Living Building Challenge in Australia: Lessons learned from the Sustainable Buildings Research Centre

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Abstract

With the scientific consensus surrounding climate change and its impact, new strategies are being established to create resilient communities and cities. The Living Futures Institute out of the Cascade Green Building Council offers a framework that works to address these challenges through regenerative development. The aim of this project is to review the Living Building Challenge using an Australian example and explore challenges encountered by the newly built Sustainable Buildings Resource Center at the University of Wollongong. Interviews conducted with the project team reveal management strategies used to fulfill the principles of Living Building Challenge setting the stage for a highly sustainable building. These strategies include aligning sustainability commitment, integrated project delivery, and contractor capacity building. While these are just some of the factors that help make a successful project, they are significant in striving towards sustainable buildings and cities.

Background

The Living Building Challenge (LBC) is a green building certification program that can push our communities and cities to become more resilient and sustainable. “It is a philosophy, certification and advocacy tool for project to move beyond merely less bad and to become truly regenerative (Figure 1).”

This includes reaching performance targets like net zero, water, energy and waste, while including elements outside of traditional certification systems like biophilia and beauty meant to reconnect occupants with nature and deliver a building that society will value (Figure 2).

SUSTAINABLE BUILDINGS RESEARCH CENTRE:

This study focuses on the first LBC registered project in Australia the Sustainable Buildings Research Centre (SBRC). This facility houses a multi-disciplinary facility with a wide range of researchers to holistically address the challenges of making our buildings sustainable and effective places in which to live and work. Because of the need to create a living laboratory to assist in the rapid decarbonisation of the built environment, the SBRC project team decided the LBC was the standard they should meet.

Purpose

The purpose of this study is to provide insight into the processes found integral towards effectively implementing the LBC and achieving highly sustainable outcomes on building projects. The SBRC project team is interviewed to gain an Australian perspective about the divers and barriers implementing the LBC throughout the design and construction process.

Methods

- Interviews were set up with key representatives from the University of Wollongong, Cox Architecture and Baulderstone (Lend Lease) all of which were involved intimately with the SBRC and LBC decisions.
- Semi-structured interviews with guiding questions.
- Questions surrounded challenges and strategies in achieving LBC.
- Future project expansion to other Australian LBC projects

Results

• High Commitment to Sustainability:
  High aspirations and core value alignment is a necessary process in building green and defining success. This was found to be the case when all interview participants ranked the first step in adopting the LBC as aligning team values for a high level of sustainability.

• Integrated Project Delivery (IPD):
  Both the Owner and contractor ranked IPD as a priority for green building and a challenge to creating a Living Building if not implemented properly. IPD allows for optimizing building systems and the necessary energy cuts that are needed for net zero also leading financial savings that payback the initial higher cost of IPD.

• Contractor Capacity Building:
  Shifting focus from the Owner and design point of view, the contractor plays a crucial role in insuring project sustainability. The following played a significant role through construction:
  • Tying sub-contractor payouts to meeting sustainability requirements
  • Dedicated sustainability representative from Baulderstone to oversee implementation.

Conclusion

The LBC offers a philosophy and framework that can create resilient and sustainable buildings. The SBRC can shed light on significant processes through design and construction that should not be overlooked in the development of a Living Building.