

The Importance of the Road Network and Its Role in the Distribution of Various Defensive Architecture Types in the Region of Guelma During the Roman and Byzantine Periods



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Abstract: I addressed the importance of the road network and its role in the distribution of various types of defensive architecture in the Guelma region during the Roman and Byzantine periods, and the relationship of the latter to the various types of defensive architecture prevalent in the Guelma region (the city of Guelma and the surrounding villages and towns) during the Roman and Byzantine periods. I attempted to answer the problematic question of this simple intervention, which revolves around: Is the diversity of defensive architecture in the Guelma region actually linked to the road network, both primary and secondary, or is it due solely to the geographical and human nature of the region? To answer this problematic, the study was divided into two sections. The first section addressed the emergence of defensive architecture in ancient Morocco and the factors that led to its spread in the region. The second section addressed the importance of the road network and its role in military policy. The second section was devoted to studying its various types in terms of location, form, and construction methods, and its relationship to natural and human geography on the one hand, and the road network used in the Roman and Byzantine periods on the other.

key words:: Guelma region; defensive architecture; Roman occupation; the Road Network; Role

Introduction: The Guelma region (including the city of Guelma and its surrounding areas) has witnessed various types of defensive architecture,

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which differ both in form and substance. The construction of such military buildings began during the Roman occupation and continued throughout the Byzantine period, either through the reuse of existing structures, if they remained in good condition, or by repurposing their building materials for the construction of new ones on the same site or nearby. This overlapping history complicates the process of accurately dating these structures.

However, it is noteworthy that the choice of location for these defensive structures was not accidental but was carefully planned. Most of these sites were strategically positioned in relation to the primary and secondary road networks, facilitating military control over the studied area.

Thus, the central issue of this study revolves around whether the diversity of defensive architecture in the Guelma region is primarily connected to the road network, in both its major and minor forms, or if it is influenced more by the region's geographical and human factors. In other words, what are the various natural and human factors that govern the nature and diversity of these structures?

To answer this question, the study was divided into two main sections:

The first section explores the emergence of defensive architecture in ancient Morocco and the factors that led to its spread. The first sub-section discusses the origins of defensive architecture and the various factors that contributed to its proliferation. The second sub-section addresses the significance of the road network and its role in military policy.

The second section is dedicated to studying the different types of defensive architecture in terms of location, form, construction techniques, and their relationship with both the natural and human geography of the region, as well as the road network used during the Roman and Byzantine periods. Finally, a comparison is made between these architectural types from both periods.

Chapter One: The Emergence of Defensive Architecture in Ancient Morocco and Factors Behind Its Spread:

Section One: The Emergence of Defensive Architecture and Factors Behind Its Spread:

The emergence of defensive architecture in ancient Morocco, in its most developed form, is closely linked to the Roman and Byzantine occupations. Although there have been differing opinions on how these

powers managed to assert control over North Africa and implement their military policies, most scholars agree that this control was established through the distribution of defensive structures along all parts of the limes (border fortifications) and within each province.¹ The researcher Diehl argues that the success of this military strategy was fundamentally tied to the large number of military buildings spread throughout the interior regions, such as watchtowers, fortresses, and citadels, which formed a complete defensive perimeter around the country. This network of military landmarks was designed to prevent rebels and insurgents from infiltrating the provinces².

Several factors contributed to the effectiveness of this military strategy, including:

Subsection One: Geographical Factor

Content of the first section, Content of the first section, Content of the first section, Content of the first section, Content of the first section, Content of the first section, Content of the first section, Content of the first s The Roman and Byzantine military strategies, particularly their emphasis on building military structures, stemmed from the challenges they faced during their occupation of the region. They were confronted with a vast geographic area, with each region possessing distinct topographical features. As a result, they sought to exploit natural barriers such as mountain ranges and watercourses to establish various types of military installations.

For instance, during the third century AD, the Romans utilized many of these natural features to create limes lines, such as using the Wadi Ghedir in southern Numidia as a boundary between Roman territory and lands beyond their control.³

This strategic integration of geographical and climatic considerations in the establishment of military watchposts was evident in the creation of boundary lines that closely followed the terrain of each region. Both the Roman and Byzantine forces used these same locations as defensive headquarters to monitor the movements of the local population, especially insurgents.

Thus, the establishment of such lines is a clear indicator of the colonizers' success in exploiting the natural environment to effectively control the social fabric, by intensifying the creation of cities and villages of all sizes, ensuring their security and safety.⁴

Subsection Two: Economic Factor

African agricultural wealth was the primary target for advocates of Roman expansion in ancient Morocco. From the outset, the Romans recognized the importance of organizing and controlling the African agricultural economy, as it was seen as the solution to many issues faced in their homeland of Rome⁵.

Since the first century BC, Roman interest in African wheat has steadily increased, as evidenced by Julius Caesar's praise for the region's ability to supply Rome with wheat during his conquest of the Kingdom of Numidia in 46 BC⁶. As the importance of wheat to Rome grew, so did the value of the land where it was cultivated, with the area of land dedicated to wheat farming expanding gradually as Roman influence spread into the interior.

The first century in Roman agricultural policy is often referred to as the "Century of Wheat," while the second century is known as the "Century of Olive Oil," as olive oil became increasingly popular in Roman society. This is clearly reflected in the large number of olive oil presses built throughout the region, with nearly every city featuring at least one.⁷ This phenomenon was confirmed during my field study of several archaeological sites in the In fact, in Guelma area, where I identified 15 olive presses at the site of Hajar Bourioune in the municipality of Bouhamdan. It is also noteworthy that these presses were often incorporated into military structures, as parts of them have been found within the remains of fortresses and castles.

In fact, the success of the Roman agricultural policy was not only linked to the efficient exploitation of land but was also dependent on controlling the security situation in the region, which was provided by the network of secure roads. Therefore, it was essential to construct main roads connecting different inland and coastal cities. After providing cities with a network of secondary roads linking them to their rural areas, the next step was to secure these roads with a range of defensive facilities⁸. This was done to achieve the following goals:

- Form defensive lines to subdue the locals, ensure security, and facilitate military intervention in emergencies.
- Provide secure means of transportation for the population, thus linking the different elements of society (rural and urban inhabitants), in order to exploit rural capabilities and make them serve the city.
- Ensure the transportation of goods of various types from their production areas to their collection and storage centers, and then

to export ports toward Rome. This would allow the opportunity to economically exploit the resources of the occupied lands and direct them to serve Rome.⁹

After reviewing and studying the archaeological maps of North Africa, particularly the eastern part, it became clear to me that most coastal cities were connected to each other by a coastal road, from which most of the main roads linking all the provinces branched out. Not to forget the network of secondary roads spread within these provinces to link their rural areas and cities. Together, they formed defensive belts enclosing areas under military surveillance. This will be further elaborated on in the next section.

second requirement: The Road Network and Its Role in Military Policy:

Due to the tremendous importance of the road network for the Roman economy, and since it was the main reason for the Roman occupation of North Africa, its history of creation, according to historian Mohamed BachirChniti, was initially linked to the military situation prevailing in the country at that time. The construction of roads was initially a purely military measure. The first strategic road established by the Romans in the eastern Numidian region was created in 14 AD due to the deteriorating security situation in the African proconsular province at the end of Emperor Augustus's reign. He ordered the soldiers of the Third Augustan Legion to construct a road linking their army camp in Haidara, passing through Tebessa to Gabes. This was officially inaugurated by the proconsul NoniusAspoenas.¹⁰

The aim of this road was to facilitate the supply process from outside Africa via the Gabes port, control the region, and subdue its rebellious inhabitants. This would ensure the security of the province and facilitate military intervention when needed. Thus, the roads connecting ¹¹the provinces, originating from major cities and ports, helped overcome natural and human obstacles between the central authority in Rome and its representatives in the provinces.

Furthermore, the roads contributed to stimulating settlement movements in the rural inland areas by encouraging Roman settlers to establish agricultural colonies and large estates, thanks to the available security and communication means. Among these roads, we find the main road extending from Carthage to Sétif, passing through several important cities (see Figure 1)¹². Due to its strategic importance, this road crosses

the proconsular province from east to west, so the efforts of both the Roman and Byzantine states focused on securing it with several defensive structures distributed along the road.

This road appears within the Guelma region, starting from the west of Mount Bardo on the border between the municipalities of Ain Arab and Ain Sandal, passing almost along the same path as the current paved road linking Jami' Mahrouf and Ain Sandal, cutting through the northern slopes of Mount Naqib and KediaArakib, protected by several watchtowers located at Kaf Arakib, Mazara Lalla Aicha, Mushta Bir Yousef, and military centers at Faj al-Hatabah and Mushta Ben Kashar. From Jami' Mahrouf, the road bends northward to the Castle of Osman's Palace, passing by the French camp known as Si Ali Chérif. Upon leaving Osman's Palace, this road is protected by the Lazrout Tower, and then it heads south for 1200 meters, passing by the Murad Tower. It then heads west along the Mazara Budbuz Tower, crossing Wadi al-Sharaf via the Majaz Ben Aqoub, while ascending north to cross the Faj al-Labeed pass, reaching the junction at Ayoun al-Jamal, and then continues its path north through Kaf Umm al-Shatub and HenshirZaydan, passing by the Kurbasa Tower, and reaching Tibilis and then Sértá.¹³

There is also a network of secondary roads branching from the main road, no less important, linking the city of Guelma with neighboring cities and villages. These roads are protected by numerous defensive structures, the remains of which are still visible today, some of which are mentioned in the archaeological atlas of Stéphane Qazel, while others remain unknown and need to be uncovered and studied. Therefore, we will attempt in the next section to present different examples of these structures for study and analysis

Chapter Two: Types of Defensive Architecture in the Guelma Region:

During its occupation by the Romans or Byzantines, the Guelma region saw the construction of many military structures, varying in shape, size, function, construction methods, and even the locations where they were built. Based on this, experts have classified them into fortified cities, camps, castles, fortresses, and watchtowers. Below, we will present examples of each type:

Section One: Fortified Cities (Civitate):

The city of Guelma is considered one of those cities covering a large area of 33.4 hectares, designated for both civilians and military personnel. It

was surrounded by a defensive wall to protect it, and the remains of some parts of this wall were still visible at the beginning of the last century, according to Raffozi (see Figure 2). We can observe the remnants of it on the western side, extending in a straight line towards the southeast/southwest. Another section extends curving back towards the west. On the southwest side of the city, the wall approaches the Byzantine fortress from its western side, believed to date back to the Roman period. Another part extends from the southwest side of the fortress to the first tower of the structure (see Figure 1).¹⁴

Archaeologists have noticed that this part of the wall differs in construction technique from the rest of the walls; it is more refined, suggesting it may date back to a period earlier than the Byzantine era, possibly the Roman period¹⁵. The city also contains remnants of a Byzantine fortress located in the southeastern corner of the old city¹⁶ (see Figure 14). The fortress is 278 meters long and 19 meters wide. An inscription above the gate mentions the Byzantine general Patrice Solomon, who ordered its construction, and it also indicates that the fortress contained 13 towers¹⁷.

In fact, the fortress during that period surrounded a small city, with irregular dimensions. Its guard posts featured arches, and its wall was thick, reaching three meters, with angular, square towers numbering eleven. It had several narrow doors, one of which opens near the remains of the Roman baths¹⁸. An inscription above the door indicates that it was under the protection of saints Clement and Vincent.¹⁹

Section Two: Military Centers (Castra):

These are large residential complexes with a unique architectural style that required vast spaces. ²⁰Their size ranged from 1.5 hectares to 3 hectares. Some were built in isolated strategic locations, while others appeared in the midst of urban centers or near them to guard and defend against invaders²¹. Regarding the presence of this type in the studied region, we will discuss some examples as follows:

Subsection One: Kaf Balzion (Zattara):

Located 18 km southeast of Guelma on the eastern bank of Wadi Hammam Rumia, its importance lies in being a connection point between Guelma and the Castle of Sidi Yahia, and on the other hand, between Khmissa and Tifash. The site is naturally fortified²², as it was built on the rocky plateau of Kaf al-Rih, which can only be accessed from the west. This led engineers to design a plan in which they only used a wall as a defensive element, 360 meters long, reinforced with eight (8)

watchtowers, and the natural defense was enhanced with a mound of small stones. This made the site area approximately 2.74 hectares (see Figure 2). As for the construction technique, it was unrefined, using stones taken from the pagan cemetery, such as funeral monuments, which affected the aesthetic appearance of the wall due to the lack of regularity and cohesion in the stones.²³

Subsection Two: Center of Henshir Lolo (Coordinates: Lamper 909.4 North, 336.8 East, 820m Elevation):

This site is located at the entrance of the municipality of Ain Makhlof Renier, from the eastern side on National Road No. 123, which links it to the municipality of Ain Arab, specifically south of this road behind the new secondary school²⁴. The researcher Vinerl mentioned that the site consists of a small circular hill containing various archaeological remains, including polished stones, as well as a set of square bases measuring 15 meters. However, he could not determine their identity at the time and considered them ambiguous²⁵.

Later, Stéphane Qazel²⁶, in his archaeological atlas, indicated that the site contained remains from the Roman period, representing a significant military center with an area of about 15 hectares. The French researcher Bernal shared this view, considering the remains as those of military barracks or storage facilities designed to accommodate the cavalry serving in the military, supported by those exempted from full or partial taxes.²⁷

Subsection Three: Thibilis (Coordinates: Lamper 909 North, 353.3 West, 562m Elevation):

The city of Thibilis, now known as Slawa, is located about 20 km west of Guelma, along the road connecting it to Constantine. According to Qazel, its area is 25 hectares²⁸. The site is located on a plateau surrounded by mountains. To the northeast, there is Mount Mawna, and to the northwest (18 km) there is the Cave of Mount Tayeh, along with Mounts Sada and Kroua, while from the south, there is the slope of Mount Announa. To the southeast, there is Mount Khmasha, and to the east, the Wadi al-Sharaf flows 5 km from Announa, which is the boundary between the provinces of Numidia and the Proconsular Africa²⁹. The surrounding area is fertile, with numerous water springs, and it has a favorable climate, making its land primarily designated for grain cultivation.

The city's strategic location allowed it to oversee important routes, such as the main road linking Carthage to Constantine or other routes that connected it to surrounding cities and villages³⁰. Therefore, it is equipped

with several defensive structures. 19th-century reports mention a wall protecting the city from the southern side, built with large stones used from the pagan cemetery, suggesting that it may date back to the Byzantine period (see Figures 1, 2, and 3). Qazel also noted that it was reinforced with rectangular watchtowers for surveillance purposes. He also mentioned the southern triumphal arch, which became one of the fortified entrances to the city (see Figure 3).³¹

Section Three: Castles (Castellum):

This type of military structure is considered the main supplier for other types³², and castles can accommodate one or two military units. Their size is similar to that of the Roman camps, ranging from 0.5 hectares to 1.5 hectares³³. Through our study of this region, we found several castles of varying shapes and functions, and we will mention some examples:

Subsection One: Castle of Bouatfan (Coordinates: Lamper 923.7 North, 337.9 West, 866m Elevation):

The Castle of Bouatfan is located about 2500 meters southeast of the municipality of Ain Arab. Stéphane Qazel indicated in his archaeological map the presence of Roman remains. The name of the ancient site remains unknown³⁴. However, it occupies an important strategic location, as it is near the Wadi Shenior from the north, where the castle stands about 80³⁵ meters above it. The castle extends from east to west, with a distance of between 500 meters and 600³⁶ meters. Among the remains are those of a fortress measuring 40 meters by 30 meters, built with finely polished double stones, forming a wall thickness of 1.50 meters, in addition to using stones previously used as door thresholds and olive press counterweights, and other architectural elements.³⁷

The researcher Mohamed Fawzi Maalim believes that despite the naturally fortified position of the castle on the northern side by the steep slopes of Wadi Shenior, the ancients reinforced it with a fortress at the top of the slope. He suggests that it was reused in later periods³⁸, which explains the presence of some architectural elements such as large building bases and counterweights within the remains of the fortress walls, indicating their reuse as previously mentioned.

Subsection Two: Castle of Osman (Coordinates: Lamper 918.8 North, 341.1 East, 872m Elevation):

The site overlooks the plains stretching between Wadi el-Sharaf and Wadi el-Sabt³⁹, approximately 20 km southwest of the city of Guelma. It is located along the road linking Khmissah and Tifash with Tibilis⁴⁰. Specifically, it is located about 1800 meters southeast of HenchirMushta

El-Mekaymen and 1700 meters west-southwest of Borj Si Ali El-Chérif⁴¹. The researcher Vinal indicates the presence of archaeological remains, including an important military center at the summit of the slope that overlooks, from the southern side, Wadi Farada or Wadi el-Sabt, currently at an estimated height of about 125 meters.

The castle occupies the rocky summit with a length of 150 meters, while its width varies between 15 and 30 meters⁴². According to Bernal, the castle is located on the northern side and remains visible from several angles, containing foundations of large stones arranged without mortar⁴³. While Qazel mentions that its walls are in poor preservation, its rectangular shape can still be recognized (see Figure 4). It is fortified from the northern side by a continuous wall integrated with the natural barrier, its thickness ranging between 40 cm and 160 cm, built in a double-layered technique with small stones (rubble) in the middle. The eastern side is reinforced with three towers. The castle's layout has been interpreted as several parallel walls from east to west⁴⁴. The researcher Youssef Eibish believes that the steep slope of the site from both the eastern and western sides led to the collapse of its walls due to sliding. He also considered the internal walls as mere internal structures for the castle, not fortifications intended to support the external fortifications, as Qazel had suggested.⁴⁵

Section Four: Fortresses (Castra): This type is considered one of the most important defense structures, although smaller in size compared to the previously mentioned types. It is distinguished by several features such as the choice of the geographic location, which is naturally fortified, and its proximity to castles or its role in guarding them from a higher position. They may also be found in isolated locations overseeing the surrounding areas or near watercourses. Their stones are very thick and solid, and they are characterized by a difficult-to-access entrance⁴⁶. In the studied region, two types of this pattern can be distinguished: the first type was built specifically for this function, while the second type was converted from other structures for defense during times of war. We will present an example of each type.

Subsection One: Fort Henchir Ain Ma'roof (Coordinates: Lambert 920.6 North, 338.3 East, 820 meters elevation): Historian Stefan Qazel, in his archaeological atlas, refers to Mushta Ain Ma'roof or Henchir Al-Habit, as called by Vinal, where Roman remains can be found, covering an area of 2 hectares and containing clear remnants of a square fortress built with massive stones⁴⁷. The site is located on a hill difficult

to access from three sides, formed by the Ain Um Lesnam branch and another path leading to Wadi Shenior. The foundations of the wall are well-preserved⁴⁸. According to researcher Mohamed Fawzi Ma'lim, after his field visit, he noted that most of its remains have disappeared, with only some polished stones still in place, while others have been used in various modern buildings⁴⁹.

Subsection two: Fort Henchir Ain El-Areema (Coordinates: Lambert 920.1 North, 338.6 East, 812 meters elevation): The archaeological atlas indicates that the site, located about 500 meters east of Mushta El-Tbaga, contains Roman remains⁵⁰. Vineral identifies these as remnants of isolated farms, in addition to scattered stones. There are also remains of a fort built with double-layered stones⁵¹. However, no traces⁵² of these remains are visible today.

As for the second type, which involves structures converted into fortresses, we mention, for example, Henchir Ain Bou Abdullah.

Subsection Three: Fort HenchirBou Abdullah (Coordinates: Lambert 923.7 North, 336.6 East, 860 meters elevation): Both Qazel and Vineral mention the site located about 1200 meters south of the castle of BouAtfan as containing archaeological remains in the form of a clear wall made of polished stones, along with several massive stones⁵³ scattered in the area. However, after the field visit of researcher Mohamed Fawzi Ma'lim, it became clear that these remains date back to the Roman period and were used in the construction of a Byzantine fortress measuring 11.75 meters in length and 8.6 meters in width. He also observed that some bases remain in place, spaced regularly apart, along with small basins and counterweights used in construction, as well as other architectural elements.⁵⁴

Section 5: Watchtowers (BURGI): Watchtowers are considered the smallest defense structures in terms of size, but their importance lies in surveillance⁵⁵ or forming the front defensive lines, where they precede the larger castles and fortresses. Diehl also states that the Byzantine map of Africa, filled with towers and fortresses⁵⁶ near or within cities, was intended to provide shelter for the population in the event of sudden danger⁵⁷. We will now present two examples of such towers:

Subsection One: Umm Eshtoub (Coordinates: Lambert 912 North, 345.6 West, 685 meters elevation): This site is located at the top of the road connecting SlawaAnnouna to Ain Makhoulf, specifically on its right side. It contains a group of archaeological remains of a military center, built in a well-constructed manner with a square shape, made of large

polished stones⁵⁸. Most of these remains have disappeared in the present time (see Figures 4 and 5).

Subsection Two: Tower Ben Osman (Coordinates: Lambert 908.7 North, 353 West, 650 meters elevation): This site is located southwest of Tibilis, bordered by the Zrikin Tower to the north and Mount Khamaija to the west, overseeing the city of Tibilis to protect its southwestern entrance. The site contains a group of scattered polished stones, as well as the remains of the square-shaped base wall. The external wall of the tower is in good condition, built using African technique (see Figures 6 and 7).

Other towers exist, whether those that were added to castles and fortresses or those built in isolation on elevations overseeing roads for the purpose of surveillance and protection of travelers passing through.

Conclusion:

The first result we reached through our modest study of defensive architecture models in the Guelma region during the Roman and Byzantine periods is the excellent control exercised by the military institutions in selecting the locations that hosted these fortifications of all types and their precise distribution in strategic areas, ensuring security. Thus, the engineers specialized in this type of architecture relied on topography to find naturally fortified locations to reduce the cost of construction on the one hand and to rely on a small number of soldiers to guard the main and secondary pathways.

The natural characteristics of the studied region helped provide natural defense lines, where elevations served as additional barriers, and valleys and ravines played the role of trenches, as observed at the sites of Qasr Othman, the Castle of BouAtfan, and others.

Building city walls during the Roman period was essential, constructed with large polished stones and sometimes containing other architectural elements like counterweights and building supports, creating walls typically made of two rows of stones. There is also a clear correlation between the wall and the topography of the site it was built upon, forming various shapes, some regular, others irregular, as seen in the case of the wall of the Guelma Castle.

Towers and fortresses are key components of castles and cities, as is evident at the Castle of BouAtfan and Qasr Othman.

As for the construction techniques used in these structures, they differ between the Roman and Byzantine periods and from one style to another. Roman-era structures are often described as well-built, while Byzantine-

era structures are often noted for their poor construction, relying heavily on reusing Roman architectural remnants.

The last result we reached is that the abundance of these structures in the region does not necessarily mean that the security situation was poor and unstable throughout the Roman and Byzantine occupation periods. Instead, it reflects the interest of both military institutions in firmly controlling the region and its inhabitants.

Appendix: Figures and Photos

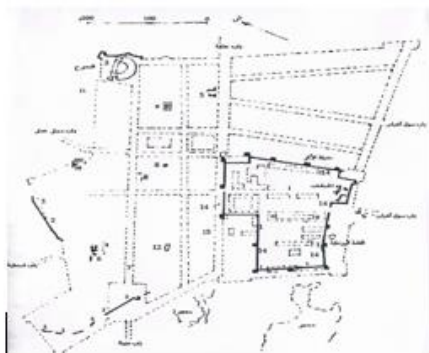


Figure 1: Plan of the city of Guelma at the beginning of the 20th century

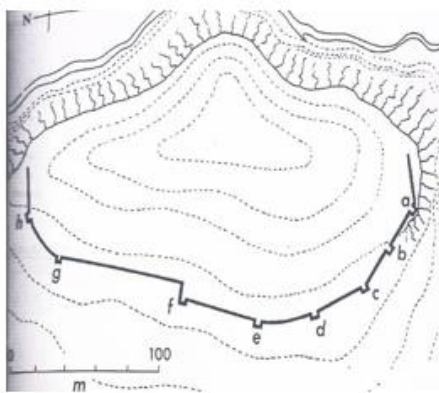


Figure 2: Plans of the Balzion Castle



Photo No. 1: Remains of the Byzantine fortress of Tibilis.

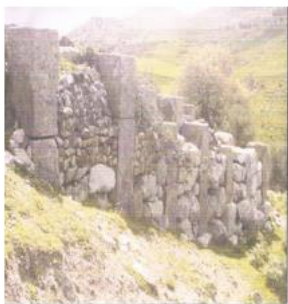


Photo No. 2: The outer wall of the fortress and its construction technique



Photo No. 4: A general view of the site of Umm Al-Shatub Tower.



.Photo No. 5: The wall of Umm Al-Shatub Tower and its construction technique



Image 6: Location of the Ben Othman Tower in relation to Tibilis.



Image 7: Technology used in the construction of the Ben Othman Tower

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