

Valley of Agrigento Temples

Engineering geological conditions and problems:

Temples are built on a ridge of a calcareous sandstone showing instability problems. The most widespread movements are falls, overturns and rotational slides. The last landslide occurred 25 December 1976.

Other problems derived from:

- Lithologic characteristics of the area: a sequence of clays, fossiliferous clayey sands and calcareous sandstones.
- Tectonic characteristics of the area: the calcareous sandstone form a syncline with E – W axis. The syncline deformation of the sandstone occurred immediately after its formation and produced several systems of fractures.
- Creeping phenomena in the foundation ground (the calcareous sandstones and the clays and clayey sands beneath).
- Weathering phenomena produced by the action of water and wind on the calcareous sandstone that form the Temples.
- The valley of Agrigento temple is interested by seismic problems too. The last earthquake occurred in January 1968



Concordia Temple (www.siciliano.it)



Giunone Temple (www.siciliano.it)



Ercole Temple (www.siciliano.it)

Investigations and protection measures already realized:

- Mineralogical, petrographic, geochemical surveys.
- Geo-electrical surveys, both vertical and horizontal.
- Drillings executed on the 1976 landslide area.
- Monitoring system of landslides and buildings stability.
- Consolidation of rock volumes and improvement of mechanical characteristics of the rock masses.
- Impermeabilization of the rock mass where the temples were built on.
- Jet-grouting in the buildings discontinuities.

Historical information:

The Valley and Hill of Agrigento is a noble evidence of one of the most important Greek settlements in the Mediterranean Sea. The whole complex of the Doric Temples represents an example of Greek arts and culture. The Temples (9 in total), built between the V and the VI century b.C., are placed on the ridge of the Hill. The “system” starts on the western side with the Giunone’s Temple and ends with the Volcano’s Temple.

References on studies already performed:

COTECCHIA V., D’ECCELSIIS G. e POLEMIO M. (1995) La dinamica dei versanti nella Valle dei Templi di Agrigento. Atti del Convegno “La città fragile in Italia” – Giardini Naxos (ME) 11-15 Giugno 1995, pag. 359-373.

COTECCHIA V., MONTERISI L. e RANA S. (2000) Condizioni di stabilità e interventi di consolidamento del tratto di collina dei templi di Agrigento in corrispondenza del Tempio di Giunone Lacinia. Convegno GEOBEN 2000. Torino 7-9 Giugno 2000, pag. 87-117.

COTECCHIA V., LOLLINO P., MASTROMATTEI R. e RANA S. (2000) Studio geologico-strutturale e di stabilità della principale necropoli paleocristiana della Valle dei Templi di Agrigento. Convegno GEOBEN 2000. Torino 7-9 Giugno 2000, pag. 423-435.