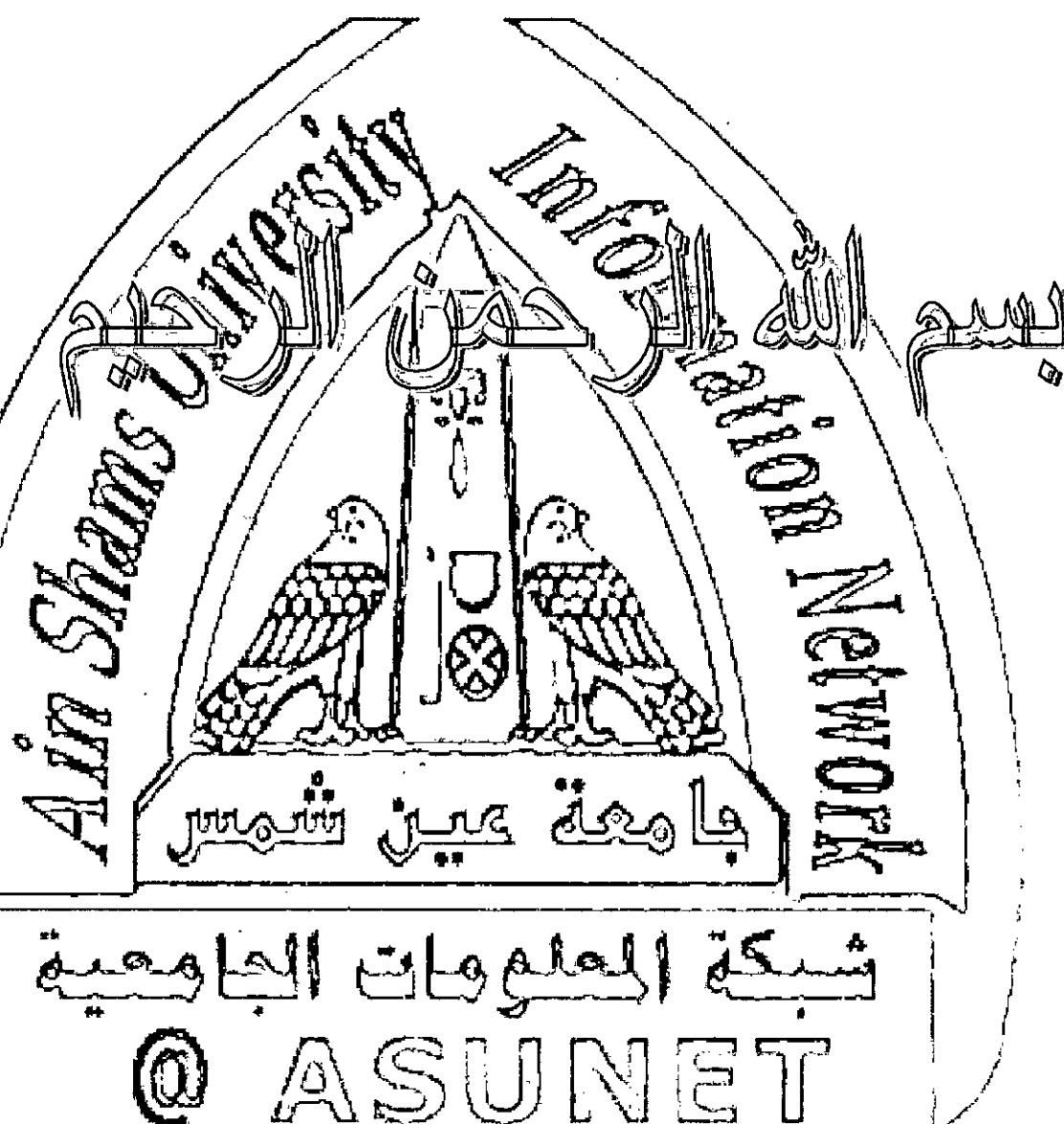




شبكة المعلومات الجامعية





شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%

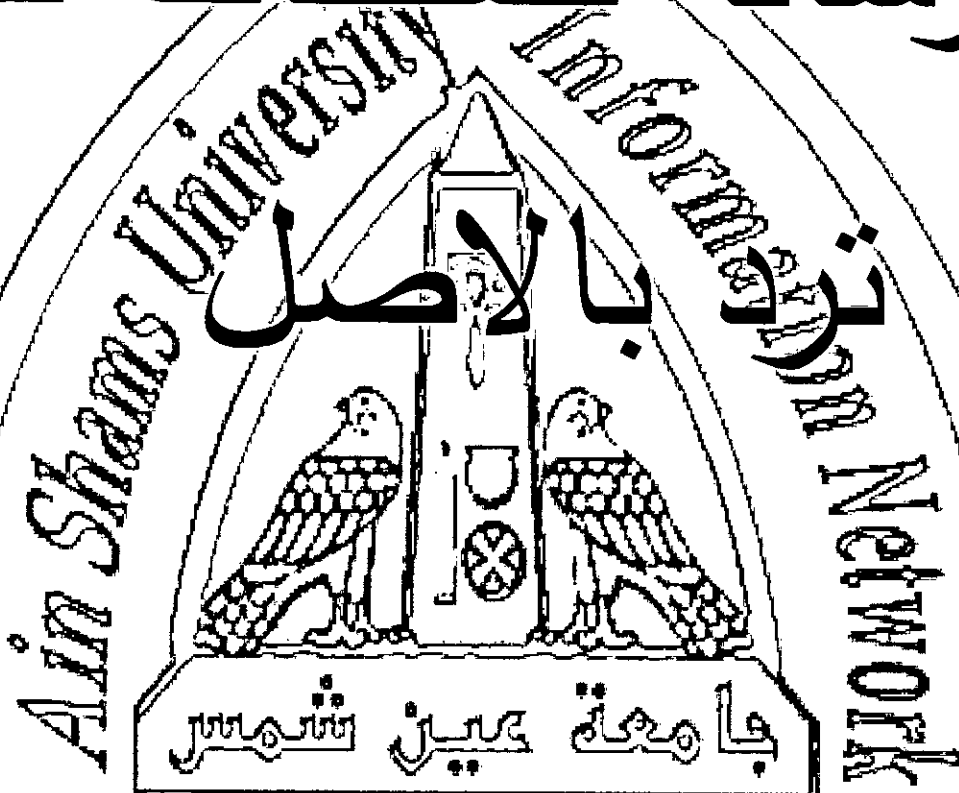


شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم

بعض الوثائق
مكتبة خالفة
Ain Shams University
Information Network
جامعة عين شمس

شبكة المعلومات الجامعية
@ ASUNET

بالرسالة صفحات لح



شبكة المعلومات الجامعية
@ ASUNET

**THE DESIGN AND CONSERVATION OF
ISLAMIC GARDENS:
THE CASE OF THE MUGHAL GARDENS**

By
Eng. Inji Mohei-Eldine Abdel Latif Kenawy

**A Thesis Submitted to the
Faculty of Engineering at Cairo
University in Partial Fulfillment of the
Requirements for the Degree of
Masters**

In
ARCHITECTURAL ENGINEERING

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
JUNE 2008**

84251

THE DESIGN AND CONSERVATION OF ISLAMIC GARDENS: THE CASE OF THE MUGHAL GARDENS

**By
Eng. Inji Mohei-Eldine Abdel Latif Kenawy**

**A Thesis Submitted to the
Faculty of Engineering at Cairo
University in Partial Fulfillment of the
Requirements for the Degree of
Masters**

**In
ARCHITECTURAL ENGINEERING**

Under the Supervision of

**Prof. Dr. Mohamed M. el Barmalgy
Professor of Urban Planning
Former Head of Arch. Dept.
Faculty of Engineering**

**Dr. Ayman Hassan Ahmed
Associate Professor
Dept. of Architecture
Faculty of Engineering**

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
JUNE 2008**

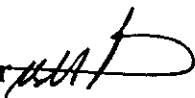
THE DESIGN AND CONSERVATION OF ISLAMIC GARDENS: THE CASE OF THE MUGHAL GARDENS

**By
Eng. Inji Mohei-Eldine Abdel Latif Kenawy**

**A Thesis Submitted to the
Faculty of Engineering at Cairo
University in Partial Fulfillment of the
Requirements for the Degree of
Masters**

**In
ARCHITECTURAL ENGINEERING**

Approved by the Examining Committee

Prof. Dr. Mohamed M. El Barmalgy, Thesis Main Advisor 

Prof. Dr. Mohamed Kamal El Din Sameh, Member 

Prof. Dr. Mohamed Tawfik Abdel Gawad, Member 

Assis. Prof. Dr. Ayman Hassan Ahmed, Thesis Second Advisor 

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
JUNE 2008**

TABLE OF CONTENTS

LIST OF FIGURES	xiv
LIST OF TABLES	xxvi
ACKNOLEDGMENTS	xxviii
ABSTRACT	xxix

CHAPTER ONE: INTRODUCTION

1.1 The Research Problem.	2
1.2 Research Objectives.	7
1.3 Research Limitations.	8
1.4 Research Methodology.	8

CHAPTER TWO: DESIGN GUIDELINES OF THE GARDENS

2.1 Introduction.	12
2.2 Examination of Historical Precedent.	14
2.2.1 Ancient Egyptian Gardens (2600-31 B.c.).	15
2.2.2 Ancient Greek Gardens (480-146 B. c.).	16
2.2.3 Ancient Roman Gardens (27 B.c.-476 AD).	17
2.2.4 Ancient Chinese Gardens (1600 BC-1279 AD).	19
2.2.5 Japanese Gardens (575-1600 AD).	20
2.2.6 Medieval European Gardens(AD 500-1200).	21
2.2.7 Moorish Gardens.	23
2.2.8 Gardens in Renaissance Italy.	24
2.2.9 The formal French garden.	26
2.2.10 The English Landscape Garden (1715-1820).	27
2.2.11 The English Victorian Garden (1820- 1880).	29
2.2.12 The Edwardian Garden (1880-1914).	29
2.2.13 The American Garden (1840-1920).	30

2.2.14	Modern Landscape Architecture in America (1940- 1970).	31
2.2.15	The Environmental Movement (1970-present).	32
2.3	The Design Analysis.	33
2.3.1	Site analysis.	33
2.3.1.1	Climate.	34
2.3.1.2	Soil.	35
2.3.2	Analysis of Users' Need.	36
2.4	Exploring Design Ideas.	36
2.4.1	Establishing a Design Concept.	37
2.4.2	Determining the Design Program.	37
2.4.3	Creating the Design.	38
2.4.3.1	Axial Conditions.	39
2.4.3.2	Circulation.	40
2.4.3.3	Geometry.	40
2.4.3.4	Grid.	41
2.4.3.5	Hierarchy.	41
2.4.3.6	Points of Transition.	42
2.4.3.7	Structuring Elements.	42
2.4.3.8	Public versus Private Space.	43
2.4.3.9	The Borrowed View.	43
2.4.3.10	Figure and Ground.	44
2.5	Creating a Design Vocabulary: Elements of the Garden.	44
2.5.1	The main components of the space.	44
2.5.1.1	The walls of the landscape.	44
2.5.1.2	The ceiling of the landscape.	46
2.5.1.3	Ground cover.	47
2.5.1.4	Embellishment.	48

2.6	Composing the Landscape Design.	50
2.6.1	Basic Principles of Landscape Design.	50
2.6.1.1	Elements of Art.	50
2.6.1.2	Principles of Design.	55
 CHAPTER THREE: THE ISLAMIC GARDENS		
3.1	Introduction.	64
3.2	Paradise Gardens	64
3.2.1	History of Paradise Gardens.	64
3.2.2	Paradise for Muslims.	65
3.2.2.1	Effects of Paradise and Attention.	65
3.2.3	Paradise in the Quran and Hadith.	66
3.2.4	Design and Symbolism.	67
3.2.4.1	Geometry and Number.	67
3.2.4.2	Development of the Chahar Bagh.	70
3.2.4.3	The Concept of Unity.	71
3.3	Islamic Gardens.	72
3.3.1	Islamic Gardens History.	74
3.3.2	Types of Islamic Gardens.	76
3.3.3	Stimulating the Senses.	77
3.3.4	The Typical Elements of the Islamic Gardens following the Description of the Quran.	78
3.3.4.1	Quadripartite Layout.	78
3.3.4.2	Water.	79
3.3.4.3	Trees and flowers.	80
3.3.4.4	Pavilions.	82
3.3.4.5	Walls and Gates.	82
3.3.5	The Characteristics of the Islamic Gardens.	83

3.3.5.1	Order.	83
3.3.5.2	Space.	85
3.3.5.3	Form.	86
3.3.5.4	Texture and pattern.	88
3.3.5.5	Light and color.	90
3.3.5.6	Movement.	92
3.4	Examples of the Islamic Gardens	94
3.4.1	Moorish Spain.	94
3.4.2.1	Alhambra Granada.	96
3.4.2.2	Generalife Granada.	99
3.4.2.3	Alcazar Seville.	101
 CHAPTER FOUR: THE BACKGROUND OF MUGHAL GARDENS.		
4.1	Introduction.	104
4.2	The Persian Gardens.	104
4.2.1	Brief History of Persia.	104
4.2.2	Old Paradise Gardens of Persia.	106
4.2.3	Persian Islamic Gardens.	110
4.2.4	Types and Styles of Persian Gardens.	114
4.2.5	Concept of the Persian Paradise Gardens.	117
4.2.6	Water and Irrigation System.	119
4.2.7	Plants Used in Persian Paradise.	119
4.2.8	Persian's Influence on the Mughals' Gardens.	121
4.2.9	Conclusion.	123
4.3	The Indian Background.	124
4.3.1	Brief History of India.	124
4.3.1.1	Before Islam.	124

4.3.1.2	The Mughal Empire.	126
4.3.2	Indian Gardens.	129
4.3.2.1	History.	129
4.3.2.2	Concept of the Gardens.	130
4.3.2.3	Types of Sacred Gardens.	133
4.3.2.4	Trees.	134
4.3.2.5	Influence of the Old Indian Gardens on The Mughal Gardens.	135
4.3.3	The Mughal Gardens.	135
4.3.3.1	Kinds of Mughal Islamic Gardens.	139
4.3.3.2	Islamic Symbolism.	140
4.3.3.3	Concept.	141
4.3.3.4	Water.	143
4.3.3.5	Planting.	145
 CHAPTER FIVE: THE MUGHAL EMPIRE AND GARDENS.		
5.1	Introduction	155
5.2	The Reign of Babur, 1526-1530.	155
5.2.1	Chronology.	155
5.2.2	Background.	156
5.2.2.1	Brief History of Babur.	157
5.2.3	Babur's Gardens.	158
5.2.3.1	Gardens in Kabul.	158
5.2.3.2	Gardens in Agra.	160
5.2.3.3	The Ram Bagh.	162
5.3	The Reign of Humayun, 1530-1556.	167
5.3.1	Chronology.	167
5.3.2	Brief History of Humayun.	167