Structural Studies, Repairs and Maintenance of HERITAGE ARCHITECTURE XIV

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Editors
C.A. Brebbia &
S. Hernández

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C.A. Brebbia
Wessex Institute of Technology, UK

S. Hernández
University of A Coruña, Spain

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C.A. Brebbia
Wessex Institute, UK

S. Hernández
University of A Coruña, Spain

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Preface

This book contains most of the papers presented at the 14th International Conference on Studies, Repairs and Maintenance of Heritage Architecture (STREMAH 2015), which was held at A Coruña, Spain, organised by the Wessex Institute, UK. The meeting was sponsored by the International Journal of Sustainable Development and Planning.

The conference has taken place on a regular basis since the first meeting was held in Florence (1989), followed by others in Seville(1991); Bath (1993); Crete (1995); San Sebastian (1997); Dresden(1999); Bologna (2001); Halkidiki (2003); Malta (2005); Prague (2007); Tallinn (2009); Tuscany (2011); and the New Forest, UK (2013), home of the Wessex Institute.

The conference brought together contributions from scientists, architects, engineers, restoration experts, social scientists, planners and economists dealing with different aspects of heritage buildings.

The importance of retaining the world's cultural heritage cannot be overstated. Rapid development and inappropriate conservation techniques are threatening many unique buildings and sites. STREMAH contributions aim to provide the necessary scientific knowledge to facilitate regulating policies. They also address topics related to historical aspects and the reuse of heritage sites. Technical issues on the structural integrity of different types of buildings, such as those constructed with materials as varied as iron and steel, concrete, masonry, wood or earth are discussed. Restoration processes require the appropriate characterisation of those materials, the modes of construction and the structural behaviour of the building.

STREMAH also considers modern computer simulation studies, which provide accurate results demonstrating the stress state of the building and possible failure mechanisms affecting its stability. Of particular importance are studies related to their dynamic and earthquake behaviour aiming to provide an assessment of the seismic vulnerability of heritage buildings.

The papers presented in this volume, as well as to all other STREMAH conferences since 1993, have been archived in the Wessex Institute eLibrary, where they are easily available to the international community (http://library.witpress.com/).

The Editors are grateful to the members of the International Scientific Advisory Committee and other colleagues for their help in reviewing the papers, as well as to all authors for their valuable contributions.

The Editors
A Coruña, Spain
2015

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Knowledge and recovery of military architecture: the *urban* castle of Pomarico (Italy)

A. Guida[1], A. Pagliuca[1] & G. Damone[2]
[1]*Department of European and Mediterranean Cultures: Architecture, Environment, Cultural Heritage (DiCEM), University of Basilicata, Italy*
[2]*Department of Civil Engineering (DiCIV), University of Salerno, Italy*

Abstract

To know is to document and, thus, to ensure the memory of man-made actions; it could become an important element for recovery and restoration interventions.

In fact, to analyze a monument from a historical, technological and material point of view means to understand the complex system of relationships among its parts, but also with the environment in which it is located. The above becomes extremely important in the case of *urban* castles, where the military architecture cannot be separated from the building fabric in which it is inserted. This architecture was built to defend the city and it has had different characteristics over the centuries. It is the generating element of new urban centers (or new military settlements within centers already structured) and become the symbol of the power of the King on the community as well as the last bastion to conquer the enemy, in the case of siege. The research focuses upon the castle of Pomarico (Basilicata, Italy). Through an analysis of technological and construction systems, the research aims to propose a methodology of study and analysis for this architectural evidence that has lost its primary function and is in a state of neglect and decay. The dialectic of conservation consists, therefore, in antinomy between the conservation of matter and conservation of the image. Between these extremes lies a third element constituted by value or by a system of values that the monument has. The most current guidelines of the method seen in the *integrated conservation* (understood as the result of the combined techniques of restoration and research the appropriate functions) the goal that it would like to pursue.
Keywords: military architecture, knowledge, recovery, integrated conservation.

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1 Introduction

Today, the question of the documentation regarding the built heritage has a central role in academic debate. It is established that it is not possible to operate any recovery or requalification intervention without a detailed knowledge of the built heritage. In fact, to analyze a building means to decompose it into its characteristic elements and to consider its elements individually and as a part of whole, taking into account the complex system of relationships between those parties.

In an area like Basilicata, inhabited for thousands of years, it becomes important to know the consistency of the built heritage; also to understand its complex settlement dynamics and organization as well. The study of the constructive techniques, with a direct analysis of a building, allows one to grasp the set of *unwritten* construction rules and to hand them down from generation to generation; their analysis is fundamental to design recovery interventions, because each building is *unique* and *unrepeatable.* Special attention is given to all those buildings which have ceased the function for which they were built (in fact, many of them are in ruins). This evidence places the question regarding the way to realize a recovery intervention in order to preserve the built heritage and to ensure memory for future generations as well.

2 Defensive architecture and the *urban* castle

An important chapter in the history of architecture is represented by fortified architecture. Defence needs and territory control demands have led – over the centuries – to fortified buildings being built, more or less complex, all over the territory. Even Basilicata, a little region in the southern part of Italy, characterized by a heterogeneous morphology and environment, over the centuries has been the stage for a succession of rulers. It is in this context that a dense network of castles and fortified architecture was formed (being more or less important). Boundary walls and castles, located in specific areas (more exposed to possible enemy attacks), are the main components of the territory defence system, documented since ancient times [4, p. 13]. In almost all cases, there is no definite information on the castle's construction (Figure 1). The main documentation regarding the construction and foundation of this architecture was due to the advent of the Normans when Robert Guiscard built castles, towers and walls on the conquered territories and cities [4, p. 16]. A fortress, as well as offering defence and protection for the inhabitants of a territory, also operated *intimidating* action on the inhabitants; in fact it represented the power of the feudal lord [4, p. 16].

The construction of *urban* castles, with the features described above, would continue with Frederick II of Swabia when they became tools to *express the strength of the state* on its citizens. They are symbols of the power of authority which, at the same time, provided social balance in the community that they dominated [4, p. 19]. The first evidence of an *urban* castle, also called baronial, was characterized by a simple boundary wall with a gateway and a central tower;

over time, it would transform into complex systems with multiple courtyards defensible in succession [3, p. 276].

Figure 1: Historical view, Pomarico 1930.

3 Reconstruction of the main historical events in Pomarico

The town of Pomarico is located 455 meters above sea level, on a hill with steep slopes; its morphology highlights the defensive needs of the territory. Pomarico was founded in the Middle Ages. In that period there were strong contrasts between factions and feudal lords for issues related to the possession and control of fiefdoms [2, p. 8]. It is in this context of fear and military tensions that it was witnessing the exodus from the countryside to the fortified towns, built on the highlands for the control and defence of the territory. From an old manuscript it is learned that the centre was built in the middle of the IX century.

This information, although not confirmed by other historical documents, would seem likely for the coincidence of this date with the many Saracen raids in the territory of Lucania; the small size of the first town centre would suggest a town founded by fugitives, as well [2, p. 8]. It is very likely that the foundation was undertaken by the inhabitants of the previous site, now identified as *Pomarico Vecchio* (Figure 2), built at 415 m above sea level in the countryside called *San Giacomo* and inhabited by Enotri. Repeatedly destroyed by the Saracens in the IX century, it was finally abandoned [1, p. 1]. It also belonged to Guglielmo Braccio di Ferro, Duke of Apulia, from 1043 to 1046; then it became the fiefdom of Drugone from 1046 to 1051, and then of Umfredo, feudatory of Montescaglioso Pomarico from 1051 to 1057. It then passed to Robert Guiscard until 1085, when it moved to his heirs [2, p. 24].

Figure 2: Pomarico, fresco at *Salone degli Stemmi* – Matera, 1709.

From 1200, Pomarico was the fiefdom of the Sanseverino family until the advent of Frederick II of Swabia; on the latter's death, the fiefdom was assigned to his son Manfredi as a bequest. Then, Manfredi assigned it to the Marquise Isolda, who in 1255 became the feudatory of Motescaglioso and Pomarico (Figure 3) [2, p. 34].

Defeated Corradino in 1268, with Angevin, the feudatory was Alberto Artesio and, at his death in 1270, it was awarded to Peter Belmonte Count of Corato. In 1275 Charles I gave it to Giovanni di Monteforte, Count of Squillace, husband of Margaret Belmonte [2, p. 37]. Leaving the successive lords and possessors, from the historiographic reconstruction it is possible to infer that the fiefdoms of

Pomarico, after being annexed by the Normans to the county of Montescaglioso, had the same lordship of the latter until 1540. It would be then the fiefdom of Giovanni Luigi Saraceno, and in 1544 was again annexed to Montescaglioso passing to the families Vasto and Aragon. Maria Orsini bought it and subsequently it was purchased by Bonifacio Hake in 1606. With this sale, the fiefdoms were finally cleaved from Montescaglioso and were in the meanwhile acquired by Lelio Orsini [2, p. 94]. In 1620 it was owned by Baron Christopher de Franchis; in 1624 by Prince John Bartirotta, and in 1771 by Baron Joseph Paul Donnaperna [2, p. 94].

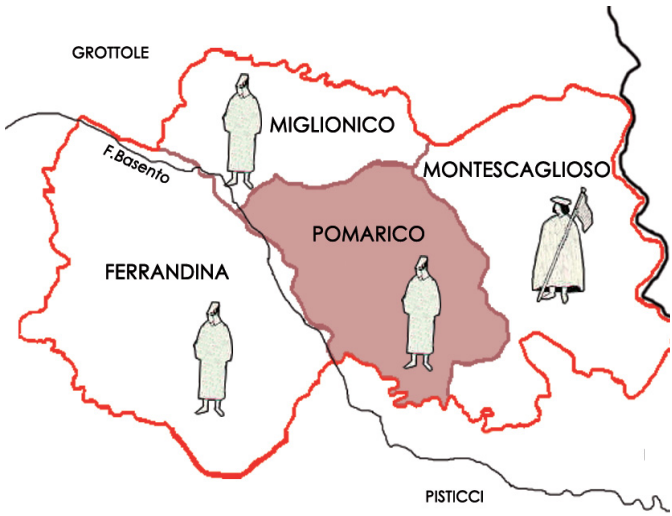


Figure 3: Hierarchical organization of the county.

4 An analysis of the urban fabric

Pomarico has had an evolution of complex settlements related to the transformation of the historical and cultural centre, but also to the morphology of the site and its modifications, due to several landslides that have affected Pomarico over the centuries. An early medieval settlement had boundary walls with two doors called *Porta Vecchia* and *Porta Nuova* (the first located to the west and the second to the north). Next to the *Porta Vecchia*, subsequently taken inside a building, there was the Church of *Santa Maria degli Angioli,* which collapsed in 1667 [2, p. 99]. This first plant also held the castle built in Norman times and classified as an *urban* castle.

From the Church of *Santa Margherita,* close to the square with the same name, Pomarico got bigger from the flat along the slopes of the hill. This was definitely an extension linked to an increase in population over the centuries (starting from the XVII century). Indeed, some documents [2, p. 103] show that at the beginning of 1600 there were two squares: the above mentioned *Santa Margherita* and *Piazza Nuova*. In the second half of the XV century the new Church of *San Michele Arcangelo* was also built (today collapsed) very close to

the castle; its construction produced the abandonment of the first church in the centre (*Santa Margherita*) collapsed in 1667 [2, p. 110].

Regarding the Church of *San Michele Arcangelo*, as mentioned above, it was made in the second half of the XV century by Francis II del Balzo and located at the highest point of the town. It was a single-nave church, with a large central arch and two doors on the northern façade [2, p. 110].

From an examination of the historical documents it is also possible to infer that the site on which there was the church and the castle, as early as the XVI century, had problems related to the stability of terrain. In fact, in 1560 part of the castle collapsed, and in 1603 part of the church was rebuilt. A few years later, in 1658, Priest Spera documents that around the first settlement there was the largest number of collapsed or unsafe buildings, realized through using poor materials and constructive technologies [1, p. 3]. In 1650, the collapse of the countryside called *Ospedale* because of a landslide is documented, and seven years later, on January 30th, many other buildings collapsed after strong earthquakes [1, p. 3]. From a document of the notary Pantaleo it is learned that in 1703 another part of the castle was collapsing and eleven years later there were reports of other cracks that also affected the church [2, p. 122].

It is because of the static and structural problems of the latter that it was decided to build a new church, bigger than the oldest one, which would respond to the needs of the increasing populations (as mentioned earlier). It was realized in the city centre in the XVIII century. Today, it is the most important church in Pomarico.

5 The *urban* castle in Pomarico: building characterization

As said above, the Pomarico [5] castle is an *urban* castle situated in the oldest part of the city; it has had problems related to the stability of terrain so today it presents itself as a ruin (Figure 4).

It was built using masonry load-bearing in very irregular local stone (according to the traditional local construction systems) [6, p. 64]. The main facade is onto a small, narrow urban street (Figure 5), while time the other part is on a steep hill. The remaining entrance is constituted by a door, which does not have decorations, but which is defined by a simple sequence of clay bricks to form the architrave and door jamb. There are also large windows all over the ruined building. An analysis of the state conservation, both crack and moisture, is fundamental to understanding the causes that have generated them. This analysis makes it possible to highlight the qualitative and quantitative characteristics of the building to determine the evolution of the damage over time and to compare those characteristics with those of the surrounding environment [7].

Despite it being a ruin, the castle shows a very important pathological condition that affects all the parts and elements of the building. In fact, because of the total disconnection of the brick tiles and of the absence of the roof, the walls have undergone a process of pathological aging rather accelerated (Figure 6).

To the above said reasons it is added the age of the material and technological elements, the very irregular form of the masonry, the topsoil on the buttress of the vault (that was saturated with the meteoric water increasing its volume and weight) [8]; it is clear that the structure was set to undergo a collapse by crushing; generating a ruin.

Figure 4: Historical plan of the city, 1911.

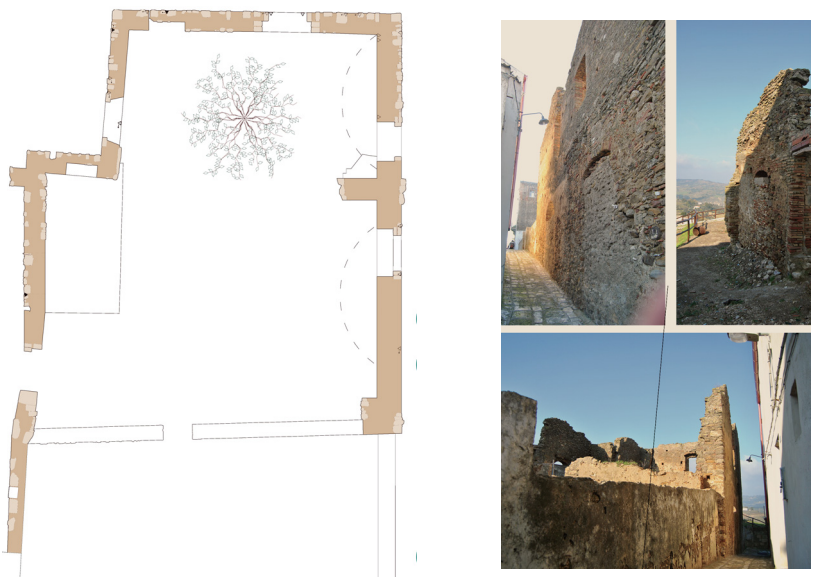


Figure 5: Plan and photos of the castle ruin.

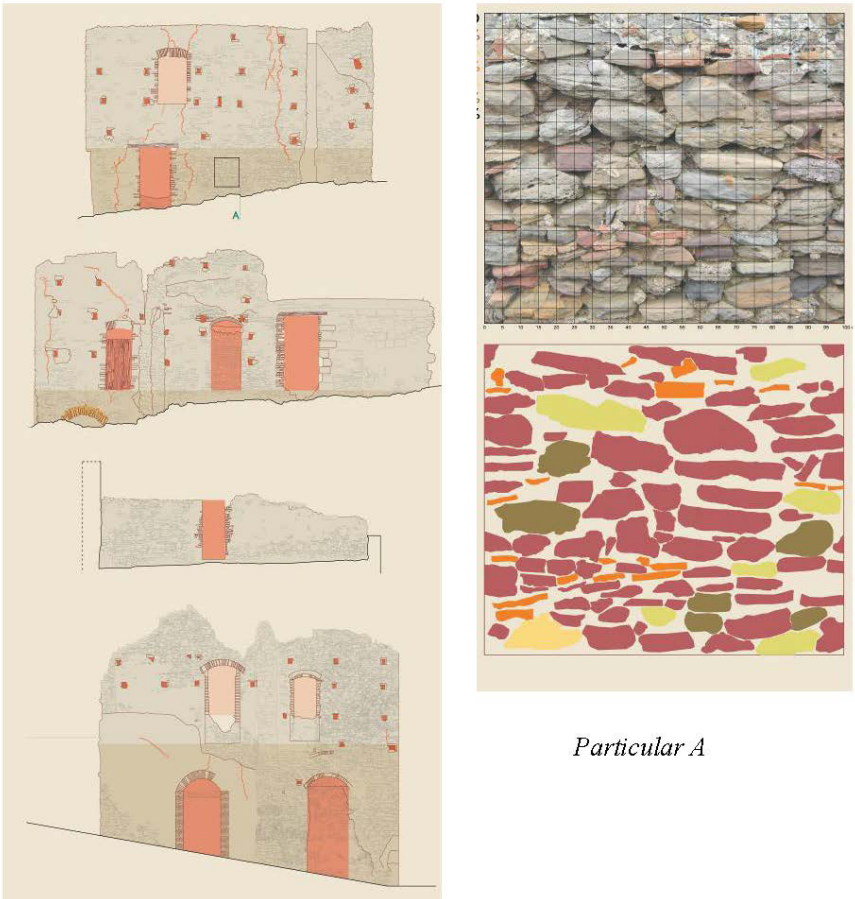
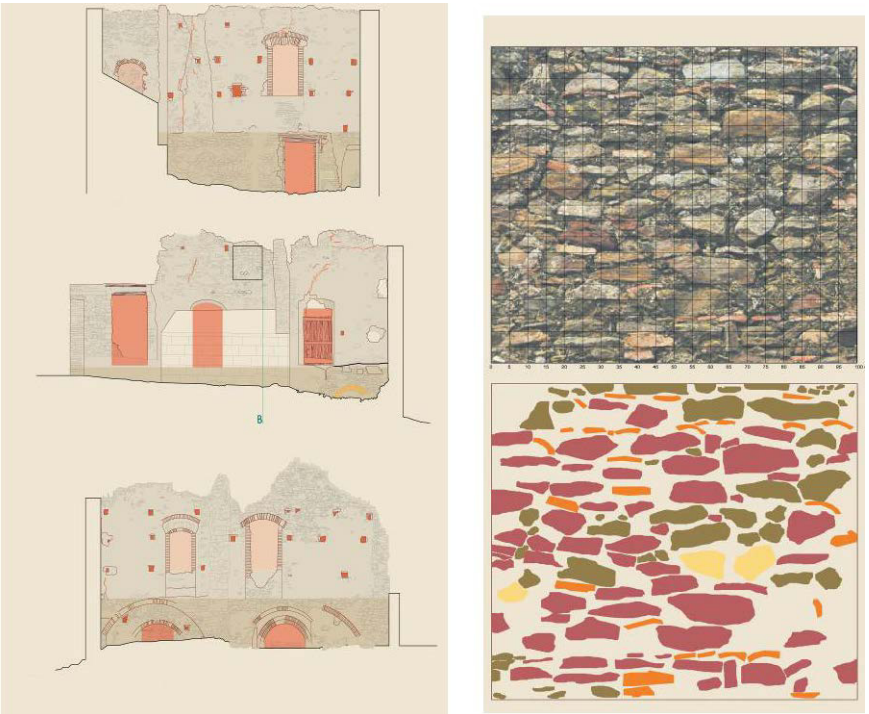


Figure 6: Constructive and technological characterization.



Particular B

Figure 6: Continued.

6 Conclusions

The analysis and knowledge of built heritage is very important for the contemporary debate on conservation intervention.

Historiographic reconstructions, structural analysis and material and technological characterization become cornerstones of complex studies to outline the guidelines to define recovery interventions and preservative actions, as well. This study aims, therefore, to identify a methodology to analyse architectural heritage placed in small urban areas.

In addition, surveys and *in situ* analysis also allow one *to capture* those particular characteristics of built heritage and, then, to place it in a specific typological series. This is fundamental to understanding the articulated relationship that has developed over the centuries between the architecture and the surrounding area, and therefore the role that it has assumed for the development of a territory.

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