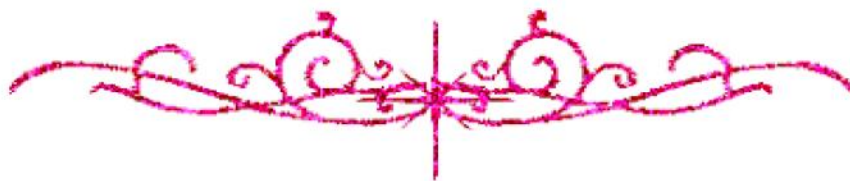


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التوثيق الإلكتروني والميكرو فيلم

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علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



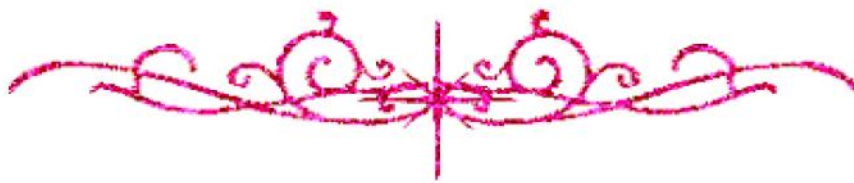
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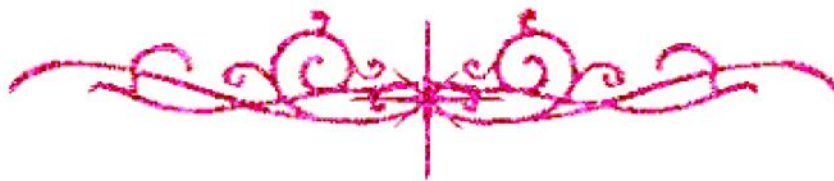


# بعض الوثائق الأصلية تالفة





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Cairo University



# **3D PRINTING TECHNOLOGY AS A WAY TO IMPROVE CONSTRUCTION ECONOMICS**

By

**Hend Shaaban Gaber Elgendy**

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  
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Under the Supervision of

**Prof. Dr. Hesham Sameh Hussain Sameh**

Professor of Architecture at Department of Architecture  
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**Title of Thesis:**

**3D PRINTING TECHNOLOGY AS A WAY TO IMPROVE CONSTRUCTION ECONOMICS**

**Key Words:**

3D Printing; Additive manufacturing; Construction System; 3D Construction Printing (3DCP); Low Cost

**Summary:**

The thesis aims to display the potentials of 3D printing technology in the construction industry. 3D printing (3DP) is a promising technology that has the potential to be an effective means of increasing project efficiency and profitability in the field. It also has positive environmental impacts. However, this technology is still highly limited by size, material, skilled labor, and industry reluctance.

The thesis also aims to analyze progressive 3DP companies that are able to effectively employ this technology on real constructions of large scale.

## **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: Hend Shaaban Gaber Elgendy

Date: / / 2020

Signature:

# Dedication

I dedicate this thesis to the following people whom I respect and admire:

- My Father, God blesses your soul. I wish you are very proud of me.
- My Mother, my husband, my Hamza and my little princess Sreen, no words can express all you did to me. I have a good life because I have you.
- My amazing family and friends, thank you for your love, support and constant encouragement I have always got over the years.
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