

# Historic centre of Naples

**Engineering geological conditions and problems:**

The geological substratum of the city (located in the Campania region) is formed by pyroclastic rocks derived from Vesuvius’ eruptions and by carbonate rocks.

The nature of substratum is the cause for caves and narrow tunnels formation. Anthropic activities increased the presence of cavities in the city substratum, through the constructions of tanks and wells. During violent rainstorms, the presence of these cavities causes a lot of hydrogeological problems as building collapse and chasm formation in the streets.

The other important geological hazard is connected with the proximity of the city to the Vesuvius volcano.

The most significant Vesuvius’ eruptions in the last centuries occurred in 1694, 1794 and 1906. The last eruption happened in March 1944, with slow lava emission. Naples’ area is located in a seismic zone. The class of seismicity is considered medium, according to the Italian classification.



**Castel dell’Ovo**  
([www.foto.portanapoli.com](http://www.foto.portanapoli.com))



**The Bay of Naples, viewed from Posillipo**  
([www.foto.portanapoli.com](http://www.foto.portanapoli.com))

**Investigations and protection measures already realized:**

The caves, narrow tunnels, tanks and wells are now recorded in a database both alphanumeric (Access) and geographic (G.I.S.) (Alberico et al., 2000). This information allows to build new edifices in safe zones.

In relation to volcanic hazard, the Italian Civil Protection realized an evacuation plan for Naples and the surrounding towns, based on a warning system linked to volcano monitoring. Of course, in case of a large eruption, a great number of historical and cultural heritages would be destroyed.



**Naples and Vesuvius**  
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**Supplementary information:**

The Committee decided to inscribe the property considering that the site is of exceptional value. It is one of the most ancient cities in Europe, whose contemporary urban fabric preserves the elements of its long and eventful history. Its setting on the Bay of Naples gives it an outstanding universal value which has had a profound influence in many parts of Europe and beyond.

**References on studies already done:**

ALBERICO I., GUERRA V. e LIRER L. (2000) “Il rischio sottosuolo nella provincia di Napoli” Atti 4° Conf. Nazionale ASITA, Genova 3-6 ottobre 2000, pag. 1411-1416.  
CANDELA M., MANDOLINI A. e RUSSO G. (1996) “Monitoring of Castel dell’ovo in Napoli – Preliminary result”. Proc. Intern. Symp. “Geotech. Eng. For the preservation of Monuments and historic sites” Naples 3-4 October 1996., pag. 343-347.