EFFICIENCY INDEXES FOR BUILDING CONDITION ASSESSMENT

F. Re Cecconi, M. C. Dejaco and S. Maltese
Department of Architecture, Built Environment and Construction Engineering (ABC)
Politecnico di Milano, Milan
Italy

ABSTRACT

Building condition assessment has become more and more important in the last years because it is essential at any time of buildings life. An assessment is absolutely necessary, for instance, in building takeovers to know what one is going to buy or it can be used to measure global service contracts success; similarly, to be aware of the building actual condition is important when planning maintenance. Condition assessment process results, in this research, are given by an efficiency index, made of an index assessing anomalies and two assessing degradation, pertaining to the whole building. Although the building assessment is obtained through a global index, which is computed from indexes assessing each building component degradation and anomalies so a deep knowledge of building condition is assured.

In order to compute the degradation index, building components service life is compared to a Reference Service Life database. The two possible cases, either the service life of the component is smaller than the RSL or it is bigger, generate two different indexes here called D+ and D-. In order to compute the anomalies index building components anomalies are compared to a defined set of anomalies, which are categorized by typology, gravity of the damage and extension, and an index, here called A, measuring numbers and extensions of existing anomalies is created. Once building components have been assessed the information about their degradation (D+ and D-) and anomalies (A) of each component are grouped in building components families and then the three indexes of each family are grouped in indexes for the whole building. This index may be used in conjunction with another one assessing the building technical documents quality to reach a final index describing the whole building; both of them are supposed to be integrated in the building logbook.

In this paper two case studies are presented in order to show how the building efficiency index works, how the intermediate results may be useful and to prove the effectiveness of the methodology.

Key words: building condition assessment, building degradation, building anomalies, service life