

Life Cycle Analysis: Applications and Implications for the Design of Greener Buildings

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There is a critical need to shift from prescriptive to environmental performance measures and approaches to green building in North America. For design teams, this is easier said than done as they try to sort through well-meaning, but often misleading, advice and rules of thumb. Life cycle assessment (LCA) offers the best prospect for establishing and achieving true environmental performance measures. Not only are all of the individual building products and elements subject to LCA, but so too is the building as a whole. However, the application of LCA techniques is especially difficult in the case of buildings because of the interrelationships of products in a building systems context and the nature of a building's life cycle.

This presentation will look at the essence of LCA from a non-practitioner's perspective, including a primer on LCA methods, terminology, and data sources, with a focus on the Athena Environmental Impact Estimator (EIE) for carrying out LCA at the whole building level. The presentation will also introduce a simple tools classification system, and establish how tools such as the EIE and BEES interrelate and where they fit in the green design process. Finally, the presentation will provide an up-date on work underway to introduce LCA into North American green building rating systems.