



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY



Cairo University

**THE TECHNOLOGICAL DESIGN OF HIGH-RISE
BUILDINGS ENVELOPES AND ITS EFFECTIVE ROLE
IN IMPROVING THE PERFORMANCE, AND ENERGY
CONSERVATION
“TOWARDS A METHODOLOGY FOR ADAPTIVE
ENVELOPES DESIGN”**

By

Mahmoud Abdulaziz Abdulhalim Ahmed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY
in
Architectural Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under the Supervision of

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Title of Thesis:

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Key Words:

ADAPTIVE; ENVELOPE; PERFORMANCE; ENERGY; SKYSCRAPERS

Summary:

The thesis presents an overview of adaptive building envelopes that have an effective role in providing improvements in high-rise buildings performance. This study investigates these improvements, which may be shown through components, materials, or innovative systems to overcome the problems of energy consumption and improve the indoor environment. Several concepts of adaptive envelopes have been developed. Therefore, the thesis aims to introduce a methodology for high-rise buildings adaptive envelopes design.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: **Mahmoud Abdulaziz**

Date: / /

Signature:

Dedication

To my **Father** (R.I.P), the leader who put my success above himself, to my brother, and my soulmate **Khalid** (R.I.P) ,who held my hand in the dark and showed me the path of light, and gave me the strength I needed to take the next steps toward my dream. To my **Mother**, who pushed me to always try harder, to want the best out of my life, and to always be strong. To my nephews, **Abdulrahman Khalid**, and **Abdullah Khalid**, I wish that I see them Ph.D. holders.

I can never thank them enough with any words for their endless love and support.

I dedicate this thesis to them.

