

Life Cycle Safety – What does it mean and why is it important?

The term Life Cycle Safety describes the need to comprehensively address building-related occupational safety and health risks for all affected worker groups across all life cycle stages. For example, once installed, vegetative roofs require workers to access the roof for periodic plant care and maintenance. How will they get to the roof? How will they get supplies to the roof? How will they be protected from falls while on the roof? These are Life Cycle Safety considerations best addressed during building design and planning stages.

Life Cycle Safety is a reminder that buildings also function as workplaces. The Leadership in Energy & Environmental Design (LEED) rating system already provides a partial foundation for Life Cycle Safety because improving health and well-being for building occupants is an explicit LEED objective. Green buildings offer significant benefits for building occupant workers compared to conventional buildings.

What about the workers who construct, operate, clean, maintain, renovate, repair and eventually dismantle green buildings? There are fewer of these employees, but they typically face disproportionately higher risks from building hazards. Shouldn't high performance green buildings also include benefits for these types of occupants compared to conventional buildings?

Viewed from this perspective, Life Cycle Safety can also be seen as a social equity issue needing additional consideration. While social equity is one of the three pillars of sustainability along with economic and environmental factors, it is often missing from the green building dialog. Because of this lack of attention, USGBC has actively sought to elevate social equity as a value and outcome integral to sustainable built environments.¹

Again, LEED provides a partial foundation to build upon. For example, it includes indoor air quality (IAQ) management credits that include the intent to “promote the comfort and well-being of construction workers”. It includes green cleaning credits designed to encourage use of powered equipment that is “ergonomically designed to minimize vibration, noise, and user fatigue” for custodial workers.

LEED aspires to comprehensively address life cycle issues and LEED Reference Guide materials do address operations and maintenance topics. Lastly, the LEED process assures that green building can address emerging issues so as to mature and evolve towards true sustainability and superior performance. Safety is an important issue and was included as a major attribute in the congressional definition of a “High Performance Building”²

Interested colleagues from the National Institute for Occupational Safety and Health (NIOSH) have engaged USGBC in discussions about Life Cycle Safety. They and their stakeholders, including researchers and LEED APs, have reviewed LEED credits and have identified a dozen credits where green practices could involve important Life Cycle hazards or exposures. They have also identified several credits that could provide positive “co-benefits” for construction and operations and maintenance workers. They are working to develop additional awareness and educational materials, new types of pilot credits, and different types of guidance materials. Life Cycle Safety is an issue you will be hearing more about in the future.

1 USGBC Strategic Plan 2009-2013

2 Energy Independence and Security Act (EISA) of 2007

