IDENTIFICATION OF CLIMA CHANGE INFLUENCE ON HERITAGE ASSETS BY USING 3D OPTICAL MICROSCOPE SYSTEM

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ABSTRACT: Historical buildings are often in bad shape, due to decay of materials and damaged structural and non-structural elements. When they are renovated and/or restored, approach based on accurate diagnosis of the building and its surrounding is seldom applied. This often results in renewed and faster decay of the monument. Therefore, accurate diagnosis of the historical building condition should be carried out first, using predominantly adequate non-destructive techniques (NDT). Among NDT techniques in-situ application of portable 3D optical microscope system seems to be a powerful tool to gain important information about damaged surfaces of historical monuments.

In the paper properties of portable 3D Digital Video Microscope System HIROX will be presented first, followed by the reference analyses of results of on-site tests carried out in framework of the EU FP7 project Climate for Culture. We will start with analyses of damages of frescoes in different churches or castles located in Dubrovnik (Croatia), Brežice and Pohorje Mountains (Slovenia) and on island Crete (Greece). The analyses were part of the WP2 tasks. In continuation of the paper we will present results of analyses carried out on damaged surfaces of painted wooden elements, plasters or textiles. These analyses were carried out in framework of the WP4 tasks.