CONTEMPORARY COPTIC ORTHODOX CHURCH ARCHITECTURE

An Evaluative Model for Traditionalist Church Designs

Prepared by

Sherif Raouf Morgan

A Thesis submitted to the Faculty of Engineering at Cairo University In Partial Fulfillment of the Requirements for the Degree of

> DOCTOR OF PHILOSOPHY In Architectural Engineering

CONTEMPORARY COPTIC ORTHODOX CHURCH ARCHITECTURE

An Evaluative Model for Traditionalist Church Designs

Prepared by

Sherif Raouf Morgan

A Thesis submitted to the Faculty of Engineering at Cairo University In Partial Fulfillment of the Requirements for the Degree of

> DOCTOR OF PHILOSOPHY In Architectural Engineering

Under The Supervision of

Prof. Dr. Sami Sabri Shaker

Professor of Urban Design Faculty of Engineering Cairo University Prof. Dr. Aly Hatem Gabr

Professor of Architecture Faculty of Engineering Cairo University

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA – EGYPT
2016

CONTEMPORARY COPTIC ORTHODOX CHURCH ARCHITECTURE

An Evaluative Model for Traditionalist Church Designs

Prepared by

Sherif Raouf Morgan

A Thesis submitted to the Faculty of Engineering at Cairo University In Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY In Architectural Engineering

Approved by the Examining Committee:

Prof. Dr. Sami Sabri Shaker	Main Advisor
Prof. Dr. Aly Hatem Gabr	Member
Prof. Dr. Naela Farid Toulan	Internal Examiner
Prof. Dr. Mohamed Samir Seif El Yazl Faculty of Fine Arts, Helwan University	External Examiner

Engineer's Name: SHERIF RAOUF AMIN MORGAN

Date of Birth: 05 /06 / 1982 **Nationality:** Egyptian

E-mail: morgan_sherif@yahoo.com

Phone: 02-25608191

Address: NewCairo, 5th settlement, street 39 villa84

Registration Date: 01 / 10 / 2012 **Awarding Date:** / 2016

Degree: Doctor of Philosophy **Department:** Architectural Engineering

Supervisors: Prof. Dr. Sami Sabri Shaker

Prof. Dr. Aly Hatem Gabr

Examiners: Prof. Dr. Mohamed Samir Seif El Yazl (External Examiner)

Faculty of Fine Arts, Helwan University

Prof. Dr. Naela Farid Toulan (Internal Examiner)
Prof. Dr. Sami Sabri Shaker (Thesis Main Advisor)

Prof. Dr. Aly Hatem Gabr (Member)

Title of Thesis: CONTEMPORARY COPTIC ORTHODOX CHURCH

ARCHITECTURE

An Evaluative model for Traditionalist Church Designs

Key Words: Coptic Orthodox; Church; Architecture; Contemporary;

Traditionalist

Summary: This thesis discusses Contemporary Coptic Orthodox Church

architecture in relation to the current worldviews, being traditional, modernized, or traditionalist linking both together. Focus is made on the Coptic Culture within Egypt's multicultural layers. Progress of Coptic Church architecture is discussed through time, together with the different traditional typologies of historical churches. Further investigation to understand Coptic Church architecture is made through understanding the main Church design fundamentals and the different approaches to understand traditional historical churches. An evaluative model is designed to apply on contemporary case studies to understand how far or near a case study may be from traditional Coptic culture. Finally, results are discussed together with the conclusions and prospects for future research based on the findings of this thesis are

suggested.

ACKNOWLEGEMENT

It is my duty and wishes to thank all who participated in the production of this research either by their technical or moral support. First, I would like to thank God for His Kindness and Grace, to have given me the vision, strength and patience to reach out to finalize this research.

I would like to thank my advisors Dr. Shaker and Dr. Gabr for their help, supervision and contribution in this research and previously with my Master thesis too. Special thanks to Dr. Shaker for his valuable support in this topic that he masters best. He has been so generous with all his information, resources available and contacts with people who helped in the data gathering of the research and interviews. In addition, Dr. Gabr for his insight, technical, theoretical and philosophical support throughout the whole thesis, that has made me enjoy his remarks and uplifted the quality of this thesis.

On the other hand, I would like to express my deepest gratitude to my direct and extended family, for their support all through the research period. Special thanks to my wife and both kids for enduring my absence due to the time spent on the thesis, furthermore, my mother and sister for their continuous effort to charge my energy with their wise advice. Cannot thank my father *Raouf* enough for his day by day support in each and every detail of the research process, he is my role model that one can hardly reach. To all my friends, your wishes for me and support really meant a lot to me, thank you.

Finally, I would like to thank and dedicate the research to my dearest and lovely wife *Sherry* and both my lovely kids *Youssef and Malak* for their extreme patience, tolerance and support throughout the whole research process. The research would not have reached its final form without them being by my side.

TABLE OF CONTENTS

AKI	NOWLEDGEMENT	i
	BLE OF CONTENTS	
LIS	T OF TABLES	V
	T OF FIGURES	
	STRACT	
CH	APTER ONE	
_	RODUCTION	1
1111	NODE CTTOTY	1
1.1.	Introduction and Problem brief	1
1.2.		
1.2.	1.2.1. Research Aim and Objectives.	
	1.2.2. Research Hypothesis	
	1.2.3. Research Questions	
	1.2.4. Research Methodology	
	1.2.5. Research Limitations	
	1.2.6. Research Framework	
	1.2.0. Research Francework	∠1
CII	APTER TWO	
_		TTT
	ADITIONAL VERSUS MODERN WORLDS AND THE STATUS QUO OF T	
EG Y	YPTIAN SOCIETY	25
2.1	Lutus dusetion	25
2.1. 2.2.		
2.3.	Egyptian Society Enlightenment and Modernity	
2.4.	Egypt's Schism: Traditional and Modern Civilizations	
	2.4.1. The reflection of traditional and modernism schism on art	31
	2.4.2. The reflection of traditional and modernism schism on architecture and	25
	urbanism	
2.5.		
2.6.	The need for a traditionalist approach as a way of linking Traditional to Modern	
	Civilizations	
2.7.	Concluding Summary	46
CH	APTER THREE	
RO	OTS OF COPTIC CULTURE IN A MULTI-CULTURAL EGYPTIAN	
SOC	CIETY	47
3.1	Introduction	47
3.2	The Emergence of Coptic Christianity within Ancient Egyptian, Greco-Roman,	and
	Jewish communities	
3.3	Effect of Egyptian multi-cultures on Coptic art	
3.4	Effect of Egyptian multi-cultures on Coptic architecture	

3.5		
3.6	Concluding Summary	67
CF	HAPTER FOUR	
_	VELOPMENT OF COPTIC CHURCH ARCHITECTURE THROUGH	H TIME.69
4.1	Introduction	69
–	Church Form Designs and Coptic Orthodox Traditional Typologies	
	4.2.1 Church Form Design Morphologies	
	4.2.2 Typologies of historical Coptic Churches 4 th to 19 th Century	74
4.3	Factors affecting Coptic Church designs	85
	4.3.1 Social Aspects	
	4.3.2 Political Aspects	
	4.3.3 Natural Aspects	
	4.3.4 Cultural Aspects	
4.4	What is the scale of changed factors, its results, and the emergence of new	71 C
4.5	Concluding Summary	
т.Э	Concluding Summary	
_	HAPTER FIVE OW TO UNDERSTAND TRADITIONAL COPTIC CHURCH ARCHIT	TECTURE
5.1	Introduction	97
5.2	1	
	5.2.1 Spatial Dynamics	
	5.2.2 Centering Focus	
	5.2.3 Aesthetic Impact	
	5.2.4 Symbolic Resonance	
<i>5</i> 2	5.2.5 A Cross reading between the different fundamentals	
5.3	Approaches to understand Coptic Church traditional architecture	
	5.3.2 Esoteric Approach	
	5.3.3 Normative Approach	
	5.3.4 Regional Approach	
	5.3.5 A Cross reading between the different approaches	
5.4		
CO	HAPTER SIX ONTEMPORARY COPTIC CHURCH ARCHITECTURE THEORETI 'ALUATIVE MODEL	CAL
6.1	Introduction	
6.2		
6.3		re, their
	design fundamentals and the factors affecting them	129

6.4	• •	rocess and evaluative model	
6.5	•	sampling and documentation	
		e study sampling process	
		e study selection	
		e study documentation	
6.6	Concluding	summary	140
_	APTER SI		CTUDY
LVA	LUATIVE	MODEL APPLICATION ON A CONTEMPORARY CASE	
7.1	Introduction	On	
7.2		ry Church Brief Background	
7.3	-	ry Church Analyses	
	_	ectural Form and Plan Analysis	
,		Relation to Church Morphological Form Designs	
		Relation to Traditional Typologies	
	7.3.1.2	Factors affecting church form and plan design and their Scale	of change
	7.3.1.3		
7	3.2 Interna	l Design Analysis	
,	7.3.2.1		
		Centering Focus	
		Factors affecting Internal Design and Scale of change	
7		ct Design Analysis	
•		Aesthetic Impact	
		Symbolic Resonance	
		Factors affecting Abstract Design and Scale of change	
7		design scale and result of change	
7.4		g Summary	
	·		170
_	APTER E	IGHT CONCLUSIONS, AND PROSPECTS FOR FUTURE RESEA	ARCH
DIO		corrections, and troop lets for forer reserv	179
8.1	Introducti	on	
8.2		of understanding the status quo of contemporary Coptic Church	
0.2		re	179
8.3		n and Conclusions	
8.4		of Future Research	
	P*****		
LIST	Γ OF REFI	ERENCES	185

LIST OF TABLES

CHAPTER ONE

INTRODUCTION
CHAPTER TWO TRADITIONAL VERSUS MODERN WORLDS AND THE STATUS QUO OF THE EGYPTIAN SOCIETY
CHAPTER THREE ROOTS OF COPTIC CULTURE IN A MULTI-CULTURAL EGYPTIAN SOCIETY
CHAPTER FOUR DEVELOPMENT OF COPTIC CHURCH ARCHITECTURE THROUGH TIME
Table 4.1 Capuani's classification of Coptic Church design typologies
Table 4.4 Comparison of typological classification themes, their authors and its year of publication84
CHAPTER FIVE HOW TO UNDERSTAND TRADITIONAL COPTIC CHURCH ARCHITECTURE
CHAPTER SIX CONTEMPORARY COPTIC CHURCH ARCHITECTURE THEORETICAL EVALUATIVE MODEL
Table 6.1 Selected approaches to understand each of the church design fundamentals131 Table 6.2 Analyses structure to understand church design fundamentals using different approaches while realizing the factors affecting church design
CHAPTER SEVEN EVALUATIVE MODEL APPLICATION ON A CONTEMPORARY CASE STUDY
CHAPTER EIGHT DISCUSSION, CONCLUSIONS, AND PROSPECTS FOR FUTURE RESEARCH

LIST OF FIGURES

CHAPTER ONE INTRODUCTION

Figure 1.1 C	Orthodox Churches of different denominations, left image is for St. Mary	
(Orthodox Church in Niranam, India. Right image is for the Christ the Savior	
	Orthodox Cathedral in Moscow.	3
	Comparison between St. Mark (left) and St. George (right) Coptic Churches in	
_	Heliopolis	
	/aughan Hoy Studio competition modernized design entry	
	Hariri & Hariri Architecture, competition modernized design entry	
-	Coptic Canadian village design entry of the team the researcher was part of,	,
_	courtesy Dr. Sami S. Shaker	Q
	St. Mark's Coptic Canadian Cathedral, Following the First Prize competition	3
		^
	design entry	丿
-	Coptic Churches Inside and Outside Egypt with different design outcomes but	
	very close resemblance of Byzantine traditional effect except for the Virgin	_
	Mary Church in Zamalek with a Basilican influence	
	nductive Research Methodology and Procedure	
	Flow chart of thesis' structure	
Figure 1.10 T	Thesis outline flowchart	3
CHAPTE		
	ONAL VERSUS MODERN WORLDS AND THE STATUS QUO OF THE	,
EGYPTIAN	N SOCIETY	
		_
•	Left) Not to be reproduced (year unknown), (Right) The son of man (1946),3	
_	Chafik Charobim: Poplars - 1995 - Lake Karoun, Fayoum, Egypt3	
_	Farouk Hosny: acrylic on canvas, 177x242 cm	
	Cairo's Google image, showing the difference between the left side (Khedivial	
	Cairo) modernized urban design and the right side (Fatimid Cairo) with a	
t	raditional urban fabric3	7
Figure 2.5 A	AUC Campus, New Cairo, by Abdel Halim Ibrahim using a traditionalist	
a	approach39	9
	The process of traditionalization:4	
Figure 2.7 R	Relation between the physical and metaphysical world through symbolism of	
		1
а	archetypes4	+

CHAPTER THREE ROOTS OF COPTIC CULTURE IN A MULTI-CULTURAL EGYPTIAN SOCIETY

Figure 3.1 Map of Ancient Egypt showing Greek Cities	51
Figure 3.2 Holy Relics of Saint Pope Boutrous VII, St. Sarabamon of the Scacf - from S	
Sarabamoun Shrine at the Old Cathedral, Azbakia, Cairo, Egypt - Oct 2011 -	-
Photograph by Michael Ghaly	53
Figure 3.3 Anthropoid sarcophagus in sandstone	53
Figure 3.4 Icon of Archangel Michael (left) and the djed pillar in Seti 1 Abydos (right), (2002)	55
Figure 3.5 Mother and Child theme in Ancient Egyptian (left) and Coptic Art (right), Ka	
Figure 3.6 Saint Sergius and Saint Bacchus Church Iconostases, in Old Cairo	57
Figure 3.7 Stone-carved monument in the Coptic Museum, Kamil (2002)	
Figure 3.8 Coptic textile fabrics, Capuani (2002)	
Figure 3.9 The Tabernacle reconstruction (left) and the Temple reconstruction (right) sh similarities in zones and function	
Figure 3.10 Comparison between the Church building and the Tabernacle zonings	63
Figure 3.11 Comparison between the Roman court law at the left and the church thronos	s on the
right of St. Barbara Church in Old Cairo, photo by researcher	
Figure 3.12 A-Philae Temple, Aswan, B- Christian Altar inside Philae Temple,	
Figure 3.13 Comparison between the Ancient Egyptian Temple and the Coptic Church.	65
CHAPTER FOUR	
DEVELOPMENT OF COPTIC CHURCH ARCHITECTURE THROUGH	TIME
Figure 4.1 Abu Mina Main Church (left) and the Basilica of Al Ashmounein (rig	(ht)70
Figure 4.2 Saint George Church in Heliopolis with a Cruciform plan, designed b	
Wissa Wassef	
Figure 4.3 Saint Georgios and Saint Antony Church, Al-Nozha, showing a circul	
Figure 4.4 The Ancient Egyptian boat's journey to the afterlife	73
Figure 4.5 A- St. Barbara's Church and - B- Virgin Mary's Hanging Church, Old	
Wood Roof Structure, photos by researcher	
Figure 4.6 Comparison between Non-basilican Church design	
Figure 4.7 The Coptic Orthodox Church typologies through the classification of	
distribution on the roof	
Figure 4.8 Main factors affecting Coptic Church designs	86
Figure 4.9 Saint Sergius and Saint Bacchus Church Plan (left) and blow up (righ	t) showing
the Womens' division and entrance benches as Islamic social influence	es87
Figure 4.10 Saint Mercurius Abo Sefein Church Plan (left) and blow up (right) s	howing
the Womens' division and Mandarah/reception with entrance benche	es to the
left with an open court as Islamic social influences	
Figure 4.11 A Nubian church (left) showing in the blow up (right) the eastern pa	
to hide/escape from persecutors attacks	
Figure 4.12 St.Mercurius Abo Sefein Church (left) St.Shenoute Church (right) be	
showing modest facades	

Figure 4.13 St. Pshoi monastery old church showing the use of domes and vaults, photo by Sherif Sonbol
Figure 4.14 (top left) Coptic museum façade (top right) Al-Aqmar Mosque façade90 Figure 4.15 Old Coptic Cathedral showing Greek influence, photo by Sherif Sonbol92
Figure 4.16 El Botroseya Church in Abbaseya area showing European design influences on the exterior and interior of the church, photos by Sherif Sonbol93
Figure 4.17 Diagram illustrating the scale of change of factors affecting the Church designs and their results, by researcher94
Figure 4.18 Diagram to understand why the need of new typologies and how to reach them in respect to the Coptic Orthodox heritage, by researcher94
CHAPTER FIVE HOW TO UNDERSTAND TRADITIONAL COPTIC CHURCH ARCHITECTURE
Figure 5.1 Fundamentals to understand Coptic Church Traditional Architecture98
Figure 5.2 Both St. Mark (left, A and C) and St. George (right, B and D) Coptic Churches in Heliopolis, show a central domed ceiling yet longitudinal processional plan, photos by researcher
Figure 5.3 Virgin Mary Hanging Church plan showing spatial dynamics focusing towards the altar. Plan coloring and illustration by researcher
Figure 5.4 Virgin Mary Hanging Church plan showing spatial dynamics of worshipers and clergy throughout the Eucharist Liturgy. Plan coloring and illustration by researcher
Figure 5.5 Saint Barbara Church 3D Analysis showing the centering focus to the altar 103 Figure 5.6 Saint Barbara's Church's Central Altar, Ciborium, and Thronos showing the centering focus of the altar and the supporting elements
Figure 5.7 Anafora Church showing a minimalist approach to address beauty, morning shot
Figure 5.8 Anafora Church showing a minimalist approach to address beauty, night shot 106
Figure 5.9 The Cathedral of St. Mark, photo by Sherif Sonbol
Figure 5.11 South Arabia bas-relief, showing the Cherubim between the palm trees 109
Figure 5.12 The power of symbol of the brazen serpent (left) also used by the Coptic Pope (right)
Figure 5.13 Approaches to understand Coptic Church Traditional Architecture
Figure 5.15 Christ and Abbot Menas from the monastery of Bawit (6th-7th centuries) Paris,

CHAPTER SIX

CONTEMPORARY COPTIC CHURCH ARCHITECTURE THEORETICAL EVALUATIVE MODEL

Figure 6.1 Methodology of analyses to relate to Shaker's typological classification of traditional churches
Figure 6.2 Idea of juxtaposition analysis to match Shaker's criteria of typologies
classification
Figure 6.3 Historical Churches of Fustat area in relation to Shaker's typologies
Figure 6.4 Interrelation between the fundamentals of church design and approaches to
understand church architecture
Figure 6.5 Phases of Analyses
Figure 6.6 Coptic Church Architecture Theoretical Evaluation Model
Figure 6.7 Sampling and Documentation process
Figure 6.8 Virgin Mary Church's Exterior, representing the Basilican Typology138
Figure 6.9 Virgin Mary Church's Original Plan, representing the Basilican Typology138
1 Igure 0.5 Virgin Wary Charen's Original Flan, representing the Businean Typology150
CHAPTER SEVEN
EVALUATIVE MODEL APPLICATION ON A CONTEMPORARY CASE STUDY
Figure 7.1 Virgin Mary Church location in Zamalek, Cairo, Egypt
Figure 7.2 Virgin Mary Church at 6 Mohamed El Maraashly Street
Figure 7.3 West façade: Margaret Nakhla's icons, Southern part
Figure 7.4 West façade: Margaret Nakhla's icons, Northern part
Figure 7.5 Isaac Fanous' Icons, St. Barbara (left) and Anba Bishoy (right)
Figure 7.6 Internal North facade showing the icons done by Ragheb Ayad, except for the
first one to the left which is St. Barbara by Isaac Fanous
Figure 7.7 Internal South facade showing the icons done by Ragheb Ayad, except for the
second one from the right which is Anba Bishoy by Isaac Fanous 144
Figure 7.8 Virgin Mary's Church in relation to Noah's Ark
Figure 7.9 Virgin Mary's Church plan zoning resembling a Basilican Typology 148
Figure 7.10 Virgin Mary's Church Roof Design
Figure 7.11 Virgin Mary's Church 3D analysis
Figure 7.12 Virgin Mary Church in Zamalek in relation to Shaker's Typological
Classification
Figure 7.13 3D model by Ramses Wissa Wassef showing his first proposal for the Church
design, courtesy of Farida William Selim Hanna
Figure 7.14 3D model by Wassef showing his second proposal for the Church design,
courtesy of Farida William Selim Hanna
spiritual service meetings

Figure 7.16 (Left) Original plan by Wassef to accommodate a rest room for one p	riest,
(right) design proposal by the researcher to the engineering board to	utilize the
space for 3 priests' rest rooms.	153
Figure 7.17 Virgin Mary's Church as a prime landmark in Zamalek	
Figure 7.18 The nave's natural lighting.	155
Figure 7.19 The sanctuary's natural lighting.	156
Figure 7.20 Ancient Egyptian influence on the entrance design is evident	157
Figure 7.21 Church external court with a fountain and mashrabeyas covering all v	vindows
	158
Figure 7.22 Use of a dome, semi-domes and vaults above sanctuary area	158
Figure 7.23 Church plan showing raising of incense procession routings	160
Figure 7.24 Icons of Saints, Martyrs, Monks, and Angels surrounding the nave ar	d aisles.
(Top image facing east, bottom image facing west.)	162
Figure 7.25 A priest raising incense, a deacon reading the Bible using the souther	n lectern,
and the worshipers standing to hear the Bible in the nave and aisles	162
Figure 7.26 Panoramic view showing the central axis from the entrance at the we	st 163
Figure 7.27 Panoramic view of nave clearstory windows resembling the Kingdon	ı of
Heaven	
Figure 7.28 View of telescopic ceiling from the upper balcony to show the higher	-
above the nave resembling heaven, and the lower part above the aisle	
resembling earth	
Figure 7.29 Panoramic view of the central axis emphasizing the centering focus.	
Figure 7.30 Nave showing the triumphal arch in grandiose scale with a minimalis	
approach	
Figure 7.31 Aesthetic impact through a grandiose effect	
Figure 7.32 Grandiose interior effect.	
Figure 7.33 Minimalist effect with smooth curved lines and monochrome colors.	
Figure 7.34 Adopting Ancient Egyptian architectural elements	
Figure 7.35 Church bell tower pointing to the metaphysical world	
Figure 7.36 Telescopic section pointing towards the kingdom of heaven	
Figure 7.37 Garden of Eden to Eternity story of life.	
Figure 7.38 Virgin Mary resembled through Ancient Egyptian symbols	
Figure 7.39 Symbols on doors	176

CHAPTER EIGHT

DISCUSSION, CONCLUSIONS, AND PROSPECTS FOR FUTURE RESEARCH

ABSTRACT

Chapter one is the introduction to the research problem. Together with a philosophical debate regarding whether we shape our identity, or does our identity shape us and turns our architecture into a static traditional type. Research limitations are then mentioned to focus on the areas of study. The research aim and objectives are stated together with the hypothesis and specific questions. The research methodology and structure are designed to obtain answers for the research questions and ensure quality of the procedure, accordingly, its validity and objectivity.

Chapter two reviews the traditional versus modern worlds and the status quo of the Egyptian society. Literature takes place to understand what are traditional and modern worlds and the differences between them. Special focus is made on the Egyptian society enlightenment and modernity. The reflection of the schism between both worldviews on art, architecture, and urbanism is reviewed. Thus enables one to understand the traditional Egyptian value system and importance of symbolism. Finally concluding with the need of the traditionalist approach as a way of linking traditional and modern civilizations.

Chapter three discusses the roots of Coptic culture within Egypt's multi-cultural society. How the emergence of Coptic culture took place within Ancient Egyptian, Greeks, and Jews. Moreover the impact of the multi-cultures on Coptic art and architecture. Finally, realizing that Coptic art and architecture formulated its own identity.

Chapter four tracks the development of Coptic Church architecture through time. The common morphological designs are discussed together with literature regarding the various classifications of typologies of historical Coptic churches. Moreover, factors affecting church architecture are discussed, which are social, political, natural, and cultural aspects. Finally, the chapter discusses the scale of changed factors, its results, and the emergence of new functions and needs thus possible new typologies. However all the previous does not truly explain the real importance of church designs which leads us to the following chapter.

Chapter five attempts to understand traditional Coptic Church architecture through keynote writers in Islamic architecture and International Christian architecture then borrowed and utilized on Coptic architecture. First part is done by adopting Richard Kieckhefer analysis of church architecture¹. He classifies the fundamentals to understand Church architecture into spatial dynamics, centering focus, aesthetic impact, and symbolic resonance. After which a cross reading between the different fundamentals takes place. Then the second part discusses the approaches to understand Coptic traditional architecture, which are historical, esoteric, normative, and regional approaches and are thoroughly explained.

Chapter six is the part were the theoretical evaluative model is designed. The chapter discusses the form morphological designs together with the traditional typologies. In addition how to relate both to contemporary case studies. Interrelation between approaches to understand Coptic Church architecture, their design fundamentals and the factors affecting

.

¹ Keickhefer (2004)