

## Tradition and semantics: the case of Aeolian architecture

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### Abstract

*Vernacular architecture is identified as a structure based on specific local needs, on the presence of building materials present in the place and on the extemporaneousness of the architecture, built according to structural dogmas based on the local construction tradition. This is confirmed by the etymology of the word ‘vernacular’, from the Latin “vernaculus”, meaning “indigenous, domestic”, or from “verna”, that is “native slave”. In the present, vernacular architecture takes on new meanings, often used as an identifier for popular architecture - as also stated by Allen Noble in “Traditional Buildings: A global Survey of Structural Forms and Cultural Functions” of 2007 - or rather structures belonging to common people but «That can be built by skilled professionals, using local and traditional designs and materials», which is also supported by the Oxford English Dictionary. It is in this context that the vernacular Aeolian architecture fits, which significantly and identically characterize the entire territory of the Aeolian Islands, awarded the title of World Heritage Site by UNESCO. Aeolian architecture is inextricably linked to the history of the invasions of different peoples that have taken place in this area, such as the Greek-Roman, Islamic and finally Campania influences, due to their modifications both from an urbanistic and compositional point of view. But today how is it possible to encourage the dissemination and knowledge of these architectures which are so identifying for the Sicilian territory? Cataloging and semantics are configured as fundamental actions for the analysis and use of the architectural heritage, broken down into its deepest formal and compositional characteristics, identifiable in Aeolian architecture through the identification of semantics with a peculiar nomenclature. This article therefore investigates the aspects of semantics applied to traditional language and the compositional characteristics of Aeolian architecture, treated as an indissoluble link of knowledge and analysis of the building, through possible uses of digital applications.*

**Keywords:** Aeolian architecture; tradition; cataloging; semantics; digital dissemination.

### 1. Introduction. Vernacular heritage as a synthesis between architecture and history

In order to deal correctly and thoroughly with vernacular architecture, specifically the Aeolian vernacular architecture, it is essential to understand the history and genesis of this type of architecture that defines places so much, tracing a sign in the mind of those who observe them.

Vernacular architecture represents the origin of all architectures, structures without constructive dogmas as much as local traditions and materials more or less scattered throughout the surrounding area. In this sense, vernacular architecture is defined as the traditional architecture of a specific place, performed by local builders who do not have special construction studies and with local raw materials. These architectures are also defined as spontaneous architectures, as the

Latin origin of the word itself suggests, which refers to domestic and native elements, as it is extremely adapted to the needs of the place and not the result of reasoned planning. As stated by the architect and historian Bernard Rudofsky, it can be defined as a spontaneous architecture (*non-pedigreed architecture*), referring to the concept of traditional architecture from the tents of nomadic peoples, to Celtic tombs, etc. (Rudofsky, 1964). It is thanks to him that, in the course of the *Architecture without architects* exhibition set up at the Museum of Modern Art in New York, the term vernacular was born: «For lack of a generic label we will call it vernacular, anonymous, spontaneous, indigenous, rural, depending on of the cases».

Previously, the word 'traditional' was used as an adjective dedicated to these architectures, although the total distance of these structures should not be confused with the real 'traditional architecture'. This is because traditional architecture properly understood, while welcoming similarities with vernacular architecture, is also identified with 'polite' design elements: temples and palaces are an example of this. It is for this reason that vernacular architecture refers to aboriginal, indigenous, ancestral and rural structures, in contrast to the more intellectual, formal and academic traditional architecture. In fact, it should be remembered that Rudofsky's definition has always been considered limiting and problematic as this type of architecture clearly deviates from the adjectives 'anonymous' and 'spontaneous', as they are influenced by the climate and intentionally designed. What makes a vernacular architecture impossible to replicate, and therefore from the necessary implementation of the safeguard, is undoubtedly the intent of the building, the spontaneity of the designer of the design act, in constant thought and re-thinking. The architecture carefully designed by professional architects, albeit extremely learned about the characteristics of the place, of local and vernacular architecture, can never be equated with an impromptu construction. As Paul Oliver argues in his book *Encyclopedia of the*

*Vernacular Architecture of the World* (1997), vernacular architecture "includes people's homes and all other buildings. In relation to their environmental context and available resources, they are usually built by the owner or the community, using traditional technologies. All forms of vernacular architecture are built to meet specific needs, adapting to the values, economies and ways of life of the cultures that produce them». These architectures therefore go hand in hand with respect to a specific place and period, as they respond to defined needs. It is in this context that the vernacular Aeolian architecture fits.

## 2. Aeolian architecture: history and landscape

Aeolian architecture represents a splendid example of architectural style developed in the geographical area of the Aeolian islands, also known as the Lipari islands, or rather an archipelago belonging to the Aeolian arch located in the southern Tyrrhenian Sea, north of the Sicilian coast. The Aeolian territory welcomes by its nature a landscape of high beauty, guarding in addition to a large number of naturalistic and cultural sites, two active volcanoes today, namely Stromboli and Vulcano. The Aeolian archipelago includes seven islands - Lipari, Salina, Vulcano, Stromboli, Filicudi, Alicudi, Panarea - and numerous other islets not far from each other and easily accessible by private boats or hydrofoils placed for public service (Fig. 1).

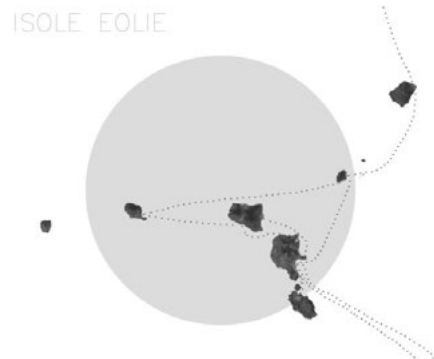


Fig. 1. Aeolian islands.

The Aeolian architectures fit into a landscape marked by terraces, in order to create flat footpaths, alternating with unspoiled, wild and steep nature. In these territories a shrub-like vegetation typical of the Mediterranean scrub flourishes and the cultures are for the exclusive use of vines and capers, making a small contribution to the Aeolian economy. In this sense, we also remember the prickly pear, which is the most characteristic plant essence of the landscapes and architectures of these territories. It is in this landscape and geographic context that the style and characteristics of Aeolian architecture develop (Sabatino & Lejeune, 2010). Over time, this has been affected by the numerous historical events that have taken place, defining and determining the culture, life and consequently also the architecture of this area. Today's architecture is characterized by an urban fabric defined by multiple building types: from the houses of the less affluent population to the villas or buildings of the wealthiest families, passing through the houses of artisans, workers, fishermen, etc. To intersperse the architecture for residential use there are structures that mark and characterize the territory such as, for example, small watchtowers and defense towers, churches, sheds used for processing and pumice<sup>1</sup>, archaeological finds, etc. But it is rural architecture, that is, the one identified with the word 'Aeolian' that characterizes the main historical urban or agricultural fabric. It is this type of housing that this contribution addresses in order to dissect the semantics and possible methodologies to be put in place in order to ensure its usability, dissemination and knowledge according to digital systems.

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<sup>1</sup> The extraction of pumice stone in Lipari, one of the seven Aeolian islands, has always been a huge economic and then tourist source for the entire island and its surrounding islands. In fact, since the Neolithic, the extraction of this stone was practiced together with obsidian, generating an export of 100-200 tons per year. It represents one of the most widespread building materials of the Aeolian vernacular architectures of the past. Today the quarry is abandoned, serving as a backdrop to the expanse of the sea every year flooded by tourists in search of refreshment from the warm climate typical of Sicily.

### 3. Composition, semantics and cataloging

Vernacular architecture still represents a heritage to be protected and preserved as a historical memory of peoples and architecture. In this sense, Figini (1950) defines the value of vernacular architecture as «A lesson in morality and logic (simplicity, sincerity, modesty, humility, adherence to necessity, renunciation of the superfluous, adaptation to the human scale, adaptation to local conditions and environmental). A life lesson (extensive use of 'intermediate' elements between outdoor and indoor life, loggias, terraces, porches, pergolas, patios, enclosed gardens, etc.). A lesson in style/anti-decorativism, love for smooth surfaces and elementary sculptural solutions, the site and the 'frame' of buildings in the landscape».

As stated by Figini, therefore, this type of architecture by its nature welcomes a very precise semantic language, made up of specific structures and nomenclatures, but above all of well-defined living spaces: internal and external. In this type of structures, in fact, life outside the home is often very present, a consequence of small homes or homes inhabited by numerous family members<sup>2</sup>. Aeolian architecture, in the same way, originally consists of non-redundant spaces, although the size of the place together with the low percentage of the population made it possible to build much larger houses than other known vernacular architectures. Today, the Aeolian-style houses maintain their main characteristics, despite the urban and tourist development that has affected the islands in recent decades. The Aeolian architectural structure, which is a type of structure common to all the islands present, is characterized by a cubic type setting. The expansion of the architectural organism takes place through the multiplication of cubic modules according to the vertical or horizontal axis, while maintaining the other

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<sup>2</sup> In this sense, we recall the Apulian *trullo*, in which a large number of family members resided - in addition to animals such as hens or donkeys - in very narrow spaces. For this reason, every moment of daily life is carried out outside the home.

semantic characteristics explained below unaltered. The only substantial difference from the past is represented by the conspicuous presence of windows. In the past, in fact, this type of construction had to respond above all to the need to defend against external dangers, mainly attributable to piracy, and was therefore equipped with a single entrance door and two small circular windows with bars, today no longer present, accompanied instead by further holes of a larger size. Even the location of the houses in the most inaccessible areas was a consequence of the dangers coming from the sea, subsequently giving way to buildings closer and closer to the coastline. The Aeolian architectural elements today configure a type of dwelling well defined by semantic/compositional characteristics peculiar to the tradition and denominated in the typical local dialect: the Sicilian dialect. As mentioned, the Aeolian construction develops according to cubic compositional models, allowing the structure to be adapted to flat areas or rocky ridges. The cubic overlap in a vertical sense is generally made up of two cubic rooms not communicating internally - although there are fewer houses with vertical overlap communicating internally - but connected by means of a staircase placed on the outside surmounting a flying buttress. This type of overlap is typical of the period of pirate raids, as it is more suitable for construction on steep hills (Fig. 2).



Fig. 2. Rural houses near the Piscità district, Stromboli (Source: Famularo, 1971).

With the passage of time, the cubic cells of horizontal development spread, more performing for flat areas, obtained through the juxtaposition of two or more non-communicating cell compartments and stretched out onto a large terrace. Having defined what is configured as the general compositional apparatus of the main structure, it is possible to precisely define the different semantic characteristics that make up the Aeolian house. The layout of the rooms is divided according to a horizontal axis from which the various rooms open in succession. The first room, that is the entrance, is a loggia or terrace (*bagghiu*) generally covered by a pergola<sup>3</sup> (*cannizzi*) on wooden beams, supported by cylindrical pillars of white plaster (*pulèra*). Along the terrace there is a stone step raised above the floor, often covered with polychrome majolica tiles, giving life to a seat (*bisola*) along the entire perimeter of the terrace (Fig. 3). The terrace was often accompanied by a rustic lava stone wash house (*pricu*) and a tub for washing clothes (*pila*) (Fig. 4) (Maffei, 2000).

Near the house, connected by the terrace, it is often possible to notice some small structures used for production purposes: the mill for grinding wheat and barley, the cellar, the stables (*pinnate*), the mills for pressing the olives (*palmènto*) and of the semi-underground stables of straw and stone (*pagghiara*). It is the terrace that connects the house to a small vegetable garden connected to the *littera*, that is a small space in which figs and grapes were placed to dry on the characteristic *cannizzi*, placed in the shelter in the evening in the open-air warehouses. Also in the external space is the *furnu*, that is the oven used for baking cakes and bread (Fig. 5) and the *furnieddu i squadari*, that is a hearth for sterilizing raisins (Lo Cascio, 2005). During the winter months it is the internal space that is the fulcrum of domestic life, carried out in a modest space in which the kitchen triumphs (Fig. 6), composed of masonry and polychrome

<sup>3</sup> This cover serves to shade the terrace during the day and to protect the rooms from humidity in the evening.

majolica, traditional local materials, a pyramid-shaped hood surrounded from a wooden beam serving as a shelf. The layout of the rooms is extremely conditioned by the surrounding environmental factors.

The external environment, such as the terrace, is always facing the sea as this solution allows greater cooling of the environment due to the wind on summer nights. The spaces dedicated to the sleeping area, on the other hand, are often located towards the mountain side as they are able to intercept less solar radiation and, therefore, a more comfortable internal temperature. It is therefore about housing founded and thinking in order to live social life and the surrounding area as much as possible. In this sense, the composition of this type of housing reveals a different model of social life, more open to the neighborhood and the landscape, in a housing context that reflects the modest living conditions and dedicated to the essentials of existence.

In line with the *modus operandi* of vernacular construction, the materials used for these architectures are mainly: pumice stone for the external masonry; the blocks of massive lava stone for the foundations; pumice stone for the external walls; pozzolanic mortar and lime to make the roof waterproof; the tuff for the covering of the walking surface of the house and terraces.

It is only with the passage of time, and with the increase in tourist flows to the Aeolian islands, that these homes are enriched with new materials and decorations: decorative frames in local stone; precious finishes with lace or masonry pinnacles that embellish the roofs and walls; brightly colored or totally white plasters (figs.7-8).



Fig. 3. Representation of the *bagghiu* (blue), the *pulèra* (purple) and the *bisola* (fuchsia) in a house in Lipari, 'Marina Lunga' area.



Fig. 4. The wall surrounding the terrace (*bisola*) in a house in Lipari, 'Marina Lunga' area.



Fig. 5. The *furnu* in a house on the island of Stromboli.

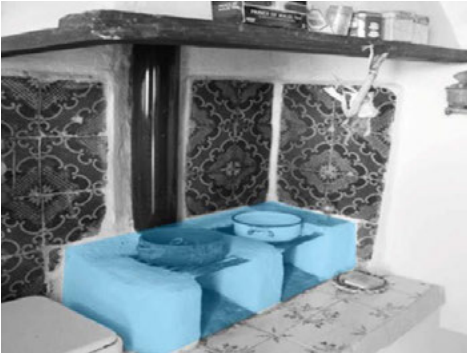


Fig. 6. The kitchen in a house on the island of Stromboli



Fig. 7. Alicudi Island (Source: web).



Fig. 8. Locking systems. Detail. Stromboli Island.

#### 4. Cataloging: possible digital dissemination

As Paul Oliver (2003) states, «There is still no clearly defined and specialized discipline for the study of housing or the broader compass of vernacular architecture. If such a discipline were to emerge, it would probably be one that combines some of the elements of both architecture and anthropology with aspects of history and geography». It is now known how the learning of knowledge takes place through the transposition of the same on digital representations, to safeguard/enhance the places (Bortolotti et al., 2008). These immersive technologies enhance the conception of space, amplifying the real experience through virtual spaces capable of educating the visitor towards previously unexplored cultural concepts (Krueger, 1985).

In this context, the semantic cataloging of Aeolian architectures represents the premise through which to hypothesize possible applications in the cultural sphere capable of disseminating knowledge and the enormous historical and cultural potential of vernacular architectures. The semantic identification of these architectures allows the classification of the same by common characteristics and almost completely present in every architecture in pure Aeolian style. By creating digital applications that can be used from smartphones, it is now possible to re-read the artefact in both intellectual and virtual terms (Croce et al., 2020) through the creation of opensource applications which, through Beacon sensors<sup>4</sup>, can be able to tell the user about semantics, history and culture. Getting ready in the immediate vicinity of the architecture, it is possible to view, through augmented reality, the same architecture painted in different colors, to identify and indicate the nomenclature of each compositional part, viewing the etymology (Fig. 9). Knowledge of the artefact is completed through the transmission on the same application of stories of the island, cultural

<sup>4</sup> Associated with POI (Points Of Interest).

analyzes and small tourist suggestions, in order to make the visit increasingly aware and interactive.



Fig. 9. Augmented reality application. Semantic reading.

The use of this type of digital dissemination is the consequence of a reflection implemented in the context of the specific knowledge of the territory with respect to the language/dialect of the place. The linguistic identity of the places, in fact, is configured as a fundamental aspect for the social and architectural understanding of these places as it is strongly connected with everyday life and social space. In this sense, the Aeolian islands are a privileged summer destination for tourists from all over the world, but often unaware of the intrinsic cultural history belonging to the places they lived. A digital application would make a linguistic tradition more usable that would otherwise not be sufficiently disclosed in the tourism context, making users more integrated into social, cultural and architectural places.

## 5. Conclusions

Ultimately, the vernacular cultural heritage represents a bet with enormous potential to be exploited both for the growth of knowledge and for the enhancement of the territories, potential attractors of important tourist flows. The semantic identification represents one of the possible interpretations not only of the Aeolian vernacular heritage but also of the rest of the heritage characterized by semantics and recurring com-

positional characteristics. This latter reading, more classical and traditional, can be combined with all those enhancement systems capable of making the user an integral part in the discovery of architectural and cultural knowledge. In fact, it is now well known that digital dissemination represents the right compromise between the transmission of knowledge and the safeguarding of cultural heritage, in the case of the Aeolian heritage which is extremely tied to the tradition of the places and the island culture.

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