

**Streszczenie rozprawy doktorskiej
(język angielski)**

Tytuł rozprawy:

**Konserwacja przez dokumentowanie – chmura punktów
a zagrożone dziedzictwo architektoniczne**

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Abstract

Laser scanning and photogrammetry are becoming increasingly popular in documenting historic buildings. They make obtaining accurate spatial point clouds and 3D models possible. Those measurement techniques and technologies are fundamental for heritage at risk of losing their historic value and for which there is a high probability of destruction. It is the realisation of the postulate of conservation through documentation.

The paper analyses a set of buildings at risk of losing their historic values on a national scale, in the Mazowieckie Voivodeship and the Mazowieckie Voivodeship, excluding Warsaw. The aspect of formal solutions related to heritage at risk, deletion from the register of monuments and making and keeping their documentation is presented.

The research presents the use of the point cloud in scientific research and the popularisation of architectural heritage. A study of these applications was carried out for the manor houses in Nuzewo and Kliczewo Małe. It included performing laser scanning and photo documentation for photogrammetry. The acquired point clouds were used, among other things, to develop 2D documentation, verify the accuracy of available documentation, document details, read carpentry rafter markings, and compare point cloud views and photo documentation. An animation, documentation of the interior wall, and digital restoration and reconstruction were carried out. The point cloud was also used for virtual and augmented reality.

The study demonstrates the need to secure the spatial record of endangered monuments for future generations before these objects cease to exist. There is also a need to develop a scheme of action that considers conservation through documentation and the provision of publicly accessible information about heritage at risk. A system, which is an interpretation of the triage procedure, is proposed for determining the order in which measurements should be taken. Recording point clouds can prevent loss of information and ensure access and expansion of the knowledge base by present and future generations.

Keywords: digitisation, heritage at risk, laser scanning, photogrammetry, point cloud, surveying, documentation, architectural monuments.

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