Methods for the Value Optimisation of nearly Zero-Energy Renovation of Offices

Keywords: nZEB renovation, Value creation, Office renovation, Energy performance, Sustainability

Architectural Engineering + Technology Department (Climate Design and Sustainability)

Area of Research: Green Building Innovation

Research Summary: Please add approximately 175 words summary of your PhD research here. You may give a summary of objectives, problems, propositions/hypotheses etcetera

At present the main problems of nZEB office renovation in practice are: difficulties of decision making among innovative renovation solutions and unconsidered total values with technical renovation solutions. These barriers are highly related to lack of guides and analysis. The purpose of this study is to investigate how the ZEB technologies for office renovation are balanced with the value of nZEO at the conceptual level. The study proposes methods to guide for nearly zero energy office renovation activities. The main objective of this research is to develop the integrated renovation methods for optimizing the value of nZEB renovations. The integrated methods will assess architectural and technical concerns with the various aspects to increase value. The new way of workspace use has to be designed under the consideration of the requirements from various aspects such as energy, environmental, economic and social. The outcome of this research (the algorithm/flow charts) will suggest a guidance to conduct efficient zero energy office renovation in the conceptual level.

Research Methodology: The value enhancement of nZEO is expected to become complementary and decrease barriers which occur during the renovation process. The methodology will include new requirement of office space and new concept of workspace with energy efficient. Investigating different energy renovation measures and how the measures are balanced with value is the main issue in the whole study.

Key Publications: