



Cairo University

Toward Net Zero-Carbon Buildings: Integrating Renewable Technologies in Architectural Design

By

Noha Omar Ismail Shawer

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
In
Architectural Engineering

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Title of Thesis: **Toward Net Zero-Carbon Buildings: Integrating
Renewable Technologies in Architectural Design**

Key Words: Zero Energy; Zero Carbon, Renewable Energy, Energy
Efficient, Energy Conservation.

Summary:

Total energy and carbon emissions play an important role in formulating sustainable development strategies and growing the interest in ZEBs. This study reviews the works related to ZEBs strategies and the methods of integrating the renewable technologies with a feasible way and takes decisions in the architectural design phase to adopt sustainable architecture principles and create a comfortable architectural environment, and how to implement all of that on a local existing case study in Egypt and achieve zero consumption, and this through two strategies EEMs and RETs.

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Dedication

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