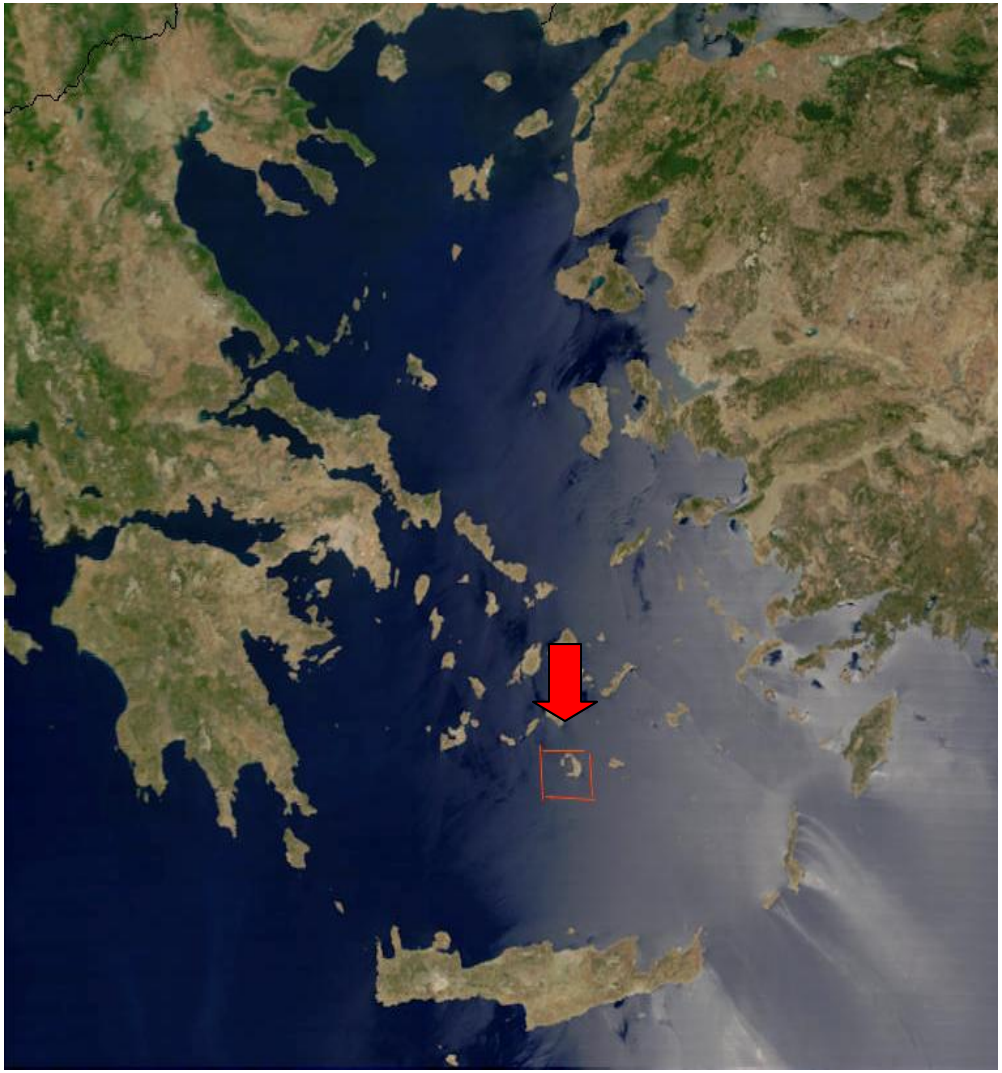
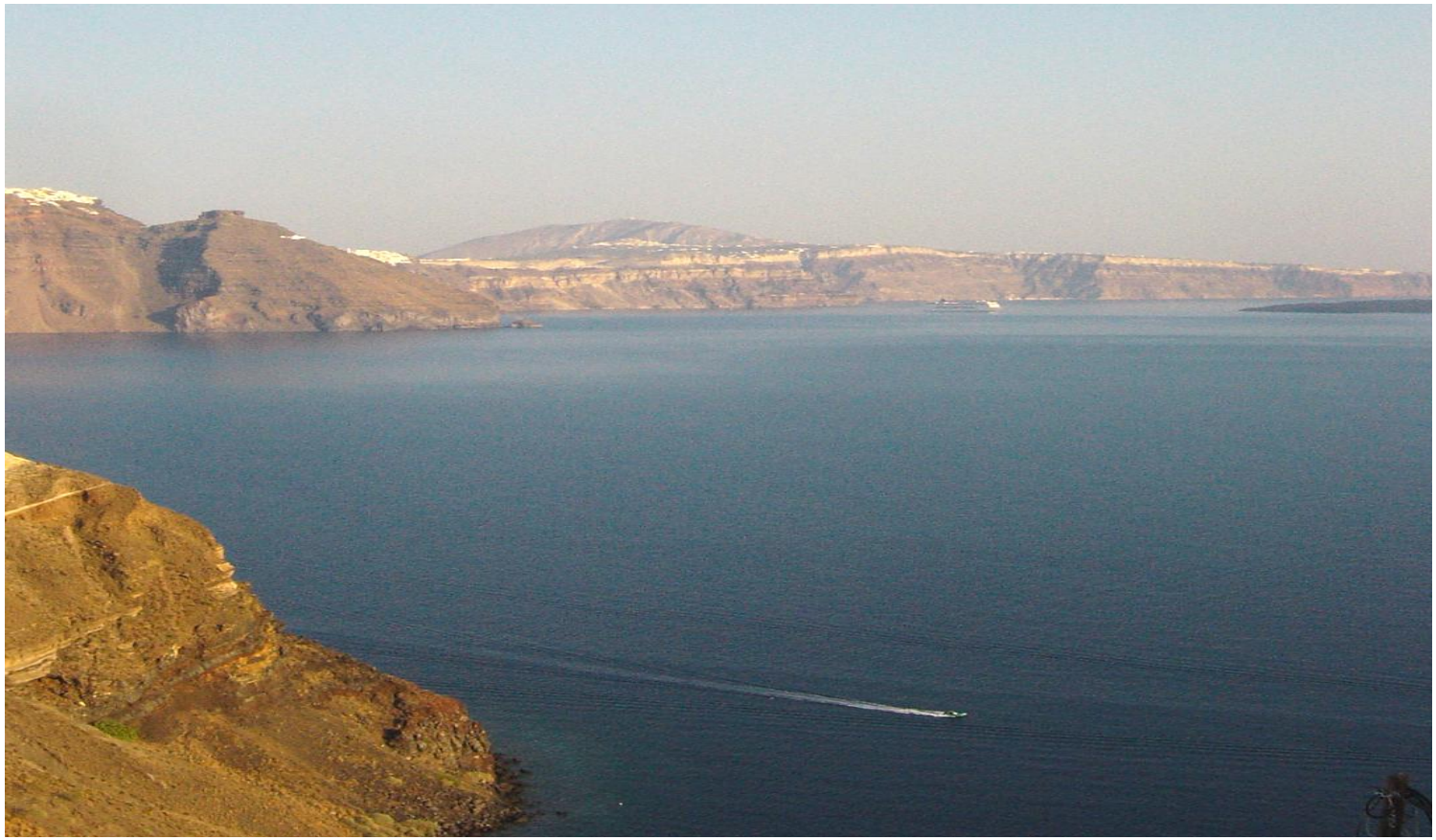
(RE)CONSTRUCTION OF TRADITIONAL ARCHITECTURE IN SANTORINI ISLAND, GREECE



Santorini is the southern island of the Cyclades, with a surface of 75 sq. km and is part of a volcanic basin composed by three islands (Thera, Therassia and Aspronnisi).

The islands form a spectacular ‘caldera’ which is the result of the submersion of part of the ancient island Strogili after an explosion of the volcano. Their ground is composed by successive layers of fragments and lava. Its upper layer consists of pumice stone and a sub-white ash called “theraic earth” which is in fact a very good quality of cement.

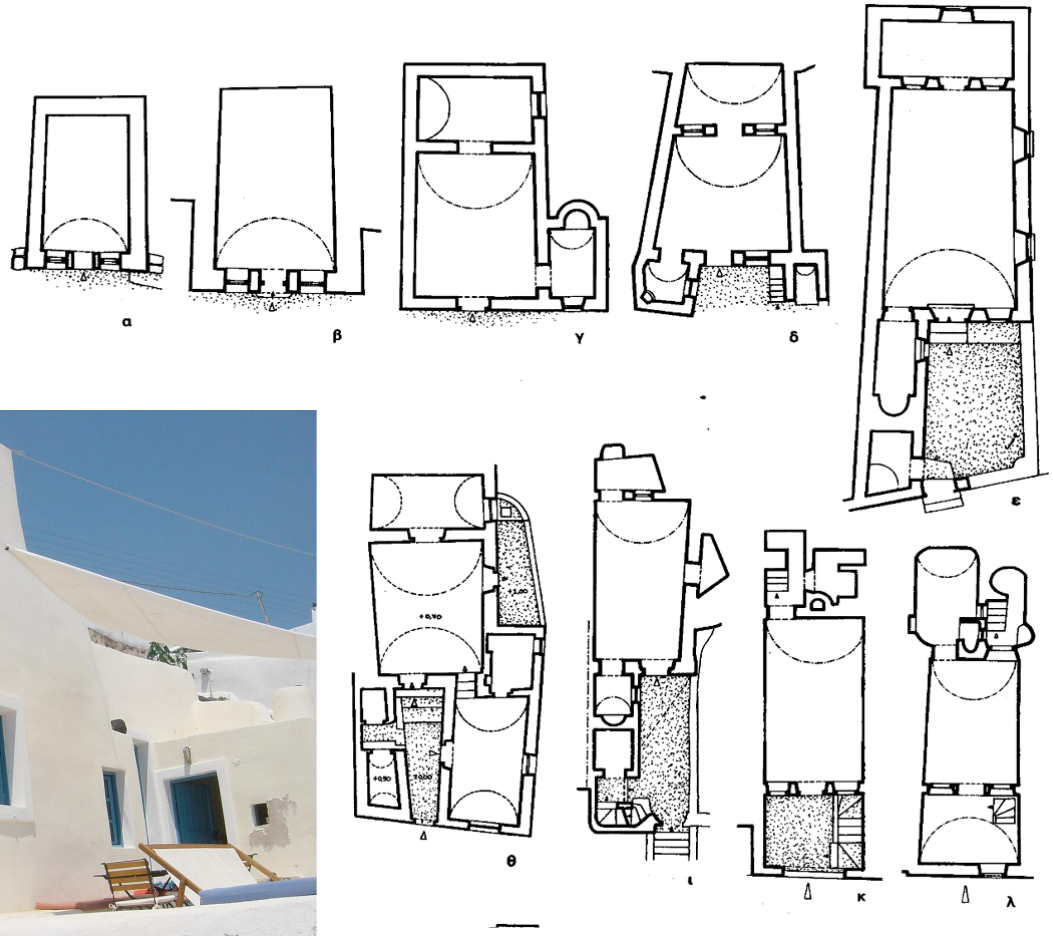


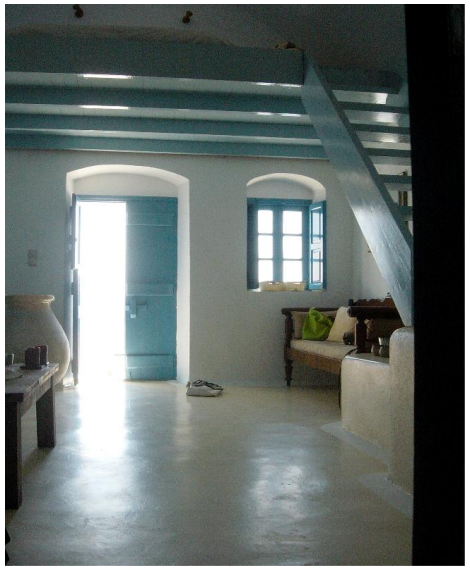
1956

In 1956, strong earthquakes struck the island and interrupted the continuity of Santorini's architectural history, when half of the buildings were completely destroyed and suffered an extended damage.

2008

The peculiarity of the easily excavated theraic earth in the 'caldera' slopes and the bents of torrents (which protected inhabitants from strong winds) gave birth to an underground cave habitation pattern with vault-like spaces receiving light from small openings on a built front.





Ia and Amoudi in 1925
photographed by Nelly

Plain roof

Vaulted roof

Ia after 1956 earthquake

The particular excavation and the resulting underground vaulted dwelling form was interpreted as a perceptible vaulted roof pattern for ground floor small cribs, storage rooms and boat husks, mostly in the ladder ports of the caldera and along the steep pathways (“scala”) that give access to the villages.

1925

2004

The differentiating architectural element in Santorini's architecture is the vaulted roof of dwellings, that resulted from their subterranean typology. The historical analysis proved that, the above the ground vaulted roof pattern prevailed after the 1956 earthquake in most areas of the island.

Is this case a metaphor of the evolutionary theory theme where foundations persist but the upper structure is reconstructed in a new morphology?

1925

above the ground vaulted roofs in 'caldera' ports.

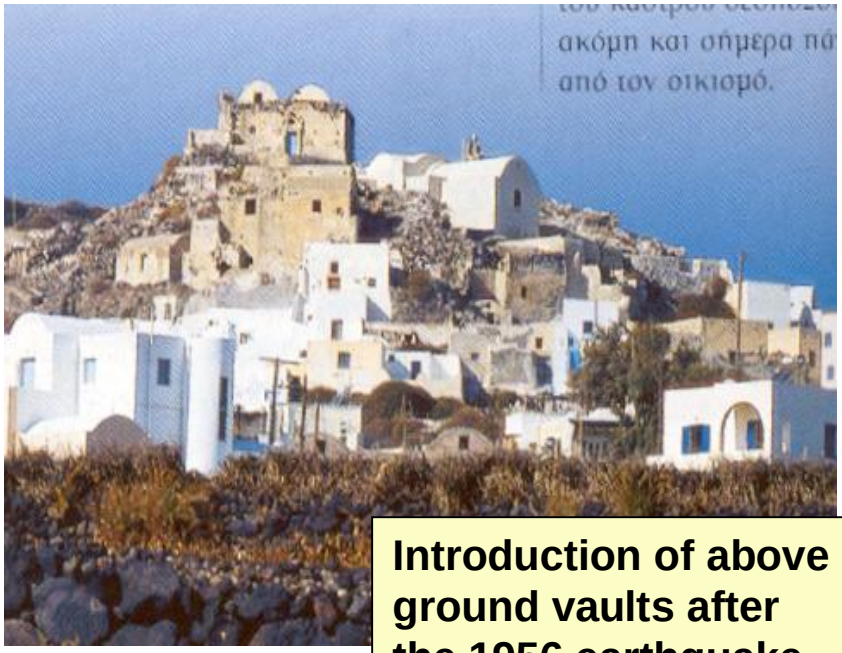
The existing network of settlements and traditional architectural elements were established in historical periods until the late 19th century.

Guillaume Olivier, Voyage dans l' Empire Ottoman, Atlas, 1801-1806.

The fortifications and the construction of six castles (castellia) and towers were the results of the Venetian duchy (13th-15th century) occupation and were still in good shape until the beginning of the 20th century. The castles and towers had a formalized layout of ramparts and watchtowers and were covered with plain roof.

AKROTIRI

1945 Archive of Museum Benaki, Athens.



1970

Introduction of above ground vaults after the 1956 earthquake.

The oldest settlement in Santorini dates from the 2nd Millenium B.C, when a city and a port was in prosperity in the east gentle coast of the island (Akrotiri). Today, the ruins are in a very good condition proving the existence of two floor houses covered with plain roof that was used as terrace. The houses are built with volcanic and light pumice stone and are reinforced with wooden "chainages" proving a high level of construction technique. They are decorated with impressive frescos.

On the 9th century B.C., the small plain east of the Inner Mountain was settled and the houses were covered with plain roofs.

During the Byzantine era, until the 13th century, Santorini was inhabited on the foothill north of the Inner mountain. The initiation of vaults in order to extend the size of the one room house is present in the 19 houses that have been excavated there. The vault supported wooden frames above which plain roofs were formed.

Today, Santorini is inhabited by 8.000 people (1991) spread into 30 settlements. It is the second in order, concerning net density of the Cycladic islands, presenting 117 inh. per sq. kilometer.

All settlements have less than 2000 inhabitants, meaning that the population of Santorini is counted as rural.

The 73% of these settlements (22 settlements) is recorded as small, meaning that the population is inferior to 500inh., the 23,5% (7 settlements) is classified as medium, with a population between 55 and 1500 inhabitants and only 3,5% (1 settlement), is classified as big, with population between 1500 and 2000 inh.

ROOF PATTERN DOMINANCE PER SETTLEMENT

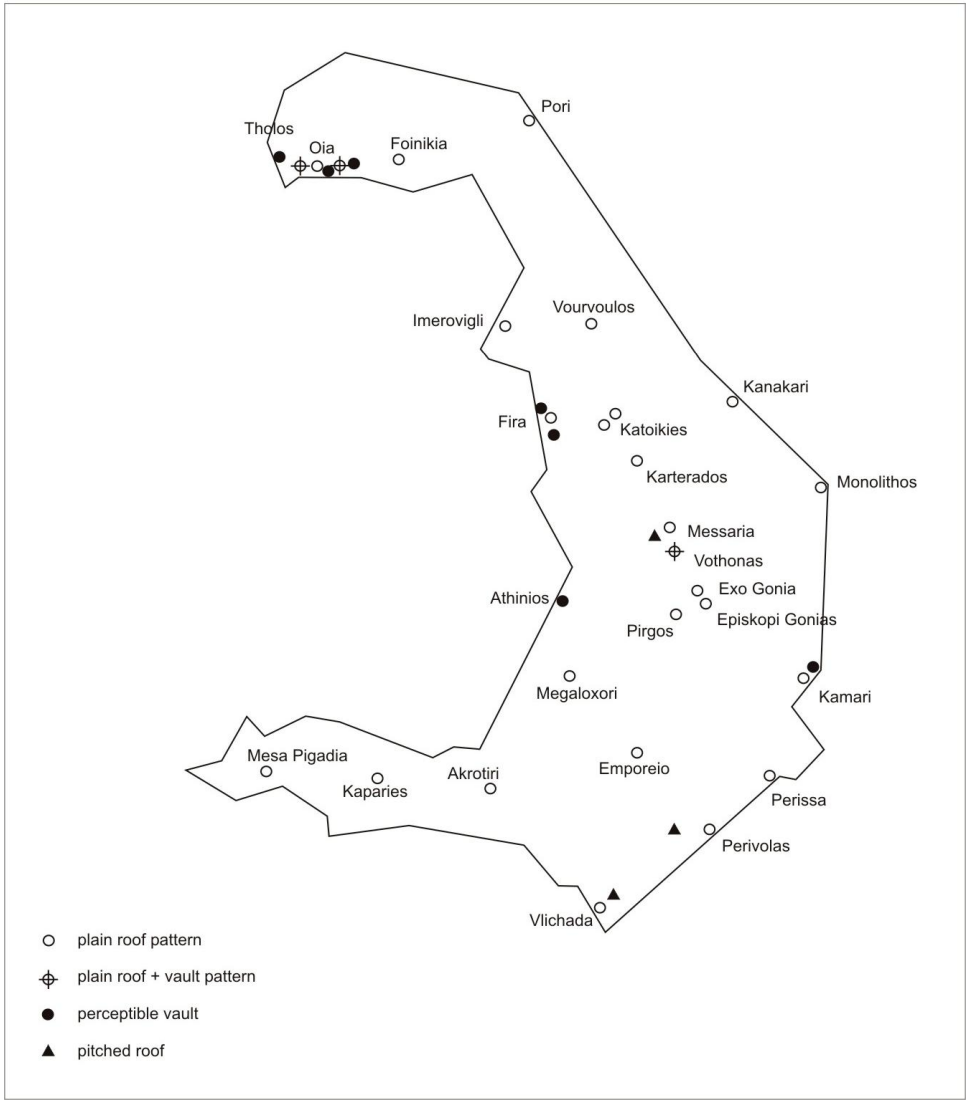
•Plain : Dominant in 21 settlements

•Plain /Terrace/ Underground vault: Dominant in 5 settlements

•Plain/ Perceptible vault: Dominant in new tourism buildings

•Pitched with tiles: Dominant in the center of 3 settlement (Industrial buildings constructed at the beginning of 20th century)

•Above the ground vault: Dominant in 4 settlements/ports of the ‘caldera’

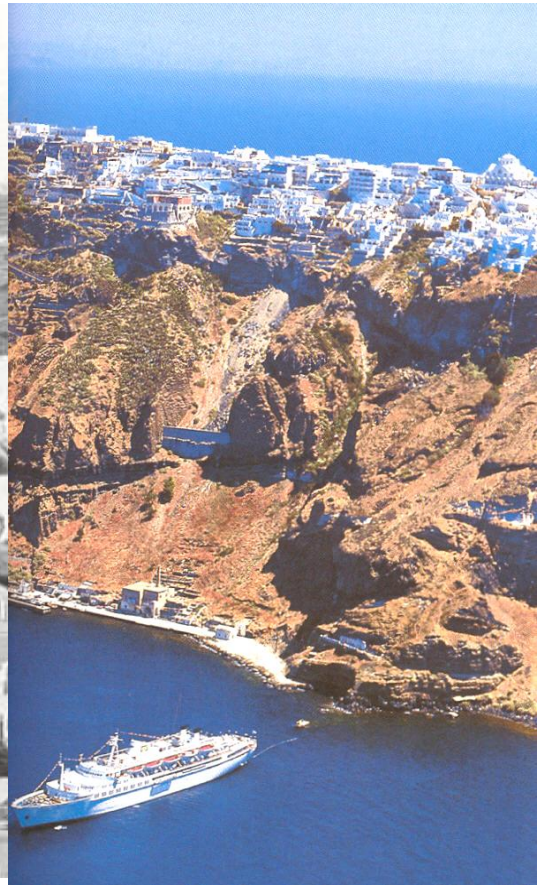


(RE) CONSTRUCTION

Central area

FIRA

1925



2008

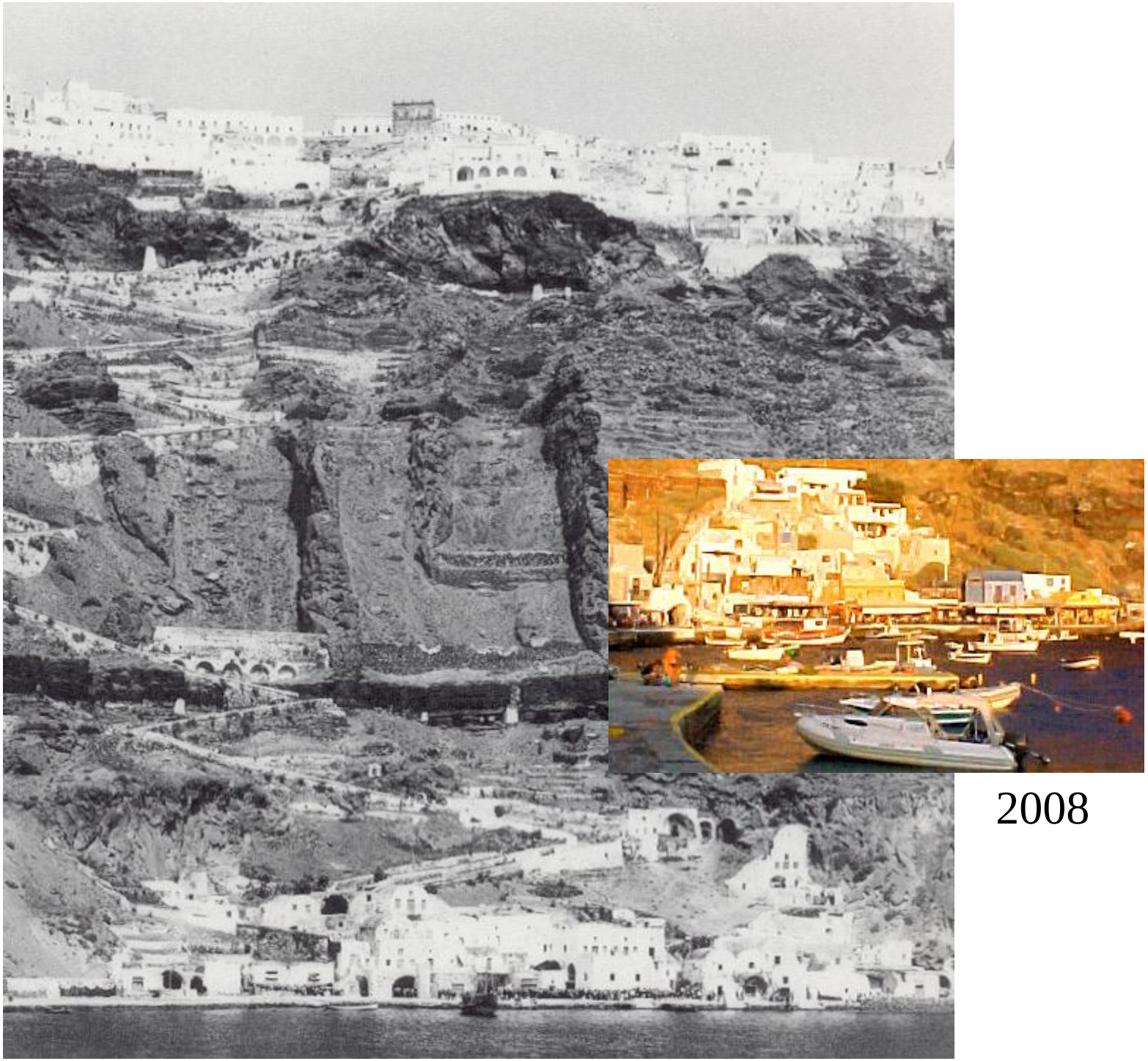
MESSARIA

2008

KATIKIES

2008

FIRA



2008

1925

North-Eastern area

EXO GONIA

2008

PYRGOS

2004

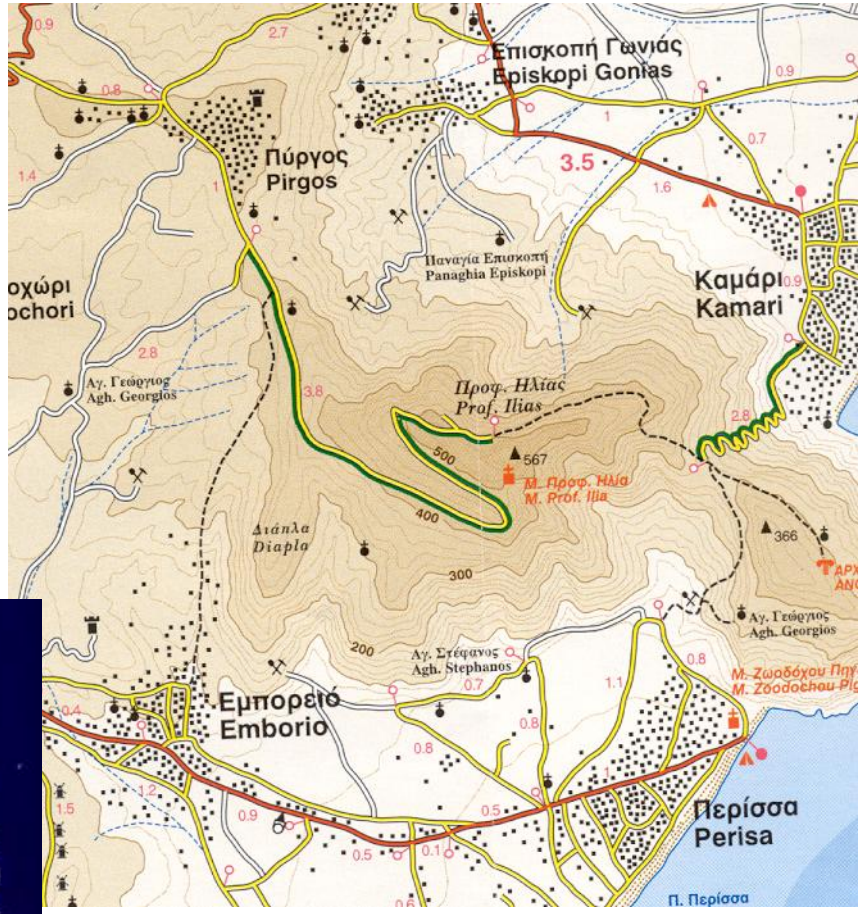
PYRGOS

2008

GONIA

2008

South-Eastern area



EXOMYTIS

2008

MEGALOCHORI

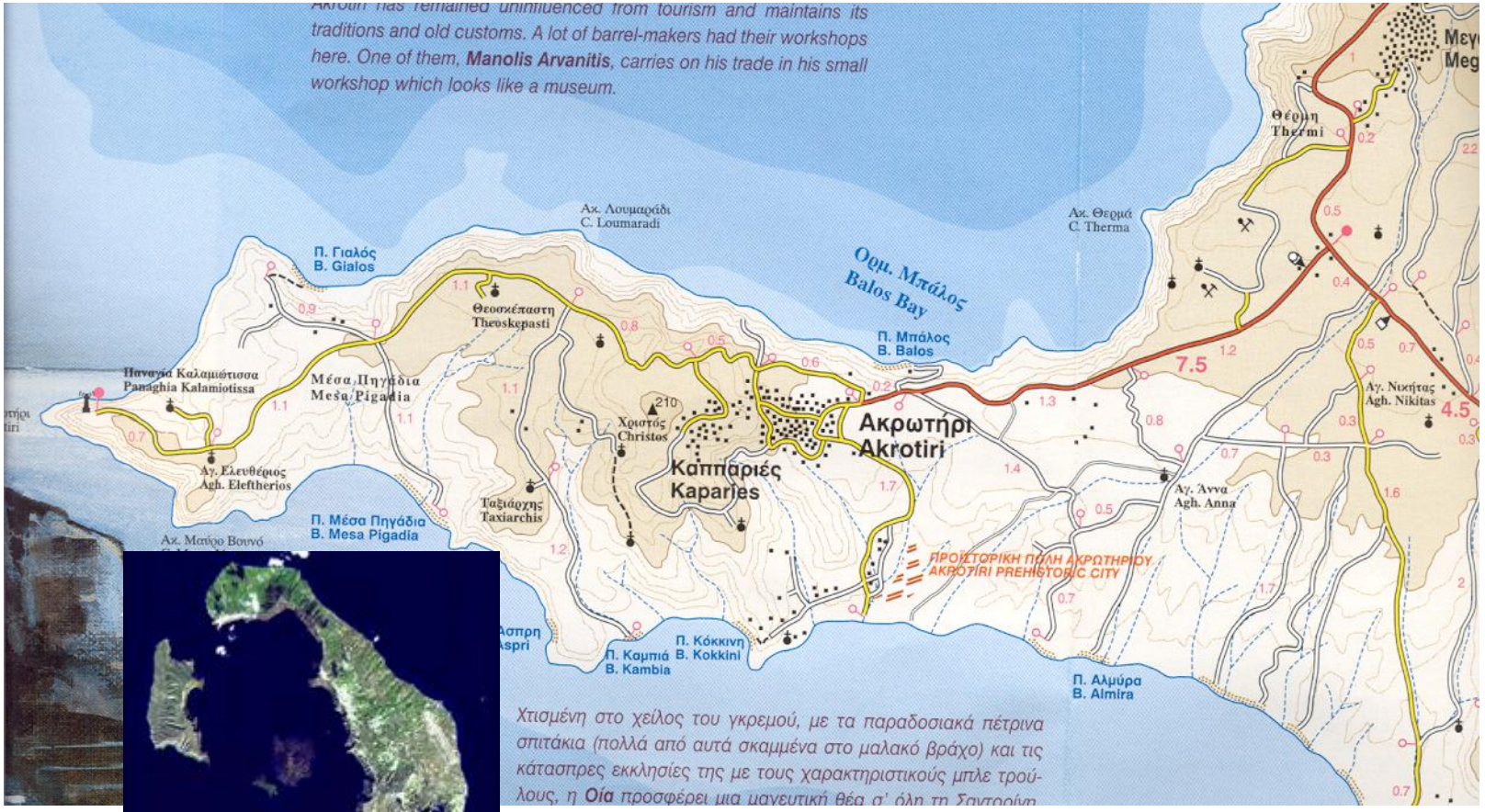
2008

PERISSA

2008

South-West

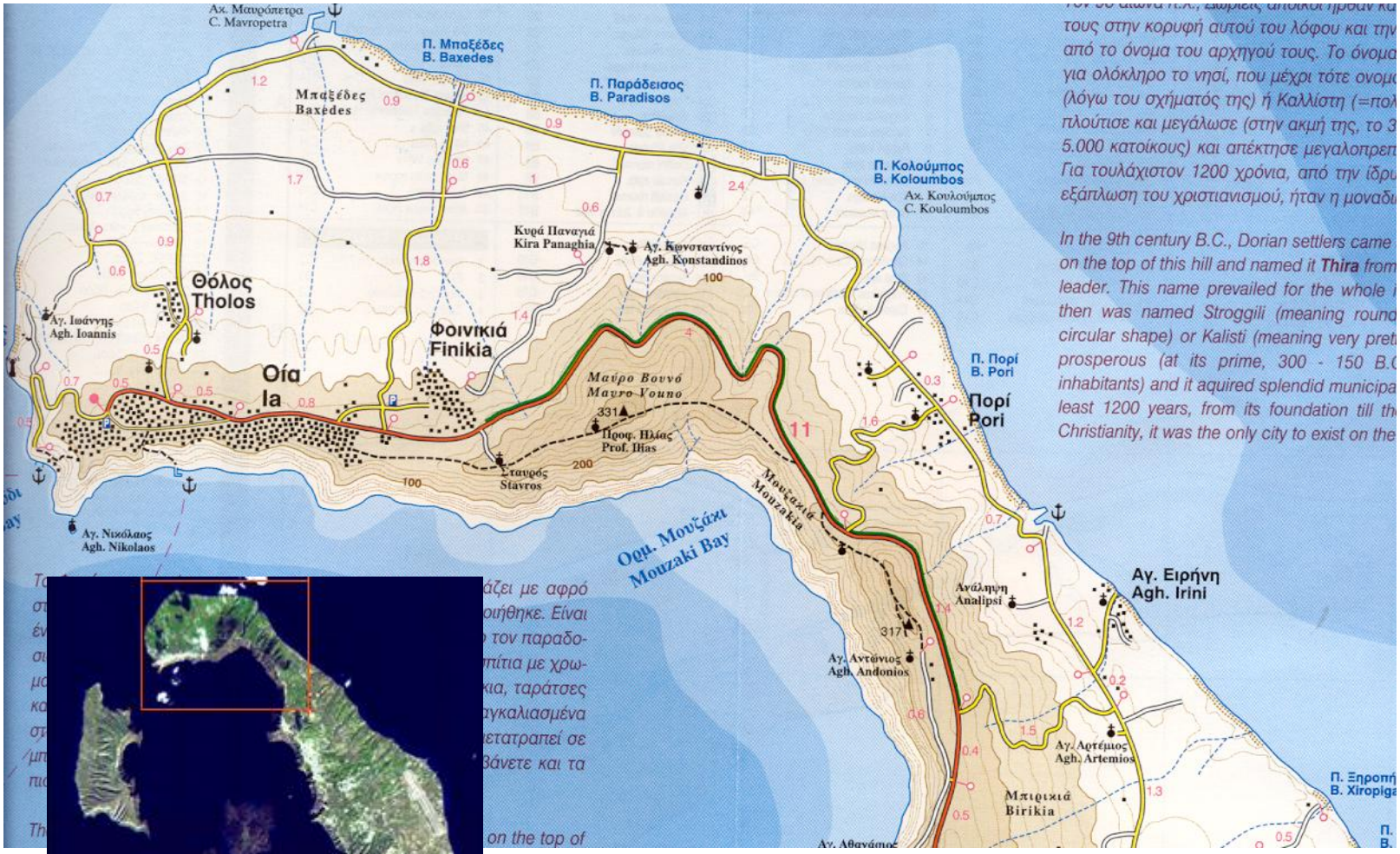
area



AKROTIRI

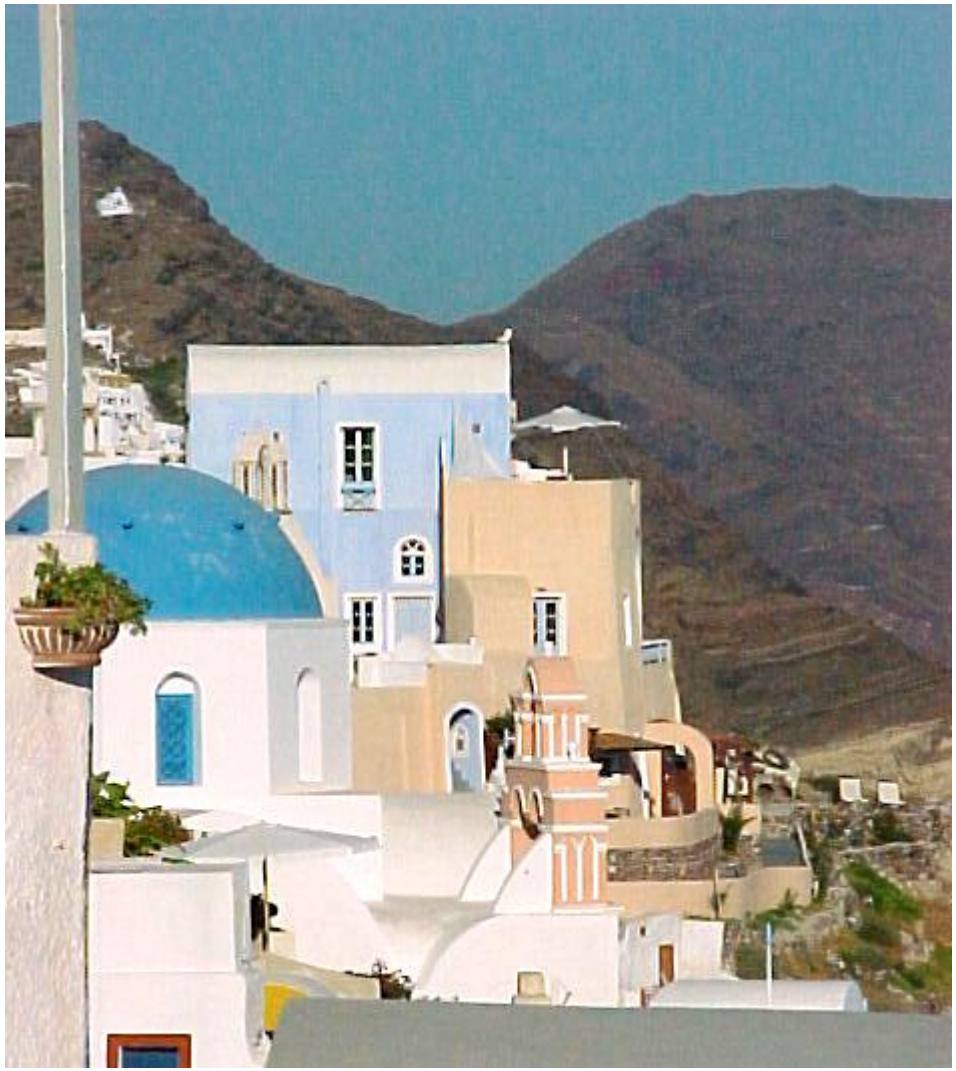
2004

North area

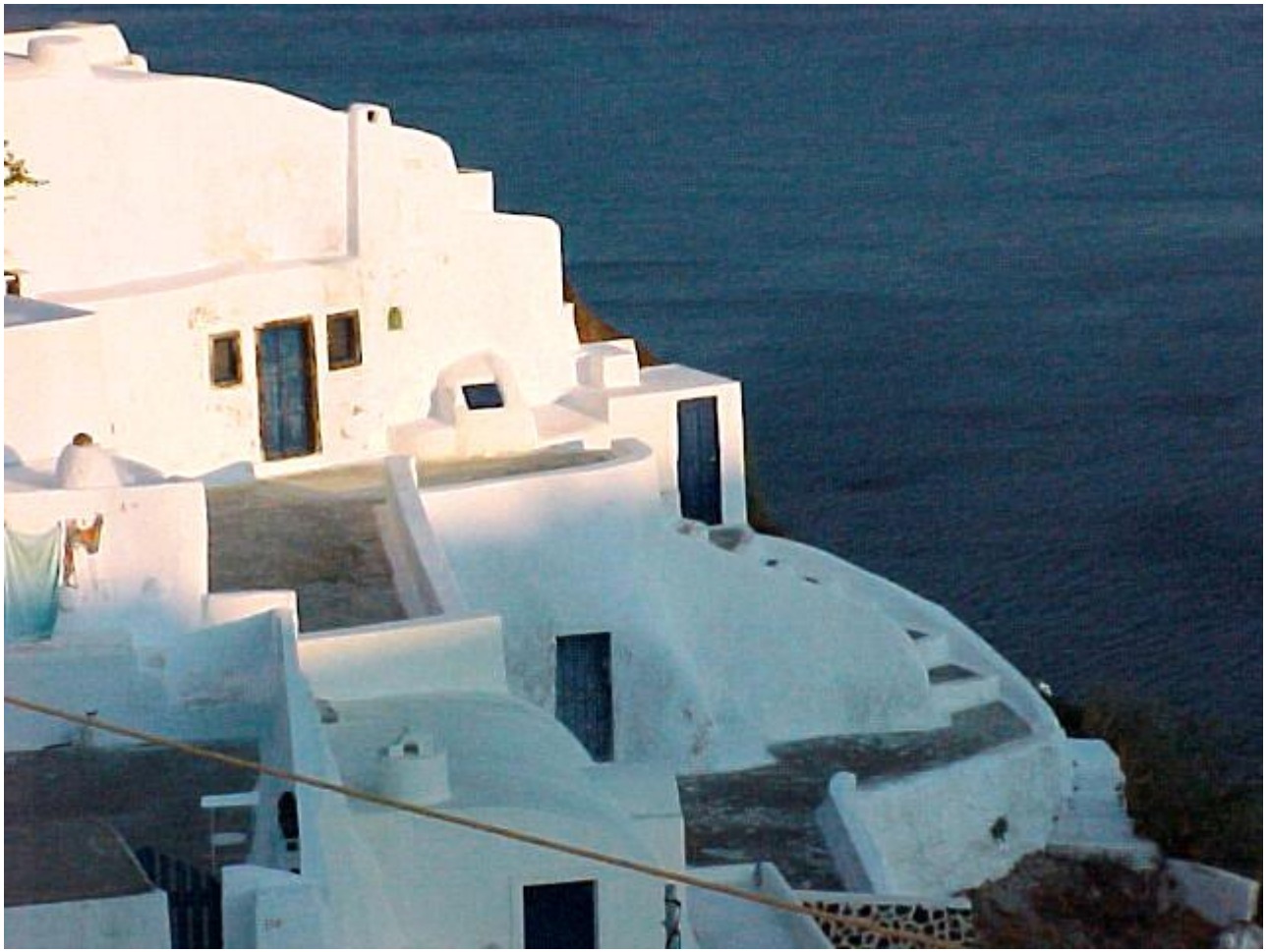

Ακ. Μαυρόπετρα
C. Mavropetra
Π. Μπαξέδες
B. Baxedes
Μπαξέδες
Baxedes
Π. Παράδεισος
B. Paradisos
Π. Κολούμπος
B. Koloumbos
Ακ. Κουλούμπος
C. Kouloumbos
Κυρά Παναγιά
Kira Panaghia
Αγ. Κωνσταντίνος
Agh. Konstandinos
Θόλος
Tholos
Αγ. Ιωάννης
Agh. Ioannis
Φοινικιά
Finikia
Οία
Ia
Μαύρο Βουνό
Mavro Vouno
331
Προφ. Ηλίας
Prof. Ilias
Σταυρός
Stavros
Αγ. Νικόλαος
Agh. Nikolaos
Π. Πορί
B. Pori
Πορί
Pori
Όρμ. Μουζάκι
Mouzaki Bay
Μουζάκια
Mouzakia
Αγ. Ειρήνη
Agh. Irini
Ανάληψη
Analipsi
317
Αγ. Αντώνιος
Agh. Andonios
Αγ. Αρτέμιος
Agh. Artemios
Μπιρικιά
Birikia
Π. Ξηροπή
B. Xiropig
11

FINIKIA-IA

2004

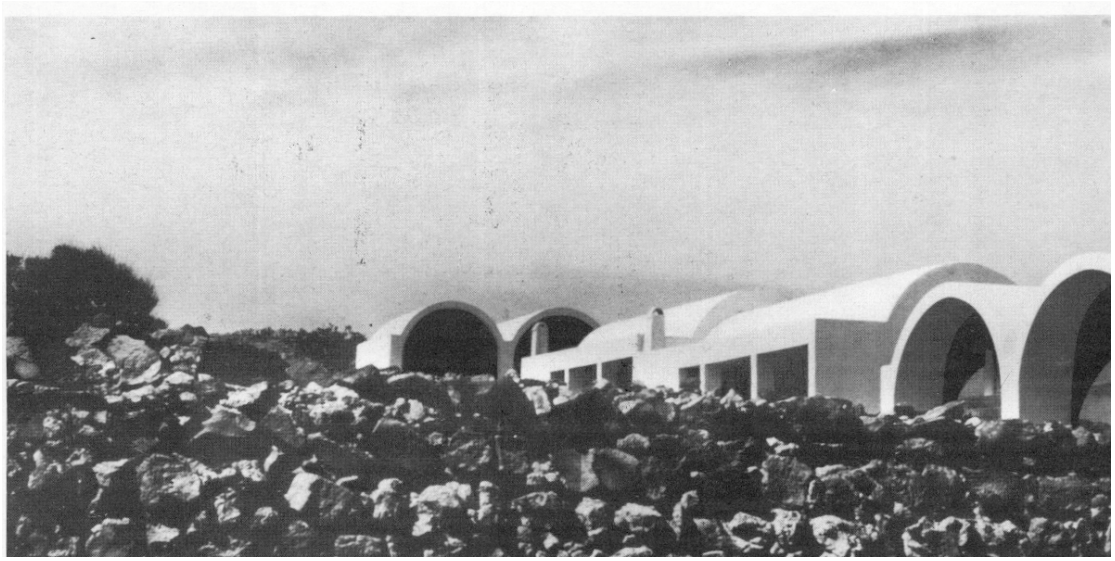


Neo-vernacular



Vernacular

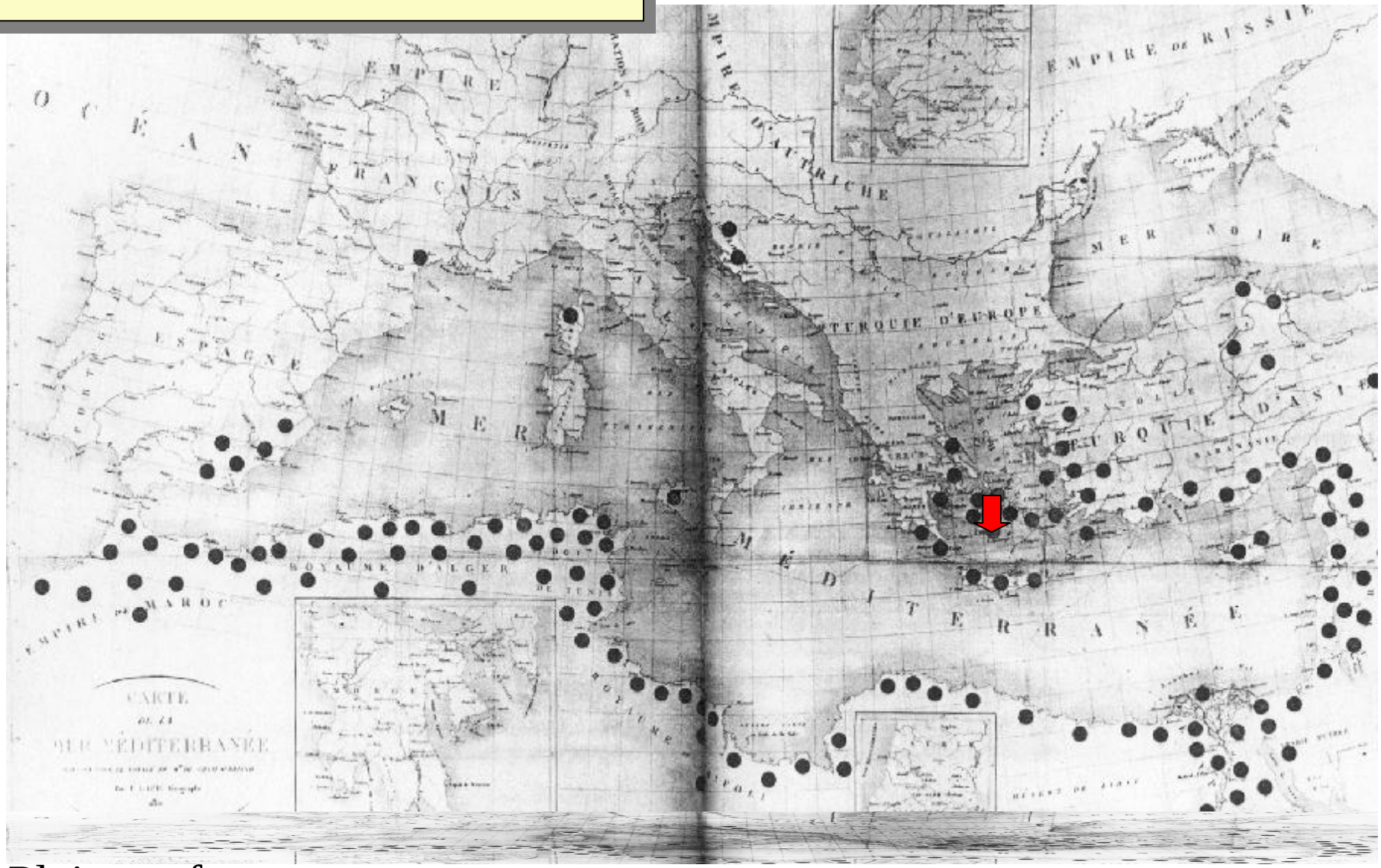
Above the ground, vaults prevailed after the earthquakes of 1956, in new organized settlements with one room dwellings built for the earthquake-victims. Victims refused to settle and immigrated or used the dwellings as storage and later, when the tourist development occurred, as tourist shops.



In the mean time (last 50 years) every corner of the island, especially the unsafe caldera slopes, was reconstructed and continues to replenish with all kinds of sophisticated uses (swimming pools) and interpretations of the local architecture

Cultural heritage
or
construction of neo-vernacular heritage?

Map of F.-R. Chateaubriand (1768-1848) dans “Itineraire de Paris a Jerousalem”, Flammarion, 1968.



Plain roof pattern

Vaulted roof pattern

The border between architectural cultural heritage and manufactured architectural era becomes fuzzy. The constraints of historical pathways exist and the dynamic (external guidance) of tourism and 'glocalisation' develop a neo-vernacular environment.
A future earthquake could possibly destroy the upper strata of Santorini's architecture and give birth to new architectural morphologies.
As in the evolutionary theory, even where foundations persists, the course of (re)construction is unpredictable.