Safaa Mahmoud

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Safaa Mahmoud

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

TOWARDS A NET ZERO ENERGY INTELLIGENT BUILDING (NZEIB)
(An Analytical Study for Residential Building Using a Complex of Environmental Software)

By

Rehab Zakria Abdel-Hamid Abdel-Ghani

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
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FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under the Supervision of

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Approved by the Examining Committee

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TOWARDS A NET ZERO ENERGY INTELLIGENT BUILDING (nZEIB)
(An Analytical Study for Residential Building Using a Complex of Environmental Software)

Key Words:
Zero Energy; Residential Compounds; Intelligent Systems; Environmental Software

Summary:

Residential buildings nowadays are progressively looked for meeting higher and more complex performance requirements; they should be sustainable, healthy, comfortable environment and smart for the occupants. Various attempts have been made to create low energy Residential buildings based on the sustainable energy performances.

Recently, The Concept of ***net Zero Energy Buildings (nZEB)*** has become an actual existence with proven effectiveness. ***Intelligent Buildings (IB)*** can also be evaluated as the main component of reducing power consumption.

This study presents new insights for achieving ***The Concept of net Zero Energy Intelligent Buildings (nZEIB)*** based on analytical study.

The development of key indicators of the ***ZEIB*** concept can become part of the national and international standards for residential buildings.

The research focuses primarily on *Passive Architecture (PA) Techniques and Renewable Energy Sources (RES)* in building and integration with *Information Technology(IT).*

The research suggests The ***(nZEIB)*** methodology as a possible solution for the problem and provides a guideline to be used among the luxury residential buildings.

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