

INFOLIO 40

RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTI E PIANIFICAZIONE
DELL'UNIVERSITÀ DEGLI STUDI DI PALERMO - DIPARTIMENTO DI ARCHITETTURA

INNER AREAS

INFOLIO

RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTI E PIANIFICAZIONE

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**DIPARTIMENTO
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**DOTTORATO DI RICERCA
IN ARCHITETTURA,
ARTI E PIANIFICAZIONE**
DIPARTIMENTO
DI ARCHITETTURA DI PALERMO

La Rivista

In folio è la rivista scientifica di Architettura, Design, Urbanistica, Storia e Tecnologia che dal 1994 viene pubblicata grazie all'impegno dei dottori e dei dottorandi di ricerca del Dipartimento di Architettura (D'ARCH) dell'Università di Palermo (UNIPA).

La rivista, che si propone come spazio di dialogo e di incontro rivolto soprattutto ai giovani ricercatori, è stata inserita dall'ANVUR all'interno dell'elenco delle riviste scientifiche dell'Area 08 con il codice ISSN 1828-2482. Ogni numero della rivista è organizzato in cinque sezioni di cui la prima è dedicata al tema selezionato dalla redazione della rivista, mentre le altre sezioni sono dedicate all'attività di ricerca in senso più ampio. Tutti i contributi della sezione tematica sono sottoposti a un processo di *double-blind peer review*.

Per questo numero il tema selezionato è:

"Inner Areas"

Inner areas, as defined in the Italy's National Strategy (SNAI), are part of the territory that plays a central role in the cultural and social fabric of our communities, are an essential component of our society, economy, and environment. However, they are still often neglected and overlooked, resulting in deterioration, abandonment, and social exclusion. For this reason, it is crucial that the fields of architecture, restoration and architectural history and urban and territorial planning are committed to revitalizing and enhancing inner areas. These disciplines have the knowledge, skills, and tools necessary to create sustainable and innovative solutions that can transform these territories into vibrant and liveable communities. Moreover, inner areas are an excellent laboratory for innovation in these disciplines. These areas provide a unique opportunity to experiment with new approaches and techniques that can then be applied to larger-scale urban and territorial planning projects. The challenges posed by inner areas require innovative thinking and creative solutions, making them an ideal testing ground for new ways. The papers presented in this special issue of *Infolio* are the result of the conference "Inner areas' cultural, architectural and landscape heritage: study, enhancement and fruition. Potential driver for sustainable territorial development?" held in July 2022 at the University of Palermo. The conference brought together experts in the fields of architecture, restoration, and urban planning to discuss the central role of inner areas in our society and the need for innovative and sustainable solutions to revitalize and preserve them, being sometimes critical and some other prepositive. The papers explore a range of topics, including the use of technology in restoration, the importance of architectural history in urban planning and the role of

community engagement in revitalization projects.

The reflections that emerged at the conference highlighted how inner areas are a crucial part of our territory and society, and their revitalization is essential for the well-being of our entire community and the preservation of our cultural heritage.

DOTTORATO IN ARCHITETTURA, ARTI E PIANIFICAZIONE (XXIX-XXXVII CICLO)

Coordinatore del Dottorato: Marco Rosario Nobile

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Docenti stranieri

Beatriz Blasco Esquivias, José Calvo Lopez, Javier Ybanes Fernandez, Vincenzina La Spina, Jorg Schroder, Jordi Bellmunt, Yolanda Gil Saura, Pablo Martí, Andrés Martínez Medina, Enrique Nieto, Manuel Alejandro Rodenas Lopez, Adrian Iancu, Ionut Julean, Virgil Pop, Cristina Purcar, Vlad Rusu, Dana Vais, Alex Deffner, Konstantinos Lalenis, Pantelis Skayannis, Alfonso Senatore.

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Opening image: Quarry wall.

Inland areas between description and transformation. The case of the disused quarries on the island of Favignana

Architectural Heritage & Design

Giuseppe Marsala, Pasquale Mei

The Municipality of Favignana is registered in the List of Municipalities of the 'Inland Areas' drawn up by the 'Agenzia per la Coesione Territoriale'¹. It is an island in Sicily and belongs to the inter-municipal pole of the city of Trapani. Its municipal territory is spread over the three islands of the Egadi archipelago and therefore also includes the islands of Levanzo and Marettimo. It is classified under category 'E' indicating 'peripheral territory' [Fig. 1]. As is the case for many of the Italian islands included in the same census, the Egadi archipelago lives its meaning of periphery both in terms of geographical position and, above all, condition. External to the territory of Sicily, and separated from it by the sea, it is in fact an area that has undergone a gradual process of marginalisation over the years, the result of a growing depopulation of its indigenous population, its ageing and the quantitative and qualitative inadequacy of essential services. The drop in births and the demographic index has also resulted in the weakening of the educational offer, forcing the few young people of school age to emigrate to the Trapani inter-municipal pole to access school services. The same applies to health services and dependence on tanker service for water supply. This particular condition of marginality is also linked to its distance from the mainland, which also makes the connections, to date guaranteed exclusively by sea, unstable, favouring the ever-increasing abandonment of the archipelago by its inhabitants. This ongoing process produces a phenomenon of marginalisation that does not guarantee a fair distribution of the wealth accumulated during the summer season, limiting a sustainable and cohesive growth of its social fabric. Within this context, therefore, the riches of its historical and environmental heritage and its material culture have long been compromised and traversed by phenomena of physical degradation that respond to an overall impoverishment, both cultural and social, of its territory. The research illustrated in this essay has as its objective the valorisation of its territorial resources within the strategic framework of a landscape and environmental reconversion of its heritage of disused quarries.

Keywords: Egadi Islands, Favignana, Quarries, Transformation, Sustainable development

Favignana between geography and history

Favignana, in Sicilian *Faugnana*, is the largest of the islands belonging to the Egadi archipelago in Sicily [G. Scarcella, 1977]. It lies about 7 km off the west coast of Sicily, between Trapani and Marsala, and is the seat of the Egadi Islands Municipality [Fig. 2]. Favignana's current name, formerly Favognana, derives from the Latin *favonius* - Favonio -, a term used by the Romans to indicate the warm wind from the south-west, which determined its mild climate during the winter season. Its inhabited centre rises around a natural inlet where the harbour is structured, on the banks of which are the buildings of

the old Florio tuna-fishing nets [Fig. 3]. The island's architecture is characterised by regular, stereometric volumes, with small windows strategically placed in the direction of the winds and to protect the dazzling Mediterranean light, and is all made of calcarenite stone quarried directly in its territory [G. Marsala, 2021]. The island is home to typical Mediterranean scrub and its vegetation consists mainly of bushy shrubs: oleaster, lentisk, carob, euphorbia and sumac. There are some interesting endemisms such as the sea cabbage (*Brassica macrocarpa*), the maritime flower (*Calendula maritima*) and the Boccone fennel (*Seseli bocconi*). The vegetation is completed with Mediterranean pine forests that have been the



Fig. 1. Map of the internal areas of Italy (UVAL-UVER elaboration on Ministry of Health, Ministry of Education and FS data)

subject of a reforestation campaign carried out since the 1950s². The island has an area of around 19 km² and a coastline of 33 km that is indented and rich in caves and grottoes. In ancient times, Favignana's name was Egusa - *Aegusa* for the Latins -, from the Greek Aigousa - *Αἰγούσα*, meaning 'having goats', due to their abundance on the island. It was also known by other names such as *Aponiana*, *Katria*, *Gilia* and is mentioned by numerous writers, including Pliny, Polybius, Nepotian and the anonymous Ravennate. By Arab geographers, it was known by the name *Djazirat 'ar Rahib* - 'island of the monk' or 'of the hermit' -, because a castle from the Norman era, the so-called Castle of St Catherine, is located on the island, where a monk is said to have lived. The painter Salvatore Fiume called it a 'butterfly on the sea' because of its morphological configuration. The island is criss-crossed from north to south by a mountain ridge whose highest peak is Mount Santa Caterina, 314 metres. Two other peaks are Punta della Campana, 296 metres high, and Punta Grossa, 252 metres. On the southern side are the islets Preveto, Galera and Galeotta, little more than rocks. Human presence in Favignana dates back to the Upper Palaeolithic; traces of ancient human settlements can be found mainly in the Faraglione and Pozzo caves in the San Nicola area. The Phoenicians settled in Favignana from the 8th century B.C. until the year

241 B.C. when the Roman army led by Gaius Lutazio Catulo routed the Carthaginian fleet in the final battle of the First Punic War, known as the Battle of the Egadi Islands, in which Sicily was definitively annexed to Rome. After the collapse of the Roman Empire, the islands fell into the hands of the Vandals and Goths and later the Saracens. In 1081, the Normans, under the rule of Ruggero d'Altavilla, built a village and mighty fortifications there: Fort San Giacomo, and that of Santa Caterina, at the top of the mountain. It then followed the fate of Sicily until the 16th century, passed under the Bourbons [F. Maurici, 1999]. and became, together with the entire archipelago, the property of the Pallavicini-Rusconi family of Genoa and then, in 1874, of the Florios, who strengthened the island's tuna fisheries. From the Bourbon period until Fascism, the island was used by the government mainly as a prison and place of confinement for political opponents³. During the Second World War, the island was equipped along the coast, given its strategic position, with an impressive network of casemates and military fortifications, most of which are still preserved today. Favignana, since the time of Roman rule, has been the quarrying site of calcarenite used for the construction of houses not only on the island, but also of public and sacred buildings throughout much of the southern territory of the Roman Empire. Mining was an important

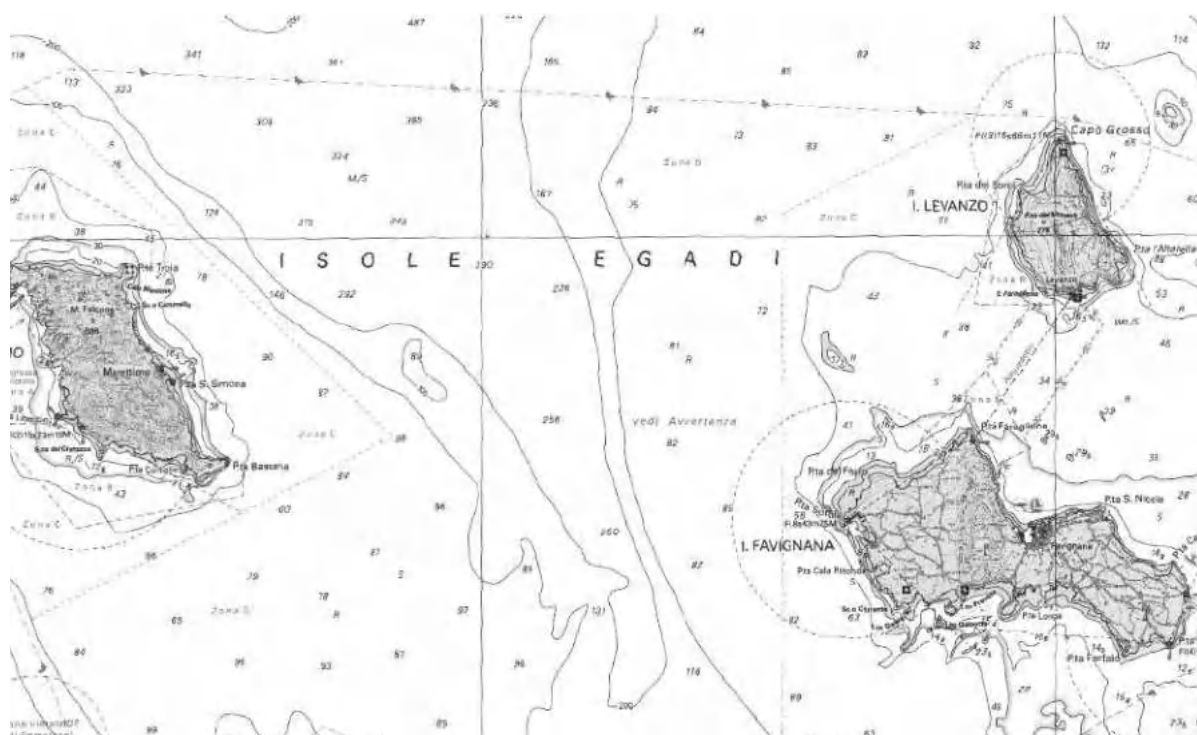


Fig. 2. Bathymetry of the archipelago of the Egadi Islands (<https://egadi.wordpress.com/area-marina/cartografia-nautica-isole-egadi/>)

economic source for the inhabitants, and strongly influenced the eastern part of the island, with its peculiar moats, gorges and caves, some of which have now been transformed by private citizens into picturesque vegetable gardens, gardens and dwellings. Another economic source on the island of Favignana is tuna fishing [V. Consolo, 1986], which found its main focus in the Tonnara dello Stabilimento Florio⁴ for the processing and distribution of the catch. With the construction of the plant, the renewed impetus given to the fishing and marketing of bluefin tuna, on the main domestic and foreign markets, was amply rewarded with success, both in terms of image and profit. And even when, in the early decades of the 20th century, what had been Sicily's most important industrial and financial group went bankrupt, the Florio factory remained fully productive, passing, in the early 1930s, first among the companies owned by IRI, and in 1938 into the hands of the Genoese entrepreneurs Giovan Battista and Vittorio Parodi. In 1985, the management of the business was entrusted to Trapani entrepreneur Nino Castiglione, owner of a canning industry. In 1991, the factory was acquired by the Sicilian Region, which began major restoration work entrusted to the Trapani Superintendency for Cultural and Environmental

Heritage and completed in 2010. Today, the factory is an important cultural centre whose potential, however, remains partly unexpressed.

Favignana and its economies

In the face of a significant history that has seen the island as the epicentre of the Mediterranean and its trade and cultural routes [F. Braudel, 1987], Favignana is today experiencing a phase of crisis - economic, social and identity - if we make an exception for tourism, the activities of which, however, are affected by an imbalance that is discussed later in this paper and which the research also takes as data to be elaborated for a hypothesis of the island's regeneration. While today, in fact, the island lives mainly on tourism, until a few decades ago Favignana counted on a number of flourishing activities that characterised both the economy of its community and its social identity. These certainly included tuna fishing and the extraction of tuffaceous calcarenite for construction. Both of these activities, now abandoned, constituted over the centuries an economic wealth of knowledge and trades that ensured the subsistence of the favignanesi community over time and its identification with those trades. Tuna fishing, in particular, experienced a flourishing season in

the Florio era, between the late 19th and mid-20th century, which made Favignana one of the most important European centres in that sector, to which the extraordinary architecture of the Florio factory bears vivid witness. Recently, a number of policies supporting the archipelago have been moving in the direction of re-establishing tuna fishing for productive purposes and not just for tourism, as was the case in more recent times. The same can be said for calcarenite quarrying, a widespread and capillary activity throughout the island's lowlands that saw its closure around the 1960s. Present since Roman times, this activity constituted for centuries a strong boost to employment and a flourishing economy that provided raw material for the construction of the architecture of many Sicilian cities. Its decommissioning, linked to the transformation of construction production cycles, today raises the issue of reading, interpreting and re-introducing into the island's metabolism a heritage equivalent to 25% of Favignana's territory. Maria Guccione, a connoisseur of the island's history and culture, writes: 'There is a parallelism between calcarenite and tuna. Both are 'extracted', one from the land the other from the sea. Both have very distant origins rooted in the mists of time. Suffice it to recall Homer who, in the 9th century B.C., describing the precision with which Ulysses struck the Proci, demonstrated his knowledge of these fish by stating that the hero «killed them as if they were tuna», which are known to be harpooned one at a time. But even before that, men had sought shelter by digging caves in the soft, malleable stone of the island in prehistoric times. And when nets were lowered to prepare for tuna fishing, they were anchored to the bottom not only by anchors but also by tuff ashlar known as *rusazze*. These were well-squared ashlar that, instead of being thrown away as waste, were given each year to the *tonnara*, which used a few hundred of them to ballast its underwater architecture. Tuna and calcarenite: a constant in the life of the people of Favignanesi'⁵. The role of tourism is particularly important in contemporary Favignana. The seasonal nature of this economy, however, makes this area a lung that is too full in the summer months and too empty in the remaining months, when the residual, meagre, resident population does not experience an active economic and social cycle. In fact, there is a vertiginous increase in the population, which from June to September rises from 1,500 residents to peaks of even 60,000 throughout the archipelago -



Fig. 3. Tonnara of the Florio establishment.



Fig. 4. Cala Rossa beach.

with an obvious insufficiency of services to receive the massive and concentrated presence in just three months. This condition is today accentuated by an absence of complementary activities that would allow, on the one hand, the deseasonalisation of the tourism economy; and on the other, to guarantee the repopulation of the community even in months other than the summer months. The Quarry Island research⁶ identified the disused quarry basins as a strategic resource on which to focus for an economic, social, landscape and environmental regeneration of the island.

Favignana and its Quarries

The system of quarries on the island of Favignana defines a veritable palimpsest of the territory⁷. They draw on the soil, signs, traces and shadows, each time of different intensity in relation to the depth of



Fig. 5. Quarry model.

the excavation [T. La Rocca, 1995]. In addition to the type of quarries defined as “open-cut”, there are also “underground” quarries obtained using the “ingrottamento” technique. In the latter, excavation took place horizontally, laterally to the rock face in order to build galleries capable of reaching the deepest parts where more valuable calcarenite characterised by greater compactness and therefore solidity could be found. Often the tunnels excavated, as in the case of Scalo Cavallo, faced directly onto the sea, so as to facilitate the loading of stone material to be transported on boats to reach its destination. This last type of quarry, defined hypogean, constructed labyrinthine architecture defined as ‘pileri’, in which large masses were left as pillars to support the rocky vaults⁸. A dark spatiality typical of the underground world, which recalls the narrative of the ‘underworld’, counterpointed by clearings illuminated by zenithal light called ‘puzzu lumi’, i.e. small holes dug in the open sky from which excavation operations could begin according to the technique of ‘ingrottamento’. This set of figures subtracted from the earth have over the long term defined a geographical region ‘Khora’ of the island of Favignana and imprinted its ‘Topos’.

Favignana island of water

Below the deepest quarries, at a depth of about 30 metres, the underground water table is intercepted. A natural resource of fresh water, which over time has allowed the island’s inhabitants, more than three thousand⁹, to be self-sufficient for their water needs. Today, however, this condition of self-sufficiency of the population is only guaranteed for a certain period of the year, excluding the summer, putting the island’s conditions for living sustainably with its resources at great risk. In addition to the described tourist factor of being the preferred destination of the smaller Mediterranean islands, there are also the particular consequences of climate change. It is against this backdrop that an ENEA research group has developed a multidisciplinary methodology that has made it possible to quantify the potential water reserves of the aquifers in the eastern part of the island, toponymously referred to as the ‘Piana’. The area is strongly characterised by the presence of disused quarries beneath which lies the shallowest aquifer, where the water is not contaminated by salty sea water, unlike the deeper aquifer in the western part of the island beyond Monte Santa Caterina. The special geological conditions still allow the water needs of the island’s inhabitants to be met. In fact,

the underground waters are still today, as in the past, pumped up through wells that dot the ground, each as a stronghold of every single agricultural property. A natural water supply system capable of satisfying, while respecting the island's natural ecosystem, some 20,000 inhabitants on a daily basis [Fig. 4]. This delicate natural system, unfortunately, now risks being put in crisis by the impact of climate change, which involves the Mediterranean Basin, with significant variations not only in temperatures but also in rainfall, with consequent repercussions in terms of the availability of water resources. In fact, a study published in *Nature Climate Change* in 2018 reveals that in the entire Mediterranean Sea, temperatures have increased by 1.4 °C and a reduction in summer rainfall estimated at up to 30%.

Favignana's quarries as counterform of geographical space

The quarries on the island of Favignana can be described as solids, according to a procedure of abstraction that reverses the relationship between void and full. The assumption is to define a possible counter-form of the quarries [Fig. 5], in which the excavated volume can be understood as a full, according to the Cartesian definition of void. But the quarries on the island of Favignana, in addition to being a tangible geographical condition from a spatial point of view, now constitute a true cultural heritage in the collective imagination of the population. The system of disused

quarries represents a potential resource available for the definition and construction of future scenarios for the island. The expedient of the counterform finds clear references in the history of architecture to a particular and precise season of studies conducted, in the last century, by Luigi Moretti and applied to the modelling of certain historical works - churches, monuments, etc.. - and also to the critical and historiographical readings of Bruno Zevi. A fortunate and internationally recognised season of Italian architecture. According to Moretti's assumption, the emptiness of Favignana's quarries can be conceptually transported as masses of volumes, capable of relating to the elements and parts of the island's body - coastline, farmland enclosures, mesh of road connections, promontories, etc. The description of the counter-form of the quarries on the island of Favignana makes it possible to transform the void inherited from stone quarrying into a resource understood as an asset to be reused in a sustainable manner, and no longer as a criticality.

Quarry Island. A research for the landscape and environmental transition of Favignana

The study adopted disused quarry basins as a field of prospective investigation, looking at them as a potential resource for environmental, landscape, economic and social reconversion. It aims to describe these endogenous resources and reinvent them for their valorisation. In doing so, it also looks at the transformations taking place on the planet, the



Fig. 6. Agenda 2030. Goals for sustainable development (from: <https://www.agenziacoesione.gov.it/comunicazione/agenda-2030-per-lo-sviluppo-sostenibile/>).

crisis due to climate change, global warming and the particular condition that the Mediterranean coastal areas present in relation to this issue. It has in the rise of sea water one of its major aspects and the ENEA research centre estimates that, in the absence of mitigation policies, by the end of the 21st century the land on the Italian coast at risk of flooding will amount to approximately 5,686.4 square kilometres, equal to the entire surface area of Liguria. The research, therefore, intends to convert disused quarries from a place of waste into an environmental resource and its focus adopts the United Nations 2030 [Fig. 6] Agenda as the horizon for a valorisation of the area of the entire archipelago, within a design guideline aimed at starting the ecological transition and securing the planet and its resources.

The research project, Quarry Island, identified five horizons for a semantic re-signification of the disused quarry sites and their regeneration from new forms of need. Just as quarried stone has for centuries condensed the economy, sustainability and self-sufficiency of a community, putting it in relation with the world beyond itself - today the world seems to suggest five landscapes to Favignana for its near future. Five landscapes that correspond to as many themes of the United Nations 2030 Agenda. Quarry Island has thus given rise to a workshop of projects that have made some prefigurations starting from the five themes outlined above. Scenarios of a possible future in which quarries assume a strategic centrality for the environmental conversion of the island. By adopting a sample quarry, understood as the genome matrix of the island's landscape (C. Ravagnati, 2018), the projects are configured as variations on the genome and measure its future possibilities of use.

They are:

- *Agriculture Scape/New Farm.*

It concerns the use of quarries for proximity agriculture and social self-sufficiency, partly experimented during the pandemic crisis by the island community.

- *Water Scape/New Sea and New Basins.*

Concerns the use of quarries for the supply of groundwater and sea water as endogenous resources to be developed as new basins for irrigation and artificial bathing.

- *Energy Scape/New Garden.*

Quarries as energy gardens and climate crisis mitigation devices

- *Waste Scape/New Ecology, Compost and Phytodepuration.*

Quarries as basins for composting and phytodepuration, also understood as a reduction of the current costs for transporting and storing waste on land.

- *Cultural Scape/New Public Space.*

Quarries as squares, agora, museums en plein air and public spaces for culture and live performance.

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Notes

1. Data available on the Agenzia per la Coesione Territoriale website, <https://www.agenziacoesione.gov.it/strategia-nazionale-aree-interne/la-selezione-delle-aree/> (last accessed 12/01/2023).
2. A study on the vegetation of the Egadi Islands reports around 570 species in Favignana. It has been part of the Egadi Islands nature reserve since 1991.
3. During the Bourbon period, the Mazzinian Giovanni Nicotera, who was later freed by the Garibaldini after the landing of the Thousand, was imprisoned in the Santa Caterina pit
4. The building, with its 32,000 square metres, three quarters of which are covered, is one of the largest tuna fisheries in the Mediterranean. The factory was leased by the Florio family in 1841 from the Pallavicini family of Genoa. The islands of Favignana and Formica were purchased and fishing rights were acquired in 1874 by Ignazio Florio, who entrusted the work of enlarging and renovating the tuna fishery to the architect Giuseppe Damiani Almeyda, building the tuna storage facility.
5. Report presented on the occasion of Dr. Maria Guccione's speech at the W.A.Ve 2021, IUAV of Venice.
6. The research, conducted through several scientific fields, conferences, workshops and publications, was awarded by the International Jury of the W.A.Ve 2021 IUAV for the Bachelor section; and was presented at the Architectural Association School of Architecture of London; at Le Vie del Mediterraneo MedWays - Accademia Nazionale dei Lincei in Rome, and at the Uniscape 2021 International Conference in Florence.
7. In the eastern part of the island, bounded by the urban centre in the west to the sea ox beach in the east, the surface of the quarries reaches an extension equal to one fifth of its surface. A ground marked, after having freed it from the so-called 'cappellaccio', i.e. the layer of the first 1 or 2 metres of non-usable stone, by incisions, excavations, caverns and caves that the skilful quarrymen with their labourers drew on the ground, defining a veritable architecture of absence
8. The stone ashlar, perfectly squared, were extracted by local 'pirriatura' stone cutters, measuring 25x25x50 cm.
9. Currently, the island of Favignana has 3,407 residents, while the entire archipelago (including the islands of Levanzo and Marettimo) has 4,314 residents. ISTAT figure updated to 2017.

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**DIPARTIMENTO
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**DOTTORATO DI RICERCA
IN ARCHITETTURA,
ARTI E PIANIFICAZIONE**
DIPARTIMENTO
DI ARCHITETTURA DI PALERMO

RIVISTA DEL DOTTORATO IN ARCHITETTURA, ARTI E PIANIFICAZIONE DELL'UNIVERSITÀ DEGLI STUDI DI PALERMO – DIPARTIMENTO DI ARCHITETTURA

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