

GENESIS AND DEVELOPMENT OF THE COASTAL DEFENCE SYSTEM OF THE IONIAN BASIN IN THE MEDITERRANEAN SEA

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ABSTRACT

To understand the history of the coastal defence system of the Ionian basin of the Mediterranean sea, as it was arranged in the territory and its architectural characteristics, it is necessary to analyse the phenomenon of fortifications widespread among Basilicata Calabria and Sicily (Southern part of Italy). The historical events and the continuous pirate raids, from the 6th century onwards, have made it mandatory to upgrade defence, making it efficient with new weapons and new coastal construction, in a suitable position of the sighting tasks, reporting and defence. Following the census operated by the historian Santoro, in particular the coastal defence, is grouped and categorized into two major categories: the first one consists of reading defences, the Towers, intended for primary protection but at the same time limited and temporary; the second one, identified by more significant characters, Fort and Redoubt, to face the enemy. The first category, stands out on the coast (Tyrrhenian sea) of northern part of Calabria, as well as on the coast of Basilicata, has quadrangular structures, with typical battlements and gun holes; while, on the Ionian side, they had a circular watchtowers based truncated cone-shaped. The most important defensive structures on the Ionian basin of the Mediterranean Sea is the Strait of Messina, which has always played in its history an important cultural and commercial role. To address this situation, between 1884 and 1914, a tactical 'secret' system was developed, the 'FortinoUmbertino', with its particular defensive system that included a long defensive trench line of about 40 km. The studies, therefore, have highlighted places of another urbanity and another memory that still summarize by small 'military library', a topic rich and very articulate of over 900 years of history fortified, where men and professionals of the time give us a contribution of the highest historical level on defence systems.

Keywords: coastal towers, military architecture, defence systems.

1 INTRODUCTION

Knowledge is certainly the first prerequisite to architectural preservation, restoration and reuse, even more if looking at the knowledge problems of a fortified architecture, because it opens the door to further scientific and operational specialization [1].

There is no doubt that entering into the merits of architectural safeguarding general problem involves having an accurate information, in general and in particular; the cultural character of a technician will be more effective as much as the professional will have a capacity to have an increasing level of cultural and scientific information capacity [1].

Information and knowledge are a fundamental contribution to reach a development operation. This is the project design ideology. The aim is to explain the various facets present in the analysed district, giving a minimal bibliographic contribution [1].

2 METHODOLOGY

The preservation of these historical, artistic, archaeological and architectural testimonies cannot ignore the knowledge of their actual foundation and their analytical and scientific study [2]. The contextualization of the Ionian and Tyrrhenian coast happens through an investigative tool: the cataloguing. In the whole process, this tool performs a territorial reconnaissance activity, aimed not only at identifying and describing the individual asset, but also at

recognizing the relationships between them, in relation to the historical-cultural context and to the micro-systems present, which are created to defend the stretches of coastline attackable on different parts.

A data sheet has been prepared, based on the methodology defined by the ICCD – Central Institute for Cataloguing and Documentation, with the following organic forms [3]:

1. Identified data [4]: the data allow the recognition of the object [5].
2. Descriptive data: the data are deducible from the direct observation of the object, they also provide indications about the territorial-environmental context [6].
3. Analytical data: examining all the components, the data allow a greater degree of detail on the asset [7].
4. Historical data [8]: the data are connected to the cultural framework of the cataloged asset, to its historical and constructive events [9] and to the transformations in time and it allows us to value the metric and geometric characteristics of the cataloged asset.
5. Iconographic element [10]: it provides an immediate and objective representation of the asset, making 'a representation or faithful description' of the asset [11].

The aim of the survey comparative analysis is to explain systematically, following scientific observation and measurement criteria, the variations of the architectural-defensive phenomena, found in different historical units.

3 DEFENSIVE SYSTEM

There is a close relationship between the fortification historical knowledge and the morphology of the territory [2]. This combination is the most important character of those architectures, such to constitute a discernible character than the other [2]. In fact, defence architectures, often, have constituted established systems on the territory based on temporal, spatial and relational needs, taking a fundamental importance in the study of the single fortified building, not only for these needs, but because their subsistence conditioned the permanence [2]. The territory knowledge, essential for urban planning and to face conservation and architectural restoration problems of any architectural asset, cannot do without the identification of the system and the fortification network in a certain place [1]. The research theme concerns the existing fortification analysis on the territories adjoining with the Ionian Sea and the Tyrrhenian Sea.

3.1 Basilicata

Fortified architecture is one of the most outstanding Lucanian architectural expressions (Fig. 1). The regional settlement structure in the high middle age is characterized by the retreat of the inhabitants from the coastline, originated by the insecurity of the territory after the cleavage of the Empire [11]. The inhabited nucleuses, surrounded by precarious masonry structures, are grouped around fortified structures, conceived as extreme defence. During the Lombard period, the territory changes, and it is characterized by the presence of numerous *Castra* of which, to date, significant traces remain only in documents located in Tricarico, Acerenza, Matera, Montescaglioso, Melfi and Venosa [11].

The Norman Conquest and the subsequent establishment of the Southern Kingdom determine a radical change in social relations and in landscape, political and military order.



Figure 1: Location of Lucan fortifications (Santoro, 2015).

The territory is divided into fiefdoms granted to the various militia of the Norman army led by the Altavilla [6], the main conquerors of Basilicata with political and administrative centre in Melfi. Strongholds and remains of Norman fortifications, although amplified and transformed in the Angevin and Aragonese age, are traced in many countries of Basilicata, for example Montescaglioso and Pisticci [12].

With the sunset of the Norman monarchy [12], there is the conquest of the Swabian Kingdom and Emperor Federico II realizes an ambitious program of fortification of the most exposed borders of the Kingdom: the north, the Adriatic coast and Sicily.

After the death of the Emperor, the Angevin monarchy was established. The dynastic change makes a grand fortification program of the southern coast, more and more insecure due to the Turkish and Muslim raids [11]. Series of towers are built along the coastal lines, regularly interspersed at an average distance of about 10 km, from Naples to the Strait of Messina and then along the entire Ionian and Adriatic coast [11]. In Basilicata, the Aragonese coastal towers system was intact [11].

With the establishment of the Spanish viceroy, castles and strongholds suffer radical changes transforming themselves into comfortable urban residences suitable for defence but also such as residence for the Baron, occupied in the administration of the feud.

In the last decades of the 18th-century Barons, Countes and Marquis reside, more and more permanently, in the Capital, giving the local administration of castles and palaces to procurators and to greedy and rapacious agents [13].

3.2 Calabria

A great part of the history of the city, the oldest in the region, is written in the 400 fortified structures [14], which belong to the Calabrian defensive system (Fig. 2): the Towers and Castles, that evoke the pitfalls of the most ferocious pirates, but also the different dominations suffered by the region of Calabria and a feudality that has never disappeared in a region that offers and hides different ways of life, with the inhabitants faces sometimes such as Saracens or Grecians or Arbëreshë or Waldensians, but united by that religiosity sometimes Byzantine, typical of the Calabrian citizens [15].

A very important moment is the landing of the Greeks on the Calabrian coasts, which create a fortified circuit ‘Geländemauern’, a perimeter wall that encloses a larger area, around the urban settlement that controlled all the favourable positions, for defence. Examples are Crotona, Locri, Caulonia and Reggio Calabria [16].

During the Iron Age, Bruzi formed a new league that had its centre in Consentia, actually ‘Cosenza’ and, in less than a century, the Brettii settled in numerous small villages a few kilometres away from each other, interspersed with strongholds, called oppidum, in which the highest social classes met. After the Western Roman Empire cleavage, Mar Nostrum’ waters

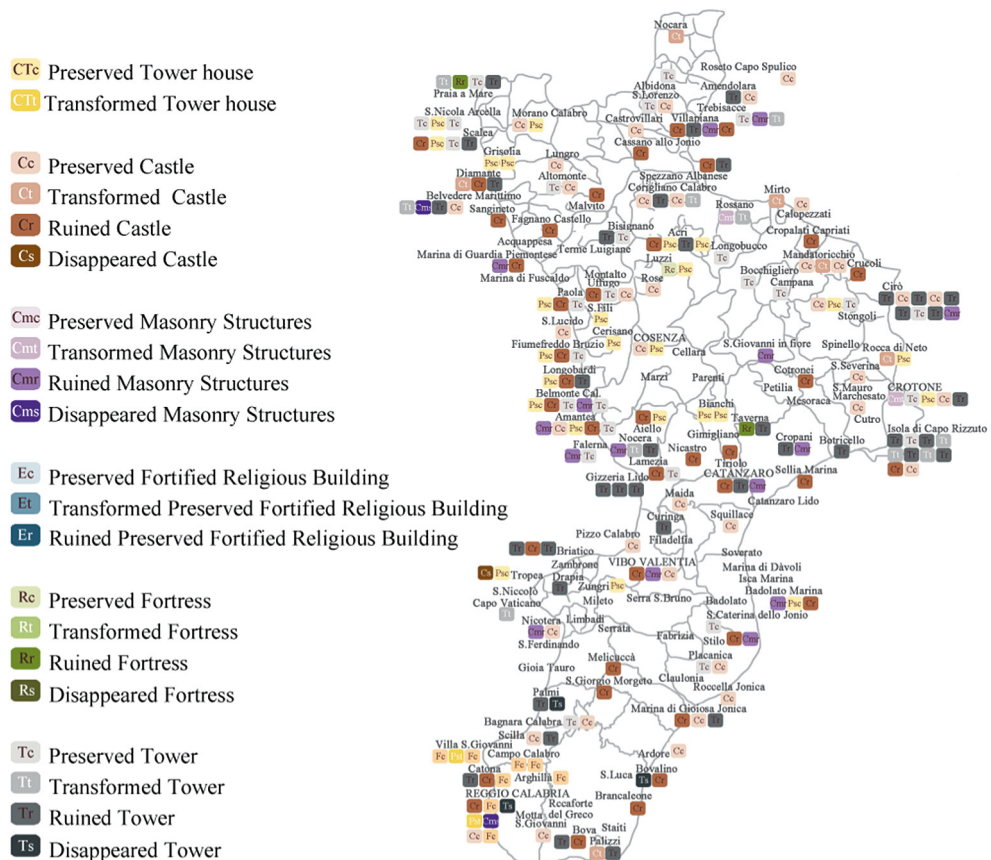


Figure 2: Location of the Calabrian fortifications.

are no longer guarded and piracy starts again. As well as the Lucanian lands, also for Calabria the mountains welcome several hill and mountain fortifications.

Between the end of the 8th century and the beginning of the ninth Bruzi's lands became the theatre of many Muslim–Christian battles [14].

Until unity is achieved, which happens with the definitive Norman's triumph, there are many autonomous forces, with maritime cities, ducats, dynasties, single governors, monks and abbots, leaders and various energies, which are oriented to perpetuate over the years the echo of their war deeds: Capuani, Benevento, Gaetani and Amalfi, Byzantines and Saracens will make these lands in a zone of conquest. With the advent of the Men from the North, the Latin typological presence is defined: *urbes*, *castra*, *castellia*, *casalia* and *motte* [16].

In the Calabrian fortification history [14], a decisive passage is the advent of the Swabian domination. The emperor empowers the system with the pre-existing fortresses renovation and with the construction of new castles, with rectangular or quadrangular planes adapted to the shape of the land and bordered by four corner towers joined together by curtain walls [15].

The Angevins start the construction of further fortified buildings. The new castles are enriched with circular towers capable of implementing a flanking defence in addition to the frontal defence. In this century, there is an extensive construction of defence systems, which consisted in throwing heavy stones that produced devastating effects on the Turkish settlements [15].

4 COASTAL DEFENSIVE SYSTEM

In the 17th century, the coastal defensive system became the new precautionary and improving defence principle, adapting to the new resistance requirements needs, dictated by new weapons [9]. The military atlas made is based on cards created by a long archival and historical analysis, which took place in the Superintendencies of Potenza, Matera, Cosenza and Reggio Calabria (Figs. 3 and 4) and it registers, describes and classifies coastal fortifications in the analysed area. From the survey, it is possible to notice the coastal defensive system methodological progress [7], which occurred over time with a radical typological differentiation of the towers present in the territory (Fig. 5).

On the northern Tyrrhenian coast of Calabria, such as on the coast of Basilicata, there are coastal buildings with a better defensive system, quadrangular, with typical merlons and embrasures; while, on the Ionian side, there are, almost exclusively, lookout circular towers with a truncated conical base. This consideration is inspired by two main factors:

1. The most important economic centres positioned are on the Tyrrhenian side; in fact, important examples are 'squares' such as Tropea, Amantea, and Scalea. Further confirmation of the Tyrrhenian hegemony are also the Tyrrhenian routes which were, however, more favourite than the Ionian ones by commercial vessels. It is clear analysing the ancient nautical charts, full of toponyms on the Calabrian Tyrrhenian coast differently from the Ionian coast.
2. The morphology of the territory. Generally, the square towers rested on parallelepiped block as base, with the function of distributing better the weight. The circular type, needed more substantial soil, more or less rocky, to guarantee its static characteristics.

With the advent of reticulated retrocarial artillery [8], there is a drastic revision of all fortified structures: from the light elements to the heavy ones, the Forts.

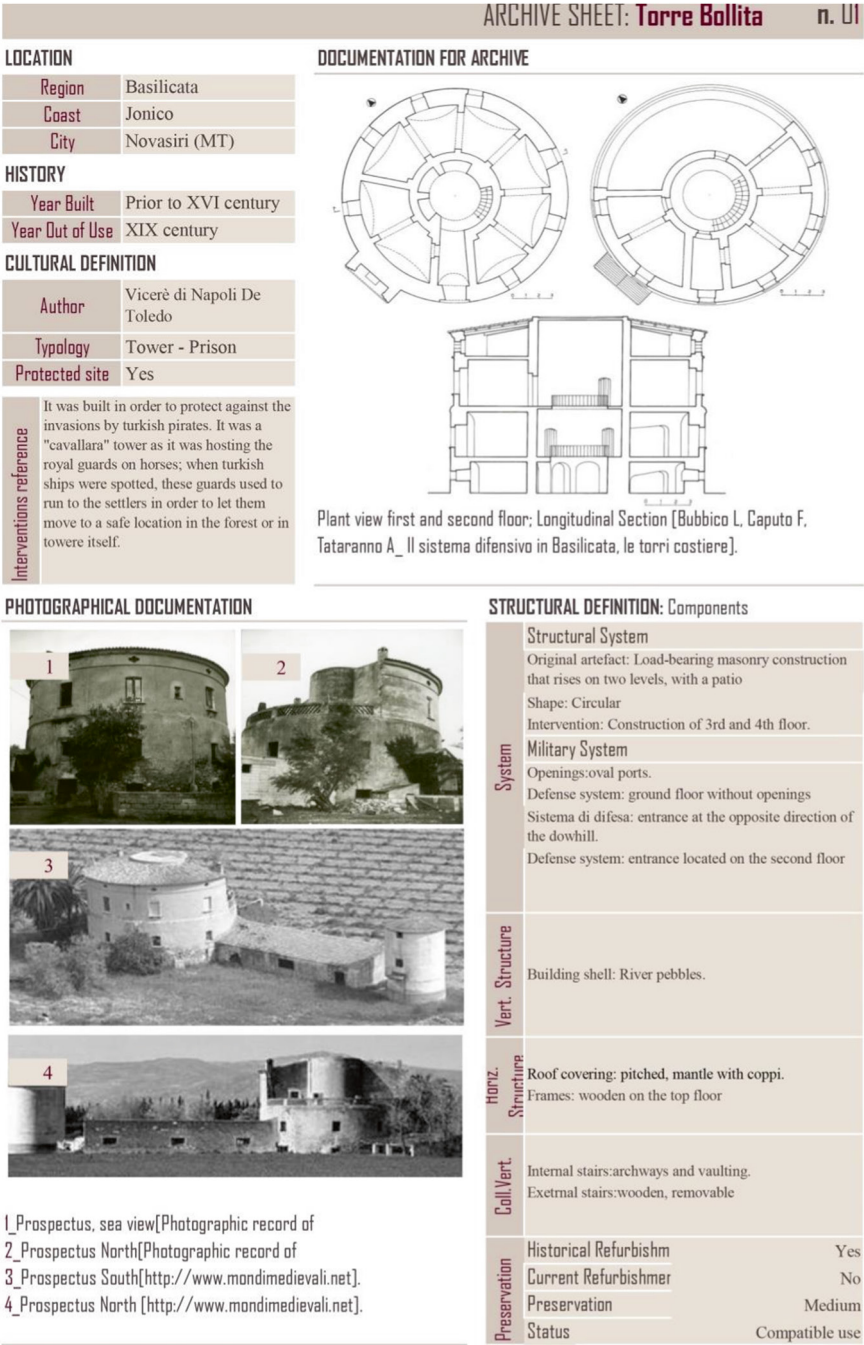


Figure 3: Type sheet – cataloguing of the light coastal defence system.

ARCHIVE SHEET: **Batteria da Costa Poggio Pignatelli** n. 03

LOCATION

Region	Calabria
Coast	Tirreno
City	Campo Calabro (RC)

HISTORY

Year Built	1888 - 89
Yearout of use	Not specified

CULTURAL DEFINITION

Author	Staff of the Armed Forces
Type	Umbertian Forts
Protected site	Si

Interventions reference

Layout and system typology are the same as Batteria di Matiniti Inferiore; the only differences can be found in the longitudinal size which appears smaller.

DOCUMENTATION FOR ARCHIVE



Plant view and cross section as-designed [La fortificazione permanente dello Stretto di Messina. Storia, conservazione e restauro di un patrimonio architettonico e ambientale].

PHOTOGRAPHICAL DOCUMENTATION

1



2



3



1_Entry Portal [https://issuu.com].

2_Drawbridge/hoist bridge , detail [City photographic record].

3_Caponier, detail [City photographic record].

STRUCTURAL DEFINITION: Components

System	Structural System Layout: the system is a regular trapezium organized in multiple floors provided with referenced quotes in order to allow the available space to be well organized. Water Provision: 1 tank of total capacity 380 m ³ Telemetric System: vertical telemeter Mod 86 sistema Bracciolini.
	Military System Defense System: 6 howitzer 28 GRC ret; 2 canons 12 GRC ret; 2 canons 9 AR ret; 2 mortar 15 ret. At watch: 4 officers, 220 soldiers and 85 sleeping accommodation Angle of fire between Villa San Giovanni e Torre Cavallo. Ammunition: for the howitzers 280 it predisposes 840 grenades with black powder and 60 guncotton; for the mortar 149 it predisposes 600 grenades with black powder and 600 shrapnel.
	Coll.Vert. Entrance: hoist Bridge Outside: access ramp to the army parade ground. Inside: connecting ramps between different rooms
Preservation	Historical Refurbishment Yes
	Current Refurbishment No
	Preservation Status almost sufficient abandoned

SOURCES AND DOCUMENTATION

Lo Curzio & Caruso _la fortificazione permanente dello Stretto di Messina. Storia, conservazione e restauro di un patrimonio architettonico e ambientale; https://issuu.com; www.nuovosoldo.it

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Figure 4: Type sheet – cataloguing of the heavy coastal defensive system.

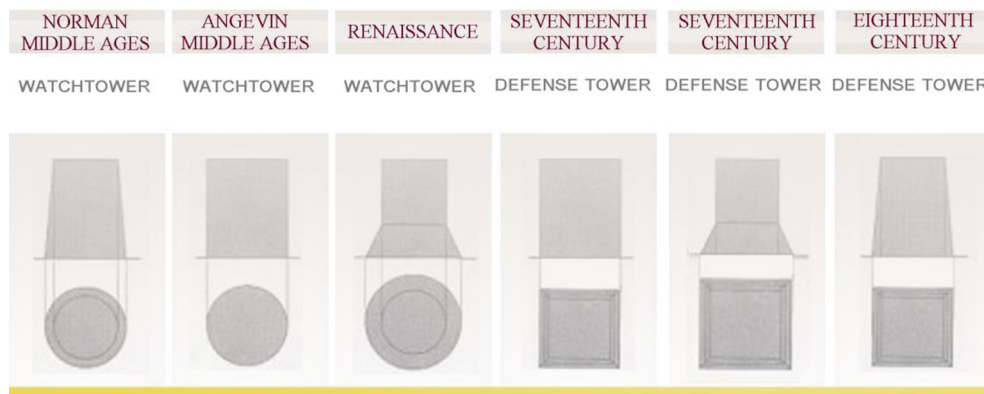


Figure 5: Towering – historical analysis.

This is because the wars were won when the attacker was in possession of technologically innovative weapons for which the defender had not provided appropriate countermeasures. In fact, in order to oppose this new condition, the fortified structures are strengthened by the insertion of ditches, embankments and escarpment walls but, even more, there is the tendency to lower the buildings that try to be less and less visible to the enemies [17]. So there is the formation of entrenched fields.

Of all entrenched fields projects, including those made in the territories of Mestre [18], Verona and Terni, the Umbertini Peloritani and Aspromontani Forts remain one of the most impressive works built, for the number of forts and territorial extension [17].

The design of this system, obtained from the planimetric distribution of the forts, gives back a more logical and complete general form on the Peloritano side, where the 14 structures are arranged on three directions, clearly distinguished according to the altitude, which gravitate around the Antennamare fort and follow the coastline trend [17].

On the other hand, there is the aspromontan system design, which, although responding to the same logic, is less complete. Probably it, rather than being the opposite equivalent of the Pelorite system, was complementary, covering with its nine forts the points left most exposed by the first (Fig. 6).

Moreover, evolution progresses and strategies change constantly, especially in the military field.

If the point of view from the fort checked the ships of the Strait, a higher point of view would have controlled the forts that guarded the ships. And so it was. The invention of the plane, like that of gunpowder, was destined to overturn the idea of war and, suddenly, the Umbertian forts were exceeded without even being put to the test of the facts. And, like a chess game, the king was shot down and the forts declined, at least only strategically [17].



Figure 6: Type sheet – cataloguing of the heavy coastal defensive system.

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