



# **TOWARDS A METHODOLOGY TO BUILD SUSTAINABLE HOUSING PROJECTS IN EGYPT**

By

**Fayrouz Tarek Esmail Ali**

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**

FACULTY OF ENGINEERING, CAIRO UNIVERSITY  
GIZA, EGYPT  
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Under the supervision of

**Prof. DR. Mohamed Mahmoud Eweda**

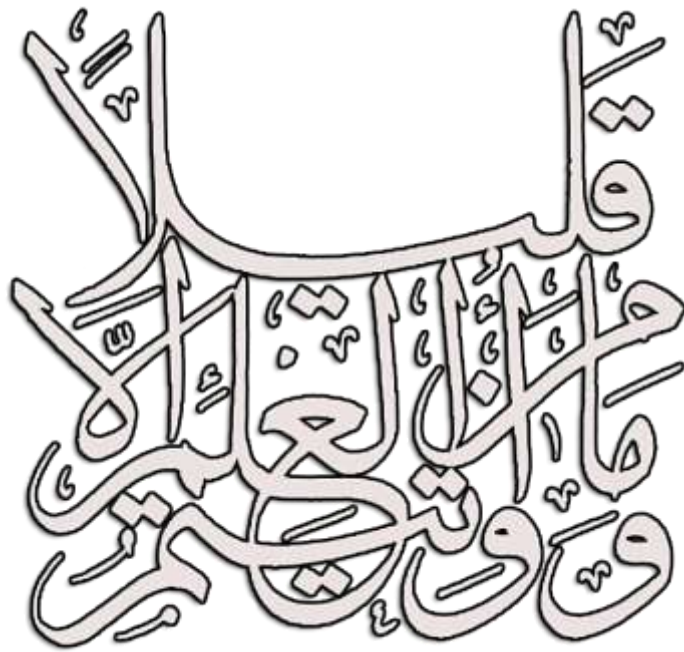
Professor of Architecture  
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FACULTY OF ENGINEERING, CAIRO UNIVERSITY  
GIZA, EGYPT

2019



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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**Title of Thesis:**

**Towards a Methodology to Build Sustainable Housing Projects in Egypt**

**Key Words:**

Sustainability; Sustainable Housing; Housing Characteristics in Egypt; Modern Building Techniques; Sustainable Building Materials

**Summary:**

This research attempts to define the concept of sustainability and its potentials in the construction sector through the assessment of sustainability level of each project based on global standards of sustainability. The aim of this research is to develop a methodology for the development of sustainable houses in Egypt, taking into account the best possible solutions for current housing challenges by investigating the validity of new building technologies around the world as sustainable alternatives to traditional building techniques in Egypt.





## **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 reference section.

Name:        Fayrouz Tarek Esmail Ali

Date:        /        /

Signature:



## **Dedication**

To my beloved family

And knowledge seekers all over the world

I dedicate this work



## **Acknowledgement**

Praise to Allah, the most gracious, merciful and the source of all knowledge by whose abundant grace this work has come to completion.

First of all, I would like to express my deepest thanks and appreciation to my supervisor; **Prof. Dr. Mohamed Mahmoud Eweda** for his kind supervision, beneficial discussions, valuable effort, and sincere help throughout this work.

My special thanks to my supporting family. Words cannot express how grateful I am to my **beloved mother and father** for all of the sacrifices that you've made on my behalf. Your prayer for me was what sustained me thus far. I owe you my success. I would also like to thank my **dear brother and sister** for their support, encouragement and love.

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I thank all who participated in this research and I pray that Allah bless them all and guide them to what's best for them.

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Fayrouz Tarek Esmail Ali



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