

## **Net Zero Energy Building Design Framework for High-Rise Residential Facilities**

The development of high-rise residential facilities is becoming more competitive nowadays that it serves compelling promises on facilities to attract potential buyers and investors. With all these facilities, maintaining a high-rise property can be tormenting and at the same time the operating system devalues over the years. This challenge might hinder the properties' prospects from purchasing and affect the market value, thus resulting in more abandoned units left unsold. The implementation of zero-energy design concept and adaptation of green technologies are among the attempts, not only to mitigate this challenge but also to become an attractive offer to the increasing number of environmental-conscious prospects. However, despite its huge potential, an issue arises on the limited standard guidelines among the stakeholders on the zero-energy design concept that adopt the green technologies. Therefore, the study aims to explore the standard guideline in determining the required capacity needed for zero-energy design concept implementation.

This study is guided by three objectives i.e. to identify the key facilities and services related to common areas; to determine design factors for optimisation of energy consumption; and to develop a framework for effective implementation of zero-energy design concept. This will allow a smooth procedure in proposing a suitable system especially in the design development phase. Design development is a critical stage which determines the overall cost of a proposed building. Therefore, specifying the system at an early stage will help to manoeuvre the design towards a zero-energy approach. This study paves the way towards a controlled standard-of-procedures for renewable energy design which then will be fruitful for the Twelfth Malaysian Plan in realising its vision for a sustainable environment.

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