Combining a survey approach and energy and indoor environment auditing in historic buildings - DTU Orbit (16/12/2018)

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Purpose
– This paper presents an approach where a survey study is combined with energy and indoor environment auditing in the built environment. The combination of methods presented in this paper is one way to obtain a wider perspective on the indoor environment and energy use and also let the people in the building voice their comments on the indoor environment. This is arguably even more important in historic buildings where many of the physical properties are to a higher degree unknown when compared with conventional buildings. The purpose of the paper is to report the experiences from this research project. Design/methodology/approach – A combination of energy and indoor environment auditing and standardized occupant surveys.

Findings – The main findings in the paper are related to the good agreement between results from standardized occupant surveys and physical measurements. The possibility to triangulate problems related to poor indoor conditions was shown to be one main advantage of the combined methodology presented in the paper. A standardized survey approach also allows benchmarking, in this case with two groups representing “average” buildings as well as a group representing well-functioning buildings. The use of records from building key cards was also shown to be an effective way of keeping track of activity in the building and thereby distribute internal gains. In addition, the paper reports a linear correlation between activity level and electricity use. Originality/value – The paper shows an effective way to investigate the performance, in terms of energy use as well as indoor environment, of historic buildings in use. This type of approach could benefit property owners, as it both allows benchmarking as well as investigating individual properties before, e.g., a refurbishment.

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