Indicators for quantifying Environmental Building Performance: A systematic literature review

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www.elsevier.com/locate/jobe

PII: S2352-7102(18)30266-3
DOI: https://doi.org/10.1016/j.jobe.2018.06.006
Reference: JOBE513

To appear in: *Journal of Building Engineering*

Received date: 5 March 2018
Revised date: 27 May 2018
Accepted date: 8 June 2018

Cite this article as: Esmir Maslesa, Per Anker Jensen and Morten Birkved, Indicators for quantifying Environmental Building Performance: A systematic literature review, *Journal of Building Engineering,* https://doi.org/10.1016/j.jobe.2018.06.006

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ABSTRACT

Buildings as products are complex structures with a long service life compared to most other products and they induce considerable environmental impacts throughout their life cycle. The Environmental Building Performance (EBP) depends on attributes like building design, selection of building materials, building location, as well as operation and maintenance. This article provides the accumulated scientific knowledge on how to quantify EBP by a systematic literature review. Such knowledge is valuable for decision-makers and facilities managers in the process of implementing an environmental strategy and focusing on improving EBP. The review includes 69 articles that cover three research topics relating to EBP: I) indicator categories, II) building types and III) assessment methods. The results show that the environmental impacts are higher for non-residential buildings, and that the building use stage has significantly higher environmental impacts than the other stages. Relating to that, the article identifies eight main categories for quantifying EBP and discusses two methods for assessing EBP.

Keywords: Building performance; environmental performance; energy; facilities management; life cycle assessment