

3D database of the knowledge of material data: analysis of the complex structure of the Pentecoste dome in St. Mark's Basilica in Venice

Luigi Fregonese, Cristiana Achille, Laura Taffurelli, Francesco Fassi, Carlo Monti, Ettore Vio

Abstract The survey of the wooden domed structures surmounting St. Mark's Basilica in Venice is part of a project of documentation, analysis and representation that the E-Lab laboratory of the Politecnico of Milan has been involved in for several years in conjunction with the Procuratoria di Venezia. Three-dimensional modelling and representation through laser scanner acquisition is the method that best lends itself to gathering information on the conformation and state of conservation of the beams that make up the roof of St. Mark's Basilica, which expresses its enormous architectural character chiefly in its five domes. The database obtained from the survey and processing of the topographical data represents a support on which to georeference the information and valuations of the heritage, directly in a 3D environment.

Keywords 3D Survey, Terrestrial Laser Scanning (TLS), Modelling