“Needs-based architecture” in the Cyclades. A project for the enhancement and conservation of the architectural heritage and the rural landscape.
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1. Introduction
The article presents the results of research on the theme of conservation and compatible reutilisation of the vernacular architecture on Andros, Mykonos, Kea and Tinos (islands in the Cyclades archipelago) which was carried out by analysing the architectural heritage and the inland areas. The study originates in an initial consideration which sees the vernacular architecture as an inheritance of the local identity and it identifies a common Mediterranean problem – the presence of two models of consumption and transformation of the area: firstly, the rapid model which characterises the coastal zones which tend to attract new economic forms; secondly, the slow model present in the internal areas which are being abandoned because they do not meet the apparent needs of contemporary life. Island areas (in this case, the Cyclades) are the epitome of any area characterised by this “double face”. On every island that was analysed, a profound and constant transformation of the coastal areas is still under way to various extents. This involves the invasion of property speculation connected to the development of mass tourism, which has changed the original character of the area, sometimes drastically. However, notwithstanding this and the loss of their agricultural and pastoral productive value, the islands' internal areas remain unviolated and retain their arcane charm. It could almost be claimed that, in the current situation, this abandonment can be considered a form of conservation, which has deterred speculative transformation and so now presents an opportunity to reconsider and find a reutilisation which is compatible with the characteristically slow nature of this area. In this context, the study examines the quality and potential of “needs-based architecture” by analysing its buildings – productive and residential - and their connections to the area as historical buildings. On the basis of the results obtained, a number of project proposals on both territorial and construction scales are put forward in a larger framework of reutilisation of the area system of which they form a substantial part.¹

2. Methodological approach
The research started with a preliminary phase dedicated to a more precise definition of the object of study which focussed on various objectives, among which were a comparison between similar examples (made possible by geographical closeness but characterised by different situations concerning construction materials and the morphology of the area) and a possible extension of the results to other geographical contexts (above all at a methodological level).
Bibliographical research on traditional Greek architecture was carried out as part of this initial phase and helped in planning the inspections. This bibliographical research was also useful both for the development of a glossary of
terms identifying parts of the rural settlements and their buildings, and for a preliminary exploration of the local construction techniques. Reading accounts of journeys around the Cyclades allowed the identification of the essential research tool; a journey, which is interpreted as an experimental investigation not only of the rural landscape and architecture but also of the customs of the (now rare) island inhabitants, which are useful in understanding the evolving changes.

Two factors were crucial in the definitive selection of the islands to be studied (Andros, Mykonos, Kea and Tinos): the geographical continuity and the current transformational dynamics. Areas were chosen for their strongly distinctive character which can be attributed to the history of the area and the urban settlements, to the use of the agricultural land, and to the natural materials which are available. The presence of rural architecture which accompanies the use of the area and which defines particular parts of the inland island landscape is common to all the areas studied.

The fieldwork phase allowed the comprehension of the system and the particular dynamics of the inland areas through the extensive observation and subsequent selection, documentation and surveying of a group of buildings, which were representative of both the rural typology and the construction techniques of each island. Finally, the results of the studies of each island were compared while highlighting the inseparable link which runs between the technological solutions and the materials to be found in each area.

The first research trip was essential for the verification of the applicability of the method outlined in the preliminary phase and went to the island of Kea which is the nearest to the mainland (Fig.1). The identification of the zones to be visited was carried out beforehand and in abstraction, and had not taken into account the difficulty of reaching these sites. They are located far away not only from the inhabited centres but also from the main roads which meant following often impassable dirt tracks on foot. However, approaching the buildings on foot permitted an observation of the area’s complex system, which is articulated in a network of paths designed for labourers and the agricultural settlements.

Fig.1 - The study-travel map in Cyclades and the pedestrian itinerary in Kea
From a methodological point of view, the experience on the island of Kea also permitted the codifying of the analysis procedures, which were subsequently repeated on the other islands. During the “observational walks” every settlement was located on the map of the area and documented using photographs, field sketches, and - for buildings which were safely accessible - geometric surveys. This first exploratory level was followed by a more in-depth reworking of the data gathered on a number of representative buildings in order to describe the comprehensive spatial organisation of the agricultural settlement and its construction technique.

3. The landscape and the rural settlement
The categorisation at the territorial scale was the first fact-finding aim of the extensive inspections and was designed to aid an understanding of the role that the rural settlements play in the general organisation of the inland area. In a subsequent phase, the investigation was concentrated at the scale of the rural settlement and the details of the single buildings that constitute the property.

3.1. Connection elements of the “inland system”: the paths
The aforementioned system of territorial organisation is made up of various objects which are spread over the inland area and connected by a network of hierarchically organised paths. The main roads (dromos) follow the contour lines and are larger, covered in asphalt and so accessible to vehicles. This road network connects the coastal and inland urban centres and in particular links the most important island towns and the ports. Smaller, often sloping roads (stenes, or rymes on Mykonos) go from the dromos to the cultivated terraces and connect the rural settlements located on the slopes below the dromos. The stenes are often pedestrian and are characterised by a surface of stone slabs which in some cases are accessible only with difficulty in the winter months because they are covered with vegetation. Apart from crossing the terraces, these paths link the various buildings or sites, such as fountains, cemeteries suspended on the slopes and archaeological digs, which are spread over the area. Direct observation highlighted that this system of pathways is essential to the survival of the content of the inland area and clarified at the same time that the recovery of these areas must begin with this very system of connections (Fig.2).

3.2. Characteristics of the rural settlements
The choice of the construction site was a crucial operation. Ventilation and proximity to springs or sources of water were prime necessities and moreover, a hidden position was preferred in order to escape the attention of predators; this attention to location was found in the observed settlements which are generally located on slopes with the residential buildings consistently orientated in the same direction. The decision to build on a slope often means that the
settlement staddles two or more terraces and that the buildings or their open appurtenances are connected by stone steps built into the retaining walls. This peculiarity was observed, for instance, on the island of Andros, where the rural residences are usually made up of several contiguous masonry walls placed on terraces at different heights (Fig.3).

The family property (kathendra on Kea, chorio on Mykonos) is marked by a dry stone wall enclosure of varying height (90 to 150 cm) which contains as many buildings and accessories as there are functions carried out in the settlement. The main building - the house (katoikia) - is characterised by the
presence of an external appurtenance (avli) marked by low dry stonewalls and paved with stone slabs. This relational space connotes a rural residence and represents an area of respect which distinguishes it from the buildings which are used for productive activities. The internal spatial distribution of the house meets the criteria of the minimum area. For example, on Mykonos, the space for the bed is found in a single room along with the hearth and the alcoves where food is kept. The katoikia on Kea, however, includes a kitchen space (kouzina) and two or more rooms with other functions (kamara). The auxiliary buildings are found separated but within the property line and include the manger, the slaughterhouse, the oven, the well and the little building for cheese ripening. These buildings are similar in their external shape but they are made up of the number of rooms needed for the activity which they house and which meant that, in the construction phase, ad hoc solutions and the necessary tools were arranged.

4. The masonry buildings and the construction techniques

The typology of the rural residence is characteristic of the Cyclades and it often represents the elementary form of island living. The urban groupings on various islands were founded in later periods than the rural settlements and have taken from these settlements construction techniques and grouping models which were then adapted to meet the new context. The stavloi are simpler than the houses and are used, according to the internal fittings, as stables, mangers, warehouses, slaughterhouses, and sometimes grape presses. Rough stone is an element which was common to the architecture observed on the four islands. In fact, the vertical load-bearing elements, sometimes the roofing, and also the fittings of the houses and the ancillary buildings are built of this material. The construction techniques and the assemblage observed in the buildings are closely linked to the material used and the solutions adopted determine both the shape of the whole and the details of the buildings. The following example, one of the katoikie studied on Kea - the house of Kambia - can be considered a typical example of the basic rural house. The construction projection in Figure 4 describes the house and the elements in its composition. The house is located on a slope and is protected from damp from the ground by a separation from the retaining wall. The avli is identified by low dry stone walls which also outline the appurtenance which continues as far as the covered entrance (stegadi). This is designed to protect from the wind and bad weather the access to the two spaces which constitute the house and it is equipped with a stone bench and a corner hearth. The kamara and the kouzina which make up the house are both equipped with alcoves for victuals and utensils and a hearth, though only the kitchen hearth has the kapasos (a jar with no base) which functions as a chimney. The hearths are always located in the corner of the wall opposite the wall with the window to aid in the formation of air currents and the removal of smoke. The masonry walls are characterised by an unusual shape created by a progressive thickening of the internal surface from bottom to top and which is designed to reduce the roof span. On the island of Kea, the roofing is made entirely of stone tiles (dokaria) in a “false dome” formation. The schist elements are 70x120 cm in size and about 10 cm
thick, and rest on ledges (dontia) which are blocked by counterweights (v rackoma) which are in turn topped by stone edges. The stone roofing structure is then covered by rammed earth and arranged in a mound to avoid stagnation and aid the removal of water. Despite the neglect, these buildings do not suffer from any particular structural instability but merely the degradation brought about by a lack of maintenance. This is due to the simplicity and efficiency of the technological solutions which are associated with the small size of the buildings. From the conservatory viewpoint adopted in this research, the widespread and substantial integrity of the buildings is considered a positive factor which today permits their recovery as tangible evidence of the history of these places.

5. The conservation project
The critical interpretation of what we call “needs-based architecture”, which was carried out from the territorial to the architectural scale, showed that the conservation of this architecture should be pursued through projects on a territorial scale which involve the inland parts of the islands. This can be achieved through the creation of incentives for a type of tourism which acts as a complement to that which is found in the coastal areas. This alternative tourism involves the possibility of visiting the area on foot. Many of the paths already in existence (diadromes) could form the basis of an alternative to the vehicular roads; a network of connections which is capable of linking the urban centres, the internal villages and the rural settlements. The pedestrian network can be developed across the whole area allowing greater access than exists today and permitting a journey of discovery of the islands’ heart, landscapes, nature, and the people who still live there permanently. In this context, the project provides an increase in economic development for the

Fig.4 - Sample of construction analysis of the main building of rural settlement (the house of Kambia)
inhabitants who will play the fundamental roles of guides and informal hosts in this system of alternative tourism.

As part of these “rural walks”, the recovered settlements become key elements in the system and are reutilised as structures which support the cross-country itineraries - as, for example, areas outfitted for short breaks or overnight stays. Moreover, the buildings which are used for specific functions, like the oven or the area for the maturation of cheese, could keep their original use and become places which present information on the island customs and promote typical local produce.

The project for the creation of the network of pedestrian paths is articulated at various scales including territorial and architectural. An in-depth analysis was carried out on the island of Kea and can be used as a pilot project which outlines strategies and approach methodologies for the sustainable conservation of the rural heritage (constructed or natural).

This methodology could be proposed on the other islands studied, linking them with a comparable management system of the area. The proposal originates in an idea which the Kea Local Authority had already put forward and which saw an alternative to the mass coastal tourism in the development of pedestrian paths.4

The project starts with a preliminary identification of the paths and the existing traces, and proceeds to highlight places and destinations for the walks (such as archaeological digs, small monuments, beaches, etc.). The subsequent definition of the project lines brought a more in-depth analysis of the aspects which deal with accessibility (with varying levels of difficulty) and the average journey time which finally led to the description of the minimum amount of work necessary to reactivate the “walks” (Fig.5).

The operations deal on the one hand with the actual path, and on the other with the buildings which constitute the hubs and single points. The first, dealing with paths which cross uncontaminated nature for various kilometres,
provide for a minimum of adjustment work on the existing paths and the addition of minimal facilities for refreshment and short breaks. An example of these operations is the design of small bridges, railings, benches for breaks, the completion of the paving, etc. The most important operations are those for the rural settlements – their conservational reutilisation is the prime objective of the project. A number of settlements located strategically along the walking route have been chosen to become guesthouses; in this way, a house can remain generally unchanged from its previous form. The strategic position of these small accommodation facilities has been studied for walks of more than one day or for trips which return to the urban centre in the same day. These latter entail structures designed for breaks which last a few hours with the possibility of using the necessary facilities. A number of the buildings can also be used for exhibitions and as small halls which document the area and the use of those same rural settlements. This last function can, in some cases, coexist with the main use. Finally, the project combines the activation of these tourist paths with the recovery of a number of rural settlements as permanent residences which link inhabitation to the regeneration of the original productive activity and thereby generate a system which is diversified and positively committed to the tutelage of the area.

6. Conclusions
The Cyclades were a good area of study because of their “double face”: the opposition between the coastal zones where reinforced concrete is inexorably swallowing the traditional settlements around the ports, and the audacious inland areas which are often tough to access and which are trying to preserve the precious evidence of the traditional architecture - the small villages or rural houses which were our object of study.

According to the territorial analysis, this double face corresponds to two transformational speeds on the islands which were studied. On one hand, the fast areas are rapidly and inexorably losing their original characteristics in favour of “mimetic” settlements and architecture. On the other hand, the slow inland areas of the islands, which are mostly abandoned and neglected, have kept (maybe thanks to that very ‘problem’) their idiosyncrasies outside the orbit of speculation. This kind of conservation from irreversible transformations permits the imagining of a project of “conservation through change” through the reappropriation of these slow areas, which are still intact today because of this slow nature.

Following the exploratory analysis, it is clear that the process of abandonment must be stopped by a revaluation of the natural resources and the architectural heritage through a project of territorial importance. The project proposal which follows the research is just such a project: the revaluation originates in the vast scale of the pedestrian paths, which manage and connect the elements in the area, and it continues through the conservation of the buildings by assigning new but compatible functions.

Notes
1 Part of the research on Cyclades Island are included in Final Degree Thesis of C.

2 It can be noted that very different dynamic economical trends are going on; a massive tourism also tied to religious scope (Mikonos and Tinos) and a niche tourism linked to local resources of the territories (Kea and Andros).


4 The existing Map of pedestrian path of Kea (Kea Municipality, 2008) helped to start the on field analysis in the first step of the research and it was also included in the project phase.

References
Carocci C.F., 2008, Conoscere per abitare. Un seminario di studio a Motta Camastra, Siracusa.