

## Title

Verification of methods of microclimate analysis of historical museum buildings

## Summary

The currently existing standards for the analysis and assessment of the microclimate in historical museum buildings are insufficient in the case of local microclimate phenomena, such as moisture. They pose a high risk of destruction of cultural heritage objects. The work, based on the analysis of five cases, proposes a range of research supplementing the existing methodology: extending the scope of air parameter measurements with ad hoc and in some cases systematic measurements of the humidity of building partitions, conducting an analysis of potential germination and mold growth supplemented with in situ measurements, conducting an analysis of the spectrum of RH parameter variability to determine the risk of mechanical damage, assessing the microclimate in relation to the speed of chemical degradation processes. Mathematical modeling, which was performed using the Wufi family of programs, was indicated as an important element of the process of formulating the collection protection strategy.

The work was based on in situ research in: Bishop Erazm Ciołek's Palace - a branch of the National Museum in Krakow, the Wawel Chapter Room of the Krakow Archdiocese Chapter, the Holy Trinity Chapel in Lublin belonging to the National Museum in Lublin, Blessed Czesław's Chapel at the Dominicans in Wrocław, St. Martin's Church at Wiśniowa.

## Keywords

museum, historic buildings, microclimate, conservation standards, mathematical modelling, museum prevention, protection management

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