GEOLOGICAL-GEOTECHNICAL APPROACH OF THE CASE OF THE 19TH CENTURY CHURCH OF AG.PARASKEVI (KONITSA, IOANNINA, GR)

1MARIOLAKOS, I., 1FOUNTOULIS, I. and 1ANDREADAKIS, E. 1University of Athens, Dept. of Geology, Athens, Greece.

The temple was built in 1864, presenting stability problems since its completion. Despite the evident progress of the phenomenon, there haven't been any remarkable fractures on the framework and walls, other than cracks on the plasters. The geological structure of the area consists of flyschic alternations of sandstone and mudstone, downhill from an old thrust of ophiolites over the flysch. The seating lays within the loose materials of an old landslide along the direction of a fault, on the flat surface of the foot. Small streams flow from uphill and around the mass. The differential lowering of the ground surface within the loose clay material of the landslide is progressive. The excavation made for the seating of the temple, decreased the durability of the ground, and the building itself disturbed the underground water flow, being an obstacle against the uniform water flow to the southeastern downhill corner of the temple, thus creating differential conditions of plasticity and compressibility. Besides, the overload of the ground with the weight of the temple, created the occurring stability problems, which were probably intensified by the reduction of water content caused by the growth of a large sycamore's roots within a few meters distance downhill from the temple. The temple consists of a parallelepiped framework of wooden columns and conjunctional struts and 50-60cm thick walls of limestone plates. What is remarkable is that the building is being plastically (!) deformed into a parallelepiped shape, twisted along a horizontal rotational axis.