

ARTURO GALLIA

ORGANIZATION OF THE INSULAR SPACE:
TERRITORIALISATION PROCESSES, SEDIMENTATION AND PERSISTENCE
OF WATER KNOWLEDGE IN THE ISLAND OF PONZA
FROM THE ROMAN AGE TO TODAY

Premise. – The history of the Island of Ponza is based on the alternation of population and depopulation processes during the time and they are in the main demographic context of the Italian tyrrhenian coast, especially the southern part of Lazio and the north of Campania. Here there have been intense populating phases alternate with periods when there was «a boost demographic rarefaction» (Moretti, 2003, p. 97). This last, in particular, has often caused by «obstacles of a political-military nature» (*ibidem*), as pirate raids, started till the end of VII century, and the incursions of armed fleets in the following centuries. The insular populations, also, have not been able to take advantage of trade and interdependence relationships built over time between the coastal populations and those of the first inland, that allowed them structuring an integrated economic system, able to balance the resources – human and natural – even during periods of difficulty (*ibidem*, p. 99).

In this paper we aim to highlight the territorialisation process into the Island of Ponza developed during centuries and the sedimentations still remained constantly until today. Especially Roman era original ways of organization of the small and limited insular space are analysed and the transformation produced, and more over their influence on settlements of XVIII century («new» territorialisation) and of nowadays (re-territorialisation)¹. Finally, the view will be focused on a specifically dynamic of the territorialisation process, the water collecting systems, trying to understand how they influenced on settlements during the times. Hydraulic works were projected and built where were roman settlements, and borbonic settlements were established where were the roman survived hydraulic works.

The Roman era: the «first» territorialisation. – In the evolution of population and depopulation processes interesting Tyrrhenian coast also the islands of Ponza Archipelago² were inhabited yet from prehistoric and preroman populations (De Fiore, 1920; De Fiore, 1921; Apollonj Ghatti, 1968; Ceruleo, 2003; Ceruleo, 2007), but until Phoenicians there weren't permanent colonies. The first colony was that founded by Volsci on V century B.C., and Romans were established in Ponza and Ventotene from IV century B.C.³. The principal bay of Ponza, where today is the main port, is surrounded by other places (Sant'Antonio, Giancos and Santa Maria) and is well protected to the principal winds. Near there is the highest point of the island, from where it's possible to have a 360° panorama, and the thinner part (about 500 meters), where it's possible to connect the main harbour to another bay facing the West, Chiaia di Luna, used as secondary port during roman era. More over, the bay of Santa Maria, deeper than today, hosted ships protecting them by eastern winds. In these areas Romans founded

¹ Keeping in mind Claude Raffestin's TDR model (1980; 1984) and the suggestions proposed by Angelo Turco (2012), a deep and long term analysis shows its necessary put some modifications to the model to be applied to this case study. The TDR process can be applied here for the period between XVIII and XIX century, with the reterritorialisation phase still in progress. This application is useless if it doesn't consider the roman phase (IV century B.C.-IV century A.D.), which the sedimentation influenced on the territorialisation phase (or «new» territorialisation). It's not possible to consider deeply these modification, see Gallia, 2013a.

² In Italian there's no accordance for the use of term *Arcipelago Ponziano* instead of *Arcipelago Pontino*. IGM maps use the first one, and so it is used in Italian version of this paper.

³ Tito Livio said Romans got Ponza from the Volsci on 312 B.C. (Tito Livio, *Ab urbe condita*, IX, 28; Baldacci, 1954, p. 56; Apollonj Ghatti, 1968, p. 33). The Roman presence on the island was important, first of all for Roman maritime expansion and to control the commercial routes (Apollonj Ghatti, 1968, p. 34; Stella, 1930).

settlements and three ports (fig. 1): on the west coast, the port of «Diva Luna», where today there is Chiaia di Luna beach; on the east coast, the port of «Venus», where there is the actual port, and the port of «Circe», in the bay of Santa Maria (Dies, 1950, p. 33).

The Roman presence was important for the development of the islands, which soon reached a high degree of prosperity and a great reputation: they – as Strabo said – «though small, are well peopled» (Strabo, *Geography*, V, 6). Indeed they became one of the favourite holiday destinations of Romans patricians, who built several architectonical structures⁴, classified in five typologies: «villas, cisterns, aqueduct, tunnels, sepulchres» (Apollonj Ghetti, 1968, p. 47). Three tunnels were dug in the rock, two of them on the «Circea» road linking the ports of «Venus» and of «Circe»; the third between the main harbour and the port of «Diva Luna», used until few years ago as pedestrian tunnel to access to Chiaia di Luna beach. Near the settlements were built luxurious villas (fig. 2), and three are localised and partially excavated in Santa Maria, Sant'Antonio and on the cape of «Madonna», where today there is the municipal cemetery. The third one, placed «in a wonderful position, occupied the long and tight southern promontory of the island [...], which it extend as a long arc from the Borbonic tower» (Amici, Bevilacqua and De Rossi, 1986, p. 84).

Forms of water supply. – Some of the roman architectural structures were built to promote the food and water supply without having to constantly import goods from the mainland. Food supply was guaranteed by a fishpond, built under the villa of «Madonna»⁵. To promote irrigation and cultivation of the hills⁶, a dam collected about 10-15.000 m³ of water in the area above Giancos (Lombardi, 1996, p. 57)⁷.

About water supply, two typologies of structures were found: one aqueduct and several cisterns. The cisterns collected rainwater, and the aqueduct got that from a natural spring in the area of Le Forma, in a place called «Fontana Tagliamonte»⁸ (literally, «cut-the-mount fountain»). From there, the water was conveyed to Cala Inferno and then to the southern part of the island along the eastern coast, in a tunnel dug in the rock and partially visible today⁹. In the end, the water was collected in a wide tank in Santa Maria (Amici, Bevilacqua and De Rossi, 1986, pp. 57-60 and pp. 61-62; Lombardi, 1996, pp. 11-28). Smaller tanks were located near villas and houses, and their localization could let understand, today, which were the ancient settlements areas.

Similar to the tanks were cisterns: they were located above populated areas and were filled through the collection of meteoric precipitation¹⁰. Cisterns were grouped in cluster of four, in the area of the port and in the surrounding areas of Sant'Antonio, Scotti and Dragonara; a fifth group was in Santa Maria. There were «four systems of linked cisterns [...]». In everyone the overflow of the highest cistern pours water into the lower cisterns» (Lombardi, 1996, p. 31). These systems permitted to bring a lot of water to the structures of the port without having enormous cisterns, with a difficult and a high cost of maintenance (*ibidem*, p. 39).

Sedimentation and persistence of hydraulic knowledge during times. – With the decadence of Roman Empire, decreased the control of peripheries and, although the islands were on Tyrrhenian commercial routes, the garrison of Ponza was gradually abandoned and in the V century it passed under Byzantium, that «considered opportune control them, for the rest of fleet at the borders of Italy» (Tricoli, 1855, p. 123). The byzantine presence wasn't steady during years and several naval raids struck the islands, that remained depopulated until XVIII century¹¹.

⁴ On archaeological studies on Ponza, see Maiuri (1926); Amici, Bevilacqua and De Rossi (1986).

⁵ The fishpond, called *Grotte di Pilato* («Pilato's caves»), was composed by five pools, excavated in the rocks and connected through channels to change water and fishes (Amici, Bevilacqua and De Rossi, 1986, p. 91).

⁶ Today insular landscape it's characterised by terraced hills, to allow the cultivation of all lands of the islands and to grant the hydrogeological stability thanks to «parracine» and «catene» (Riggio, 2006).

⁷ The absence of maintenance lets the basin covered of stones and earth, creating a fertile valley and hiding the dam.

⁸ Literally, it could be translated «cut-the-mount fountain», but Tagliamonte is also a family surname of some inhabitants of the island.

⁹ Recently 65 points are individuated on the coast where it's possible to see the aqueduct (Lombardi, 1996, p. 11).

¹⁰ Only one is on external position and used to irrigate lands and not for houses (Amici, Bevilacqua and De Rossi, 1986, p. 61).

¹¹ On non-permanent settlements during medieval and modern era, see Tricoli (1855); Apollonj Ghetti (1968); De Rossi (1986).

During these centuries, hydric availability was granted collecting water by cisterns and digging new wells, used «up few years ago» (Lombardi, 1996, p. 39). There is the sedimentation of roman water knowledge and its persistence during all Modern era and, at same time, a process of new sedimentation by the few inhabitants. Several archival sources (texts and maps) attest the presence of hydraulic structure implemented from XVI century.

A well, called «of the Commandant» (*Comandante*), is behind the Municipal palace and its presence is documented by the *Consulta della Regia Camera* of 1572¹² and by the Winspeare's project of new port (Winspeare, 1768). Another well in Santa Maria was used until 1960s by population; and a third one is into the rural church of the «Madonna della Civita», filled by water seeping from the slopes of Mount Guardia. «Light and diuretic waters» (Tricoli, 1855, p. 63) flowed from the springs in Le Forna, until on 1970s the mine exploited them. Finally, a XVI century manuscript map shows some «enormous cisterns» of «really perfect water» and two wells dug by Turks of sweet water» (*Progetto...*, 1589) (fig. 3), and a early XVIII century report attests that in the island of Ponza there was so much water that «all vessels passing there supplied water» (*Estima ...*, 1715).

The «new» territorialisation process. – From 1734 the new king of Naples, Charles III, promoted the population of Ponza; new inhabitants settled where they found the best condition to¹³. Some of them found a shelter in caves, others accommodated into the old roman cisterns. Generally, they occupied the places where Romans settled and especially in Scotti, Dragonara, Guarini and Santa Maria, the same places where there were the systems of grouped cisterns. From contemporary witnesses, it's possible to know how new inhabitants could understand and absorbed the persistence of roman hydric knowledge, as in a report and two maps of 1766 made by Agostino Grasso, appointed to carry out a survey of the island: in several points are identified cisterns, wells, pools and *pantani*¹⁴.

In the following decades, the consolidation of settlements, the new port and the foundation of new urban core strongly influenced new houses and, at the same time, the hydraulic structures. The centralization of the inhabitants led to the abandonment of the furthest structure and to the transformation of those closest and the creation of new system to collect water. These joined local and historical water knowledge and exogenous ones imported from mainland during XVIII century population processes.

Cisterns were no more used as shelter, but they were restored to their original use, and new «deep cisterns were excavated in those rocks» (Tricoli, 1855, p. 63) close to the houses. Water was collected by the rooftop of the houses, built inclined or domed¹⁵ (fig. 4). This building typology is used still today, but sometimes cisterns are converted as rooms to let during summer.

Today hydric availability is granted bringing water by ship from mainland and conveying that into the municipal aqueduct, consisting of several tanks and a distribution network serving almost all urbanized areas of the island (Gallia, 2013b, p. 120). During last decades several proposals were debated to solve the dependence on water, as the submarine aqueduct from Circeo to Ponza (CASMEZ, 1982), or the building of a desalter, initially stopped because too expensive, but rethought in last years by local and regional administrations¹⁶.

Finally, it's possible to highlight how important were the Roman structures and how they influenced the organization of insular space, then and recently. The overlap of more recent forms on the most ancient wasn't just for the narrowness of the territory, but also, and mostly, for their effectiveness until XVIII century. The persist of ancient water knowledge over the times and its joining to the new ones create an original knowledge system, which values are today called traditional and promote the reterritorialisation processes, now in progress.

¹² The Consulta was written on Naples Antoine Perennot de Granville viceroy request about the sovereignty of the island, solved by Phillip II and Pope Sixtus IV giving that to the Kingdom of Naples.

¹³ On borbonic population process, see Gallia (2013a, pp. 281-294).

¹⁴ On Agostino Grasso's survey, see Gallia (2014).

¹⁵ «Cistern is like a bell: it has a circular hole on the rooftop of about 0.60 meter diameter, it is deep about 4/5 meters and its ground is a circle of about 3 meters diameter. On the middle of the ground, there is a dimple, called «the spring», where waters convey. In the cisterns they use to have a eel and if water is turbid they put some quicklime» (Baldacci, 1954, p. 78).

¹⁶ LR 1 del 5 gennaio 2001; DGR 59 del 21 gennaio 2005; Del Ghiaccio (2010); Furlan (2011); Consiglio Regionale del Lazio (2011).



Fig. 1 – Island of Ponza plan. Localisation of roman portual settlements (and actual settlements)
1. Diva Luna (Chiaia di Luna); 2. Venere (Ponza porto); 3. Circe (Santa Maria)
Source: Author's elaboration

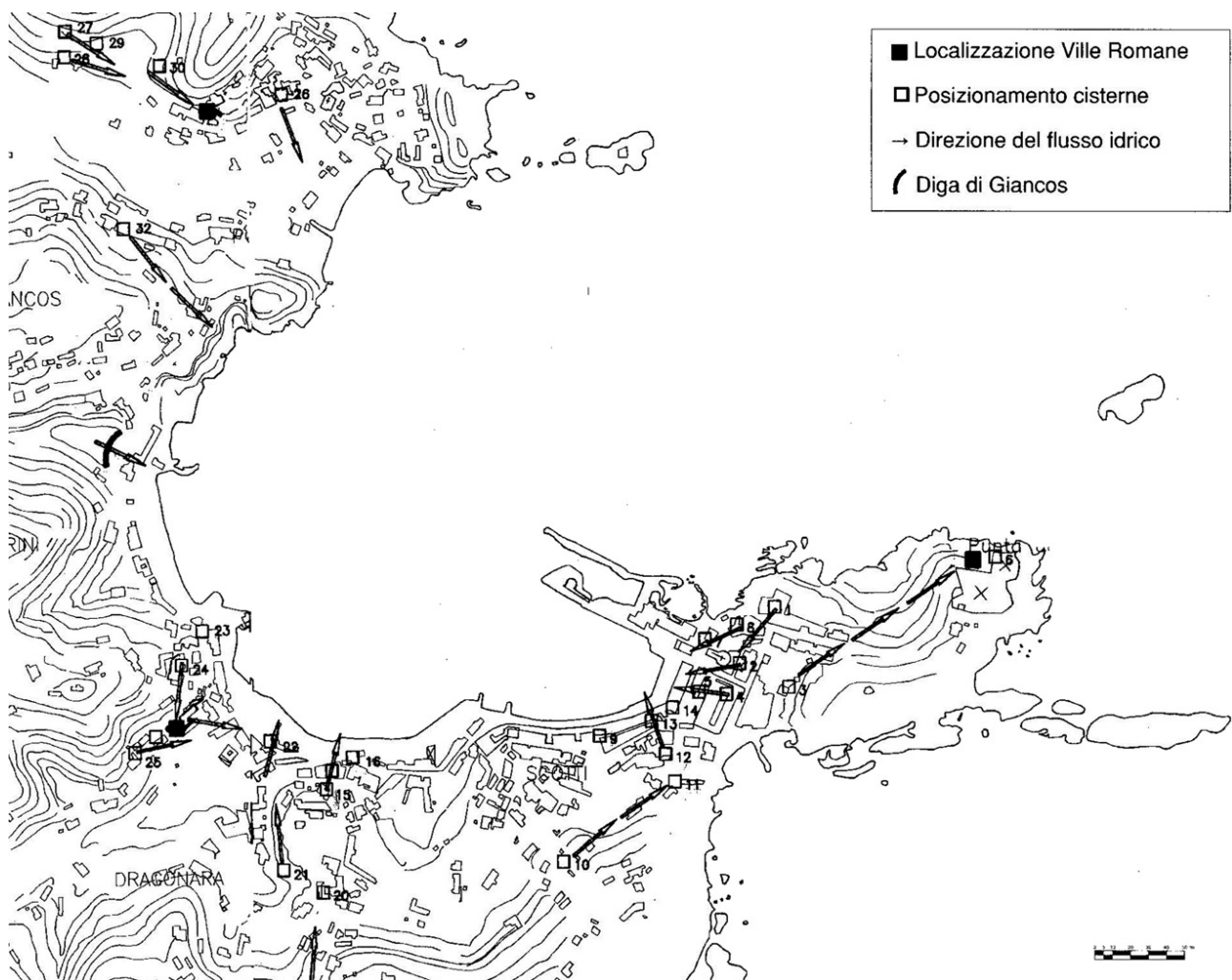


Fig. 2 – Localisation of roman villas and cisterns

Source: Lombardi (1996, p. 31)

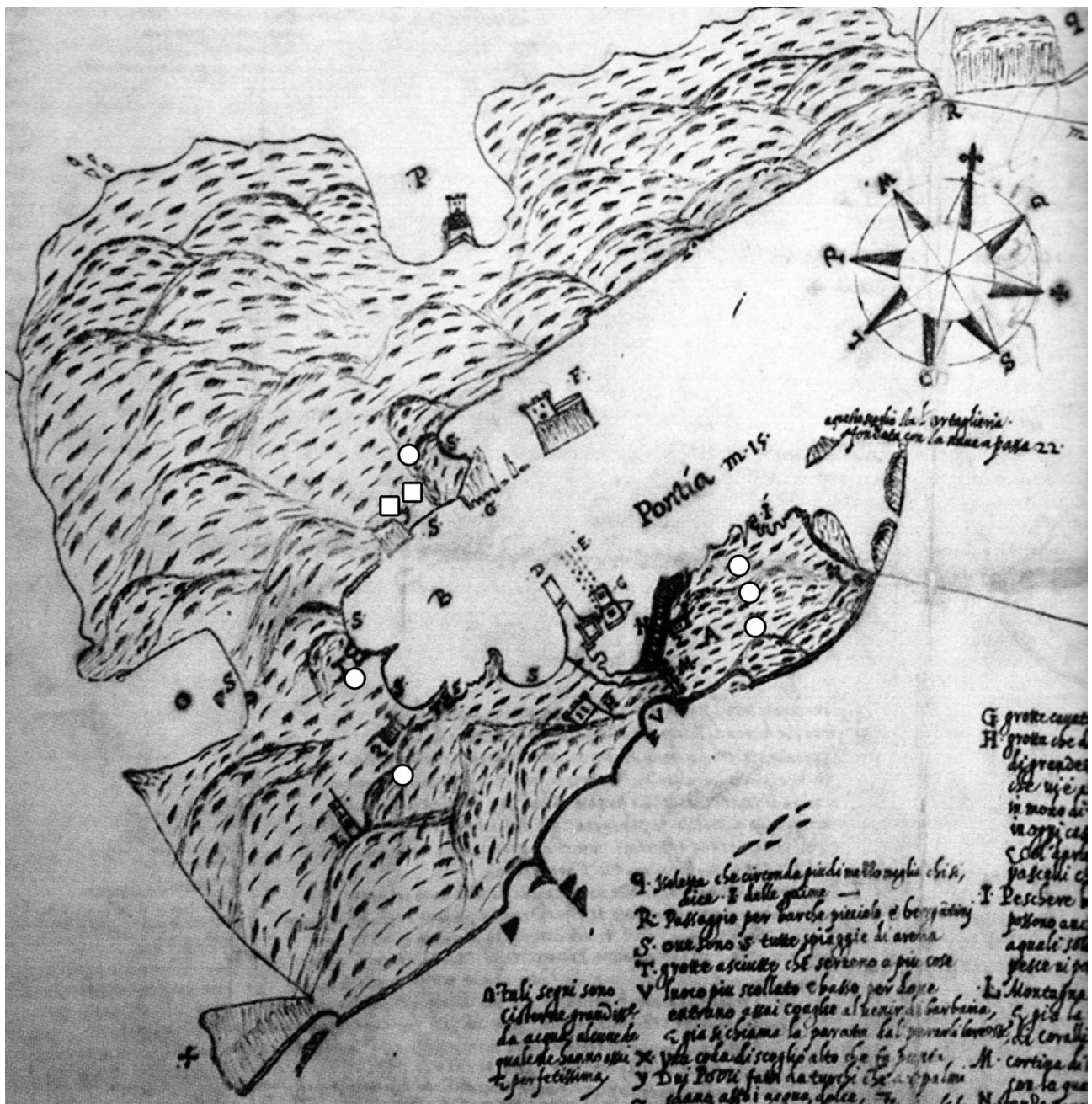


Fig. 3 – The presence of cisterns (circle) and wells (square)

Source: *Progetto ...*, 1589 (details)

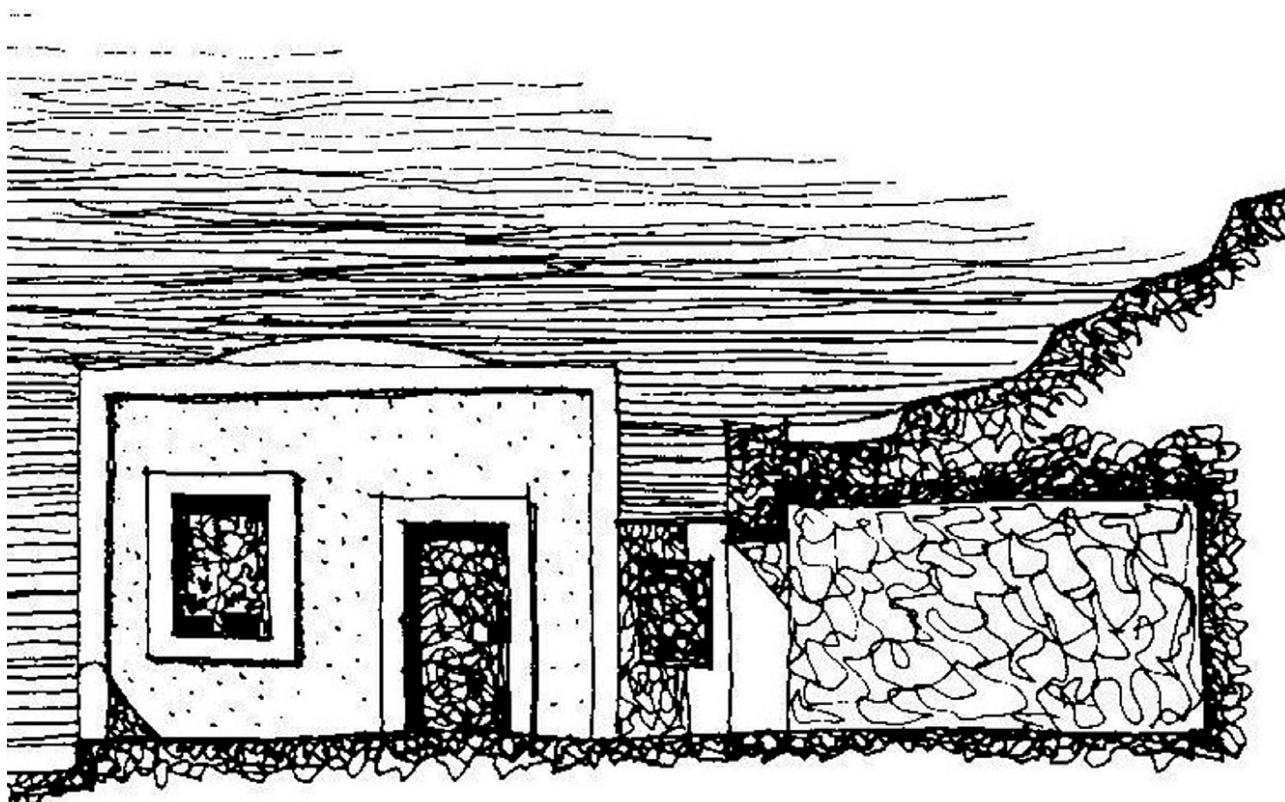


Fig. 4 – Dome rooftop housing type to collect rainwater

Source: De Rossi (1986, p. 321)