



## COLLECTING AND ASSESSING CLIMATE DATA – THE “CLIMATE FOR CULTURE” DATABASE

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**ABSTRACT:** Various types of historic buildings located in different climate zones all over Europe have been investigated concerning their behavior due to weather changes and different utilization. The case studies should serve to enhance the knowledge about the complex cause-effect relationships between use, indoor and outdoor climate, technological features and preservation state by examination of the most common types of historic buildings and the movable cultural heritage preserved inside in different climates. One of the aims was an assessment of the climatic indoor behavior of different types of historic buildings for basic classification. Furthermore, to use these data for verification purposes of building simulation models and to construct so-called transfer functions out of the climatic in- and outdoor data.

For these reasons a measurement program was set up to collect the in- and outdoor data at various historic sites all over Europe. An existing web-application [1] was developed further to collect measurement data automatically, or upload measurement data, from various sites. The web-application provides various tools to analyze the measured data: to construct various graphs to allow better interpretation, to analyze the data in a statistical way, to classify the indoor climate regarding the preservation quality of the indoor climate and to determine preservation risks [2]. Furthermore, the web-application makes it possible to use transfer functions [3] to predict the indoor climate in several buildings for the future, making use of a future scenario for the outdoor climate.

For about 100 case studies the in- and outdoor data have been collected and these data will be available for future use, too. They have formed the base for a number of different building types, which can be used as reference cases for the evaluation of the future indoor climate and energy use.

### References

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- [3] Kramer, R.P., Schijndel, A.W.M. van & Schellen, H.L. Inverse modeling of simplified hygrothermal building models to predict and characterize indoor climates. *Building and Environment*, 68, 87-99, 2013.