

## DELOS (CYCLADES ISLANDS)

### Engineering geological conditions and problem:

Weathering of stones (marble and granite) by polluted atmosphere and marine spray.

Decays by supply of matter such as brown crusts (on marbles sheltered from rain).

Damages by loss of matter such as dissolution (on marbles exposed to rain).

Other degradations by loss of matter such as granular disintegration and contour scaling (on parts exposed to rain).

The presence of marine salts leads to dissolution and crystallization cycles of salts, especially inside the marble and the granite porous network. This mechanism occurs: a) by capillary transfer of water and salts from the ground and b) by fixation of water vapor by sea-salts deposited on the stone by the wind.



### Protection measures already taken or have to be taken:

Protection against weathering of building stones

Consolidation of weathered surfaces using appropriate materials which do not cause damage to the other parts.

Diagnosis of damage and consolidation result using non destructive techniques

### Other information:

Delos was the most important Panhellenic sanctuary, and, according to mythology, the birth-place of Apollo and Artemis. The first signs of habitation on the island date from the 3rd millennium B.C., and important remains of the Mycenaean period have been uncovered in the area of the sanctuary. In the 7th century B.C. Delos was already a known Ionic centre because of its religious importance as the birth-place of Apollo. Athenian influence was initiated on the sanctuary with the first purification of Delos by Peisistratos in 540 B.C. but it gradually developed into a proper domination lasting - with short intervals - until the end of the 4th century B.C., when Delos was finally declared free and independent (314 B.C.). The independence of the island lasted until 166 B.C. when the Romans gave it over to the Athenians.

### References on studies already performed:

CHABAS, A.; JEANNETTE, D.; LEFEVRE, R.: Atmospheric causes of the marble and granite damage in the archaeological site of Delos (Cyclades Islands, Greece). Protection and conservation of the cultural heritage of the Mediterranean cities. 5<sup>th</sup> Int. Symp. on the Conservation of Monuments in the Mediterranean Basin. April 2000.

CHRISTARAS, B. (2000). Effectiveness of in situ P-wave measurements in monuments. *Journal of Nepal Geological Society*, Vol. 22, pp.45-48.