

Vernacular architecture of the Amalfi coast: a medieval *domus* in Villa Rufolo in Ravello (Italy)

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Abstract

The oldest medieval domus in Ravello date back to the twelfth century, as an evolution of the original house with barrel vaults, a primitive stone construction with walls of dry masonry of limestone and almost always connected to an olive grove or a vineyard, widespread on the Campania coasts between the island of Capri, the coast of Sorrento and that of Amalfi. Vertical and horizontal aggregations of this module have constituted, over time, the evolution of the building typology, while retaining some of the pre-existing architectural elements and the peculiar construction characteristics, including the strong link of this architecture with the particular orography of the territory. The private building complexes are the result of this ongoing process, consisting of various rooms connected to each other and arranged on several levels, in which the members of a single family lived with their servants. The entire structure was surrounded by walls and defended by towers. The interiors consisted of rooms heated by fireplaces, kitchens, furnaces, Arab baths, cisterns, wells, cellars, warehouses, stables, rooms for winemaking, gardens and cultivated terraces. The paper analyzes the history and construction features of one of the few medieval domus still existing and which has not undergone substantial transformations, also because it was brought to light only in the last decade of the twentieth century, currently located in the boundaries of Villa Rufolo in Ravello. Its original conformation is hypothesized, thanks also to a description made of it in the archive documents. The paper also reports the work carried out on the case study in order to undertake a cataloguing of a heritage in continuous discovery.

Keywords: Amalfi coast; medieval architecture; vaults; traditional techniques.

1. Introduction

The Amalfi Coast is rich in architectural remains of inestimable value from the medieval period, date from between the time of the Duchy of Amalfi to the beginning of feudalism, that is, from the 9th to the 14th century¹. These architectures possess a qualified environmental and landscape value that has always been appreciated by Italian and foreign travelers and writers

and constitute the memory of the wise use of traditional construction techniques that have transformed a difficult orographic condition into a landscape peculiarity to be preserved and handed down. In particular, the houses with extradosed vaulted of the Amalfi coast, although they may appear to be a poor production, have substantial peculiarities connected to the geographical environment, history and production activities and some characteristics that make this type of construction not a simple spontaneous building, but a construction designed down to the smallest detail.

¹ Cf. Fiengo G., Manco A. (2014). *Ruderi medievali della Costiera Amalfitana. Diffusione e caratterizzazione del paesaggio*, Amalfi, p. 7.

2. The medieval house in Ravello: typology and construction techniques

The medieval *domus* of Ravello is made up of several floors and covered by a characteristic element of these buildings, the extradosed vault, made with the "battuto di lapillo", put in place using a construction technique with which an exceptionally resistant and waterproof mortar was obtained. The slaked lime was combined with pumice to create a light but at the same time resistant mortar; the mixture was then left to rest for 24 hours and stirred four times; after these operations it was spread on the extrados of the vaults for a thickness of 10-15 centimeters and it was beaten for three days at the same time by several people, the whole operation was accompanied by folk songs that accompanied the rhythm of the work. Another characteristic element of these houses was the presence of an external staircase next to the house which allowed access to the various rooms and to the different levels. The *domus* also had several rooms, kitchens, cisterns and *balnea*. The building material used came largely from the surrounding area. The use of local limestone, combined with good quality mortar, has allowed these buildings to survive over time even in the presence of partial collapses². For greater protection from the summer heat, in these particularly arid areas, the houses did not have windows or, where they exist, they are small while the water was collected through terracotta pipes inserted into the masonry and ending in a special cistern³. Today the ruins of the medieval houses of the Amalfi coast are not sufficiently protected also because there is no exhaustive cataloguing of them, moreover they are exposed to numerous dangers, deriving not only from abandonment and lack of maintenance but also,

and above all, from the uncontrolled transformations. These have almost always changed the form of these architectures and led to the irreversible loss of their original characteristics.

3. Methodology

The paper presents the results of a methodological experience⁴ that has updated the knowledge of the remains of an architectural complex located within the boundaries of Villa Rufolo in Ravello not yet sufficiently investigated and previously known under the name of *balnea*, that is, as remains of a thermal complex of the Villa. The research carried out revealed that the complex is an architectural palimpsest consisting of a wall system and of a first original nucleus identified in an ancient house with an extradosed barrel vault then enlarged with the addition of an upper floor and other surrounding rooms, whose consistency is described in a document dating back to the 12th century⁵.

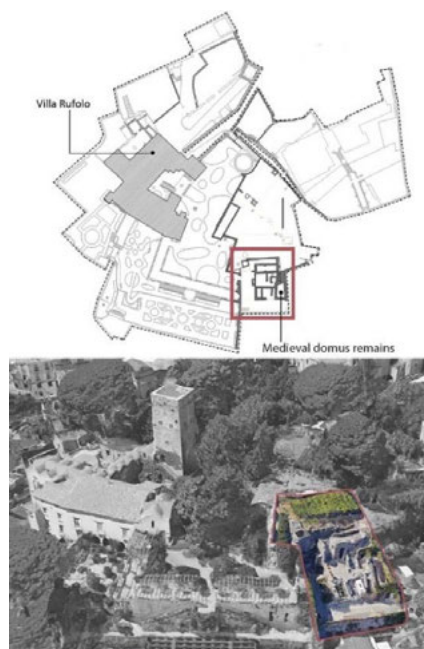


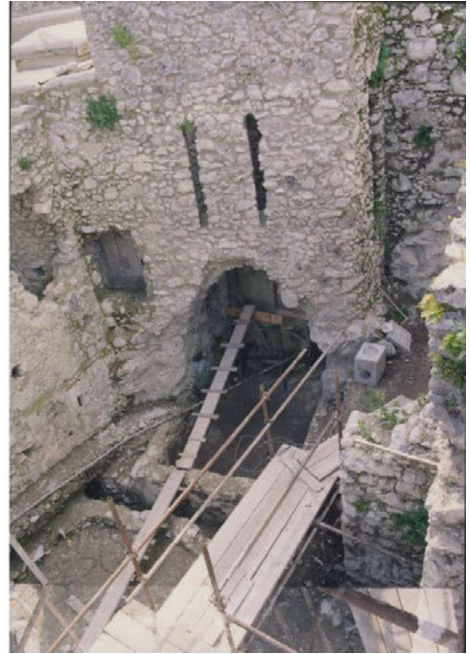
Fig. 1. The remains of the medieval domus in Villa Rufolo

2 Cf. Fiengo G., Abbate G. (2001). *Casa a volta della costa di Amalfi: censimento del patrimonio edilizio storico di Lone, Pastena, Pogerola, Vettica Minore e Tovere*, Amalfi: Centro di cultura e storia amalfitana.

3 Cf. Niglio O. (2005). *Conservazione e valorizzazione dell'Architettura Vernacolare Mediterranea: la "casa a botte" in Costa di Amalfi*, in TECNOLOGOS, IV, august 2005, pp. 9-11.

4 The paper enriches the results of a collaboration project started in 2019 between Villa Rufolo and the Department of Civil Engineering of the University of Salerno.

5 Document of 1148 in PAVAR, I, pp.60 ss, n. XLI.



Figs. 3-4 The excavation of the medieval domus in 1997 (Source: Archive of the Soprintendenza BeAP Salerno and Avellino)

The research methodology used a multidisciplinary approach by addressing an in-depth historical-archival examination, as well as an analysis of materials and typological-constructive characteristics, focusing on the consistency of the building and its stratifications. Significant advances have been achieved in the knowledge of this architectural complex by combining information from indirect sources (bibliographic, archival surveys, etc.) with direct reading of the architecture and with data from photogrammetric and laser scanning surveys.

3.1. A medieval house in Villa Rufolo in Ravello: discovery, history and transformations

The first excavation campaigns in the northeastern sector of Villa Rufolo were carried out between 1988 and 1989, promoted by the European Center for Cultural Heritage. Until that time, the area, excluded from the tourist route, was used for cultivation. Only in 1996, a more systematic excavation campaign was undertaken and, in 1997, the first restoration and consolida-

tion of discovered structures, coordinated by the Soprintendenza B.A.A.A.S. of Salerno⁶. The excavations brought to light a series of environments. The oldest and also the only one known until then, consists of a room with a rectangular plan covered by an extradosed barrel vault, subsequently raised by a further floor, today almost entirely collapsed, as it was possible to deduce from the stratigraphic analysis and from the survey. To the south of this room there is a cistern to which the water from the vault was also channeled. It has an inclination such as to allow rainwater to drain into a special channel that reaches the cistern. Very interesting are the small rooms east of the main body consisting of a *calidarium* and its hypocaust. The *calidarium* consists of a small square room covered with a cross vault. The ribs have a well-marked edge that was probably used to convey the con-

6 Cf. Peduto P., Richter D. (1999). *Una discarica ottocentesca nella villa medievale dei Rufolo*, in Richter D., Romito M. (edited by), *I profumi di Reid. Uno scavo archeologico e la vita di un inglese nella Ravello dell'Ottocento*, Ravello, pp. 17-18.



Fig. 5. The north-east sector of Villa Rufolo in a photo from the early twentieth century. Before the excavations, the area was occupied by cultivated terraces.

densation water of the vapors to a small channel that crossed the perimeter of the room. On the south wall there is a niche with a small tub that contained water, below which there is the hypocaust which was accessed from another room located at a lower level. Terracotta pipes arranged vertically in the corners of the *calidarium* allowed the steam to rise upwards. A staircase, which partly overlooked the *calidarium*, gave access to the complex from the vineyards; on the lower level, on the other hand, there are three other rooms, one is undoubtedly a cistern, another, smaller, consists of an access corridor that led to the upper rooms.

The consistency of these remains coincides with that described by a parchment from the bishop's archives of Amalfi and Ravello dating back to 1148. The document is the act of division between several heirs of two domus, one new and one old located in via Episcopo. The remains of the analyzed complex seem to coincide with the old domus described by the document which, in fact, describes a "*caminata fabricata supra ispum valneum*"⁷, that is a path over a *balneum*, just like in the house under study, where the

staircase passes over the *calidarium*, and, moreover, that the boundaries of the property arrive directly "*at lentiam*" that is to a control point that could be identified with the small tower located at the edge of the complex.

The description of the house made by the document, together with its position, suggest that these remains correspond to an ancient *domus* of Ravello that already existed and was frequented at the beginning of the twelfth century. We do not yet know the subsequent history of its transformations at least until the nineteenth century, thanks to further information obtained from the Murattian land registry. In particular, the cadastral sheet relating to the properties of Francis Nevil Reid, already owner since 1851 of the ancient noble residence of the Rufolos, attests that the Scottish lord bought the remains of the medieval *domus* in 1859 from the Manzo Cosmo and Pantaleone, (who in turn they had bought it from the heirs of Giuseppe Confalone in 1821⁸) and transformed them into a terraced

7 Document of 1148 in PAVAR, I, pp.60 ss, n. XLI.

8 State Archive of Salerno, Murattian land registry, sheet 690 (about the property of Francis Nevil Reid), 479 (about the property of Manzo Cosmo e Pantaleone di Ravello), 122 (about the property of the heirs of Confalone).



Fig. 6. Cross section of the complex (Source: De Feo)

garden. Thanks to the reading and analysis of these documents it was possible not only to obtain information on the *domus* under investigation, but also to reconstruct a piece of the history of Villa Rufolo whose current borders, as it has been noted, are the result of successive additions carried out from Reid, a great project of unification of different properties aimed, most likely, at the rebirth of forgotten and abandoned places.

3.2. The digital survey and the material survey for study and cataloguing

Three-dimensional survey techniques play an important role in the documentation of cultural heritage. The elaborations produced, in fact, are a precious tool for facilitating historical interpretations, they constitute a geometric basis of reference for their cataloging and allow to investigate the complexity of the structures to be analyzed.

Different digital survey methods have been implemented for the survey of the remains of the medieval house under investigation. In particular, the data acquired from laser scanning were integrated with those from photogrammetry. The former was used to create a digital model of the architecture from which to obtain a scientifically verified survey. The latter made it possible to create high resolution orthophotos

for the material survey of the complex. Thanks to these infographic outputs, the hypotheses proposed on the transformations of the complex have been confirmed. The oldest structure consists of the defensive tower with a quadrangular base probably dating back to the 11th century. The small tower, losing its defensive function in the following centuries, underwent transformations and was reused as a cistern. The existence of a large boundary wall between Villa Rufolo and the analyzed complex confirms the original separation between the two properties. In fact, the only passage was built only in the 70s of the twentieth century. The following construction phase, dating back to the early 12th

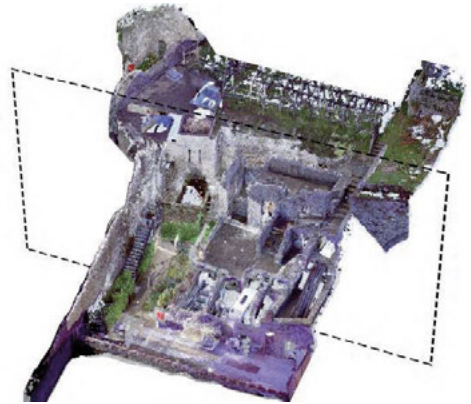


Fig. 7. Points cloud model of the complex analyzed (Source: Survey and elaboration of De Feo).

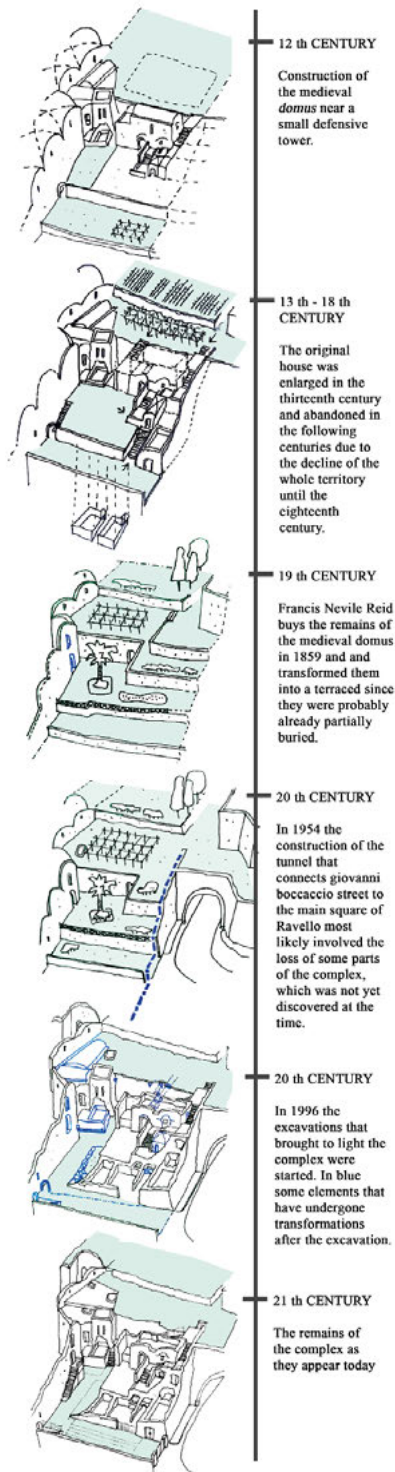


Fig. 8. Graphic scheme on the historical evolution of the complex (Source: Drawings by Fernandez)

century, coincides with the construction of the house with extradosed vault with its cistern. To overcome the cliff between the vineyard area and this environment, now occupied by a stone staircase built after 1996, a masonry bridge was probably built which no longer exists. Its remains are still partially visible and highlighted by the material survey carried out as well as from the archive photos of the archaeological excavation. Particularly interesting was the section on the *balneum* of the house which reveals the construction system of the small *calidarium* with hypocaust. A system that was commonly employed on the Amalfi coast and of Islamic derivation. These Arab baths are found not only in large noble palaces but also in smaller houses⁹, as evidenced by the presence of a small Arab bath in our complex, with some constructive differences. In our case, in fact, the *calidarium* is not covered by a ribbed dome, as happens in great palace, but by a cross vault.

3. Conclusions

The research work has shown that the current borders of Villa Rufolo in Ravello are the result of successive additions made by Francis Nevile Reid in the nineteenth century. After the purchase of the ancient Rufolo residence in 1851, the Scottish lord annexed the area north-east of it in 1859, occupied by the remains of the medieval residence and, in 1868, Villa Episcopio. Furthermore, by crossing the information from indirect sources with the direct reading of the architecture and with digital restitution, it was possible to identify the remains of the medieval residence with the *domus veteris* described by a document of 1148.

This work intends to provide new information on the remains of an architectural complex on which little information was available and also intends to outline a methodological approach to

⁹ Caskey J. (2010). *I sollazzi di Villa Rufolo* in Camelia G., Cobarbo G. (edited by), *Fieri iussit pro redemptione. Mecenatismo, devozione e multiculturalità nel Medioevo amalfitano*, Amalfi, pp. 247-250.

address future investigations on the theme of the ruins of medieval vaulted houses of the Amalfi coast. The data obtained from the documentary research, compared with the information that emerged from the material survey of the elevations and of graphic representations (plans, sections and views), have produced advances in the knowledge about the theme of the medieval domus. These architectures, considered as a whole, constitute an original expressive attribute of the local landscape which is particularly fragile and exposed to constant dangers. In this sense, a work of cataloging, knowledge and identification of the characterizing elements constitutes a first step for their protection and the conservation of resilient values.

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