

# Archaeological zone and the Cathedral of Aquileia

**Engineering geological conditions and problems:**

In the course of the last 2000 years, the elevation of the ground in the whole area of the Aquileia town has undergone an overall lowering ranging from 1,5 to 2,0 meters.

The reasons for the variation of the ground level are:

- Substratum properties (alluvial deposits made of clay and silt in the upper layers, silt and sand in the lower layers).
- Soil compression by foundation ground.

Anthropic influence consisted in stress variation connected to building construction.

Ground foundation sinking under the Cathedral’s belfry is proved by mosaics deformation in the church.



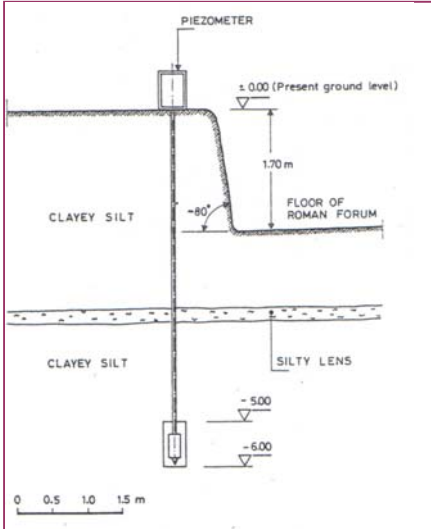
**Aquileia Cathedral**  
(<http://193.42.81.170/aquileia/index.htm>)

**Investigations and protection measures already realized:**

The investigations realized concern:

- Soil properties of the site.
- Realization of oedometric compression tests and analysis of soil plasticity.
- Time variations of the water table.
- Evaluation of vertical packing of the ground.

The investigations allowed to assess the total height variation from the Roman age to the present day (see figure on the side).



**Cross-section of Roman Forum**  
(Sorzano, 1997)

**Historical information:**

The city of Aquileia was founded in 181 B.C. and originated as a military garrison of the Roman Republic whose purpose was to hold back barbaric invasion from the East. All the monuments of the archaeological zone were built in that period. The city was razed to the ground in 452 A.D. by troops headed by Attila.

**References on studies already done:**

BERTACCHI L., BERTACCHI P. e JOMILKOWSKI M. (1980) “Cedimenti di fondazione del campanile di Aquileia documentati di un mosaico preesistente”. 14th National Conference of Geotechnics, Florence, pag. 17-24.  
SORZANO M. (1996) “Compression phenomena responsible for the current ground level in the town of Aquileia (NE Italy)”. Proc. Intern. Symp. “Geotech. Eng. For the preservation of Monuments and historic sites” Naples 3-4 October 1996, pag.305-312.