



Cairo University

Numerical assessment of multistorey reinforced concrete framed structures subjected to blast loading using the Applied Element Method

By

Mohamed Ramadan Ibrahim Hafez Albady

A Thesis Submitted to the
Faculty of Engineering, Cairo University

In Partial Fulfillment of the
Requirements for the Degree of

MASTER OF SCIENCE

In
STRUCTURAL ENGINEERING

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under the Supervision of

**Prof. Dr. Hamed Mohamed
Mahmoud Hadhoud**

Professor of structural Engineering
Structural department
Faculty of Engineering
Cairo University

**Dr. Huda Mohamed Helmy
Hussein**

Design engineer at
Misr concrete development company

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Approved by the

Examining Committee

Prof. Dr. Hamed Mohamed Mahmoud Hadhoud

Thesis Main Advisor

Prof. Dr. Huda Mohamed Helmy Hussein

Thesis Advisor

Prof. Dr. Hatem Mostafa Mohamed

Internal Examiner

Prof. Dr. Mohamed Abd Elgawad

External Examiner

Housing and Building National Research Centre

FACULTY OF ENGINEERING, CAIRO UNIVERSITY

GIZA, EGYPT

2017

Engineer: Mohamed Ramadan Ibrahim Hafez Albady
Date of Birth: 12 / 07 / 1986
Nationality: Egyptian
E-mail: mo_no_albady2008@yahoo.com
Phone: +2 01006732897
Address: Kafr Alarab- Fareskour- Damietta
Registration Date: 01 / 10 / 2010
Awarding Date: / /
Degree: Master of Science
Department: Structural Engineering
Supervisors: **Prof. Dr. Hamed Mohamed Mahmoud Hadhoud**



Dr. Huda Mohamed Helmy Hussein

Examiners: **Prof. Dr. Mohamed Abd Elgawad** (External examiner)
Prof. Dr. Hatem Mostafa Mohamed (Internal examiner)
Prof. Dr. Hamed Mohamed Hadhoud (Thesis main advisor)

Dr. Huda Mohamed Helmy (Thesis advisor)

Title of Thesis: **Numerical assessment of multistorey reinforced concrete framed structures subjected to blast loading using the Applied Element Method**

Key Words: Blast load – Progressive collapse – Strengthening

Summary:

Explosions beside a structure can lead to severe damage in the building structural elements. There are number of factors that can cause loss of life and injuries such as structural collapse, fire, smoke, debris impact and direct blast effects. There are also indirect effects that need evacuation, which may cause additional casualties. During the last three decades, number of efforts has been made to reach new design to resist blast loads. Studies about the structural concrete behavior to blast loads have promoted understanding the role of structural details that effects on the behavior.

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Dedication

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