

PROCEEDINGS OF THE  
INTERNATIONAL CONFERENCE ON  
**FORTIFIED HERITAGE:  
MANAGEMENT AND  
SUSTAINABLE DEVELOPMENT**

PAMPLONA, 15 – 17 OCTOBER 2014

[COMPLETE SET OF PAPERS]

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# The Lombardy castle in Enna (Italy): new studies for a sustainable conservation and integration in the historic city

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## Abstract

Since ancient times, the topography of Enna, a town situated in the Sicilian hinterland at 997 m above sea level, has been considered of great interest, especially in terms of territory's control. The highest level of the urban territory, has for centuries hosted a dense set of architectural and archaeological strata: the so-called *citadel of Lombardy*. Although once its first nucleus, the site is today completely detached from the urban setting. Restoration carried out in the past have made difficult the understanding of the historical evolution of the monument which appears characterized by a great stratigraphic complexity. Starting from an in-deep archival analysis and from an accurate and all-comprehensive geometric survey (never realized before), this study intends to lay the foundations for its conservation and a sustainable re-connection with the city.

**Keywords:** *fortified heritage; conservation; valorisation; tourism; Enna; Sicily.*

## 1. Introduction

Situated between the peak of the Italian peninsula and the northerly coast of Tunisia, Sicily has historically acted as a major role in the strategic, political and socioeconomic framework of the Mediterranean area. By merit of its geographical location, soft climate, beauty and productivity of its estates, it has always been considered a “privileged area” and, thus, an object of contention between the diverse powers that have appeared on the political panorama of the *Mare Nostrum*. Rulers who, for centuries, have plagued its people contributing, however, to the constitution of that heterogeneous cultural personality that characterizes the island. Just the simplicity with which it became a prey to the various lordships ensured the construction of building forts, fortresses, towers, castles: a wealth of remarkable extent and thickness (in Sicily, there are about 400 examples) which, though variously preserved and/or known, represents a tangible sign of the passage, of the alternation and of the overlap of many, different civilizations.

The militarization of the island takes shape in the late Byzantine era, in response to the long period of Muslim invasion, distorting the late ancient *facies* characterized by a considerable fragmentation of the settlement. The Sicilian landscape is so affected by both an early and extensive phenomenon of fortification because of the situation of conflict in the Mediterranean, generated the Arab invasions (Maurici, 1992). Several sea outposts are fortified and equipped with watchtowers to defend the authority. For the first time, there is a clear distinction between power and subjects: the fortified town appears separated from the governmental fortress that, more and more often, lies in the upper and imperious part of the city (Giuffrè, 1980). With the Norman conquest of Sicily starts an era of great violence and destructions: the few sources describe, in fact, a country strewn with ruins, where the most beautiful buildings from Islamic age had been demolished (Cresti, 2007). The Byzantine fortification undergoes a definitive turning point in this period, carrying out both a defensive and residential function. The new Norman fortification, the *castellum*, takes place in the various existing *castras* and becomes a symbol of royal power and of the feudal lord representing him.

In the absence of a typical Sicilian architecture, castles built during this period will be referred to the models of North-western Europe from where the Normans came (Peri, 1978; Brocato, 1986). In Sicily, however, castles will be not only the instrument of feudal power but also of the Crown. Frederick II of Swabia, in fact, to repress the advance of feudalism, will destroy a large part of them. They will then replace the ancient castle with “royal” ones, largest and fortified, and populated cities and

countryside with new structures mainly having functions of pleasure and entertainment.

In the years following the rebellion of 1232 and the battle of Cortenuova (1237), it will so come to life and refined a network of castles that going from Trapani to Syracuse, from Termini Imerese to Augusta will constitute the strategic elements of a vast defensive system. Focal points will be on the one hand, the Maniace castle of Syracuse, to defend the east coast of Sicily, and on the other that of *Lombardy in Enna*, the ancient Castrogiovanni (the Latin *Castrum Henna*), which barred the line of Salso river.

## **2. Revisiting the sources to improve the historical/constructive site's evolution**

The fortified town of Enna, one of the largest and most important medieval examples in Sicily, is located on the highest mountain of the city, close to the legendary Rock of Ceres, where are traces of an ancient temple, also mentioned by Cicero, probably dedicated to the goddess of the harvest. Its foundation can apparently be attributed to the Sicanians, an ancient people who lived in historical south-central and south-western Sicily, and then Enna, traditionally considered the *umbilicus* of the island and *urbs inexpugnabilis*. However, it appears very likely that the area of the castle coincide with the one occupied in the past by a Byzantine fortress. Archaeological excavations conducted in 2001-2002 allowed to identify a detailed stratigraphic sequence due to materials amass, over time built up, which can be interpreted as the western moat of the castle in the early medieval and medieval phases. To the early medieval period is also attributed the remains of a strong quadrangular tower (perhaps of the second half of the 8th century), which, according to a schema encoded by the Byzantine strategists, closed in the northern and southern extremities, this side of the defensive perimeter.

Nevertheless, it is clearly documented the presence of the castle in 1145, when it is referred to the tithes "*de balio et de Lombardia que sunt de cappella castelli*". The name *Lombardia* dates back, therefore, to this period and it is, in all probability, due to the allocation in the surroundings of a north-Italian colony. About the city layout in the Norman period, there is no much information, apart from the succinct description made by the Arab geographer Ibn Al Idrisi which confirmed that the city, placed in the top of a mountain, contained a solid fortress. This would be further corroborated if we compare the particular topography on which stands the present castle with other similar examples in southern Italy, during the Norman domination. In particular, "*many of the early feudal castles (...) have a peculiarity: the one of the seating on the top of*

*natural rocks already characterized by the presence of ancient strongholds*"; i.e. those places already used by the people of Sicily to defend against Saracens. The site of implantation of the first castle embryo was, therefore, chosen at the highest point of the grounds: a rocky plateau, a rocky ridge, a hill located in the visual domain of the surrounding area. (Santoro, 2001; Di Stefano & Cadei, 2000).

The absence of incontrovertible historical sources does not consent to determine with certainty what the building role of Frederick II of Swabia was: construction, rehabilitation or reconstruction. To the Swabian emperor, the fortified structure has traditionally been attributed by some Sicilian intellectuals from the 18th and 19th centuries (among others, F. Villabianca and G. Di Blasi), essentially on the basis of stylistic similarities. A thesis, moreover, confirmed by G. Agnello, the Sicilian great pioneer of study of castles (*castellologia*), which considers the current Lombardia castle a late reshuffle of Frederick; the result of *"a true innovator character, from which emerged profoundly modified the aspect of the pre-existing work of art"* (Agnello, 1935). He points out how the particular planimetric shape based on an irregular polygon, distances itself from that of the most famous Swabian castles, set on geometric and rational figures. The most common type is, in fact, the quadrangular *castrum* with a similar courtyard and angular perimetral towers, as well as medians based on geometric shapes such as circle, square, pentagon and octagon (Occhinegro, 2012). Therefore, it seems highly plausible the hypothesis of a re-fortification made by Frederick II, of a Norman pre-existence, placed in a situation of topographic supremacy and characterized by a high strategic and defensive value, according to configurations acquired in southern Italy such as, for example, the dungeons of Rupecanina and Caiazzo, the fortress of Castrocielo and Roccauglielma, the Garagnone castle, etc. (Triggiani, 2004).

If parts or architectural elements of that era are not easy to find, numerous are the pre-existing structures that will remain for centuries in the sites selected by the Normans, even if, almost always, their shape will be later radically altered (Bresc & Maurici, 2009). As in the case of the strongholds of Agira and Milazzo in Sicily, the castle of Lombardy has a decentralized keep and a plan regularized, but not geometrized (Pistilli, 1999), obtained by means of the development of a network of large curtain walls protected by an impressive array of not less than twenty square towers, of which today only six surviving (fig. 1). A morphology that is rather attributable to a kind of "personal criteria" that will bring the Swabian emperor, in this context, to revive a military plan, perhaps for some time implemented in the palatium of the Apulian city of Lucera.



Figure 1. The six survivor towers of the curtain wall.

This happens, of course, only after the journey that Frederick II made in Sicily after the rebellion in 1232 of some urban centers, in order to closely observe the island conditions and the functioning of the new state system. Travelling through the length and breadth of Sicily, he also stopped at Castrogiovanni, where on August 14, 1233 issued an act. Perhaps, at that time, he decided to proceed with the restoration and/or reconstruction of the castle.

As is known, through the constitution of Menfi “*De novis edificiis*”, renewing what already foreseen in 1220 by the XIX assisa of Capua, Frederick II ordered that all the *castras, municiones et turres* erected after the death of William II on no state-owned lands would give up to the imperial envoys and eventually destroyed (*funditus destruantur*). Also the restoration of the fortifications in a precarious state should be authorized in advance by the crown and, with the establishment of *De prohibita in terra demanii constructione castrorum* it was forbidden, for the future, the erection in state lands of castles and towers (Bresc & Maurici, 2009). Therefore, it seems natural to imagine an intervention of Frederick on the castle, although it remains difficult to define with precision characteristics and details. As well as, after all, for the subsequent restoration, not least that of Manfredi (Fidelio, 1998).

Many voices have been raised to support or refute the hypothesis of a possible constructive or reconstructive act during the Swabian period. Already at the beginning of the 20th century, the French art historian C. Enlart, while not deepening the study, defines the style of Lombardy castle as belonging to the one used by the principles of Anjou for their buildings; while É. Bertaux qualifies the castle in Burgundian Romanesque style. If both statements appear mined by a nationalistic spirit, even subsequent critics have not, however, unanimously agreed on dating, while maintaining prudent positions of doubt in relation to the nature of Swabian intervention (Bruschi & Miarelli Mariani, 1975), by considering it “*a valuable*

*antecedent of Swabian fortified architecture*", perhaps only subject to maintenance actions by Frederick II (Bellafiore, 1993) or even considering it as "*the most powerful, the most armed castles of Frederick*" (Cadei, 1992).

Despite it nothing adds to the effective contribution of Frederick II, the castle seems, however, in a complete efficiency in 1239 when it appears among the *castra exempta* of the well-known administrative reform, directly dependent from the sovereign, regularly provided with warden appointed by the king and of a garrison of fifty soldiers. Following the death of Frederick, the citadel will become prey to rebels; apparently "destroyed" it would be simply repaired or maybe rebuilt in 1258 by Manfredi (Maurici, 1995). At the end of the Swabian control, after years of infighting and another period of feudal anarchy, Sicily went to the Capetian House of Anjou. During this period, the greater availability of documentary sources allows to reconstruct more accurately the network of state-owned castles in Sicily. The castle of Lombardy recurs in the *List of Castles in Sicily kept by the Curia at 1272* published by the erudite D. Schiavo in 1756. It is counted among the 21 so-called *citra flumen salsum* (eastern side) on the basis of the division of the island in two parts, separated by the already named river (Maurici, 1997). With the Sicilian Vespers (1282), the castle probably suffers extensive damage to its structures during the citizens' attacks to the fortress held by Angevin garrison.

After the accession to the throne of *Regnum Siciliae* of Frederick III of Aragon and following the wars of independence of the kingdom from the Angevin papal power, Castrogiovanni will enjoy a period of economic and political prosperity. Frederick will frequently stop there with his court, either to defend against enemies and to stand in, as it seemed very suitable for both purposes, being at the centre of the island and placed on a very high and steep: "*this castle you could neither conquer nor besiege it because, within the walls, it possessed many sources of perennial water, and no one outside*". For these reasons, he executed numerous modifications (Testa, 1775). Even after, his son Peter II established his residence, as an alternative to the Ursino Castle in Catania.

The decline of the citadel began in the 15th century, when the military importance was maintained mainly by coastal fortifications. In the 18th century it was already in ruins and in 1818 it was damaged by the explosion of a powder placed inside the building. In 1837 Ferdinand II of Bourbon judged it militarily useless and after a temporary use as a prison, in 1887 it is described as being in full decay.

It will follow a period of neglect and inactivity that will stop in the next century. Since then, the castle will be affected by numerous restoration and consolidation projects that will further alter the layout. But in order to better understand the nature and extent of these rearrangements, it seems appropriate to proceed, first, to a description of the complex, in its architectural and spatial values.

### **3 The castle today: analysis of its key architectural features**

The citadel of Lombardy stands on a rock plinth of calcarenite and occupies an area of 26.260 square meters. The majestic curtain walls, partially restored, are a fine example of a sacco wall formed by external facing filled with coarse cemented material. They were built with stone coped essentially in the underlying, already known, Ceres Rock.

The complex consists of a succession of three polygonal courtyards, preceded on the west side by the Barbican erected by John of Aragon (1458-1479), as mentioned in a manuscript by the Capuchin Padre Giovanni (1752). This space was a long and narrow place to protect the main entrance of the castle: on the outside wall with crenellation, was situated a door that still existed in the mid-18th century – even if walled-in (as reported by Lexicon Siculum, written by the Benedictine prior V. Amico in 1757), placed in axis with that of the inner enclosure and connected by means of a drawbridge (*lignum pontem, qui facile, ubi necessitas exigeret, tolleretur, habebat*) to the lower part of the city. This gate, represented by the French traveler J. Houel (1776) was probably closed by Aragon and replaced by a new access located on the south-facing wall, cut at the heart of the cliff and connected to the street below by a staircase ramp. This access, in the past equipped by an aperture in iron from the inside and from the outside in wood with large nails coming out like a spear, was much more secure than the previous one because it was looked at by two towers and faced a much narrower street. In the first half of the 20th century, another entry in the north was added, currently exclusively used. During these rearrangements, some existing structures were covered and a water well on the south side next to the “tower of the guard” was dug. Recent excavations allowed, in fact, to detect the presence of a lomia from the Greek period (5th century BC.) at a level much lower than that of ravelin.

The ravelin is connected to the first courtyard. Based on an isosceles trapezoid plan, it is called of “St. Nicholas” or “of armed men” by virtue of the presence of the ancient church of St. Nicholas of Myra, bishop and patron saint of Hauteville Norman family and of the same town of Enna. This space, located at an altitude lower than

that of the other yards has been the subject of a long campaign of excavations carried out by the local superintendence in the years 1973-2002 during which it was possible to resurface the floor of the 14th century, which coincides with the current. On the northern side, it was found an underground space, accessible via a flight of steps carved into the rock. Around the *hypogeum* are visible incisions attributable partly to old Greek workings and partly to the burial function in circular graves bell-shaped dating from the 5th century B.C. The burial function of the courtyard had to persist even in the early Christian period as indicated by the presence of underground burial places in the southern area, later integrated into a Byzantine ditch. The study of this part of the yard is still in progress, but it is possible that during the Byzantine period was dug a ditch which left outside most of the space of the courtyard and is now identifiable only in a long strip partially covered by the southern wall of the *Maddalena* courtyard, 42 m long with an average width 4.00 m. This ditch probably continued even northward, under the keep.

As mentioned above, the findings subsequent to the archaeological excavations, are the tangible evidence of the encastellation. The foundations of the recovered Byzantine tower partly cover two Roman tombs carved into the rock, along with three circular pits dating back from the Greek era. The walls of this vigorous structure have a thickness of 1.40 m and were constructed partially using blocks extracted *in situ*.

The courtyard area has been, over the centuries, gradually filled up to the level of the “chain door” (*porta della catena*), the only passage to the next courtyard. In the 16th century, it actually maybe constituted the planking level on which the church of St. Nicholas was built, in the northern area, as well as of a series of building structures placed near the southern walls of which still remain traces of the roof skewback and carved niches, designed to accommodate torches. Finally, the structures located in the northwest corner near the “bell’s tower” (*torre della campana*), date back to the Spanish rule, probably unintended by the regent Don Giovanni in the 15th century to house a garrison in charge of the defense and of the control of prisoners restrained in the castle. Today, these spaces are used as exhibition areas.

The only connection between the courtyard of St. Nicholas and the adjacent courtyard of *Santa Maddalena* or “of victuals” (*delle vettovaglie*) is the “door of the chain” (*porta della catena*). In this second courtyard, was maybe built the church of the Madeleine, but no trace remains of it today. At its extreme north side opens a postern, a port originally suspended high on a rocky spur were the perimeter wall bordering the third courtyard develops, sandwiched between two towers.

This latter - the real heart of the castle - it is said of “the chieftains” (*dei condottieri*) or of *San Martino*, due to the presence, in the past, of the church dedicated to the bishop of Tours, and that, according to a 1145 graduation of the bishop of Catania Gioieni, was even a Royal Chapel.

In the same yard, the archaeologist P. Orsi unearthed a number of bell-shaped *silos* excavated in the rock - perhaps destined to receive the grain offered at the nearby Sanctuary of Ceres -, several tombs of the Islamic age (1912-1913) and later, the traces of a medieval church probably built on the site of more ancient one from the Byzantine era (1930).

On the west side, along the border wall with the first yard, were placed the real ambiances: the so-called *palatium*. There are still signs of a rectangular hall, of which the keystones of the arches skewback where the vault was once set, can be identified. On the wall are crenels, on top of which are placed stone corbels that supported the ceiling of the second floor. On the ground floor, were located the stables; upstairs there must have been the kitchens and a large living room connected to the “real tower” (*torre reale*), commonly known as the “tower of the harem” (*torre dell'harem*). The layout suggests, therefore, a progressive approach, from the ravelin to the third courtyard, a space having a mostly residential function, where if necessary could lodge the royal guests. The other courtyards had instead a predominantly strategic defensive role; it would be also used in case of siege to host the population or as a deposit.

Horseback with the first courtyard lies the keep, represented by the “Pisans tower” (*torre Pisana*), perhaps so called because the Normans had entrusted into the custody of an allied garrison from Pisa. The tower is a prismatic volume with a trapezoidal plan, placed on the highest margin of the courtyard. Inside, the ground floor has a very high ceiling, interrupted by a wooden floor recently introduced on the original stone shelves. The first level is instead pseudo-cross vaulted, in a similar way to the Frederick rehash of Roccaguglielmina's keep (Pistilli, 1999) and is accessed via a staircase running along the perimeter walls. The crenelations belong to one of the many restoration/recovery projects, which should now retrace, focusing in particular on the most significant ones.

#### **4 An analysis of the modern restorations: conservation or subtraction of important testimonies?**

At the beginning of the 20th century, a renewed interest in medieval architecture in Sicily and, in particular, towards the recovery of the age of Frederick II, will bring attention to the fate of the citadel. During this era, the researches of German scholars straddle, especially for political reasons and will focus on the origins of “imperial” architecture in Sicily: among others those of the geographer O. Rossbach (1912) which considers the castle of Lombardy, one of the most impressive medieval fortresses ever seen, and the census conducted by B. Ebhardt on behalf of the emperor, of which remain meticulous drawing (1909-1925). In agreement with C. Enlart that had already demonstrated the French origin of Gothic architecture in Italy, W. Leopold in the formulation of his PhD under the direction of H. Hartung went to Sicily to deepen its knowledge about medieval architecture; in December 1910, he visited Castrogiovanni and the castle of Lombardy and reported interesting architectural descriptions and drawings (Prescia, 2007). Along with Ceres Rock, affected by frequent stone extracting operations, the October 10, 1923, the castle was declared by the Ministry of Education, a “*location of significant public interest*” by virtue of the law of 11 June 1922, n. 778 for the protection of the natural beauty and buildings of particular historical interest. The arch. F. Valenti, superintendent of monuments in Sicily (1920-1935), particularly concerned with the preservation of this monument, which was for long used as the town’s prison, advocates in this period local administration for not executing further demolition or adaptation. It is widely hoped that the used premises, moreover inadequate and unfit for the purpose, could rapidly release to make room for activities most appropriate to the enormous cultural and historic value of the castle.

In December 1926 Castrogiovanni is elevated to the role of provincial capital and resumes the Latin name Enna. The process of modernization of the city receives a major boost: the fascist government is committed to provide it with all facilities connected to the new institutional role. In this renewal action are of course included restoration and “beautification” works on main monuments. As part of the “forward-looking” programs to enhance the artistic heritage that the government takes in this period, even the monumental castle is concerned. Are also realised a ring road that surrounds the castle as well as the levelling of the square on the west front with the arrangement of the “monument to the fallen of the Great War” by E. Basile (1927) within the new so-called “park of remembrance” (Severino, 1996).

In the fall of 1936 the idea of creating at *the Lombardy*, a large outdoor theatre rises. New requests are made to the provincial authorities and government so that the castle would finally be deprived from the “disfiguring” prison. In July 1938, the first courtyard is used as an open-air theatre (albeit with temporary wooden structures) and inaugurated with Verdi's magnificent work *Aida*. The success reported by the courageous initiative draws the attention and interest of the whole island and of the Regime authorities. The open-air theatre considered the “theatre of the people”, the following year the sums necessary for its final settlement are found. This second allotment of work involves the lowering of the parterre (with substantial removal of rock and earth) and the related paving, the arrangement of the open space at the entrance, the building of the artists' dressing rooms and of the soundboard and all services related. It is naturally expected the demolition of the old prison (including the access stairs) and the opening of doors in the towers.

The project for the so-called “theatre of the six thousand” shall be drawn up by the architect. V. Nicoletti and most likely also includes the new access ramp in the north and a second door in the Barbican's wall. It is also foreseen the creation of large water tanks and the water supply to the city under the *cortile delle vettovaglie*. At the end of the work, the renovated theatre will not, however, be opened due to the outbreak of the war. The castle will then be called back to its original functions and host the soldiers' camp until the end of the conflict, when the theatre will lastly resume its activities (Livoti, 1949). In 1951, the architect R. Calandra and the engineer N. Cutrufelli work at the general plan of the city. Interrupted the approval process for bureaucratic reasons, the municipal council of Enna find a loophole in the provision of such a procedure with the formulation (instead of the master plan) of a reconstruction plan. In this context, the two professionals are also called upon to formulate the recovery plan of the areas adjacent to the castle. Later, Calandra, along with his sister Maria, receive the assignment for the “*touristic accommodation of the monumental complex of the castle of Lombardy*”. The execution of the project, prepared in February 1954, immediately after being approved by the *Cassa per il Mezzogiorno* and by the Superintendence, will be suspended in October 1955 following the discovery of ancient walls and artefacts during excavations. Made the appropriate studies, work will start again and end in 1959. Given the precarious static conditions in which the towers and the curtain wall poured, the work will result essentially in consolidation and restoration activities. Massive rock excavations will be made, both to highlight and restore the old walls of the castle and for the construction of warehouses, toilets and a pedestrian ramp access from the ring road to the second courtyard of the castle. It will also be realized a massive restoration

of the eastern walls of the courtyard of *San Martino* and the so-called tower *della Zecca*, and the construction of a basement. The consolidation and restoration works made on the castle's ancient structures continued from September 1959 to April 1961 under the direction of the superintendent P. Lojacono and again from October 1962 to May 1963, headed by the arch. A. Favara, a local superintendence's official. This work consisted in further dismantling the ancient walls and patching them with new masonry and joints in cement mortar, and in the arrangement of the wall exposed face "reproducing the old" in the areas located between the south tower and the north-east corner of the second courtyard. It was also constructed the battlements of the *torre Pisana* with stones from the near cave of Calascibetta and a new access to the tower from the ground floor realised, as well as other small restorative treatment on the surrounding walls, behind and on the arcs at the doors of the tower *della Catena*.

In 1963, in the course of final stages of the restoration work, new archaeological studies became necessary. During the construction of a lift behind the stage of the theatre in the service of the local actors' dressing rooms, underground structures identifiable as prisons of the Arab period were found. This discovery led to the suspension of work in progress. The municipality of Enna, at the request of the Superintendence of Eastern Sicily carried out the investigations, excavations and surveys. In 1970, the warning of damages caused by atmospheric agents to the external walls and to the rock layers below, engaged the superintendent P. Paolini in obtaining the necessary funds to proceed with new consolidation actions. On this occasion, a tentative was made in order to draw on the loans granted by the Genio Civile in accordance with the law n. 230 of 21 March 1953 for the repair of monuments damaged by the war. The request, however, was rejected because the castle was not on the list of cultural goods injured during World War II. The municipality then proceeded with the mere removal of the stones that blocked the road below, and took just few safety measures.

For years, the structural problems of the pediment and of the perimeter walls of the castle have represented - and, as we will see, still represents - an issue addressed only in emergency situations. Partial meltdowns occurred at the south side of the city walls in 1985 and at the south-east in 1991 and 1996; the latter, causing more damage than the precedents, required an intervention of greatest urgency, through highly invasive consolidations, perhaps, not very well adapted to a monument.

After the conservation work and archaeological prospections ended in 1965, new excavations were undertaken between 1979 and 1980; findings were discovered in all three courtyards of the castle. New restorations followed between 1995 and 2001. The first interventions, designed by the architect. G. Mazzola in May 1990, carried out between July 1995 and October 1998 concerned the masonry stitching with bricks, stone chippings and cement mortars, the replacement of some blocks of stone, the cleanings of some lithic wall surfaces. In particular, the consolidation of the vaults at the first floor of the *torre pisana* with a reinforced concrete structure at the extrados was made; it followed the construction of a new attic. At the same time, between 1995 and 1999, took place the restorations foreseen by the arch. C. Di Stefano project in 1993. This work consisted of the consolidation of the segment of surrounding wall included between the small door (*postierla*) present in the second courtyard and the tower at the east, some archaeological excavations in the first and second courtyard as well as the restoration of the Barbican's tower and of the walls adjacent to it.

Thanks to funding provided by the *programma operativo plurifondo* 94/99, the last restoration project was launched. It was characterized by interventions of great importance that affected the entire monumental complex. The project was elaborated in 1995 by architects R. Oliva and F. Fidelio, both officials from the local superintendence. The interventions carried out from 1997 to 2001, besides regarding actions of walls protection and restoration, concerned the demolition of the theatre and of the concrete steps in the first courtyard, and the removal of the ravelin and first courtyard's pavement. In particular, the area of the ravelin was subjected to an intense campaign of excavations, which brought to light many masonry structures, before totally hidden from the floor; also, the balustrade which limited the central part of the west side was replaced by a stone curtain wall. In addition to the aforementioned excavations in 2001-2002, a new campaign was launched in 2006-2007 and concerned the execution of topographic plans from aerial photography of the archaeological evidence for the implementation of the data on GIS platforms, the cataloguing in digital format and for the realization of didactic panels. More recent projects (2011) regarding the completion of the restoration work and the renovation of the first courtyard to be used again as a theatre, are still pending.

A few months ago, the cleaning of the weeds and brambles thrived, after years of neglect, on the rock at the base of the castle walls started; following the intervention, however, it occurred the fall, in the areas open to the car transit, of a multitude of small boulders and rock fragments no longer retained by the vegetation. The intention

of the municipal administration, in order to ensure the safety and accessibility of the road around the monument, is to act with a containment action of landslide surfaces, through wire mesh anchored into the rock with deep rivets. The project, however, is at the center of strong controversy because, if on the one hand it would allow the usability and security of space under the walls, on the other hand, hiding its characteristic traits and the morphology of the stone, it will alter its real perception. In addition, the nailing procedure, if not carried out with care and sensitivity, can cause the destruction of archaeological remains and of the traces etched on the stone. We cannot ignore, in fact, that the “castle” is also the rock holding it, modeled and carved, and now an integral part of the fortified complex and, to this reason an essential asset to be safeguarded.

### **5 A program of investigations and surveys for the preservation and revitalization**

The inadequate state of conservation and the lack of a coherent program of adaptive-reuse have unfortunately affected the castle of Lombardy, so that it today represents a kind of urban void, despite its grandeur, its undeniable historical and cultural importance and its huge architectural and artistic values. In addition to the current difficulties due to the limited accessibility of the monument and to the poor understanding of the sequence and distribution of space, the site is detached from the urban and landscape context in which it is inserted, although he has formed the core of its primary expansion. Its physical substance is characterized by a considerable stratigraphic complexity; the large amount of work put in place for the protection of the castle has, in fact, in some way affected the full comprehension of the monument, especially with reference to its spatial structure, its material and constructive features, and the relations between its different elements.

A place of secrets and mysterious origins, the castle is valuable for the history of Sicily and for the local people who longs to defend it but at the same time does not really know it. This privileged place of historical sedimentation, symbolic image and identity of the city deserves, actually, to regain its central role and through concrete actions and tools, to make up with a population that needs to be made more sensitive to the recovering of its roots.

The new fact-finding investigations, largely initiated on the castle of Lombardy by the authors of this paper with the essential help of students, local associations and simple citizens, will provide researchers, through a comparative reading of the historical sources, the archaeological stratigraphy and of the signs of matter, new means to deepen their own research, to prove hypotheses and substantiate the

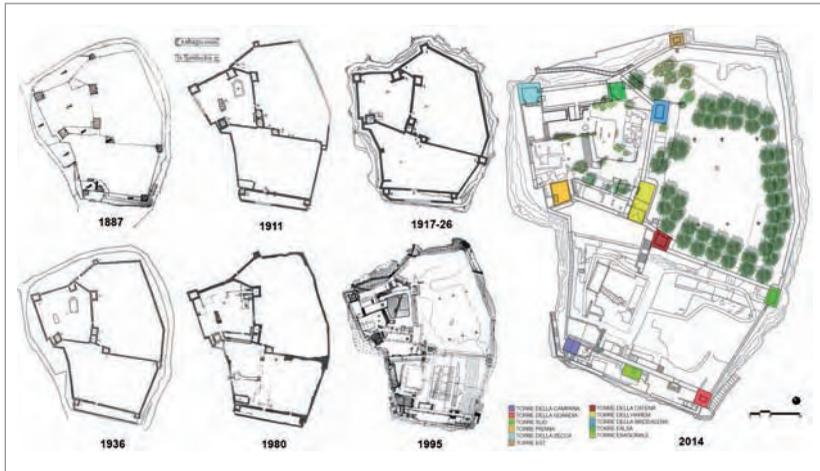


Figure 2. The site plan of the castle as represented in the past (a) and in the author's 2014 version (b).

necessary design choices aimed at the revitalization of the monument. At the same time, both their implementation and their results have been and still are an invaluable opportunity for education and training to the total benefit of the entire population.

After having ascertained the lack of a graphical reconstruction metrically correct and critically characterized of the front walls, re-examined all the historical documentation and archival sources available on the site, acquired the most recent scientific literature on the medieval castles of southern Italy, the starting point of the new investigation has, therefore, involved the execution of an accurate geometric survey. If from the planimetric point of view, there are various rendering - some very imprecise (fig. 2a) - and an aerial photogrammetric support dating back to 1995, deficient are the drawings of the elevations that are metrically simplified and inaccurate. The graphic documentation is also not up to date and in non-digital format, it not contains archaeological evidences discovered since the last excavation campaign and does not allow, then, that encompassing reading of the site, rather indispensable.

In the activities here described, the traditional survey - base of knowledge because it is founded on the direct observation and on the critical skills of the operator- was then integrated with indirect methods based on 3D laser scanning and photogrammetric techniques in order to gain in a very short time the information required. Obtained data were then interpreted and graphically rendered through

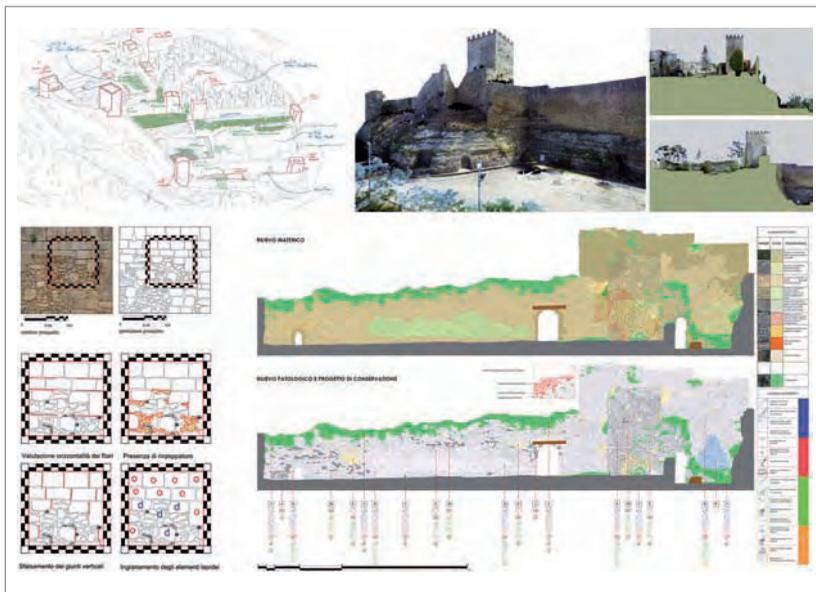


Figure 3. Synthesis of the activities carried-out: traditional survey, 3D laser scanning, masonry's consistence analysis, material and degradation phenomena evaluation and restoration project.

distribution patterns, orthographic projections, isometric views and perspectives. The precision afforded by the point cloud has not only enabled the exact redesign of the layout of the citadel (fig. 2b) but also the reconstruction – by means of the elaboration of cross-sections through the courtyards - of the numerous changes in elevation and of the heights of higher battlements. Orthographic projections derived from 3D scan data relating to curtain walls have also provided the coordinates of a large number of points, useful for straightening chromatically corrected and high-definition images. Instruments very useful for the recognition - qualitative and quantitative - of the different masonry types. Masonry were then categorized by comparing samples of about one square meter chosen, on the basis of their build quality and state of preservation and evaluated in accordance with the requirements of the “*stato dell'arte muraria*”. It has been followed the recognition of alteration and degradation of the surfaces for the evaluation of the conservation status and the identification of critical factors, which are essential to address, as a result, a respectful and sustainable conservation project (fig. 3).

This study has allowed to explore the ancient citadel in its entirety, helping to rediscover and re-evaluate the potentialities. The goal is to re-move this ancient monument from the state of neglect and decay to which is relegated, regenerating and integrating its spaces and the surrounding areas, transforming it into a new collective equipment, intended to accommodate different activities - primarily educational - and to promote a more effective sharing of cultural and civic values. It may also be seen, as the active subject of a planning that see in the respect for tradition and historical elements of the cultural and environmental heritage, one of the main instrument for the management and development of the territory, also for tourism purposes.

### **Acknowledgements**

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### **Sources and bibliography:**

Agnello, G., 1935: *L'architettura sveva in Sicilia*, Tivoli, Arti Grafiche A. Chicca.

Bellafore, G., 1993: *Architettura dell'età sveva in Sicilia*, Palermo, Lombardi.

Bresc. H., Maurici, F., 2009: "I castelli demaniali della Sicilia (secoli XIII-XV)", in Panero, F., Pinto, G. (ed.), *Castelli e fortezze nelle città italiane e nei centri minori italiani (secoli XIII-XV)*, Cherasco, Centro Internazionale di Ricerca sui BB.CC., pp. 271-317.

Brocato, D., 1986: *I castelli della provincia di Enna*, Siracusa, Ediprint.

Bruschi, A., Miarelli Mariani G., 1975: *Architettura sveva nell'Italia meridionale. Repertorio dei castelli federiciani*, Firenze, Centro Di.

Cadei, A., 1992: "I castelli federiciani: concezione architettonica e realizzazione tecnica", *Arte Medievale*, VI, n. 2, 1992, pp. 39-67.

Cresti, F., 2007: "Città, territorio, popolazione nella Sicilia musulmana. Un tentativo di lettura di un'eredità controversa", *Mediterranea Ricerche storiche*, IV, pp. 21-46.

Di Stefano, C.A., Cadei, A., 2000: *Federico II e la Sicilia. Dalla terra alla corona, I*, *Archeologia e Architettura*, Lombardi, Siracusa.

Fidelio, F. 1998: "Il castello di Lombardia: storia, restauro e progetto", in Fonseca, C. D. (ed.), *Castra ipsa possunt et debunt reparari. Indagini conoscitive e metodologie di restauro delle strutture castellane normanno-sveve*, pp. 763-776.

- Giuffrè, M., 1980: *Castelli e luoghi forti di Sicilia*, Palermo.
- Prescia, R., 2007: “Il contributo di Walther Leopold alla Storia dei restauri in Sicilia”, in *Architetture del Medioevo in Sicilia a Castrogiovanni, Piazza Armerina, Nicosia e Randazzo*, Enna, Il Lunario, pp. 75-92.
- Maurici, F., 1992: *Castelli medievali in Sicilia*. Dai bizantini ai normanni, Palermo, Sellerio editore.
- Maurici, F., 1995, “*La Sicilia di Federico II. Città, castelli e casali*”, Quaderno del B.C.A. Sicilia, 18, Palermo.
- Occhinegro, U., 2012: “Il progetto e la costruzione dei castelli a pianta regolare nel Regnum Siciliae di Federico II di Svevia”, in *I Beni Culturali*, n. 4-5, pp. 35-45.
- Peri, I., 1978: *Uomini, città e campagne in Sicilia dall'XI al XIII secolo*, Roma-Bari, Editori Laterza.
- Pistilli, P., 2003: *F. Castelli Normanni e Svevi in Terra di Lavoro. Insediamenti fortificati in un territorio di confine*, San Casciano.
- Santoro, R., 2001: “L'arte della difesa nei castelli siciliani”, *Castelli medievali di Sicilia – Guida agli itinerari castellani dell'isola*, Palermo, Regione Siciliana CRCO, pp. 44-45.
- Schiavo, D., 1756: *Memorie per servire alla storia letteraria di Sicilia*, 2 voll., Palermo
- Severino, C. G., 1996: *Enna. La città al centro della Sicilia*, Roma, Gangemi.
- Testa, F., 1775: *De Vita et Rebus Gestis Federici II Siciliae Regis*, Palermo.
- Triggiani, M., 2004: “Il castello del Garagnone”, *Studi bitontini*, vol. 78, pp. 9-20.

## Other published works

*Fortificaciones de Pamplona*

*Pasado, presente y futuro*

AA.VV., Pamplona, 2010

*Fortín de San Bartolomé*

*Centro de Interpretación de las Fortificaciones de Pamplona*

AA.VV., Pamplona, 2011

*San Bartolomé Fort*

*Interpretation Centre for the Pamplona Fortifications*

AA.VV., Pamplona, 2011

*Fortín de San Bartolomé*

*Centre d'Interprétation de Fortifications de Pampelune*

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*Cinco siglos de vida de una fortaleza inexpugnable*

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*Memoria histórico-descriptiva de José Luis Prieto Gracia de 1965*

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