



THE IMPACTS OF WIDE SPAN STRUCTURE ON BUILDING ECONOMICS

The effects of economic factors on building's life span

By

Mohamad Khaled Bassma

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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2016

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Under the Supervision of
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Title of Thesis: **THE IMPACTS OF WIDE SPAN STRUCTURE ON BUILDING ECONOMICS**

Key Words: Wide Span - Structure System - Building Economics - Economical Factors – Building Life Cycle

Summary:

As the necessity for a wide span in architecture, various forms, span systems and materials have been designed and developed by architects and engineers. Due to technological development, cost rates and consideration of aesthetic appeal, wide span structure is widely used in most countries around the world. Construction of these structures becomes complex and a significant driver of cost.

Achieving economical wide span building structures requires a deep understanding of the key relationships among framing concepts, construction sequences, fabrication processes and erection methods. Economic factors that affect these relationships will increase costs in building life cycle.

Acknowledgments

Firstly, I would like to express my sincere gratitude to my advisor Prof Mohamed Mahmoud Eweda for the continuous support of my thesis, for his patience, motivation, and immense knowledge. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my study.

Besides my advisor, I would like to thank the rest of my thesis committee: Prof. Medhat Abd akmajed Alshazli, and Prof. Hesham Mahmud Aref for their insightful comments and encouragement, but also for the hard question which incited me to widen my research from various perspectives.

I take this opportunity to express gratitude to all of the Department faculty members for their help and support, to all my friends for their support and help.

Last but not the least; I would like to thank my family: first to my beloved Mother, for her prayers to me, and to my brother and sisters and their families for supporting me spiritually throughout writing this thesis and my life in general.

Dedication

أبي

This thesis is dedicated to the memory and soul of my father.

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Abbreviations

WSSS	Wide Span Structure System
SS	Structure System
WSSB	Wide Span Structure Building
LCC	Life Cycle Cost
BCE	Before the Common/Current/Christian Era
CE	Common/Current/Christian Era
AD	anno Domini
PVC	Polyvinyl chloride
PTFE	Poly tetra fluoro ethylene
ETFE	Ethylene tetra fluoro ethylene
SCSD	System for California Schoo
FP	Folded Plates
BR	Barrel Vaults