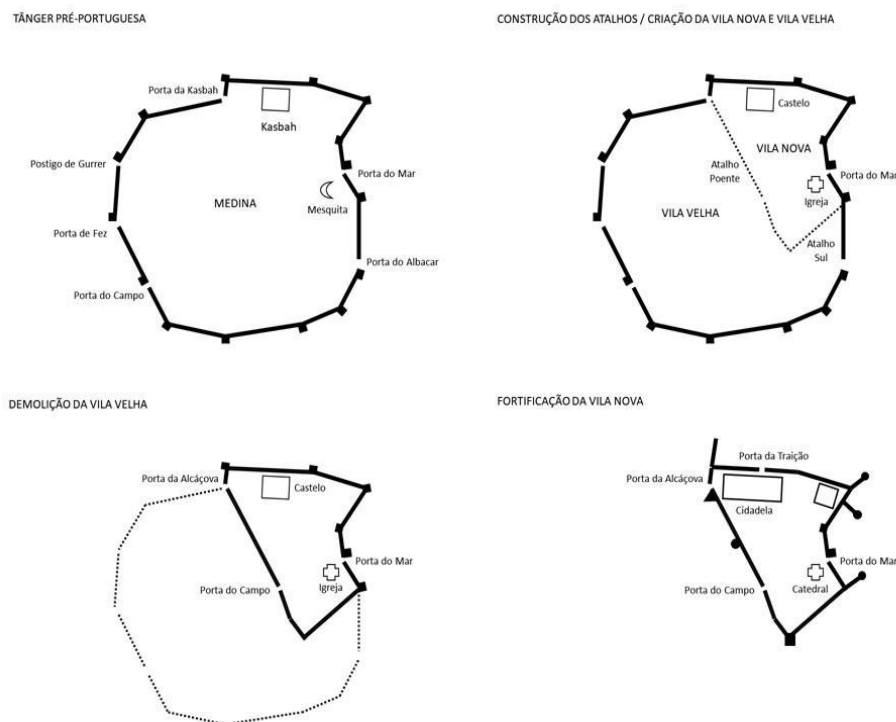
Now we present some results of the analysis carried out based on the bibliographic material consulted, considering the time frame defined between the 15th and 20th centuries.

5.1 Tangier, end of the 15th century: the Portuguese conquest and the creation of the shortcut

According to Paula (2019), in the case of Tangier, the walled area was reduced and the perimeter regularized, with the construction of two elbow sections of wall. Shortcuts were implemented in situations that took advantage of the terrain's topography, on top of existing embankments, gaining supremacy in relation to the nearby outdoor area. After the division process, Tangier was the largest city occupied by Portugal. It had a walled area of 20 hectares and a population of over 3,000 inhabitants.

The retreat of the wall left some high places outside the walls unprotected, "corresponding (...) to an important defensive limit that followed a relatively constant level curve and that would later be used by the Portuguese and English to mark the territory with watchtowers or advanced forts in the countryside outside the city". (CORREIA, 2008, p. 213 apud PAULA, 2019) Figure 2 illustrates the appropriation of Tangier by the Portuguese and the creation of shortcuts.

Figure 2 Illustration of the appropriation of Tangier by the Portuguese and the creation of shortcuts



Source: Available on: <https://historiasdeportugalemarracos.com/2018/05/20/o-campo-detanger/#more-9772> apud Jorge Correia (In: *Implantação da Cidade Portuguesa no Norte de África. Da tomada de Ceuta a meados do século XVI*). Accessed in: 8 feb. 2020.

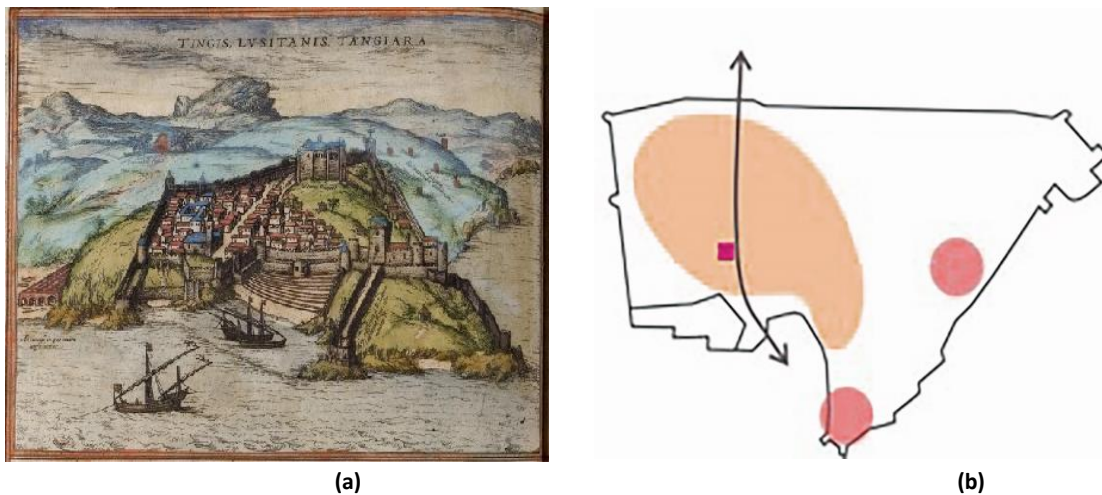
The first iconographic image on the up-left corner shows the condition of Tangier prior to the Portuguese takeover. The presence of the Wall in the Medina can be seen with the Gates in strategic places and the main Islamic elements: the Mosque and the Kasbah. In the second iconographic image on the up-right corner, it shows the Medina divided into Vila Velha and Vila Nova, where there is the presence of the elements: the Kasbah, which was transformed into a Castle, and the church (in this case the Mosque was transformed into a church by the Portuguese). The image on the down-left corner shows the demolition of Vila Velha and the continuation of Vila Nova with the main elements: Castle, Church, Porta do Mar, Porta da Alcáçova and Porta do Campo. The image on the down-right corner shows the permanence of Vila Nova, with reinforcement in the wall, the presence of the Citadel, the Portas do Mar, Porta do Campo, Porta da Alcáçova and the Porta da Traição near the Citadel. Despite having been occupied by the Portuguese for 191 years (1471 – 1661), the mark left by Portugal on the urban structure was reduced, mainly due to the topographic irregularity of the terrain and the difficulty in implementing orthogonal axes.

It is noteworthy that an important installation in the Mediterranean region, the hámmam, classified in the category of urban buildings, with social and hygiene functions, played an important role in the development of the urban and social layer of the Medina. Historic Moroccan urban centers had exquisite hámmams. The urban expansion of the Medina throughout history is considered to be due primarily to the abundance of water that was provided by sophisticated networks of water sources

and rivers. The ingenious hydraulic network dating back to the 8th century connected all of the city's buildings to drinking water, river and sewage channels. (SIBLEY (ed), 2008)

Figure 3 shows an engraving of the city of Tangier in the 17th century. XVI and the iconographic scheme of the Medina.

Figure 3 (a) Engraving of Tangier in the 17th century. XVI of the work *Civitates Orbis Terrarum* by Braun and Hogenberg, 1572; (b) iconographic scheme of the Medina.



Source: (a) <https://historiasdeportugalemarrocos.com/2018/05/20/o-campo-de-tanger/#more-9772>. Accessed on: 5 feb. 2020; (b) Authors

Caption:



Regularization of the structuring axis (Medina – Porta)



Urban structures concentrated around the main structuring axis.



Mosque: adaptation of the religious element

5.2 Tangier, end of the 16th century and 17th century: urban elements

It can be seen from the map in Figure 4 that in the period from the 16th century to the 17th century the urban layer expanded towards the two castles. In the road branches, new branched roads appear associated with the main structuring road (Medina-Castelo Velho / Medina-Castelo Novo).

The rationalization and consequent geometrization of urban layouts is the result of planning or adaptation actions, in which spontaneity and organic growth have no place.

The Portuguese medieval city is characterized by several aspects that differentiate it from others, for example, through basic elements of its structure, such as Rua Direita. This street forms the axis that organizes the building network, formed by a set of medium and small-sized streets, squares, where the main public buildings are generally located, where the streets themselves and large

peripheral spaces are often widened open and with a poorly defined layout (the rossios) where the main events of the community and also economic activities take place. (PAULA, 2018). Rua Direita is the axis that determines the hierarchy of urban spaces and that relates and articulates different areas.

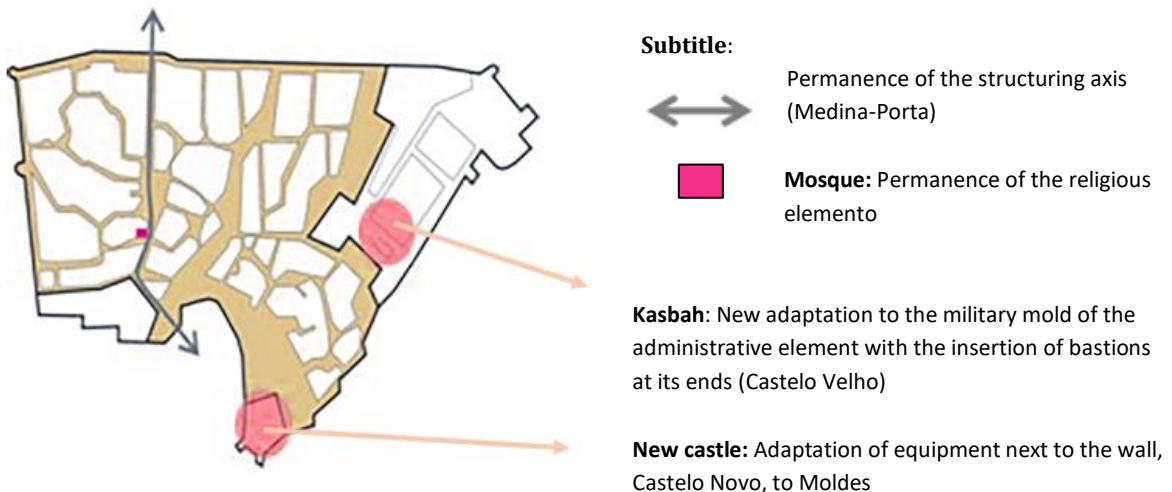
According to the same author, Rua Direita was generally a street with an irregular layout. This can also be seen in Figure 5. This irregularity is attributed to the topography of the region.

Figure 4 (a) Map of the 18th century (b) iconographic diagram from the 16th and 17th centuries and urban elements of permanence.

(a) military insertion of bastions and two cuirasses in the Manueline style. Source: Authors



Source: Disponível em: <https://historiasdeportugalemarrocos.com/tanger-2/> apud Biblioteca Nacional da França. Accessed on: 10th feb. 2020.



(b) Strait of Gibraltar, in the Kingdom of Tangier [17.]

Figure 5(a) and (b) show maps from the 17th century and from the 20th century respectively, where some relevant aspects for the period can be observed. Figure 5 (a) shows the densification, the permanence of the structuring axis, the small Socco, the densification around the Great Mosque, among others.

In Figure 5 (b) the permanence elements such as the Kasbah presents itself with more defined roads and greater density, the structuring axis and secondary roads (current Rua Siaghine and Rua de La Marine) connecting Porta da Ribeira to Porta do Field already well defined, the Little Socco, squares, the Great Mosque, the wall, church, hotel, among others.

Figure 5 - View of the structuring axis, densities and elements on maps (a) from 1888 and (b) from 1964.



(a) Mapa de 1888



(b) Mapa de 1964

Source: Available on: https://www.etsy.com/listing/526330394/1964-tangier-morocco-vintage-map?ref=internal_similar_listing_bot-1. Accessed on: 15th feb. 2020

The maps in Figure 5 were positioned with the same orientation so that the outline of the Medina can best be seen in both images. In the 17th century (1888) and in the 20th century (1964), its elements of permanence, the branching of roads and the density of each region are also observed. It is possible to observe the permanence of the structuring axis (Medina - Markets) and its most relevant use (Mercados Mosque), the permanence of the religious element, the mosque, and the markets (open/covered). In the road branches, development can be observed within the blocks with the formation of new alleys and secondary accesses, the appropriation of the free space of the square (Square - Mesquita), the erasure of the limits of the castle, the new castle and its incorporation into the network urban, the appropriation of the rear part, the advancement of the castle's limits. In the Praça – Castelo Novo area, the appropriation of the part behind the castle considering the Praça – Castelo Velho began. It is also possible to observe the incorporation and appropriation of the urban layer under the wall, a greater densification of this region, significant changes in the Porto region and

areas of occupation (note courtyards and possible delimitation of neighborhoods associated with smaller mosques and their areas of influence).

According to Paula (2018), squares were highly contested territories. For the Portuguese, they were of fundamental importance for their security and logistics and for the Moroccans it was a zone of pressure on daily life, where they could cause great damage.

In just a few years, the squares created an extensive depopulated area around them, due to the continuous Portuguese raids and cavalcades, so frequent on all medieval borders. The chronicler of the first years of Portuguese Ceuta, Gomes Eanes de Zurara, tells us that the entire coast of the Strait, until reaching Almarça (about 13 km west of Ceuta), was depopulated". (GOZALBES CRAVIOTO, 1980, p. 150-151 apud PAULA, 2018)

The Wall clearly defined the limits of the city, together with defensive systems such as: the moat or pits, the bastions and sods, breastplates, ravelins and doors. (PAULA, 2018).

5.3 Tangier: 20th century, contemporary base

Over time, several interventions were relevant to the Medina. From an early age, the old Alcáçova was adapted to the Citadel, which the Portuguese called Castelo Velho or Castelo de Cima, and the construction of a second Castle next to Porto, Castelo Novo. The tradition of castles that Portugal implemented in the cities it occupied. In the outer area, bordering the New Castle, the Terreiro was created, which in Tangier was called Chouriço, creating a set of military structures along the north side of the wall, connecting the upper city to the lower city. The Palace would be built in the Castelo Velho, which Miguel de Arruda would transform into a modern Citadel in the mid-16th century. (PAULA, 2019) Figure 6 illustrates these transformations.

Figure 6 – Main permanent elements left by the Portuguese.



Source: PAULA (2019). Available on: <https://historiasdeportugalemarracos.com/2017/02/18/o-urbanismo-portugues-nas-pracasde-marrocos/> Accessed on: 4th feb. 2020.

The main urban structuring intervention that remains was the affirmation of Rua Direita as the main axis of the city, currently Rua Siaghine and Rua de La Marine, connecting Porta da Ribeira (Bab Marsa) to Porta do Campo (Bab El Fans), along where the main urban facilities were located. In the middle of its route, a square of suitable dimensions was opened for the creation of the Market, today still called Petit Socco or Zocco Chico.

The regularity of public space began to be defined as a priority, renouncing the inherited Islamic fabric and seeking new geometric and perspective rationalities [SIC].” (CORREIA, 2008, p. 231 apud PAULA (2019).

Other streets were opened, but they ended up regressing in terms of layout after the city's appropriation by Morocco. According to Jorge Correia, “the urban core underwent a definition of public space, and induced a timid process of regularization of the residential density. We sought to make the public space the link between the main equipment and a spectator of the representation of the new exposed facades”. (CORREIA, 2008, p. 232 apud PAULA (2019))

The streets (public, semi-public, semi-private) and the organization of the city still have many traces of the Portuguese occupation, but over time it was transformed with the small arteries that

changed it into the typical Moroccan labyrinth. The international presence in Tangier since the end of the 19th century is noticeable in the Medina due to the observed European influence.

6. Summary of the results obtained

We now seek to verify whether the initial hypothesis can be accepted, based on the analysis of the resilience of the previously listed urban elements. Below, table 1 is presented as a summary of the urban transformation analyzed as the object of this research.

Table 1 – Summary of the Main permanent elements left by the Portuguese.

Islamic city-Permanent elements	Tangier, end of the 15th century	Tangier, end of the 16th and 17th centuries	Tangier, 20th century
URBAN MARCH. Absence of orthogonal grids. Irregular natural topography.	Demolition of VILA VELHA.	(1) Expansion of the urban layer towards the two castles (Medina-Castelo Velho / Medina-Castelo Novo). (2) Appropriation of the urban layer under the wall, with greater density.	(1) Other streets were opened, but ended up regressing after appropriation by Morocco. (2) Public space as the connection between main facilities.
WALLS (Simple walls, reinforced by towers, closure of the medina, adapts to the topography, regular rectilinear mesh, entry and exit control)	(1) Wall reduced and perimeter regularized. Construction of two sections (shortcuts) for entrance. (2) Elaboration of a smaller fortification, from VILA NOVA. (3) Stay DOORS (from the sea; from the Alcaçova, from the countryside)	The walls remained	The walls remained
KASBAH next to the wall (citadel of the ruling Elite) High walls, without windows. Highest point, sign of wealth. Two entries (Interior and Betrayal)	Becomes castle	(1) It becomes CASTELO VELHO, adapted to military standards. (2) NEW CASTLE – Adaptation of the equipment next to the wall to military standards, insertion of bastions. (3) Kasbah with more defined streets and greater density. (4) Erasure of the castle limits, incorporation of the urban layer.	(1) In the outer area, bordering Castelo Novo, the Terreiro (Chouriço) is created, connecting the upper city to the lower city. (2) Palace implemented in Castelo Velho.

ROAD SYSTEM. Narrow streets, presence of a square in front of a mosque or market. Segregation of residential buildings.	Urban structures concentrated around the main structuring axis (Medina – Porta)	(1) New branch roads associated with the main structuring road (Medina-Castelo Velho / Medina-Castelo Novo). (2) Rua Direita, with an irregular layout, organizes the building network. (3) Widening of streets. (4) Permanence of the structuring axis (Medina-Porta) and secondary roads (current Siaghine Street and La Marine Street) already well defined.	(1) Affirmation of Rua Direita as the main axis of the city. (2) Current Rua Siaghine and Rua de La Marine, connecting Porta da Ribeira (Bab Marsa) to Porta do Campo (Bab El Fans), along which the main urban facilities were located. (3) Small arteries that changed it into the typical Moroccan labyrinth.
Open-air MARKET/BAZAAR (Souqou souk) with individual shops	The bazaar remained	(1) Small Socco (Market Square).(2) Squares were highly contested territories.	The Bazaar remained.
MOSQUE WITH PATIO. Related to the Hamman mosque (public bathhouse) and Madrasa (college).	It becomes a CHURCH, and then a CATHEDRAL.	(1) Permanence of the religious element (mosque) (2) DENSION around the mosque.	Mosque remained
LAND PARTING. Irregular lots. Inner courtyard.	Irregular lots remained	Development within the blocks with the formation of new alleys and secondary accesses	Timid process of regularization of the residential fabric.

Source: the authors

It can be noted that the urban layer has always presented the absence of orthogonal grids, mainly due to the irregular topography, a physical characteristic of the territory. From the 17th century onwards, it expanded towards the two castles, and also under the wall. More straight streets were opened in the 20th century, but after appropriation by Morocco, the sinuous and dense fabric remains characteristic of an Islamic city, confirming the hypothesis.

It is possible to verify that the Main Structuring Road Axis (Medina – Porta) is the element of the urban layer that has remained the most resolute, without undergoing significant changes over time. Rua Direita is also a prominent road that organizes the building network. Therefore, Tangier's connecting axes actually date back to European times, as has been hypothesized.

The walls, which are elements of separation and limitation of the urban layer, underwent modifications mainly in the 15th century, with the construction of the two entrance sections, partially confirming the hypothesis. However, most of it was maintained, mainly because it is a defense element in a territory that is geographically well exposed.

It is also worth remembering that fundamental urban equipment remained, resisting the city's transformations, however, having its forms of use changed. One case was the Kasbah, a citadel

of the ruling Elite, which became a military-style castle, aimed at protecting Tangier. The mosque also becomes the Church, then the Cathedral, to return to its initial proposal as a mosque.

This change of use of a building shows that the colonizers possibly had a certain respect for the city's memory, since they intended to reuse and not demolish old buildings. A mosque does not have the same characteristics as a Catholic church, but such occurrences can be identified in urbanization processes similar to Tangier, where cultural mixing enables certain forms of acceptance of differences. Port cities themselves already have greater social diversity, due to the intense traffic of people, which allows different populations to coexist, resulting in cities with more memories from different periods.

To conclude, the proposal was to prepare a table with the modification trends of urban elements in Medina of Tangêr, considering the original urban elements of the Islamic city in the three periods analyzed through bibliographical review and analysis of the cartography of each historical moment. The objective was to verify which aspects showed more resilience with the changes made by the colonizers, and therefore characterize the current city.

Table 2 – Permanence or Modification of Urban Elements in Medina of Tangier

n.	Urban element	Tendency	Tangier, end of the 15th century	Tangier, end of the 16th century and 17th century	Tangier: 20th century
1	Urban March	Permanence			
		Alteration	Demolish	Expansion	Expansion
2	Walls	Permanence		Permanence	Permanence
		Alteration	Reduced		
3	Kasbah	Permanence			
		Alteration	Ways of usage	Ways of usage	Expansion
4	Main axis	Permanence	Permanence	Permanence	Permanence
		Alteration			
5	Rua Direita	Permanence	Permanence	Permanence	Permanence
		Alteration			
6	Souqou souk (market)	Permanence	Permanence	Permanence	Permanence
		Alteration			
7	Mosque	Permanence			Permanence
		Alteration	Ways of usage	Expansion	
8	Lotes	Permanence	Permanence	Permanence	Permanence
		Alteration			

Fonte: Autores

From the results in Table 2, it is possible to verify fundamental trends in this urbanization process. The urban area underwent major changes during the periods studied, starting with the demolition of Vila Velha at the end of the 15th century, and also alternating the vector of its growth.

However, the pattern of land parceling and the size of the lots maintain practically the same pattern, and is a factor that characterizes the urban landscape of the Medina of Tangier to this day: Small houses, very close together, in winding alleys, many times with no way out due to the limits of the walls.

The walls underwent some modifications at the end of the 15th century, with the creation of two new shortcuts to enter. However, this fact reduces the protection of the ancient city, which is very exposed geographically. Therefore, after this first modification attempt, the walls remain intact, considering their fundamental role in protecting the territory.

It appears that the structuring road axes are the most permanent elements, and they do not seem to lose importance or undergo modifications either with the change of colonizers or with the passage of time. They are stronger and more resilient elements. The Main Axis (Medina-Porta) and Rua Direita function as the structural roads of the ancient city to the present day. Similarly, the markets (Souqou souk), which are like open-air bazaars that take place in public squares, also remain similar to the original use of the Islamic city. The bazaar trade is one of the most characteristic elements of Tangier, the Islamic markets, which attract tourists from all over the world, and stimulate the “magic” in relation to this city, a point of sale for eastern spices.

On the other hand, the buildings underwent major modifications, such as the Mosque that changed its use to a church, and then to a Cathedral. And also the Kasbah, headquarters of the elite in the Islamic city, becomes the Old Castle, and even the headquarters of the military service. The buildings, which represented power and spirituality, are actually “dominated” and shaped to the interests of the new colonizers. This is a symbol of power: deciding the use of the most important buildings in the ancient city. Therefore, they undergo several modifications, adaptations to new forms of use.

7. CONCLUSION

Therefore, we conclude that public spaces, such as structuring roads and squares, with their bazaars, have a greater permanence in Tangier's Medina. Buildings of power and religiosity change the usages more easily, they are transformed to suit the desires of the new colonizers. The urban area changes a lot, however, the morphological characteristics of the urban fabric, such as small lots and winding, dead-end streets, are very resilient, possibly due to their characteristics.

It is observed that the Medina of Tangier is consolidated and structured to this day based on a Portuguese plot imposed in the colonial period associated with an Islamic plot and way of occupying it. The typical labyrinth of the Muslim city remains. The permanence of the highlighted equipment and its adaptations to current times are verified. There are discontinuities in specific parts of the wall, as well as changes in its importance and shape, but its meaning as urban heritage remains.

The city of Tangier, like many others, behaves like a living organism that quickly changes and expands in its occupation environment, according to its needs and investments. However, the Medina has growth limitations, mainly because it is an urban heritage site.

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