

A Study of the Architecture of Nader Ardalan in Terms of Tradition and Modernity in the Islamic Context

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A Study of the Architecture of Nader Ardalan in Terms of Tradition and Modernity in the Islamic Context

Hamid Aghaei Rad

Master of Architecture

A thesis in fulfilment of the requirements for the degree of

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Faculty of Built Environment



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This study is focussed on Nader Ardalan's scholarly and design work in the light of discussions on tradition and modernity in Iranian architecture. It undertakes an analysis of Ardalan's approach to the debates on tradition and modernity in architecture and examines the relationship between Ardalan's understanding of traditional Iranian Islamic architecture and his contemporary projects.

In chapter 1 this study explains Ardalan's understanding of traditional Iranian Islamic architecture through an analysis of Ardalan and Bakhtiar's *The Sense of Unity* (1973). This book is well known among Islamic architectural researchers because it presents a rare insight into traditional Islamic architecture in comparison with conventional historical studies. In chapter 2, this study analyses the relationship between *The Sense of Unity* and Ardalan's projects. For this purpose, specific projects from different periods of Ardalan's professional career are examined individually and in relationship with each other. In chapter 4, from a broader perspective, this study analyses Ardalan's approach to the debates on tradition and modernity by exploring the differences between Ardalan's understanding of traditional Iranian Islamic architecture and the conventional understanding of significant Iranian scholars. Then, from an external perspective, this study examines the alignment between Ardalan's architectural attitude and the concept of the contemporary redefined by Giorgio Agamben, by exploring the differences between the design principles in Ardalan's projects and a few outstanding projects of his time in relation to the debates on tradition and modernity in architecture.

This thesis demonstrates (1) Ardalan's projects after the publication of *The Sense of Unity* are inspired by his understanding of traditional Iranian Islamic architecture, which is based on Gnosticism. In fact, from the perspective of the debates on tradition and modernity, *The Sense of Unity* provided a theoretical foundation for Ardalan's architecture. (2) This thesis highlights that the understanding of Ardalan by Iranian architectural historians is irrelevant, since it assesses Ardalan's projects without considering *The Sense of Unity*. (3) This study shows that Ardalan's projects can be nominated as contemporary Islamic architecture based on Agamben's concept of the contemporary.

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ABSTRACT

This study is focussed on Nader Ardalan's scholarly and design work in the light of discussions on tradition and modernity in Iranian architecture. It undertakes an analysis of Ardalan's approach to the debates on tradition and modernity in architecture and examines the relationship between Ardalan's understanding of traditional Iranian Islamic architecture and his contemporary projects.

In Chapter 1 this study explains Ardalan's understanding of traditional Iranian Islamic architecture through an analysis of Ardalan and Bakhtiar's *The Sense of Unity* (1973). This book is well known among Islamic architectural researchers because it presents a rare insight into traditional Islamic architecture in comparison with conventional historical studies. In Chapter 2, this study analyses the relationship between *The Sense of Unity* and Ardalan's projects. For this purpose, specific projects from different periods of Ardalan's professional career are examined individually and in relationship with each other. In Chapter 4, from a broader perspective, this study analyses Ardalan's approach to the debates on tradition and modernity by exploring the differences between Ardalan's understanding of traditional Iranian Islamic architecture and the conventional understanding of significant Iranian scholars. Then, from an external perspective, this study examines the alignment between Ardalan's architectural attitude and the concept of the contemporary redefined by Giorgio Agamben, by exploring the differences between the design principles in Ardalan's projects and a few outstanding projects of his time in relation to the debates on tradition and modernity in architecture.

This thesis demonstrates (1) Ardalan's projects after the publication of *The Sense of Unity* are inspired by his understanding of traditional Iranian Islamic architecture, which is based on Gnosticism. In fact, from the perspective of the debates on tradition and modernity, *The Sense of Unity* provided a theoretical foundation for Ardalan's architecture. (2) This thesis highlights that the understanding of Ardalan by Iranian architectural historians is irrelevant, since it assesses Ardalan's projects without considering *The Sense of Unity*. (3) This study shows that Ardalan's projects can be nominated as contemporary Islamic architecture based on Agamben's concept of the contemporary.

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LIST OF ABBREVIATIONS

ADMA	Abu Dhabi Marine
BASU	Bu Ali Sina University
BHO	Behshahr Headquarter Office
CIT	College of Information Technology
ICMS	Iran Centre of Management Studies
TMCA	Tehran Museum of Contemporary Art

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Dedicated to the holy shrine of Imam Reza^(a.s)

INTRODUCTORY STUDY

Aims and Methodology

This study generally considers the applicability of the qualitative principles of traditional Islamic architecture to contemporary architecture. Specifically, it focuses on the scholarly and design work of Nader Ardalan in the light of debates on tradition and modernity in architecture.¹ The study has four particular aims. First, it explains Ardalan's understanding of traditional Iranian Islamic architecture by analysing Ardalan and Bakhtiar's book entitled *The Sense of Unity*.² Second it examines the relationship between Ardalan's understanding of traditional Iranian Islamic architecture and his projects.³ Third, it analyses Ardalan's approach to the debates on tradition and modernity based on the differences between Ardalan's understanding of traditional Iranian Islamic architecture and the conventional understandings among significant Iranian scholars.⁴ Fourth, it analyses the differences between Ardalan's design principles and the design principles of two outstanding architects⁵ of his time with regard to their respect for traditional Iranian architecture. The results of this analysis suggest that Ardalan's projects should be classified as Islamic contemporary architecture in accordance with the ideas of Giorgio Agamben,⁶ who states that those who are truly contemporary "neither perfectly coincide with [their time] nor adjust themselves to its demands."⁷

This study attempts to clarify Ardalan's view in studying Iranian traditional Islamic architecture and its effect on his projects. In the process of analysing the relationship

¹ Tradition and modernity in this study refers to the issues raised after the acceleration of the modern movement in Middle Eastern societies. Debates on tradition and modernity are largely about ways that traditional values can be protected against Western culture in different domains. Differences between modernism and Westernisation are not distinguished in these debates.

² Islam and the Iranian culture have been integrated over centuries. This study does not attempt to make distinctions between Iranian culture before and after Islam. In this study traditional Islamic architecture refers to Iranian traditional Islamic architecture.

³ This study does not examine Ardalan's projects with features of modern architecture.

⁴ Such as Mohammad Karim Pirnia (1923–1998), Mehdi Hojat (1945) and Darab Diba (1949).

⁵ Such as Houshang Seyhoun (1920–2014) and Abdolaziz Farmanfarmaian (1920–2013).

⁶ Giorgio Agamben is an Italian philosopher known for his work on the concepts of the state of exception.

⁷ Giorgio Agamben, *What Is an Apparatus? And Other Essays*, trans. David Kishik and Stefan Pedatella (California: Stanford University Press, 2009), 41.

between Ardalan's book⁸ and projects, this study shows that despite the rise of technology in construction and the modification of contextual and eco-social forces over the last three decades, Ardalan's design principles have been inspired by the ideas expressed in *The Sense of Unity*, which are based on Gnosticism. This thesis provides a series of images and drawings of Ardalan's projects in Iran and the UAE, where the majority of his projects have not been comprehensively studied and the relevant architectural documents have not previously been published. Additionally, this study explores the background of the debates around tradition and modernity in Iran and highlights the dilemmas and confusion caused by them. Finally, this study shows how previous misunderstandings (that have mainly arisen because the role of *The Sense of Unity* in Ardalan's projects has been ignored) have led to Ardalan's work being incorrectly classified. A number of Farsi sources, never before translated into English, are used to achieve these aims.

Background

In the early 1960s, debates flourished on the applicability of traditional principles to modern contexts in Middle Eastern societies. The historical precedent of these debates has its foundation in the post-colonial issues that subsequently affected the lifestyle of people in the Middle East. In Iran in particular, during the early 1970s and based on a substantial increase in oil prices, the Shah tried to accelerate the modern movement, while on the other hand many scholars, such as Jalal Al Ahmad and Seyyed Hossein Nasr, warned against the Westernisation of Iranian society.

Nasr is well known for his outspokenness against Westernisation based on Islamic notions and philosophy.⁹ Nasr clearly delineated how traditional Islam (rooted in the *Quran* and *Sunnah* and practised by Muslims over the centuries) differs from modernism. He also considered how traditional Islam has addressed the challenges of the modern world generally and, more specifically, in the realms of education, science,

⁸ Ardalan and Bakhtiar are the authors of *The Sense of Unity*. The role of both authors is discussed in the first chapter. It is important to mention that when discussions of the book or its ideas are attributed to Ardalan it does not mean that Bakhtiar is ignored by this study. This is because this study focuses on only Ardalan.

⁹ Seyyed Hossien Nasr, *Traditional Islam in the Modern World* (Routledge & Kegan Paul Ltd, 1987), 5.

philosophy, architecture and urbanism. Nasr argued that Westernisation has affected Muslims in two ways. First, in the spread of secularisation and, second, by narrowing the tradition of Islam to include only the principles of human actions and not the principles of wisdom or, consequently, the arts.¹⁰

The adoption of new technologies in architectural practices and increasing demands for improved living standards have raised key questions in relation to the application of traditional architectural principles to contemporary architecture in Iran. Consequently, studying traditional architecture has played a key role in debates on tradition and modernity. However, different approaches to the study of traditional architecture have led to various positions being taken in the debate.

An historical approach to traditional Islamic architecture is the most prevalent¹¹ approach and includes the research and writings of Oleg Grabar (1973, 1976), Robert Hillenbrand (1994), Gulru Necipoglu (1981, 1995) and Mohammed Hamdouni Al-Alami (2002). For historians, the changes that have occurred in different eras are important. Tradition in their view can be divided into smaller periods composed of different features and styles. In these architectural studies, the originality of elements and forms is identified according to historical evidence and in relation to Imperial dynasties and eras. However, the role of Islam in these studies has been limited. Indeed, some scholars have argued that no connection exists between Islam and architecture.¹² From a historical viewpoint, the relationship between Islam and architecture has been limited to a consideration of Islamic law and rites.

Islamic conceptual architecture is based on the relationship between Islamic notions and architecture. As the *Quran* or sayings of the prophet have not directly driven architecture, scholars nevertheless have explored the symbolic and metaphysical significance of Islam in architecture. Thus, the relationship between Islamic notions and traditional architecture is based on the esoteric aspect of Islam as expressed through symbols in traditional architecture. This approach has been referred to as Gnostic or

¹⁰ Ibid, 229.

¹¹ The number of publications by scholars affirms this.

¹² More than 1,000 years of Islamic domination in the Middle East has led to many religious public and monumental buildings being designed in accordance with Islamic principles.

mystical. However, symbolic views of well-known scholars, including Rene Guenon, Titus Burckhardt, Ananda K Coomaraswamy, Keith Critchlow, Adrian Snodgrass, Samer Akkach and Nader Ardalan, on Islamic architecture have consistently been criticised by historians for lacking historical evidence.¹³

Case Study

Based on the background outline briefly above, the design work and scholarly output of Nader Ardalan was selected as the case study for this thesis for two main reasons, the first being the importance of *The Sense of Unity*. This book is well known among Islamic architectural scholars because it presents a rare insight into Islamic architecture in comparison with conventional historical studies. Ardalan and his co-author Bakhtiar did not consider the historical factors discussed above. In their study of early Islamic architecture, despite some similarities between their work and that of other scholars, it is clear that Ardalan and Bakhtiar's attitude differs. *The Sense of Unity* is the only English source that has attempted to redefine the basis of Iranian traditional architecture in relation to the esoteric aspect of Islam. Ardalan and Bakhtiar's approach to Islamic architecture is similar to the approach of Burckhardt (1976) and Akkach (2005), who emphasised the symbolic language and meaning of Islamic architecture.

Second, based on Ardalan's scholarly character, in his role as an active architect he encountered the issue of tradition and modernity in both practical and philosophical terms.¹⁴ In the early 1960s, when much debate was raised around the Westernisation of Iranian architecture and many scholars, architects and even sections of the government attempted to preserve local values, Ardalan returned to Iran after graduating from Harvard University. Shortly afterwards he became a partner in Farmanfarmaian's firm. As the largest architectural firm in Iran, and given Farmanfarmaian's strong connections with the Royal Family, several important projects were offered to the firm.¹⁵ These

¹³ "Most speculations about architecture as expression of a mystic world view do not have any historical basis in the early Islamic period." Mohammed Hamdouni Al-Alami, *Art and Architecture in the Islamic Tradition: Aesthetics, Politics and Desire in Early Islam* (London; New York: I B Tauris, 2011), 252.

¹⁴ Nader Ardalan, "The Visual Language of Symbolic Form: A Preliminary Study of Mosque Architecture," in *Architecture as Symbol and Self-Identity*, ed. Jonathan G. Katz (Philadelphia: Aga Khan Award for Architecture, 1980), 18.

¹⁵ Farmanfarmaian employed Ardalan due to his experience and qualifications in the modern context. When the debate on tradition and modernity became more popular, the general attitude of the firm supported tradition. At this time, Ardalan was selected as the responsible architect for most of the projects

projects gave Ardalan an opportunity to follow his theories in practice. This is an outstanding feature of Ardalan's work, because most of the architects actively involved in the Iranian issues of tradition and modernity were not scholars in the field of traditional Iranian Islamic architecture.

Previous Studies in the Field

Despite Ardalan's specific approach to the study of Iranian traditional Islamic architecture and his active role as an architect in Iranian contemporary architecture in the 1960s and 1970s, his understanding of traditional Islamic architecture has never been analysed, and more importantly, his projects have never been studied in relation to *The Sense of Unity*. Moreover, Iranian architectural historians have different and contradictory opinions on Ardalan's projects. From a broader view, there are few studies focusing on Iranian traditional or contemporary architecture, and all have taken a different approach and scope of study to that proposed in this study. These are listed in the following paragraphs.

In studying Iranian traditional architecture, in his doctoral thesis entitled *Early Islamic Architecture in Iran (637–1059)* Alireza Anisi tries to explain how the heritage of pre-Islamic Iranian architecture developed and how it established the foundations for Iranian, and especially Saljuq, architecture. This study was supervised by Robert Hillenbrand and the main approach used was based on historical evidence rather than symbolism.

Another study in this area is *Transformations in Early Safavid Architecture: The Shrine of Shaykh Safi al-din Ishaq Ardabili in Iran (1501–1629)*. In this thesis Rizvi Kishawar (2000) analyses shrine formation during the early Safavid period according to the doctrines of *Sufism*. Although Kishawar used a Gnostic approach to study Iranian traditional architecture, his scope of study is limited to a specific building and period.

with traditional themes at the firm. However, his traditional approach went beyond the general attitude of the firm and this was one of the reasons why he established his own firm in 1972.

In terms of Iranian contemporary architecture and its relation to Iranian traditional architecture the most relevant study belongs to Ali Mozaffari. In his doctoral thesis, *Inscribing a Homeland: Iranian Identity and Pre-Islamic and Islamic Collective Imagination of Place*, Mozaffari (2010) focuses on the relationship between different representations of homeland in contemporary Iran. Although Mozaffari considers Islamic aspects of Iranian collective identity and Iranian contemporary architecture in the 1960s and 1970s, Ardalan is not considered.

A similar situation can be seen in the doctoral theses of Mehdi Hojat (1995),¹⁶ Mina Marefat (1988),¹⁷ Mostafa Kiani (2005)¹⁸ and Karimi Pamela (2009)¹⁹. They all consider Iranian contemporary architecture and the relationship between aspects of Iranian traditional architecture before or after Islam. However their approaches, scope and case studies are very different to this thesis.

Thesis Overview

This section outlines the content of the chapters of this thesis. Additionally, the sources and methodology used in each chapter are briefly discussed. The methodology for this study was partly adapted from James Steele's study of Hassan Fathy and Orientalism.²⁰ In Steele's study, Edward Said's definitions of Orientalism were first presented. Then, Hassan Fathy was introduced and his contributions were summarised. Orientalism was then analysed in relation to Fathy's works. Consequently, Fathy's three main planning projects were described and compared to Said's definitions of Orientalism. Finally, ideas from a wide variety of post-colonial theories were introduced to show that new methods of interpreting representations were possible.²¹ Similar to in Steele's work, the

¹⁶ This study focuses on the relationship between cultural heritage and sanctioned identity after the Islamic revolution.

¹⁷ *Building to Power: The Making of Modern Tehran*. This study is about modernity, which was brought into Tehran in an Islamic and pre-Islamic context.

¹⁸ This study tries to explore the relationship between Iranian contemporary architecture and the socio-political context.

¹⁹ *Transitions in Domestic Architecture and Home Culture in Twentieth Century Iran*. This dissertation studies the transformation of the Iranian home in the twentieth century.

²⁰ James Steele, *Orientalism and Others in case of Hassan Fathy* (California: University of Southern California, 2002). A similar method was used to examine Hassan Fathy's ideas and works.

²¹ Ibid.

first part of this thesis explores the relationship between theory and practice in relation to Ardalan.

This thesis is divided into two parts and each part is comprised of two chapters. The first part of this thesis describes and analyses Ardalan's scholarly and design work. It also analyses the relationship between *The Sense of Unity* and Ardalan's projects. The first part of this thesis follows Ardalan's application of his understanding of Islamic architecture to contemporary architecture. The second part of this thesis focuses on the context in which Ardalan worked. Specifically, it explores the history of the modern movement and issues of tradition and modernity in Iran. It then analyses the eco-social forces of the modern movement in Iran from a historical perspective. It also describes the dilemmas that arose in the 1970s as attempts were made to find a strategy that preserved the traditional values of Iranian architecture against Westernisation. Additionally, this highlights the socio-economic background of Ardalan's projects. Finally, Ardalan's position on the issues of tradition and modernity is outlined.

Chapter 1

Chapter 1 analyses *The Sense of Unity* from two directions; that is, internally and externally. It begins by exploring the authors' understanding of Islamic architecture and different approaches to Islamic architecture. This understanding is based on symbolism and historical issues are not taken into account. Instead, the symbolic meanings of traditional forms of Islamic architecture are considered.

The density and diversity of ideas described in *The Sense of Unity* are complex. However, the book does not always discuss the background for, and bases of, these fundamental ideas and new terms. This study explores this complexity and provides a background for these ideas. Additionally, this study argues that there are paradoxes in the assumptions on man's traditional understanding of metaphysics and inaccuracies in the case studies of authors that emphasise Iranian vernacular architecture.

From an external view, Chapter 1 compares the ideas presented in *The Sense of Unity* with other studies. This analytical comparison reveals homologies, contradictions and

disparities between Ardalan and Bakhtiar's views and those of scholars such as Burckhardt, Snodgrass, Guenon, Al-Alami, Necipoglu and Grabar. This comparison also reveals the authors' contribution to Islamic architectural studies. Finally, Chapter 1 attempts to demonstrate that Ardalan took a Gnostic approach to Islamic traditional architecture, and based on analyses of the book's sources, he was inspired by the Iranian mystic poet Rumi and Seyyed Hossein Nasr.

Chapter 2

The thesis limits its study of Ardalan as an architect in Iran to the periods from 1969 until 1977 and in the United Arab Emirates (UAE) from 1990 until 2005. Five projects in Iran and two projects in the Emirates were selected that span three periods of Ardalan's work. A comparison of these projects revealed the influence of *The Sense of Unity*. Over these periods, Ardalan participated in the design process of many projects, although some of these projects were never built and not all the architectural documents related to these projects are accessible.²² The number of resources available for these projects was not considerable.²³ Such a limited number of resources proved to be insufficient to analyse Ardalan's design work. Thus, the sites of seven of Ardalan's projects in Iran and the UAE were visited, and documentation, including photographs and floor plans, was obtained.

Chapter 2 analyses the relationship between *The Sense of Unity* and Ardalan's projects. It also demonstrates that all his projects after the publication of *The Sense of Unity* were inspired by the ideas of the book. These ideas were mostly conveyed in the geometry he employed in his project; however, the level of this inspiration was not always equal. In fact, over three decades Ardalan was trying to follow specific principles conceptually and he did not limit this to specific forms.

²² Ardalan stated that he does not have any such documents in his archives. Municipalities in Tehran and other cities stated that following the Islamic revolution of 1978 all such documents were destroyed.

²³ Apart from a few articles on these projects written by Ardalan himself, the majority of writings on these projects are based on interviews with Ardalan.

Chapter 3

Chapter 3 analyses the history of tradition and modernity over 200 years (i.e., from 1779–1977) and across three dynasties (i.e., the *Qajar*, the first *Pahlavi* and the second *Pahlavi* dynasties). The modern movement continued after the second Pahlavi era; however, Ardalan left Iran in 1977 and did not return there to live. Consequently, the scope of this study is limited to the history of the modern movement until 1977.²⁴ Additionally, Chapter 3 explores the context and the historical background of Ardalan's works. This chapter begins by outlining how some traces of the modern movement in Iran appeared in the *Qajar* dynasty. It notes that certain individuals in power encouraged this movement; however, others stood firmly against it. This chapter considers important historical events and analyses social changes. The influence of the modern movement on architecture and urbanism in the *Qajar* era is also discussed. Chapter 3 considers the first *Pahlavi* era, explores eco-social changes in light of modernity and explains the importance of this period to the modern movement. The influence of modernity on the architecture of this period is then analysed and features of prevalent styles are discussed. Finally, initial debates on tradition and modernity in architecture are discussed.

The second *Pahlavi* era is also analysed in Chapter 3. Criticisms against modernity in the second *Pahlavi* era are considered. In addition to eco-social changes, this chapter explores criticisms about modernity in different fields such as philosophy and literature. This chapter also highlights that from a philosophical point of view Gnosticism became important in this era as an alternative to Westernism. In this respect, the perspective of Nasr, an avant-garde scholar, is briefly outlined.

Modernity in architecture peaked during the first half of the second *Pahlavi* era due to the emergence of a new social class. In the second half of the second *Pahlavi* era, tradition and modernity became a controversial issue. This chapter considers the

²⁴ Although in Chapter 2 two projects are selected from the UAE to analyse the possible modifications in Ardalan's design principles, Chapter 3 only considers the context of Ardalan's projects in Iran. These historical discussions are only used for analysing Ardalan's attitudes in the debates around tradition and modernity in Iran.

dilemmas of tradition and modernity and argues that because of the debates on tradition and modernity a new style of architecture gradually emerged that endorsed traditional values. However, the lack of a theoretical foundation has led architectural historians to analyse this style differently and refer to it by different names, such as ‘modern with a historical approach’,²⁵ ‘post modernism’²⁶ and ‘Iranian novel architecture’.²⁷

This chapter also shows how Gnosticism emerged in the issues of tradition and modernity, and in light of the discussion in Chapter 1, concludes that *The Sense of Unity* can be considered a direct result of the emergence of Gnosticism in the debates around tradition and modernity.

Chapter 4

Chapter 4 begins by recalling the contribution of Ardalan to Islamic architectural studies and compares *The Sense of Unity* with the outlined studies of Iranian traditional architecture. It then highlights the key role of *The Sense of Unity* in Ardalan’s architecture and in the debates surrounding tradition and modernity.

Chapter 4 argues that previous architectural historians and researchers did not understand Ardalan’s attitudes in relation to issues of tradition and modernity, largely because Ardalan’s projects were considered in isolation from *The Sense of Unity*, and thus from their theoretical basis. Consequently, Iranian architectural historians have classified Ardalan differently, calling him a ‘neo-traditionalist’²⁸ and his work ‘Iranian novel architecture’.²⁹ This chapter reviews a few examples of these unrelated

²⁵ Amir Bani Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite (Iranian Contemporary Architecture, an Inquiry into Tradition and Modernity)* (Tehran: Honare Memari, 2009), 268.

²⁶ Iraj Etesam and Hassanali Poormand, *Memari Moaser Iran, 75 Sal Tajrobe Banahaye Omomi (Contemporary Architecture; 75 Years Experience in Public Buildings)* (Tehran: Payam Sima, 2010), 88.

²⁷ Vahid Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran (Styles and Concepts in Iranian Contemporary Architecture)* (Tehran: Elmememar, 2013), 266.

²⁸ Sayyed Mohsen Habibi, *Sharh Jaryanhaye Fekri Memari Va Shahrsazi Dar Iran Moaser (Intellectual Trends in the Contemporary Iranian Architecture and Urbanism)* (Tehran: Cultural Research Bureau, 2010), 35.

²⁹ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 266.

classifications. Lastly, the chapter suggests a new classification for Ardalan's projects in accordance with the ideas of Giorgio Agamben on the concept of contemporary.³⁰

A Short Biography of Ardalan

The Role of Biography

This chapter gives an account of Ardalan's adult life to the present. This biography addresses two different aspects of Ardalan's character: Ardalan as an architect and Ardalan as a scholar, to gain an understanding of his work and thought. Based on Ardalan's career in architecture, five different periods will be explained in the following sections, and these will be categorised according to their relationship with Ardalan's scholarship. This biography highlights Ardalan's path between the modern and the traditional.

The majority of available sources on Ardalan only consider general information about his life; however, there are some discrepancies in this information. The most detailed biographical source is the interview conducted by Shahla Haerei in Boston.³¹ As there is no published biographical source that deals with the period from 1990 to 2011, the present chapter will attempt to consolidate information from before 1990 with new details about the last 21 years. These details were mostly elicited from the researcher's face-to-face interview with Ardalan in Tehran on 28 October 2013 and also online interviews on 12 January 2014 and 25 September 2014. When the first draft of this manuscript was ready the researcher had another online interview with Ardalan on 6 April 2015 to check the findings with him.

Who is Ardalan?

Fundamentally, Ardalan's reputation in Iran is based on his architectural projects. Ardalan has participated in the design process of more than 112 projects across the

³⁰ Agamben argued that "the contemporary is the one whose eyes are struck by the beam of darkness that comes from his own time." Giorgio Agamben, *What Is an Apparatus? And Other Essays*, trans. David Kishik and Stefan Pedatella (California: Stanford University Press, 2009), 41.

³¹ 1990.

world, but his international reputation is largely focused on his work as a scholar within the community of traditional architectural researchers.³² However, from Ardalan's perspective, this is not a complete understanding. Ardalan says that his research is dedicated to the investigation of origins. Origins are his starting point, giving him both a phenomenal and nominal base for designing innovative, sustainable and culturally relevant solutions for human place-making.³³

Additionally, Ardalan states in his resumé that he has had “a long and distinguished international career in the fields of planning, architecture and historic preservation ... [and is] a recognised world leader and expert in the field of environmentally sustainable and culturally relevant design with a particular focus on Islamic countries.”³⁴

As the author of more than four books and 20 articles, Ardalan has professed a consistent concern with the revival of traditional and Islamic architectural practices. His most celebrated work is *The Sense of Unity: The Sufi Tradition in Persian Architecture*.³⁵ Early on his career he became a founding member of the Steering Committee of the Aga Khan Award for architecture.³⁶ As of February 2014, he is a senior research associate at Harvard University's Graduate School of Design, where he co-directs the *Gulf Encyclopaedia for Sustainable Design*.³⁷

Early Life: Modern Context and Traditional Interests

Ardalan was born in Tehran on 9 March 1939 into a well-educated family. Ardalan's family immigrated to America for his father's work when he was a young child.³⁸ This was the starting point for his cross-cultural interactions. Ardalan finished high school in New York and won a scholarship to study architecture at the Carnegie Institute of Technology in Pittsburgh, where he received his Bachelor's degree in 1961. One year later, he graduated from Harvard University with a Master of Architecture. In that

³² Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 302.

³³ Nader Ardalan, e-mail message to author, September 25, 2014.

³⁴ Ardalan's resume. Nader Ardalan, e-mail message to author, January 12, 2014.

³⁵ 1974.

³⁶ Nader Ardalan, e-mail message to author, September 25, 2014.

³⁷ Nader Ardalan, “spiritual Duets,” 2A 5 (2009): 12.

³⁸ Shahla Haeri, “Interview with Nader Ardalan,” *Foundation for Iranian Studies Program of Oral History* (2010), <http://fis-iran.org/en/oralhistory>.

period students at the Harvard Graduate School of Design were trained in accordance with modernist principles.³⁹ Immediately after graduation Ardalan was employed by SOM, an architecture firm in San Francisco. He worked there for three years, where he had the opportunity to work closely with Charles Bassett (1922–1999).⁴⁰ In this early period of Ardalan's professional life he was in a country that was positioning itself in the vanguard of modernism and he experienced architecture through a firm that experimented with the principles of modernism. Thus, an important formative influence on Ardalan's long professional life was the tension between the philosophical underpinnings of his initial training and his personal interests.

Internal Conflict

Ardalan's attention to Iranian culture and tradition was embedded in his longing for his personal roots and identity. A series of events in his personal life opened up a new world of formative experiences for him. In the late 1950s Ardalan met his first wife, Laleh Bakhtiar. As an Iranian family in the early 1960s, they were considering their options to return to Iran. At this time Iran was developing rapidly and various institutes were seeking Iranians who had been trained abroad. Consequently, Ardalan accepted an offer from the National Oil Company of Iran for a position as a chief architect.⁴¹

Ardalan says that 1964 to 1966 was a very important transitional period for him. On returning to Iran, Ardalan became aware that his architectural training in America was of limited use for understanding the traditional architecture of Iran. However, he soon met Dr Roman Ghirshman,⁴² who was working on Iranian ancient sites at that time and was offered the opportunity to draw images of Ghirshman's findings.⁴³ In addition, Ardalan began to systemically photograph and draw early Islamic buildings. A few

³⁹ "I had completed my Masters in Architecture in 1962 at Harvard studying with Dean Jose Luis Sert who was a protégé of Le Corbusier and had introduced us to Corbusier's work." Nader Ardalan, interview by Hamid Rad, Tehran, October 28, 2013.

⁴⁰ Edward Charles Bassett was born in Michigan. Bassett was served as design partner in the San Francisco office of Skidmore, Owings and Merrill from 1955 through his retirement in 1981. Bassett had been trained by, and worked with, Eero Saarinen (1910–1961). He was a modernist but he was also a craftsman.

⁴¹ Haeri, "Interview with Nader Ardalan," 23.

⁴² He was a great French archaeologist

⁴³ Haeri, "Interview with Nader Ardalan," 24.

years later he began to volunteer as a teacher at Tehran University.⁴⁴ These activities gave Ardalan insights into Iranian traditional architectural principles.

While Ardalan was employed by Iranian companies as an international architect to respect the modern movement, he actually took this opportunity to become more familiar with Iranian tradition and culture. This culminated in an opportunity to work for the most well-known Iranian architect, Abdolaziz Farmanfarmaian (1920–2013), in 1967. Since Farmanfarmaian's firm was the largest architectural firm in Iran, several substantial projects were offered to them. In this company, Ardalan designed his first major project in Iran: the Saman Towers.⁴⁵ Interestingly, while the Saman Towers were being built and Ardalan was being acknowledged for bringing modern architecture into Tehran, he was working on his book about traditional architecture. As this stage of Ardalan's life plays a significant role in his professional career, it is worth considering Ardalan's scholarship in the next section before considering his projects.

Ardalan as a Scholar

Ardalan's scholarship is evident in his most important work, *The Sense of Unity*. The history of this book began in 1966 when the University of Chicago contacted Seyyed Hossein Nasr to suggest an architect to write a book on Persian architecture. Nasr invited Ardalan to write the book, and consequently Ardalan became involved. Later Ardalan invited Laleh Bakhtiar to join him in this project, despite neither Ardalan nor Bakhtiar having studied Persian architecture previously.⁴⁶ Ardalan "was not satisfied ... just simply photographing and measuring architecture," and so he began conducting a series of surveys of the architectural vocabulary, philosophy and aesthetic concepts of the culture of Persia.⁴⁷ At this point he had a conceptual framework of Iranian traditional architecture, and as an Islamic philosopher, Bakhtiar assisted him in terms of

⁴⁴ Haeri, "Interview with Nader Ardalan," 25.

⁴⁵ The Saman Towers were the first residential towers in Iran. Ardalan says that: "I had had experience in doing high-rise building in San Francisco with the firm; I was chosen to design this building." Haeri, "Interview with Nader Ardalan," 28.

⁴⁶ Laleh Bakhtiar, e-mail message to author, June 12, 2013.

⁴⁷ Haeri, "Interview with Nader Ardalan," 110.

Islamic notions.⁴⁸ Finally, after four years, the manuscript of *The Sense of Unity: The Sufi Tradition in Persian Architecture* was completed, and in 1973 the University of Chicago Press published it with an introduction from Seyyed Hossein Nasr, aided by a supporting letter from the famous American architect Louis Khan.⁴⁹

Contribution to Scholarship

Despite Ardalan not seeing himself primarily as a scholar, he is well known internationally as a scholar.⁵⁰ Amir Bani Masoud, an Iranian architectural historian, states that Ardalan's global reputation is based on his ideas of the theories of traditional architecture.⁵¹ In a closer view, Ardalan's first book, *The Sense of Unity*, is well known among Islamic architectural scholars because this book presents a rare insight into Islamic architecture in comparison with conventional historical studies.⁵² *The Sense of Unity* highlights the esoteric relationship between Islam and art based on a mystical view that is elaborated through symbolism. Ardalan and Bakhtiar are not alone in this; the work of Coomaraswamy, Snodgrass and many others⁵³ regarding symbolism and esotericism in traditional architecture can be found in the same line of thinking as that of *The Sense of Unity*. Critiquing the work, Nasr emphasises the importance of this

⁴⁸ Bakhtiar says: "Ardalan and I wrote the book together. I did most of the [non-architectural] research and he did most of the writing. As each topic is architecturally and metaphysically integrated, there was no division according to topic." Laleh Bakhtiar, e-mail message to author, June 12, 2013.

⁴⁹ Kahn: "Nader Ardalan, Architect, and Laleh Bakhtiar, Art Historian, have collaborated in a work they have named: *The Sense of Unity*.

What they are bringing to us is the recalling of the original inspiration which motivated building. What we admire and stand in wonder over in the works of old is the marvel of their beginnings when the desire to express sought the means. The human who primarily lives to express conjured up the record within him of how he was made which he found to be the non-conscious means of nature's growth structure forms-geometric; which when discovered, had to be honored as metaphysical. Another way of expressing this is the traditional man builds his expressions satisfying the measurable spirit devoid of means, calling upon non-conscious nature which is the source of all means.

This is so important now when the means sought to express directions to our human environment-building is in great part professionally based on statistics, surveys and technology. Times long ago had only meager means to go on. They were highly motivated by wonder which brought about the desire to learn, the profundity of which lay at the threshold of where the unmeasurable and the measurable met. This meeting was the moment of inspiration when the desire to express met the possible. Today as yesterday such moments are essential to man. This is the crux of their inspired and most worthy work." Louis I Kahn Collection, The Architectural Archives, University of Pennsylvania.

⁵⁰ He believes that he just had done much research regarding his job as an architect. Nader Ardalan, interview by Hamid Rad, Tehran, October 28, 2013.

⁵¹ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 337.

⁵² This kind of historical study can be seen in the works of scholars such as Grabar, Hillenbrand and Necipoglu.

⁵³ Geldern (1930); Tucci (1932); Mus (1936); Kramrisch (1946); Eliade (1957, 1968, 1978); Stein (1957); Guenon (1962); Burckhardt (1967) and Kollar (1975).

book, and in its introduction says, “until now [Islamic art] has been only too rarely studied with the aim of understanding its symbolic and metaphysical significance.”⁵⁴

Except for three other books that Ardalan co-authored, *Habitat Bill of Rights* (Qualitative Criteria for Urbanism) in 1975, which was presented at HABITAT I in Vancouver in 1976; *The History of the Masjed-e Haram and the Holy Kaaba* in 1976 and in 1983 *Blessed Jerusalem*, which deals with the preservation of the visual and historic character of the Old City, Ardalan’s other writings are mostly based on the enhancement of the ideas presented in *The Sense of Unity*.⁵⁵ In addition to the pivotal role of *The Sense of Unity* in Ardalan’s scholarship, the research that undertook for this book created an opening to traditional architecture that has greatly influenced his career as an architect.

Recently Ardalan has conducted research in the Persian Gulf that aims to “make recommendations for innovative strategies to achieve more energy efficient, ecologically benign, and culturally relevant built habitats in the eight countries surrounding the Persian Gulf.”⁵⁶ From Ardalan’s perspective, current architectural and construction practices demonstrate serious shortcomings due to their resource consumption, urban pollution, loss of quality of life and urban cohesion plus the lack of an indigenous sense of cultural identity.⁵⁷ Ardalan advocates the benefits of innovation in sustainable design in environmental and cultural terms in preference to the current planning, design, construction and real estate practices and models that are being used in this region.

Ardalan as an Architect

⁵⁴ Seyyed Hossein Nasr, introduction to *The Sense of Unity: The Sufi Tradition in Persian Architecture*, by Nader Ardalan and Laleh Bakhtiar (Chicago: University of Chicago Press, 1973), xi.

⁵⁵ Other articles such as “Simultaneous Perplexity,” “Place of Public Gathering” and “Colour in *Safavid* Architecture” and many more, the most recent ones being “Reconceiving the Built Environments of Gulf Region,” “From Within: On the Spiritual in Art and Architecture,” and “The Spiritual Dimensions of Cities,” “Spiritual Duets” and “Inspirations From a Long Lost Letter” (of Louis Kahn to Ardalan).

⁵⁶ Nader Ardalan, “Re-Conceiving the Built Environment of the Persian Gulf Region,” 2A, no. 7 (2008): 13.

⁵⁷ Ibid.

This section considers Ardalan's views on traditionalism and modernism based on his principles, and also the views of other Iranian architectural researchers who have studied Ardalan's projects. Ardalan's projects will be categorised from three points of view: the period in which they were designed; their relationship with his scholarly character and their location.

From 1962 until the present Ardalan has been involved in the design process of 112 projects.⁵⁸ While his work is represented internationally, his projects are more numerous in the Middle East and America. Such a large number of projects is not seen in the resumé of ordinary architects. Four factors have helped Ardalan in this regard: (1) his training at two of the best architecture schools;⁵⁹ (2) the eco-social situation in Iran when he returned in the early 1960s; (3) his partners;⁶⁰ and (4) for his recent projects, his global reputation as an architect familiar with environmental adaptation and cultural relevance.

Ardalan's architectural features are not limited to the variety of their locations. Different functions, including entire new towns; residential, office, stadium, university, museum and art centre buildings are addressed in his projects. The diversity of these projects precludes the adoption of a simple framework for analysis. Some of them look modern, while others are admired due to their incorporation of traditional symbols. Similar tension has appeared in his sources of inspiration. In an email message, Ardalan says that while he was at Harvard he was influenced by Corbusier's work through his Master's teacher, Jose Luis Sert, but that over time he has been predominantly inspired by Louis Kahn.⁶¹ In the same line of thought, while Ardalan's senior colleagues are known as modern architects (such as Bassett and Farmanfarmaian), he named his own firm 'Mandala', which represents a perennial and timeless pattern in geometry and philosophy.

⁵⁸ Details of all projects can be seen in Chapter 2.

⁵⁹ Harvard and Carnegie Mellon University.

⁶⁰ In most of the projects Ardalan was working with famous architects. Among these Farmanfarmaian is the most noted. As Farmanfarmaian was close to the Iranian royal family, many important projects were offered to his firm, especially during Ardalan's participation.

⁶¹ Nader Ardalan, e-mail message to author, January 12, 2014.

There are different understandings of Ardalan's projects among Iranian architectural researchers, who locate Ardalan on a scale between tradition and modernity. For example, in his book *Intellectual Trends in the Contemporary Iranian Architecture and Urbanism*, Seyyed Mohsen Habibi considers Ardalan a neo-traditionalist. Habibi states that the neo-traditionalists are advocates of recreating traditional and vernacular principles using either Islamic or ancient concepts. In his view, this group of architects is inspired by critiques opposing modernism in the 1960s and tries to reread principles of regional architecture.⁶² However, in *Iranian Contemporary Architecture*, Vahid Ghobadian introduces Ardalan as an Iranian novel architect. From Ghobadian's perspective, 'novel architecture' is not a building with traditional elements constructed by high technology or a modern building with traditional ornaments, but rather an architectural style in which architects pay equal attention to modern and traditional principles.⁶³ Amir Bani Masoud's understanding of Ardalan offers another example in this regard, since he classified Ardalan along with all other traditional architects, regardless of their differences.⁶⁴

Considering Ardalan's sources of inspiration and then the definitions given to his projects by Iranian architects highlights the fact that Ardalan cannot be easily classified. Additionally, his approach evolved over the time, making categorisation more complicated. In an email to this researcher, Ardalan rejects having specific design principles and instead introduces what he perceives as the four forces of his design: "as an architect and his approach evolve, the interaction is dynamic and matures over time and each project is contingent upon multiple opportunities and limitations ... my design ethos has grown over these last 40 years to encompass the four forces of design: environmental adaptation, cultural relevance, functional purpose and technological innovation."⁶⁵

⁶² Sayyed Mohsen Habibi, *Sharh Jaryanhaye Fekri Memari Va Shahrsazi Dar Iran Moaser (Intellectual Trends in the Contemporary Iranian Architecture and Urbanism)* (Tehran: Cultural Research Bureau, 2010), 35.

⁶³ Vahid Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran (Styles and Concepts in Iranian Contemporary Architecture)* (Tehran: Elmememar, 2013), 265.

⁶⁴ Masoud does not consider any differences between the advocates of traditional architecture.

⁶⁵ Nader Ardalan, e-mail message to author, January 12, 2014. Ardalan's Four Forces of Design also shows the complexity of his classification since considering merely the cultural relevance of a project does not necessarily make him traditional while paying attention to function and applying technological innovation are understood as modern principles.

Ardalan's aim has been to incorporate a holistically integrated design approach that he considers as perennial and timeless, which he terms 'the New Creation'. It is an aspect of vernacular 'critical regionalism'. In other words, these design forces demonstrate more or less the same tension between tradition and modernity and place Ardalan between Kahn and Corbusier. To this interpretation, Ardalan comments that he "seeks the balanced middle way."⁶⁶

Significant Stages in Ardalan's Life

Ardalan's theories and architectural practices have evolved and been transformed during his 50-year professional career. In my interview with Ardalan, he described his professional life as having five significant periods: (1) 1956–1964, his student years in America, which ingrained the value of functional purpose, technology and aesthetics; (2) 1964–1977, as a young architect in Iran. In this period Ardalan encountered remarkable men and women and their philosophical thoughts and received training in not only *Sufism* and other spiritual traditions but also environmental design work. He worked with the famous ecological planner, Ian McHarg, on the Pardisan Ecological Park in Tehran, which convinced him of the importance of culture and environmental adaptation in architecture and planning. He also founded the Mandala Collaborative and continued a theoretical application of *The Sense of Unity* in his built works. (3) 1977–1994, as a senior architect in America. In this period his theoretical writings and built works were broadened to include the four forces of design: environmental adaptation, cultural relevance, functional purpose and technological innovation. (4) 1994–2006, as a senior architect in the Persian Gulf. (5) 2006 to the present, as a senior researcher and architect in America. Collaborative work with Harvard and regional anthropologists/sociologists has brought Ardalan to a greater awareness of the need for social equity and thus he has focused on extensive publications of the theories and lessons learned from his research, and his collaborations with both the Harvard Divinity School and the Forum for Architecture, Culture and Spirituality relating to transcendence and sustainability in design.⁶⁷

⁶⁶ Nader Ardalan, e-mail message to author, September 25, 2014.

⁶⁷ Nader Ardalan, interview by Hamid Rad, Tehran, October 28, 2013.

Ardalan's understanding of Islamic architecture is crystallised in his first book, *The Sense of Unity*. The influence of this work on his built works has been considerable. Thus, his projects can be divided into three periods: before *Sense of Unity*; the immediate *Sense of Unity* period, and post *Sense of Unity*.⁶⁸ The period before *Sense of Unity* includes a few projects designed by Ardalan in America immediately after his graduation and also three projects in Iran: climatically adapted staff housing on Kharg Island for the NIOC (1964); a very small primary school in an outlying city (1964) and the Saman Towers in Tehran (1969), which were the first residential towers in Iran. The second period includes the Azadi Sport Stadium (Asian Games) (1970); the Centre of Management Study (Now Imam Sadegh University) (1970–1974); the Behshahr Office Building (1971–1974); the University of Bu Ali Sina (1974); the Tehran Museum of Contemporary Art (1967–1977); Pardisan Environmental Park (1976) and the Centre for Children and Young Adults (1970s); the Tehran Celebration of Music (1977) and Nuran Solar New Town (1977). Finally, the post *Sense of Unity* period covers all other projects designed by Ardalan in last three decades, including the Serena Hotel and Retail Centre Study in Pakistan for the Aga Khan (1979–83); the Universal Meditation Center in Surennes, Paris for Pir Vilayat Khan (1982); the Citizen Bank Headquarters in Providence Rhode, Island, USA (1986–88); the ADMA-OPCO Oil Company Headquarters in the Emirates (1994); the Kuwait Waterfront Development (1996); the Information Technology College in Emirates and the Divan of Al Ain (2004–2006) plus 88 other projects across the world.

⁶⁸ Ibid.

PART ONE: UNDERSTANDING ARDALAN

CHAPTER 1: ARDALAN AS A SCHOLAR AND HIS BOOK *THE SENSE OF UNITY*

1.1 Importance of *The Sense of Unity*

As mentioned at the beginning of this thesis, *The Sense of Unity* is significant to study for two reasons. First, it expresses the unique attitude of its authors and their contributions to Islamic architecture. Second, it provides a rare theoretical basis for understanding Ardalan's architecture. To date, the majority of researchers investigating Islamic architecture have failed to engage with practical issues. Ardalan, however, practically and philosophically, dealt with the potential integration of traditional principles in the contemporary context of his professional life.⁶⁹ Laleh Bakhtiar, the co-author of *The Sense of Unity*, spent many years researching and writing in the field of Islamic studies and was influential in crystallising a new approach to traditional architecture based on Islamic notions. Ardalan and Bakhtiar have been highly acclaimed for their work, as it presented new attitudes towards Islamic art. In relation to *The Sense of Unity*, Nasr wrote: "until now [1973] [Islamic art] has been only too rarely studied with the aim of understanding its symbolic and metaphysical significance."⁷⁰

The methodology of previous Islamic architectural studies by scholars such as Grabar (1973, 1976), Hillenbrand (1994), Necipoglu (1981, 1995) and Al-Alami (2002) was based on historical research. These scholars used historical evidence to demonstrate the local origin of Islamic architecture and focused on factors such as dynastic periods, the background and origin of architectural elements, structural limits and the function of

⁶⁹ Nader Ardalan, "The Visual Language of Symbolic Form: A Preliminary Study of Mosque Architecture," in *Architecture as Symbol and Self-Identity*, ed. Jonathan G. Katz (Philadelphia: Aga Khan Award for Architecture, 1980), 18.

⁷⁰ Seyyed Hossein Nasr, introduction to *The Sense of Unity: The Sufi Tradition in Persian Architecture*, by Nader Ardalan and Laleh Bakhtiar (Chicago: University of Chicago Press, 1973), xi.

spaces. Ardalan and Bakhtiar did not consider these factors in their study of early Islamic architecture and despite some similarities between their work and that of other, historically focused, scholars, it is clear that Ardalan and Bakhtiar's attitude differs. *The Sense of Unity* attempted to redefine the basis of Islamic architecture in relation to the doctrine of *Sufism*.

The Sense of Unity provides insight into Ardalan's scholarship of Islamic architecture. This section discusses how Ardalan formed his ideas on the relationship between Islamic cosmology and architecture and how the *Sufi's* doctrine was applied in determining his view. Finally, this section outlines the differences between Ardalan's view and that of other scholars on architecture and Islam.

The Sense of Unity has three sections: "The Morphology of Concepts," "The Concept of Traditional Forms" and "Levels of Realisation." Arguments in *The Sense of Unity* commenced with abstract discussions and moved towards the tangible. In the first chapter of the book, entitled "The Morphology of Concepts," concepts in respect of Islamic cosmology and the relationships between the Divine and Art were discussed. Following this, architectural elements (such as space, shape and colour) were defined according to the principles of Islamic cosmology and the relationship between the Divine and Art. Next, traditional forms and order-making systems were discussed. An analogy can be made between *The Sense of Unity* and a tree; its separate roots are the secondary sources based on the *Sufism* doctrine, its dense trunk is the abstract discussions on Islamic cosmology and, finally, its branches cover the extensive area of architectural forms and elements.

Accordingly, this thesis begins by discussing "The Morphology of Concepts," as it forms the basis of Ardalan and Bakhtiar's metaphysical considerations. Next, the definition of architectural elements in Islamic architecture is discussed based on ideas from the "The Morphology of Concepts" and "The Concept of Traditional Forms." Finally, the systems of order-making in Islamic architecture are discussed in relation to "Levels of Realisation."

The Sense of Unity will be analysed from two directions. First, the internal relationships between ideas and assumptions are considered and Ardalan and Bakhtiar's understanding of Islamic architecture is explored and their approaches are discussed. Second, *The Sense of Unity* is considered from an external viewpoint. The ideas presented in *The Sense of Unity* are compared with ideas presented in other studies and the attitudes of Ardalan and Bakhtiar are compared to those of other Islamic architecture scholars. This analytical comparison reveals homologies, contradictions and disparities between Ardalan and Bakhtiar's views and those of other scholars such as Burckhardt, Snodgrass, Guenon, Al-Alami, Necipoglu and Grabar. Further, this comparison also reveals the ideas that belong uniquely to Ardalan and Bakhtiar. Additionally, an examination of the methodology of *The Sense of Unity* reveals significant factors that were not explicitly considered by Ardalan and Bakhtiar.

Finally, the sources used by Ardalan and Bakhtiar are analysed and the impact of these sources on the authors' ideas are considered. The secondary and primary sources used in *The Sense of Unity* are analysed to explore Ardalan and Bakhtiar's understanding of Islamic architecture.

1.2 Internal View

1.2.1 The Morphology of Concepts

Ardalan and Bakhtiar's introduction to "The Morphology of Concepts" provided a fundamental basis for the entirety of the book's arguments. This section provided a clear outline of Ardalan and Bakhtiar's understanding of Islamic architecture. Important homologies and contradictions to the work of other scholars appeared here.

Nasr stated that "the basis for the understanding of traditional architecture ... is the relation existing between the cosmos, Man in traditional sense of anthropos and architecture." This statement provided the inspiration for the approach taken in this thesis in relation to the main ideas outlined in this section of *The Sense of Unity* and the triangulation between the Divine, Art and Traditional Man (Figure 1.1).⁷¹ The subtitles to this section of the book are translated as "Creative Man" and "Realization Through Art" and the main arguments arise from the relationships between the Divine, Traditional Man and Art. A triangular model demonstrates the fundamental assumptions of Ardalan and Bakhtiar's understanding of Islamic architecture. Further, this triangle can be used to explore deficiencies in *The Sense of Unity*.

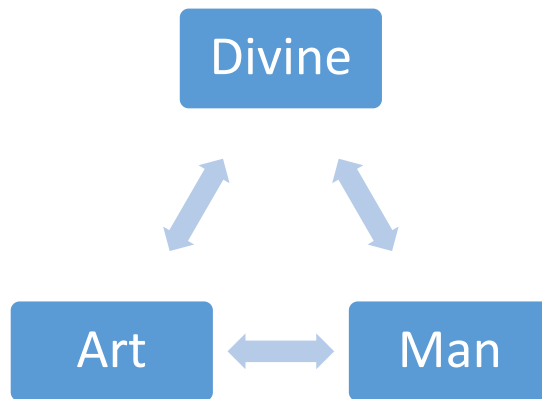


Figure 1.1: Relationship

The Relationship Between Man and the Divine

To analyse the relationship between Man and the Divine, as outlined in "The Morphology of Concepts," it is necessary to introduce the concepts of Hermetic

⁷¹ Ibid, xiii.

cosmology and microcosms and macrocosms (not explored in the book's discussions). These concepts provide insights into the notion of the 'Creative Man', one of Ardalan and Bakhtiar's contributions to Islamic architectural studies.

Hermeticism is a set of beliefs that aims to influence the world through contact with heavenly forces. From a traditional viewpoint, science is based on the intellect;⁷² however, Hermetic science goes beyond the intellect, as it "is based on a certain traditional symbolism which derives from a spiritual revelation."⁷³ Hermeticism is considered a fundamental revelation and has been adopted by both the Christian and Islamic worlds.⁷⁴ In Hermeticism, the Divine and Man represent two distinguished poles, but they cannot be separated. Their relationship can be reduced to that of "subject and object, of knower and known."⁷⁵ According to Hermetic sources, the states of beings can be divided into seven stages; that is, Divine essence, Divine nature, the world beyond form, the world of imagination, the world of spiritual perception, the world of forms and finally the world of nature or Man (see Figure 1.2).⁷⁶ Thus, Man represents the final stage of being. According to Hermetic doctrine "[Man's] intellect is derived from the substance of God."⁷⁷ However, intellect should not be viewed as part of the substance of God; rather it is a reflection of God; "in human beings this intellect

⁷² "The idea of truth is much more absolute in traditional than in modern science ... [in] traditional science truth is the expression of a possibility contained in the universal intellect ... [however in] modern science truths are only simplifying descriptions of appearances, [as from a modern point of view science is based on experience and] ... Modern science dissects things with a view to possessing and mastering them on their own level." Titus Burckhardt, *Alchemy*, trans. William Stoddart (London: Stuart and Watkins, 1967), 38.

⁷³ Ibid, 39.

⁷⁴ Ibid.

⁷⁵ Burckhardt, *Alchemy*, trans. Stoddart, 34. Objectivity means the state or quality of being true even outside of a subject's individual feelings, imaginings, or interpretations. A proposition is generally considered to be objectively true (i.e., to have objective truth) when its truth conditions are met and are "mind-independent;" that is, when it exists freely or independently from a mind (from the thoughts, feelings, ideas, etc. of a conscious subject). In a simpler meaning of the term, objectivity refers the ability to judge fairly, without bias or external influence.

⁷⁶ In relation to states of being, Ikhwan compared the creation of the world by God to the generation of numbers from number one and stated "the creation of universe, beginning with the Creator, descending through the multiple states of being including: 2 Intellect, 3 Soul, 4 Matter, 5 Nature, 6 Body, 7 The sphere (which has its seven planets), 8 The elements (which have eight qualities), 9 Beings of this world." Seyyed Hussein Nasr, *An Introduction to Islamic Cosmological Doctrines: Conceptions of Nature and Methods Used for its Study by the Ikhwān al-Ṣafā, al-Bīrūnī, and Ibn Sīnā* (London: Thames and Hudson, 1978), 48.

⁷⁷ Burckhardt, *Alchemy*, trans. Stoddart, 34.

is God.”⁷⁸ Accordingly, the soul is present in the body, the intellect is present in the soul and the Divine is reflected in Man’s intellect.

In Islamic notions, microcosm means the smallest universe. Conversely, macrocosm means the largest universe. In *Sufi* doctrine and according to Ibn Arabi, the concept of macrocosm refers to an outward motion to the Divine, while the concept of microcosm refers to an inward turning to a hidden treasure that is the seat of the Divine. However, both the inward and outward seeking of the Divine include an ascending motion and operate at the same level of worthiness.⁷⁹

The relationship between Man and the Divine has been the subject of much debate by philosophers over the centuries. Ardalan and Bakhtiar’s arguments in this respect consider the arc of descent and ascent discussed in Hermetic sources.⁸⁰ In *The Sense of Unity*, the relationship between Man and the Divine is understood in relation to the position of Man and his state of being and the Islamic notions of macrocosm and microcosm.

⁷⁸ Ibid, 37.

⁷⁹ Slight differences exist in relation to these concepts; for example, Sarhandi argued that these motions cannot cover the divine, as the divine is beyond macrocosm and microcosm. Thus, such motions are not endless and can be confined. Further, macrocosm has a priority over microcosm. See Hassan Ghahi Bolkhari, “sheikh Akbar and Sheikh Ahmad,” *Andishe Dini* 17 (2005): 151.

⁸⁰ Hermetic beliefs include that the universe is divided into four classical elements that God created seven intermediary planetary spirits to govern destiny.

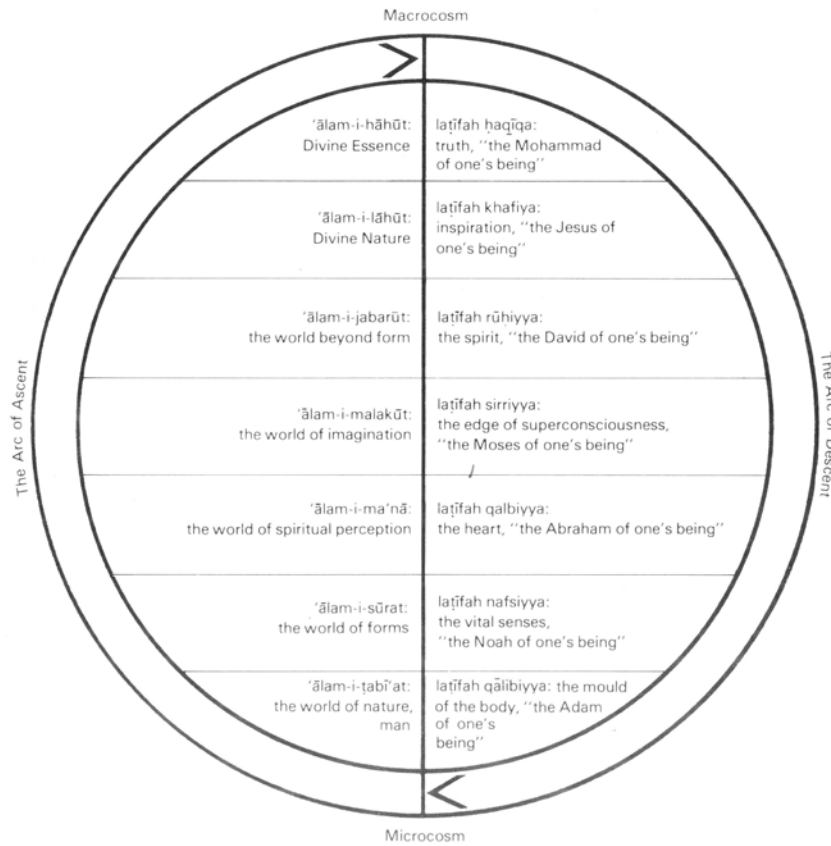


Figure 1.2: The Arc of Ascent and Descent

Source: Ardalan and Bakhtiar, *The Sense of Unity* (Chicago: University of Chicago Press, 1973), 5.

Ardalan and Bakhtiar integrated the concept of the arc with the Islamic ideas of microcosm and macrocosm, stating:

Traditional Man tends towards a mode of comprehension which provides a metaphysical interpretation of life, which precedes and goes beyond all external perception ... initially this interpretation determines his awareness of cosmic space as an externalization of the macrocosmic creation which is analogous to his own microcosmic self. This traditional Hermetic concept forms part of the world view incorporated into Islamic perspective, a view in which the universe is composed of a macrocosm and microcosm, each containing three great divisions; the body (*Jism*) the Soul (*Nafs*) and spirit (*Ruh*).⁸¹

In integrating Hermetic and Islamic ideas, Ardalan and Bakhtiar introduced a new term: the 'Creative Man'. They argued that "because Man, the microcosm, is the mirror image

⁸¹ Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture* (Chicago: University of Chicago Press, 1973), 11.

of macrocosm, he contains all the possibilities of the universe within himself ... Man is the pivot between the arc of descent and ascent.”⁸² The basis for this perspective can also be found in the *Quran*. In the *Quran*, Man is referred to as the ‘Caliph of God’. This term emphasises the possibilities of Man rather than Man’s position or state of being. Significantly, it reflects the faculties of the Divine and gives Man a greater share of Divine qualities than that given by the Hermetic view. Notably, the *Quranic* view was not explicitly discussed in *The Sense of Unity*.

The term ‘Creative Man’ enabled Ardalan and Bakhtiar to emphasise the similarities between Man and the Divine; in Islamic notions, ‘creativity’ is the most well-known faculty and is the name of the Divine and Man. Thus, in using this term Ardalan and Bakhtiar assumed Man’s metaphysical knowledge; however, the position of Man and his state of being does not imply Man is familiar with metaphysics. Indeed, only the *Quranic* view gives Man the ability to understand metaphysics; the term ‘Creative Man’ merely emphasises this ability.

Such descriptions make it clear that Hermetic ideas were applied, rather than *Quranic* ideas, to broaden Ardalan and Bakhtiar’s study and bring them closer to the idea of religions unity. Consequently, the term ‘spiritual architecture’ was used rather than ‘Islamic architecture’.

From an external point of view, the role of Man has been noted by Islamic and non-Islamic scholars, including Schuon (1954),⁸³ Burckhardt (1974)⁸⁴ and Nasr (1968).⁸⁵ Scholars have differed in their view on the role of Man; for example, Nasr emphasised the *Quranic* view of Man, while Burckhardt emphasised the central position of Man in the state of being according to the principles of Hermeticism. However, Ardalan and Bakhtiar were the first to use the term ‘Creative Man’. Thus, this term forms part of Ardalan and Bakhtiar’s contribution to spiritual architecture.

⁸² Ibid, 12.

⁸³ Frithjof Schuon, *Spiritual Perspectives and Human Facts*, trans. Mark Perry, Jean Pierre Lafouge and James S. Cutsinger (Bloomington: World Wisdom Inc., 2007).

⁸⁴ Titus Burckhardt, “Perennial Values in Islamic Art” in *The Sword of Gnosis* ed. J. Needleman (Penguin Books Inc, 1974).

⁸⁵ Seyyed Hossein Nasr, *Man and Nature: The Spiritual Crisis of Modern Man* (Unwin Paperbacks, 1968).

In summary, in *The Sense of Unity* the relationship between Man and the Divine is based on the position and possibilities of Man. States of being in Hermetic cosmology and Islamic notions of microcosm and macrocosm view the role of Man as pivotal in the ascending and descending arc; this role was emphasised by the use of the *Quranic* term ‘Caliph of God’. ‘Creative Man’ thus provides the basis for *The Sense of Unity*.

The Relationship Between Art and the Divine

In *The Sense of Unity* it was argued that the relationship between Art and the Divine is based on symbolism. This section introduces Ardalan and Bakhtiar’s concept of symbolism and discusses different aspects of symbolism to demonstrate Ardalan and Bakhtiar’s Gnostic approach to Islamic architecture.

The relationship between Art and the Divine is controversial. Indeed, some scholars⁸⁶ have denied that any such relationship exists, as Islamic texts make no connection between Islam and architecture and there is a lack of historical evidence to support such a relationship. However, in *The Sense of Unity* the relationship between art, particularly architecture, and Islam was discussed and a foundation was provided for further arguments. Ardalan and Bakhtiar stated:

The esoteric dimension concerns the Divine Law (*Shariah*) and Man’s behaviour, but it is not directly related to the creative principle of the Traditional Man. Rather it is the Gnostic aspect of Islam the way (*tariqah*), in which are found the principles which govern Islamic art, especially architecture.⁸⁷

Ardalan and Bakhtiar used symbolism to show the relationship between the Divine and Art. They assumed that “every external form was complemented by an inner reality which is its hidden, internal essence.”⁸⁸ Rather than focusing on the nature and validity of symbols, Ardalan and Bakhtiar emphasised the interpretation of symbols or the

⁸⁶ For example, Al-Alami, Grabar and Hillenbrand.

⁸⁷ Ardalan and Bakhtiar, *The Sense of Unity*, 3.

⁸⁸ Moreover, Ardalan and Bakhtiar (*The Sense of Unity*, 3–5) noted Gazzali’s idea that: “The visible world was made to correspond to the world invisible and there is nothing in this world but is a symbol of something in that other world.”

relationship between *zahir*⁸⁹ and *batin*⁹⁰ (*Quranic* terms) to demonstrate the reflection of the Divine in the arts. In doing this, they also adopted the *Quranic* term *tawil*, an Arabic word used to refer to interpretation, specifically the interpretation of esoteric concepts. Ardalan and Bakhtiar defined *tawil* and spiritual Hermeneutics⁹¹ “as the bridge between the esoteric and the exoteric, the discernment in a sensible form of ... inner essence which reflects the Divine prototype.”⁹² While “the language of symbols is ‘conceptual’ [it] is nevertheless capable of expressing ... coherent thought on existence and on the world.”⁹³ Consequently, Man can only understand the symbolism used in the visible world through *tawil*.⁹⁴

Despite its key role in understanding the relationship between the Divine and Art, *The Sense of Unity* does not comprehensively explain symbolism. Consequently, some questions remain unanswered; for example: What is indicated by the term ‘symbol’? What is the nature of symbols? How is the validity of a symbol established?

According to Akkach, “the nature of symbolism, as extracted from traditional literature, is shown to be based on the correspondence between two domains of reality: those of the inferior domain are viewed as representing those of the superior, the visible representing the invisible, the physical representing the spiritual.”⁹⁵

Snodgrass provided a similar interpretation of the term symbolism and noted that it had two levels: (1) A level to indicate “something within the empirical world, knowable by the senses or conceivable by the mind, so that symbol and its referent stand at the same level of reality;” and⁹⁶ (2) A level to indicate “a referent that stands at a supra-empirical

⁸⁹ “The *zahir* is the sensible form ... which emphasizes the quantitative aspect which is most readily comprehensible.” Ardalan and Bakhtiar, *The Sense of Unity*, 5.

⁹⁰ “The *batin* is the essential or qualitative aspect which all things possess.” Ardalan and Bakhtiar, *The Sense of Unity*, 5.

⁹¹ Ardalan and Bakhtiar use the term “spiritual Hermeneutics” from a universal point of view. See Ardalan and Bakhtiar, *The Sense of Unity*, 5.

⁹² Ardalan and Bakhtiar, *The Sense of Unity*, 5.

⁹³ Mircea Eliade, “Methodological Remarks on the Study of Religious Symbolism,” in *The History of Religious*, ed. M. Eliade and M. Kitagawa (Chicago: University of Chicago press, 1959), 86–107, quoted in Samer Akkach, “The Sacred Pattern of Traditional Islamic Architecture According to *Sufi* Doctrine,” (PhD diss., University of Sydney, 1990), 5.

⁹⁴ Ardalan and Bakhtiar, *The Sense of Unity*, 5.

⁹⁵ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 4.

⁹⁶ Adrian Snodgrass, *The Symbolism of the Stupa* (Ithaca, N.Y.: Southeast Asia Program, Cornell University, 1985), 3.

level where it cannot be known by sense perception ... the symbol beyond itself, to a domain that transcends the sensible and rational.”⁹⁷ Symbols at the supra-empirical level are called sacred symbols as they lay “at another level of reality.”⁹⁸ As Art and the Divine do not operate on the same level of reality, these definitions offer an understanding of the significant role of symbolism in the relationship between Art and the Divine.

In understanding this relationship, the meanings of symbols and their validity are important. Ardalan and Bakhtiar did not place as much emphasis on the meaning and validity of symbols as Snodgrass and Akkach. Symbols are of two fundamentally different types: universal and natural or particular and conventional. The significance of universal symbols (e.g., geometrical or numerical symbols) derives from their inherent nature, whereas the significance of particular symbols relates to particular traditions.⁹⁹ An object becomes a symbol when a concrete object is enriched with a layer of significance that is not necessarily clear through immediate experience.¹⁰⁰ Meanings are not superimposed on symbols. Indeed, symbols are deemed to act similarly to the way in which natural laws obey physical phenomena or mathematical principles reside in numerical or geometrical phenomena.¹⁰¹ Thus, the validity of symbols is independent of understanding;¹⁰² however, their form is not arbitrary.¹⁰³ These explanations provide answers to some questions arising from *The Sense of Unity* and also clarify the reasoning behind Ardalan and Bakhtiar’s statement that symbolic forms, which are perceptible aspect of the metaphysical reality, exist whether Man is aware of them or not.¹⁰⁴

In summary, *tawil* and symbols are essential in understanding the relationship between the Divine and Art. Gnosticism is also an inseparable component of this connection. A

⁹⁷ Ibid.

⁹⁸ Adrian Snodgrass, *Architecture, Time and Eternity: Studies in the Stellar and Temporal Symbolism of Traditional Buildings* (New Delhi: P K Goel for Aditya Prakashan, 1990), 45.

⁹⁹ Samer Akkach, *Cosmology and Architecture in Premodern Islam: An Architectural Reading of Mystical Ideas* (Albany: State University of New York Press, 2005), 11.

¹⁰⁰ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 6.

¹⁰¹ Snodgrass, *The Symbolism of the Stupa*, 9.

¹⁰² Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 4.

¹⁰³ “The form of a sacred symbol is not arbitrary but is a verisimilitude, a true likeness of an intelligible form.” Snodgrass, *Architecture, Time and Eternity*, 45.

¹⁰⁴ Ardalan and Bakhtiar, *The Sense of Unity*, 5.

consideration of the type of relationship between the Divine and Art and the medium of this connection shows that Ardalan and Bakhtiar's view of Islamic architecture was not based on esoteric principles rather than exoteric ones. In other words, they adopted a Gnostic attitude towards Islamic architecture. This mystical view has been criticised (see discussions further below). *Quranic* terms were used in *The Sense of Unity* to enrich understandings of symbolism. Further, Akkach and Snodgrass's discussions on the validity and nature of symbols enriched weaknesses in *The Sense of Unity*.

The Relationship Between Man and Art

The relationship between Man and Art is supported by the relationship between Man and the Divine and the position of Man as a 'Creative Man'. Nasr stated that to appreciate any form of traditional architecture, including traditional Islamic architecture, it is necessary to understand the way that Traditional Man perceives the totality of architecture and its elements.¹⁰⁵ Ardalan and Bakhtiar assumed that Traditional Man was able to achieve a balance between the material world and spiritual world and stated: "The Traditional Man's sense of reality includes a qualitative and a quantitative aspect and is determined by the balance he is able to achieve between the material worlds on the one hand and the spiritual world on the other."¹⁰⁶

However, a question arises: how did Traditional Man reach this point? The role of rituals goes some way to answering this question. Rituals prepare Traditional Man to understand the spiritual world. Through rituals in the sacred arts, craftsmen are able to relate a symbol to its origin. As Ardalan and Bakhtiar stated: "The master artisan participates in the creative process through traditional rituals which prepare him to create works of art that reflect forms in the *malakut*, or world of imagination. The aim of these rituals is essentially one—to create a state of consciousness that allows the contemplation of the Divine."¹⁰⁷

However, in *The Sense of Unity* Ardalan and Bakhtiar failed to consider the differences between Traditional Man and Contemporary Man. Questions arise, including: How are

¹⁰⁵ Nasr, introduction to *The Sense of Unity*, xi.

¹⁰⁶ Ardalan and Bakhtiar, *The Sense of Unity*, 9.

¹⁰⁷ Ibid, 10.

contemporary Islamic rituals similar to their traditional Islamic rituals? Ontologically, is there any difference between Traditional Man and Contemporary Man? and Why was only Traditional Man able to achieve this balance? Arguments in relation to Traditional Man, his cosmology and rituals unfold to reveal another correlation between Islam and Art; that is, a relationship unlimited by the esoteric aspect of Islam that is symbolically reflected in art. Islam formed a cosmology of traditional craftsmen through rites that reiterated that Man acts as mediator between Islam and Art.

In the section entitled “Realization Through Art,” Ardalan and Bakhtiar assumed that an artist does not necessarily need to know the metaphysics of a tradition to effectively use it, as tradition transmits models and working rules that guarantee the spiritual validity of forms for the artist. However, in respect of the relationship between art and Man, Ardalan and Bakhtiar assumed that Traditional Man was able to achieve a balance between the material and spiritual worlds. These two assumptions were either not entirely compatible or Ardalan and Bakhtiar’s explanations were not clear enough to distinguish between these two assumptions.

1.2.2 The Concept of Architectural Elements

This section examines the second part of the first chapter of *The Sense of Unity* in which Ardalan and Bakhtiar defined fundamental architectural elements such as space, shape, surface, material and colour. Ardalan and Bakhtiar considered the Traditional Man in relation to these elements, regardless of the region and period of history. This section focuses on how the ideas, introduced above, resonate in discussions on architectural elements. A brief comparison of the works of other Islamic scholars is undertaken to emphasise Ardalan and Bakhtiar's scholarly contributions and highlight the differences between the assumptions in various studies and the scale of applicability of each idea. The relationship between the sources and arguments of scholars is also considered and it is shown that the arguments of some scholars are not supported by sources of evidence. In a broad sense, this discussion attempts to demonstrate Ardalan and Bakhtiar's understanding of Islamic architecture and the priority of cosmic concepts over traditional forms. This discussion also highlights the contribution of Ardalan and Bakhtiar in defining traditional elements of architecture based on *Sufi* doctrine.

In traditional architectural studies, historians identify the originality of elements and forms on the basis of historical evidence (i.e., in a backwards direction). However, Critchlow argued that tracing the origins of creation should move in an inwards (not backwards) direction.¹⁰⁸ Similarly, Ardalan and Bakhtiar adopted a non-historical approach and noted that originality is achieved through a connection to the world of archetypes and continues because of the creative ability of Traditional Man to reproduce a synthesis. Ardalan and Bakhtiar stated: "Conformity to spiritual principles is essential in all traditional art, and forms the basis for originality in such an art ... The achievement of a profound synthesis of material, techniques and quantitative functions constitutes such an art."¹⁰⁹ According to this view, fundamental architectural elements are significant, as they constitute components of Creative Man's syntheses. Accordingly, architectural elements must be defined in accordance with Traditional Man's views as influenced by Traditional Man's cosmology (see above).

¹⁰⁸ Keith Critchlow, *Islamic Patterns: An Analytical and Cosmological Approach* (New York: Schocken Books, 1976), 8.

¹⁰⁹ Ardalan and Bakhtiar, *The Sense of Unity*, 10.

Space and Unclear Assumptions

This section analyses the assumptions made in relation to ‘space’ in *The Sense of Unity*. Specifically, the following points are considered: (1) unequal weight was given to the scale of study, and the argument moves between architecture and urbanism; (2) *The Sense of Unity*’s arguments in respect of space did not consider the function of spaces and buildings to be significant; (3) Ardalan and Bakhtiar’s assumptions in relation to Islamic cosmology gave rise to an unclear discussion in “The Structure of Space;” (4) the use of the term ‘space’ in the Western sense was not appropriate in these discussions; and (5) Ardalan and Bakhtiar presumed orientations other than to Mecca for traditional cities, regardless of the geographical bases.

The qualitative dimension of space was emphasised by Ardalan and Bakhtiar as a key element to understanding Iranian traditional Islamic architecture. In discussing the role of space in Islamic traditional architecture, space was analysed in relation to the following: (1) The Structure of Space; (2) Orientation in Space; (3) The Sense of Place; (4) Positive Space Continuity; (5) Positive Space System; (6) The Space of Man; (7) Time–Form Simultaneity; and (8) Rhythm in Time.

Ardalan and Bakhtiar’s ideas on the relationship between space and time, orientation and positive space continuity were applicable on a large scale (e.g., to sizeable architectural complexes or urban areas). However, other ideas, such as the structure and sense of a place, were applicable on a small scale (e.g., to individual buildings or intimate spaces). Ardalan and Bakhtiar’s discussion was not limited to the boundaries of architectural objects, but oscillated between architecture and urbanism. Given the structure of space and that Man’s space is based on Islamic cosmology (other discussions fail to consider Islamic cosmology), there was no equality in the assumptions made. From a practical perspective, this section can be divided into two smaller sections; the first section relates to traditional Islamic architecture and the second section considers the traditional urban fabric. It should also be noted that arguments in this section of *The Sense of Unity* do not follow a linear order; for example, orientation is discussed under two different headings and a poem by Rumi is

discussed in the last section, but is actually more relevant to the discussion that takes place in the section entitled “Positive Space Continuity.”

The assumption in *The Sense of Unity* that there is no distinction between public and private buildings and religious and secular buildings is also questionable. Some Islamic scholars, including Akkach, have noted that “in traditional Islamic architecture the built forms do not always relate to particular functions or building types;”¹¹⁰ however, the ideas of authors in relation to the function of buildings is not always clear.

Ardalan and Bakhtiar began their argument on space by discussing the structure of space. It is clear that their definition was based on Islamic cosmology even if they did not explicitly classify this as cosmology. Islam can be divided into several denominations and a shared cosmology should not be assumed. Any assumption of a unity of cosmology across all Islamic denominations may have been caused by Ardalan and Bakhtiar’s emphasis on the unity of religion (see discussion above).

Another important assumption arises in relation to Traditional Man’s perception of metaphysics. Ardalan and Bakhtiar used this assumption to explain the relationship between space and its symbols, stating: “space is one of the most direct symbols of being.”¹¹¹ They also noted that, based on Traditional Man’s understanding, the universe is a combination of the microcosm and the macrocosm. Their understanding offers a metaphysical interpretation of life. They stated: “This interpretation determines [man’s] awareness of cosmic space as an externalization of the macrocosmic creation which is analogous to his own microcosmic self.”¹¹² However, this argument would be clearer if the faculties of Man and his position in the macrocosm and microcosm as ‘Creative Man’ were noted. As stated above, in Hermetic doctrine, Man is placed in the final stage of being. Conversely, in the microcosm Man is placed in the first stage of being and, as his faculties are a reflection of the Divine’s faculties, tries to emulate the role of the Divine in the creation process.

¹¹⁰ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 237.

¹¹¹ Ardalan and Bakhtiar, *The Sense of Unity*, 11.

¹¹² Ibid.

Next, Ardalan and Bakhtiar considered orientation in space. It appears that they used the term 'space' synonymously with the term 'universe' and that the Western concept of space was viewed as being equal to the traditional Persian concept of space. It should be noted, however, that in traditional Persian texts the term space (or *Faza*) was used to refer to the universe and environment and the term palace (or *Makan*) was used to describe space in the Western sense. Ardalan and Bakhtiar appear to have merged the concepts behind these terms. Consequently, their arguments were not clear; for example, at one point Ardalan and Bakhtiar stated: "in structured space, Man knows where he is;"¹¹³ however, it is not clear what 'space' means here, as a discussion about the orientation of the sky and the qualitative dimensions of space follows.

'Orientation' is also discussed in relation to a 'sense of place', but on a city scale. Prior to the publication of *The Sense of Unity*, Islamic architectural studies were primarily related to the orientation of mosques in relation to Mecca. Ardalan and Bakhtiar argued that in a cityscape many other orientations exist; for example: "Residences look into courtyards which orient south to the sun; wind towers relate to the prevailing breezes."¹¹⁴ However, such directions follow geographical conditions and are not related to Islamic notions.

Sense of Place and its Roots

The following discussion of 'sense of place' considers: (1) the contribution of Ardalan and Bakhtiar to Islamic architectural studies and that Guenon's idea may have provided inspiration for the qualitative dimension of space; (2) the importance of space in traditional architecture as compared to the concept of space in modern architecture (as articulated by Nasr). This comparison also clarifies the following concepts in *The Sense of Unity*: space of man, and positive space continuity; (3) the literary source of *The Sense of Unity* and how it corresponds to the above concepts (this was not mentioned by Ardalan and Bakhtiar in the text). This discussion also attempts to explain why the inside surfaces of ornaments in traditional Islamic architecture are more complex than

¹¹³ Ibid.

¹¹⁴ Ibid, 15.

those on the outside and explains Ardalan and Bakhtiar's complex argument in relation to time, form and rhythm.

Not only is 'sense of place' a central point of discussion for this section of the thesis, it also forms a key part of Ardalan and Bakhtiar's contribution to Islamic architecture (before *The Sense of Unity*, no other studies on Islamic architecture individually analysed the concept of space in Islamic architecture). A traditional concept of space was considered in secondary Persian texts; however, the concept of space expressed in these texts differed from that expressed in *The Sense of Unity*. By way of example, in Pirnia's *Styles of Islamic Architecture* (1980)¹¹⁵ a qualitative dimension of space was considered; however, Pirnia's view was based on the relationship between function and size of space and his sense of place was derived from the sensations of users and observers. Of the studies that considered a sense of place, only Akkach's approach was similar to that adopted in *The Sense of Unity*. Interestingly, Guenon's idea on the qualitative dimension of space was published many years before *The Sense of Unity*. Guenon stated: "If place were purely quantitative, it would have to be entirely homogeneous and its parts would have to be indistinguishable from one another by any characteristic other than their respective sizes."¹¹⁶ It should be noted that while Guenon had undertaken some studies based on Islamic notions, his book *The Reign of Quantity and the Signs of the Times* (1953) was not based in Islamic thought.

In their definition of a sense of place, Ardalan and Bakhtiar emphasised the relationship between the *zahir* (i.e., manifest) and the *batin* (i.e., hidden), stating: "The concept of place or '*makan*' is composed of both the container (body) and the contained (soul) ... Place does not have a tangible existence but exists in the consciousness of the beholder who visually perceives physical boundaries while his intellect perceives the spirit as contained, defined with the boundaries."¹¹⁷ This definition highlights the difference between space and form. Space is the soul in the body of form. The relationship between space and form is a key to understanding the principles of traditional Islamic

¹¹⁵ Pirnia is a well-known Iranian scholar, known for his books on Iranian and Islamic architecture

¹¹⁶ Rene Guenon, *The Reign of Quantity and the Signs of the Times*, trans. Loard Northbourne (W.C.: Luzac and Company, 1953), 42.

¹¹⁷ Ardalan and Bakhtiar, *The Sense of Unity*, 13.

architecture.¹¹⁸ Thus, this definition is critical to understanding traditional Islamic architecture. However, a comparison of this definition with the modern definition of space should be made. Nasr stated: “in modern architecture a house is placed within the space and a space is defined by the contours of material forms it surrounds. In much of Islamic architecture, space is ‘cut out’ from the material forms around it and is defined by the inner surfaces of these forms.”¹¹⁹ Thus, in traditional architecture, regardless of its form and material, space is confined and hollowed to encompass Man¹²⁰ and enables Man to “move continuously in an undulating and expanding space that is forever united.”¹²¹

It may be that in relation to ‘Positive Space Continuity’ Ardalan and Bakhtiar were more inspired by literary sources than doctrine. Based on their definition of a sense of place, space is cut out from its boundaries and empty so that it can encompass Man who can move within it. Analogically, this qualitative dimension of space corresponds with Rumi’s¹²² concept that: “We are the flute, our music is Thine.”¹²³ This line of poetry can be viewed as the starting point for *The Sense of Unity*. It indicates the flow of the soul into the body. From an architectural point of view, this flow is similar to the movement of Man in space. Ardalan and Bakhtiar also referred to another of Rumi’s poem:

Hearken to this reed forlorn,
Breathing, even since ’twas torn,
From its rushy bed, a strain

¹¹⁸ Nasr, introduction to *The Sense of Unity*, xiii.

¹¹⁹ Ibid.

¹²⁰ Akkach has stated that in traditional architecture: “Large architectural complexes, which comprise many interrelated spaces with varying size and significant, can always be broken into their constitutive units which reveal the same underling pattern as the whole.” Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 238.

¹²¹ Ardalan and Bakhtiar, *The Sense of Unity*, 17.

¹²² Rumi was a well-known *mufti* (i.e., *Sufi* mystic) in Quniye (i.e., North-West of Iran in the 10th century, now part of Turkey). Similar to other *mufti* in medieval Islam, Rumi engaged with his disciples by teaching the *Quran* and *Hadith* and daily religious rituals. Following a meeting with an unknown man named “shams,” Rumi suddenly and similarly fell in love and accepted Shams as his master. Shams showed Rumi another view of the universe with a different focus on communicating with the divine. Rumi was also required to leave the Islamic position he had attained after many years of studying and praying. See Abolkarim Soroush, *Ghomar Asheghane* (Tehran: Serat, 1989), 12.

¹²³ Ardalan and Bakhtiar, *The Sense of Unity*, 1.

Of impassioned love pain.¹²⁴

Ardalan and Bakhtiar noted that this poem emphasises the existence of a relationship between rhythm and architecture. However, this poem also reveals the relationship between *zahir* and *batin* in space and the concept of unity. As outlined above, these two concepts resonate in space. Rumi used the reed “as a symbol for the soul emptied of self and filled with the Divine spirit. This blessed soul, during its life on earth, remembers the union with God which is enjoyed in eternity and longs ardently for deliverance from the world where it is a stranger and exile.”¹²⁵ This morphology between the concept of *zahir* and *batin* in relation to a sense of place is also another view not considered in *The Sense of Unity*. Indeed, Ardalan and Bakhtiar argued that, according to Islamic notions, “the locus of person is associated with the *batin*, surrounded by the shell of *zahir*.”¹²⁶ Thus, a person is defined by the inner surfaces or is cut out from the surrounding *zahir*.

By assuming similarities between a character (i.e., person) and a sense of place as a character of space, the definition of a person corresponds with the definition of a space in traditional Islamic architecture. Thus, the outer form of the space is the *zahir* and its inner form is the *batin*. It should be noted that in Islam, the *batin* is more privileged than the *zahir*. This provides an explanation as to why in traditional Islamic architecture the inner surfaces of spaces are fully covered by ornaments, but the outside surfaces are very simple.

Integration of Time and Form in Space

Time–form simultaneity is another important consideration of space. However, the short discussion of this topic is not sufficient. Ardalan and Bakhtiar argued that the concept of time and form simultaneity is just as important as space in traditional architecture. In Ardalan and Bakhtiar’s view, space contains both active and passive possibilities. They stated “the concept of time and form as simultaneous...is in relation to the active aspect of space that the idea of time as motion occurs. Concurrently, the passive possibility is

¹²⁴ Ibid, 19.

¹²⁵ Reynold Nicholson, *Rumi: Poet and Mystic* (London: George Allen and Unwin, 1964), 31.

¹²⁶ Ardalan and Bakhtiar, *The Sense of Unity*, 19.

manifested in matter in for which is directly a product of this movement.”¹²⁷ Interestingly, Ardalan and Bakhtiar used the idea of Ibn Arabi in relation to initial creation to support the idea next under consideration; that is, rhythm in time.

For clarity, three points should be recalled: (1) the possibility of motion in space is an important feature of space as caused by positive space continuity in Islamic architecture; (2) physically, motion is caused by pervading distance over time; and (3) conceptually, motion cannot be assumed outside of time. Consequently, the relationship between space and time can only be seen in motion. This fact shows the active nature of space. Further, because motion cannot be understood in an infinitive space, barriers (i.e., ‘forms’ in architecture) confine motion. Resultantly, interactions between time and form occur in space through motion. This concept often appears in large-scale forms of architecture, such as traditional bazaars in Islamic cities.

This discussion provides a basis for the next section of *The Sense of Unity* entitled “Rhythm in Time.” Ardalan and Bakhtiar argued that “as we are able to appreciate a feeling of continuity and harmony in architectural design so we can parallel developments in other arts.” The continuity and harmony of music is well appreciated and may serve to elucidate another aspect of the spiritual meaning of time–form continuity.”¹²⁸

Shape and Symbols of Unity

It has been stated that: “shape results from the delimitation of structured space.”¹²⁹ Shape is important in Islamic architecture not merely because of its role in architecture, but also because it relates to the symbolic significance of numbers and geometry; “numbers are units of this spatial definition and geometry expresses the personality of these numbers.”¹³⁰ The role of shape in Islamic architecture is related to the ability of numbers and geometry to express meanings symbolically. The concept of unity acts as a

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ Ibid, 21.

¹³⁰ Ibid.

pivot between this argument and Islamic cosmology and will be further explored via the ideas of Nasr, Akkach, Critchlow and Burckhardt.

The structure of the arguments presented in the section of *The Sense of Unity* entitled “Shape” can be criticised, as numbers, mathematics and geometry are studied individually. Arguably, based on their common features, they should be analysed together. Additionally, according to Critchlow and Akkach, the symbolic meanings of geometry and numbers emphasise the concept of unity, but the importance of unity is not discussed comprehensively in “Shape.”

Shapes can be known through numbers and geometry; however, geometric forms and numbers are more than what they appear to be quantitatively, as they have both a qualitative and symbolic aspect.¹³¹ Analysing geometry and exploring the numerical aspect of shapes can unfold their symbolic meanings. This process is called *tawil* (i.e., interpretation) in *The Sense of Unity*. Ardalan and Bakhtiar argued that the creation of shapes through the use of numbers and geometry recalls the archetypes of “*alam i mithal*,” that is, “a reflection of the higher planes of existence.”¹³²

Given that traditional craftsmanship was inspired by order and proportions in nature (as studied through mathematics), shape is an instrument by which traditional craftsmanship can symbolically illustrate the concepts of cosmology.¹³³ Traditional Man tried to comprehend proportions in nature through cosmology and emulated it in his art through geometry and numbers. Thus, through geometry and mathematics the traditional craftsman could: (1) understand the order of nature (which reveals the relationship between unity and multiplicity); and (2) make a symbolical relationship between Art and the Divine that also emphasised unity.

This concept of unity is important, as it connects geometry, numbers and, consequently, shape to Islamic cosmology. It has been stated that: “The doctrine of unity of being is the fundamental base of *Sufism* and [is the] foundation of *Sufi* metaphysics. Its roots can

¹³¹ Nasr, introduction to *The Sense of Unity*, xiii.

¹³² Ardalan and Bakhtiar, *The Sense of Unity*, 9.

¹³³ “Order and proportion are viewed as cosmic laws whose processes man undertakes to comprehend through arithmetic, geometry and harmony.” Ardalan and Bakhtiar, *The Sense of Unity*, 21.

be found in numerous *Quranic* verses.”¹³⁴ This doctrine of unity “is central to the Islamic revelation combined with the nomadic spirituality which Islam made its own [and] brought to being an iconic art.”¹³⁵ Through numeric symbols the traditional architect can easily explain the relationship between multiplicity and unity.¹³⁶

In Islamic studies, the number one is a symbol of unity and the other numbers are symbols of multiplicity. The creation of the world by God can be compared with the generation of numbers from one. Further, each number is assumed to be nomad of a concept in the universe. Thus, “the creation of universe, beginning with the Creator, descending through the multiple states of being include 2 Intellect, 3 Soul, 4 Matter, 5 Nature, 6 Body, 7 the Sphere (which has seven planets), 8 the Elements (which have eight qualities), and 9 Beings of this World.”¹³⁷

In addition to numbers, geometry illustrates the process between unity and multiplicity. According to Critchlow: “In our manifested world we observe things developing having a duration and being reabsorbed. This elementary law of all phenomena can be symbolised geometrically in the way that space seen as extension, is created by unfolding through the dimensions and can be folded up again through the understanding of its nature.”¹³⁸

Ardalan and Bakhtiar assumed that the concept of unity was inherent in numbers and that numbers were similar to other phenomena and contained a *batin*; that is, a projection of unity. This projection was never divorced from its source, as other numbers cannot be separated from the number one.¹³⁹ In this sense, as numbers increase they are not based on deduction and induction and every number always contains the number one.

¹³⁴ “The Primordial Presence is the Presence of Unity that proceeds in principle, all determinations and manifestations. It is the presence of the Essence that *Sufis* symbolically compare to geometrical point.” Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 101.

¹³⁵ Seyyed Hussein Nasr, introduction to *Islamic Patterns: An Analytical and Cosmological Approach*, by Keith Critchlow (New York: Schocken Books, 1976), 6.

¹³⁶ Nasr, *An Introduction to Islamic Cosmological Doctrines*, 45.

¹³⁷ Ibid, 51.

¹³⁸ Critchlow, *Islamic Patterns*, 7.

¹³⁹ Nasr, *An Introduction to Islamic Cosmological Doctrines*, 49.

Ardalan and Bakhtiar outlined the origin of their arguments in respect to the symbolic meanings of numbers and geometry; however, they did not explain the relationship between original sources of arguments and Islamic sources. The origin and source of these discussions will be considered in more detail with reference to Nasr and Critchlow's views. I also will consider the Ikhwan al-Safa's view that brought Pythagorean geometry into Islamic studies.

Nasr's writings form the main secondary source for Ardalan and Bakhtiar in this section of *The Sense of Unity*. Ardalan and Bakhtiar adopted the ideas of Ikhwan al-Safa and Pythagoras on the symbolic meaning of numbers and geometry. Further, in relation to symbolic geometry, Ardalan and Bakhtiar explained Platonic bodies in accordance with al-Biruni's explanations.¹⁴⁰ The *Alchemy* of Titus Burckhardt is another important secondary source on the symbolic meanings of geometry.

Aside from the symbolic meaning of Platonic and Pythagorean shapes, Ardalan and Bakhtiar did not mention the backgrounds of geometrical and numerical concepts from non-Islamic sources in *The Sense of Unity*.¹⁴¹ Further, Ardalan and Bakhtiar did not explain how these values were brought to Islam and whether or not they were limited to Islamic culture. Such omitted discussions led to the use of terms such as spiritual architecture.

According to Nasr, "there is within the spiritual universe of Islam a dimension which may be called "Abrahimic Pythagorean," or a way of seeing numbers and figures as key to the structure of the cosmos and symbols of the archetypal world and also a world which is viewed as the creation of God in the sense of the Abrahamic monotheisms."¹⁴² In the Pythagorean sense, adding or subtracting does not determine a number series; rather, numbers have a geometric character with a unique centre.¹⁴³ Thus, numbers and geometry share the same esoteric value. This esoteric geometrical value is not limited to

¹⁴⁰ In Islamic studies the sphere is recognised as a symbol of unity. In relation to the role of the sphere, Ardalan and Bakhtiar stated: "There are only five regular polygons which can be inscribed in a sphere Known as platonic bodies." Ardalan and Bakhtiar, *The Sense of Unity*, 23.

¹⁴¹ "The concept of number in Islam is similar to Pythagorean system where numbers, being qualitative as well as quantitative entities." Ardalan and Bakhtiar, *The Sense of Unity*, 25.

¹⁴² Nasr, introduction to *Islamic Patterns*, 6.

¹⁴³ Nasr, *An Introduction to Islamic Cosmological Doctrines*, 48.

Islamic culture; it can be found in a diverse range of cultures (e.g., in the Chinese and Japanese painting of the Southern Sung and later Zen periods, the *yantras* and *mandalas* of Hindu, Tibetan and Buddhist art and the sand painting of indigenous North American Indians).¹⁴⁴

In Islamic studies, the qualitative dimension of numbers and geometry was affirmed by Ikhwan al-Safa.¹⁴⁵ Ikhwan al-Safa argued that geometry is a science that deals with measures and dimensions from both a quantitative and qualitative perspective.¹⁴⁶ Historically “the Ikhwan al-Safa believed themselves to be disciples of Pythagoras ... especially in considering numbers as the cause of all things and the key to understanding of the harmony pervading the universe.”¹⁴⁷ For Ikhwan al-Safa the language of symbols, particularly numerical symbols, could be used to discern the wisdom of the Maker.

The ideas of Pythagoras and Ikhwan al-Safa have been used in other Islamic architectural studies. These sources have made clear the homologies between *The Sense of Unity* and other Islamic texts such as *Islamic Pattern* by Critchlow and *Islamic Art* by Burckhardt. The approaches of these two authors differ. Critchlow is focused on pure geometry and mathematics and the reflection of patterns normally found in ornaments. Conversely, Burckhardt explored the symbolic meaning of geometry in architecture and paid little attention to the geometry of floor plans and structures in his work.

Ardalan and Bakhtiar did not explore the qualitative dimension of geometry and mathematics as deeply as Critchlow; rather, they discussed the symbolic meanings of geometry and numbers in ornaments, floor plans, structure and the context of cities. Their explanations do not have the same level of detail as the works of Critchlow and Burckhardt; for example, Ardalan and Bakhtiar discussed squaring the circle and also the mandala as two fundamental examples of the culmination of geometry in the art of

¹⁴⁴ Critchlow, *Islamic Patterns*, 8.

¹⁴⁵ *Ikhwan al-Safa* is a group of scholars; however, their exact identities (i.e., the place and time of their writings) are unknown. Many different ideas exist in relation to their identities and the community to which they belonged.

¹⁴⁶ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 95.

¹⁴⁷ Nasr, *An Introduction to Islamic Cosmological Doctrines*, 47.

Traditional Man and argued that the components of these transformations are symbols of heaven and earth.

The style of argument of Ardalan and Bakhtiar differs to that of Burckhardt and Critchlow. Ardalan and Bakhtiar attempted to explain geometric symbols (such as the mandala) from different views; for example, they argued that according to Islamic cosmology, the mandala began with unity, moved through the theophany and returned to unity. The mandala corresponds to the *Quranic* verse: “He is the First and the Last and the Manifest and the Hidden and He is known infinitely all things.” From a *Sufi* point of view, the mandala is a symbol of this *Quranic* verse: “Die before you die, die an earthy death in order to be born in the hidden, the self.”

Thus, Ardalan and Bakhtiar did not make a new contribution to the field in their discussion on shape. Indeed, their views were similar to those of other Islamic scholars that considered the symbolic basis of shape (i.e., Snodgrass’s works). However, the importance of shape in architecture meant that Ardalan and Bakhtiar could not omit a discussion of shape in *The Sense of Unity*. Geometry and numbers form the basis of shapes and convey symbolic meanings. Unity and multiplicity are the most important of these symbols and their significance relates to the Islamic doctrine on unity of being. These symbolic meanings, however, are not limited to Islamic culture and sciences; rather, they originated from Pythagoras (and Ikhwan al-Safa was the first to introduce the idea to Islamic philosophy).

From Light in Philosophy to Colour in Architecture

In *The Sense of Unity*, colour was discussed from a philosophical perspective and the unity of colours was emphasised. The doctrine of unity, however, is not applicable to colour in architecture, which may be why Ardalan and Bakhtiar attempted to connect ‘colour’ to the cosmology of Traditional Man in their discussion of conventional symbols.

Ardalan and Bakhtiar began by defining the role of colour in the cosmology of Islam and then noted how Traditional Man viewed colour. Ardalan and Bakhtiar’s sources

allowed them to elaborate on other Islamic studies that emphasised the use of different colours in traditional architecture at different historical periods (the colour of traditional buildings can be used as a sign to indicate dates of construction). Notably, Ardalan and Bakhtiar's ideas were formed according to the doctrine of light in Islamic philosophy and an esoteric view from the works of Suhrawardi¹⁴⁸ (1154–1191) and Al-Gazzali was adopted; the works of Al-Gazzali and Suhrawardi can be considered minor primary sources for *The Sense of Unity*.

Referring to the well-known idea of *Suhrawardi*, Ishraq, Ardalan and Bakhtiar stated:

The essence of the First Absolute Light, God, gives constant illumination, whereby it is manifested and it brings all things into existence, giving life to them by its rays. Everything in the world is derived from the Light of His Essence and all beauty and perfection are the gift of his bounty, and to attain fully to this illumination is salvation.¹⁴⁹

This quotation is followed by an explanation from Al-Gazzali:

The difficulty of knowing God is therefore due to brightness; He is so bright that men's hearts have not the strength to perceive it. There is nothing brighter than the sun, all things become manifest yet if the sun did not go down by night, or if it were not valid by reason of the shade no one would realize that there is such a thing as light on the face of the earth. Seen nothing but white and green and other colors, they would say that nothing more exists. However they have realized that the light is a thing outside colors, the colors become manifested through it ... they have apprehended light through its opposite, he is hidden by His very brightness.¹⁵⁰

Ardalan and Bakhtiar attempted to define an esoteric value for colour based on these quotations and integrated the nature of colour from light with the symbolic role of light in Islamic notions. The quotations interpret the well-known *Quranic* verse: "God is the light of sky and earth," (24,35) in order to express the unity of displays and the quality of the Divine's manifestation in the universe. Thus, in these philosophical discussions, light has nothing to do with colour. Consequently, the unity of colours and their source of light were not related to light as a symbol of Divine manifestation and unity.

¹⁴⁸ Suhrawardi's most significant work, "Hikmah al-Ishraqiye," considers the theosophy of the orient of light as the essence of the universe.

¹⁴⁹ Ardalan and Bakhtiar, *The Sense of Unity*, 47.

¹⁵⁰ Ibid.

Ardalan and Bakhtiar may well have been aware of this shortfall in their argument on the relationship between colour and Islamic notions. In their discussion, they used conventional symbols of colour in traditional society and the possible meaning of each colour was discussed symbolically; however, the sources, historical periods and geographical areas of these conventional symbols were not made clear (see Figure 1.3). Such symbolic meaning of colours demonstrates Traditional Man's purpose in using them in his architecture. Importantly, these symbolic meanings were also based on the cosmology of Traditional Man.

Red	Fire	Spring	Hot-dry	Expansion-fixation	Morning	Childhood	Active
Yellow	Air	Summer	Hot-wet	Expansion-solution	Afternoon	Youth	Active
Green	Water	Fall	Wet-cold	Solution-contraction	Evening	Maturity	Passive
Blue	Earth	Winter	Dry-cold	Contraction-fixation	Night	Old age	Passive

Figure 1.3: The System of Four Colours

Source: Ardalan and Bakhtiar, *The Sense of Unity*, 5.

Ardalan and Bakhtiar assumed that a coherent tradition and culture existed in Islamic lands. More importantly, they assumed that a convention existed whereby Traditional Man consciously combined colours based on symbolic meanings or an emulation of nature; “color realization in the traditional arts and crafts also exhibit[ed] a keen awareness of qualitative and quantitative integration, a primary source of this integration [was] to be found in nature.”¹⁵¹ They also noted that: “The Judicious choice of small white or yellow blossoms in tertiary levels attests to traditional artist’s awareness of this nuance of color usage.”¹⁵² However, Ardalan and Bakhtiar did not consider the role of material in the use of colour in architecture. Other historians have argued that various colour syntheses were caused by different factors, including available materials and geographical conditions; for example, Pirnia argued that the colour cyan was used during a specific era of Iranian traditional architecture. Similarly, as azure mining occurred near Isfahan, yellow became the dominant colour of tiles in

¹⁵¹ Ibid, 50.

¹⁵² Ibid, 55.

traditional architecture in the *Safaviye* era. Thus, colour usage by Traditional Man may not necessarily be connected to Islamic notions.

“Alchemy and Color” is the title of a small section of *The Sense of Unity*. In this section, Ardalan and Bakhtiar explained the esoteric aspect of Islam that relates to another section of the book entitled “Material.” The authors attempted to draw an analogy between traditional Iranian paintings, miniature and alchemy. This connection was defined based on two aspects of alchemy; that is, that it is the science of the transformation of the soul of Man and is a science concerned with the essences and processes of nature expressed in traditional arts and crafts. However, Ardalan and Bakhtiar did not explain the roles of the traditional arts and crafts in alchemy. If they had, this would have made a contribution to Islamic architecture, as it has not been considered in other Islamic architectural studies.

1.2.3 Levels of Realisation

This section considers Ardalan and Bakhtiar's contribution to ordering systems in traditional architecture. While ordering systems can be seen in other cultures,¹⁵³ in Islamic studies Ardalan and Bakhtiar were the first scholars to explain these systems in the light of unity. This section considers Ardalan and Bakhtiar attempts to draw a connection with Islamic cosmology through the use of emerging terms such as the 'Spiritual Man' and the homologous nature of the human body and the city. Additionally, the section contrasts Akkash's idea that the harmonic order is not only applicable to cities, but also individual buildings and spaces, with Ardalan and Bakhtiar's ideas. This section also notes that the methodology of arguments is closely related to historical studies. The structure and nature of arguments in this section differs to those presented elsewhere. The case studies and examples confine Ardalan and Bakhtiar's ideas to a specific geography, resulting in an overemphasis of Iranian cities and villages.

Traditional Ordering Systems

Ardalan and Bakhtiar suggested three systems of order-making: natural, geometric and harmonic. Ardalan and Bakhtiar defined these order-making systems as independent of the foundations discussed in "The Morphology of Concepts." The natural order is, as one would expect, developed by those closest to nature. The geometric order relates to the system of Man's most ancient cities and expresses a unity within unity. The harmonic order creates multiplicity within unity.¹⁵⁴ In Ardalan and Bakhtiar's view, the differences between these systems relate to Man's consciousness: "The natural order develops from Man's unconscious integration of cosmic laws,"¹⁵⁵ the geometric order is based on simple circular quadrangular concentric forms¹⁵⁶ and the harmonic order uses

¹⁵³ Ibid, 136.

¹⁵⁴ Ibid, 79.

¹⁵⁵ Ibid, 81.

¹⁵⁶ Ibid, 85.

the maximum of architectonic vocabulary.¹⁵⁷ Interestingly, the only point that links these systems to Islamic notions is unity. Unity is the main principle of Islam. As Ardalan and Bakhtiar stated: “The development of Islamic principles to express unity through the organization of quantitative and qualitative space and shape in human settlements has assumed three observable systems of order-making: natural, geometric and harmonic ... they are three fundamental ways by which Man shapes his environment.”¹⁵⁸ Ardalan and Bakhtiar did not over emphasise the concept of unity in these systems of order- making; rather, they attempted to make connections through other concepts. In the natural order section, for example, Ardalan and Bakhtiar used a new term to connect nature with spirituality (i.e., the ‘Spiritual Man’). Ardalan and Bakhtiar stated the: “Spiritual Man has always sought nature as a means of better understanding the Creator.”¹⁵⁹

In the geometric order, Ardalan and Bakhtiar tried to connect their historical and geographical analysis with their definitions of architectural elements according to Islamic cosmology and metaphysics. For example, in analysing the geometric order of Bagdad, a prototypical city with circular concentric ordering, the analysis commenced historically, but continued by connecting the city’s creation with Ardalan and Bakhtiar’s definition of time and space. They stated: “The primordial concepts of definition in time and space played a central role in the creation of the city of Baghdad. The definition of time was manifested by conscious selection of the site on August first, 762, under the sign of Leo.”¹⁶⁰ In this way, the concepts of space, sense of place, orientation, macrocosm and microcosm motions and mandala were all considered as aspects of Baghdad’s traditional design. In relation to the Baghdad example, Ardalan and Bakhtiar stated that this system of order in its extreme geometric purity approached archetypical excellence.¹⁶¹

The harmonic order section was built on the homology between the body of Man and a city. This idea was based on Ikhwan al-Safa’s writings: “The body of Man was constructed by the Creator link a city. Its anatomical elements resemble stones, bricks,

¹⁵⁷ Ibid, 89.

¹⁵⁸ Ibid, 79.

¹⁵⁹ Ibid, 81.

¹⁶⁰ Ibid, 88.

¹⁶¹ Ibid.

trunks of trees and metals which enter in the construction of the city.”¹⁶² This quotation may seem unrelated; however, Ardalan and Bakhtiar linked the first section of the book, “The Morphology of Concept,” to the cosmology of Traditional Man. In the first section, the universe and state of being were discussed based on Islamic notions and Traditional Man’s view of macrocosm and microcosm was discussed. These ideas revealed that the position of Man in the microcosm (i.e., as a reflection of the role of the Divine in the macrocosm) would be applicable to the city scale. Thus, Ardalan and Bakhtiar stated: “The city [took] form as a shadow was coming into focus with the shape that cast it.”¹⁶³

The harmonic order extended Ardalan and Bakhtiar’s explanations on time and space and time–form simultaneity. The explanations and examples provided for harmonic order strengthen Ardalan and Bakhtiar’s arguments in relation to the definition of time–form simultaneity. In Ardalan and Bakhtiar’s view, the synthesis of space and time means that the harmonic order can be “achieved through continuous space, defined by cyclically repeated geometric forms, cumulatively sensed through movement. Movement coalesces space and time into a unity that is infinitely extendible in space yet finitely complete at any given point in time.”¹⁶⁴ Akkach clarified Ardalan and Bakhtiar’s statement:

The linear order is achieved in traditional Islamic bazaars ... they are formed by the repetition of a spatial unit, creating a number of individual concentric spaces, or spatial pulses ... these unites are linked together in a manner analogous to the way beads of a rosary connected upon a thread. The repetition of formative units creates a monotony, but this is interrupted when the main route of the bazaar intersects with another or when the entry to a building is emphasized.¹⁶⁵

In relation to systems of order-making, Akkach’s point of view was similar to that of Ardalan and Bakhtiar; however, the scale of applicability of their ideas was not the same. Ardalan and Bakhtiar’s ideas in relation to ordering systems were only applicable to large-scale projects (such as villages and cities) and the examples and case studies provided were limited to cities and villages. Consequently, Ardalan and Bakhtiar did

¹⁶² Ardalan and Bakhtiar, *The Sense of Unity*, 79. Nasr, *An Introduction to Islamic Cosmological Doctrines*, 99.

¹⁶³ Ardalan and Bakhtiar, *The Sense of Unity*, 79.

¹⁶⁴ Ibid, 95.

¹⁶⁵ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 249.

not consider systems of ordering in individual buildings. In the “Morphology of Concept,” the arguments move from architecture to urbanism; that is, while *The Sense of Unity* starts with architecture, step-by-step it moves closer to urbanism. Thus, Ardalan and Bakhtiar assumed that individual buildings could not be separated from cities in traditional architecture; for example, the concepts of point and line were discussed as the basis of harmonic order at the city scale. Ardalan and Bakhtiar noted that cities “maintained the concept of a centre but a centre as a single point in spaces that moves in time and creates the line.”¹⁶⁶ Conversely, in Akkach’s view, harmonic order was applicable to individual spaces and buildings. Akkach argued “the spatial organization of traditional Islamic buildings, settlements and landscaping reveal two prototypic orders: the concentric order and the linear order.”¹⁶⁷

In the section of *The Sense of Unity* entitled “Levels of Realisation,” the scale of study was changed and so too was Ardalan and Bakhtiar’s attitude. While previous sections were based on philosophy, the arguments presented in “Levels of Realisation” were based on historical and geographical conditions.¹⁶⁸ Further, the methodology used by Ardalan and Bakhtiar for ordering systems was similar to the methodology of historical studies. This feature culminated in a second system; that is, “Geometric Order.” Ardalan and Bakhtiar analysed the order of traditional cities in Islamic lands based on historical evidence (a methodology rarely used in *The Sense of Unity*). It appears that the only difference between the point of view of Ardalan and Bakhtiar and naturalists and historians is the connection between nature and the Divine assumed by Ardalan and Bakhtiar, who stated: “The shapes and spaces of nature, inasmuch as they are Divine creations and symbols, are more primordial and more universal than anything Man creates.”¹⁶⁹

Another difference between this section of the book and former sections relates to the examples and figures used. In this section, Ardalan and Bakhtiar used examples from traditional Iranian architecture. While the examples used in previous sections did not

¹⁶⁶ Ardalan and Bakhtiar, *The Sense of Unity*, 89.

¹⁶⁷ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 239.

¹⁶⁸ For example, Victor Olgyay, *Design with Climate: Bioclimatic Approach to Architectural Regionalism* (Princeton, N. J.: Princeton University Press, 1963) and *The Histories* by Herodotus are the major sources for this section.

¹⁶⁹ Ardalan and Bakhtiar, *The Sense of Unity*, 81.

limit the book's ideas to specific areas, the geographical basis of this section led to Ardalan and Bakhtiar confining their views to the Iranian plateau. They stated: "along close contact with nature evolved solutions such as those of the Iranian village in the oasis of Varamin [Sought of Tehran], where the village huddles together to leave the least surface to the scorching sun."¹⁷⁰ In *The Sense of Unity*, Ardalan and Bakhtiar attempted to make the domain of Islamic architecture broader by using terms such as 'spiritual architecture'.

¹⁷⁰ Olgyay, *Design with Climate*, 8, quoted in Ardalan and Bakhtiar, *The Sense of Unity*, 83.

1.3 Broader Field

1.3.1 Other Studies

This section begins by considering studies that concur with the views expressed in *The Sense of Unity*; these studies will also be used to reveal a possible non-Islamic basis of *The Sense of Unity*. Additionally, opposing views on Islamic architecture and the mystic view of studying traditional architecture will be discussed to highlight the place of *The Sense of Unity* in the hierarchy of Islamic studies.

The Sense of Unity attempted to demonstrate the relationship between Islam and Art based upon symbolism. Ardalan and Bakhtiar were not alone in their approach; other studies conducted in this context include the work of Hein-Geldern (1930), Tucci (1932), Mus (1936), Kramrisch (1946), Eliade (1957, 1968, 1978), Stein (1957), Guenon (1962), Burckhardt (1967), Kollar (1975), Coomaraswamy (1977) and Snodgrass (1985).¹⁷¹ These studies did not necessarily follow Islamic notions. Similarly, *The Sense of Unity* testifies to the fact that it may have its roots in non-Islamic notions. Ardalan and Bakhtiar did not deny these claims, but acknowledged a unity in all religions,¹⁷² asserting: “According to the Islamic perspective God did not send different truths through His many prophets but different expressions and forms of the same fundamental truth of Unity.”¹⁷³

Other scholars have opposed Ardalan and Bakhtiar’s view on the relationship between Islam and architecture arguing against a connection between Islam and architecture. The lack of any direct correlation between Islam and architecture has created this controversy. Further, scholars have used historical evidence to show the local origin (rather than religious origin) of Islamic architecture. For example, in relation to monuments from the first three centuries of Islamic history, Grabar stated: “every decorative motif considered in isolation, every unit of planning, every detail of construction, and every kind of object has a direct prototype in the earliest artistic

¹⁷¹ Snodgrass, *Architecture, Time and Eternity*, 1.

¹⁷² “It is not spirituality only because if it is true spiritual it must be universal.” Nader Ardalan, interview by Hamid Rad, Tehran, October 28, 2013.

¹⁷³ Ardalan and Bakhtiar, *The Sense of Unity*, 131.

tradition of the Near East and the Mediterranean.”¹⁷⁴ Here, Grabar is emphasising the wider architectural influences. It appears that Burckhardt generally agreed with Grabar on this point; however, Burckhardt’s attitude towards Islamic architecture varied widely. Indeed, Burckhardt argued that forms “are not derived directly from the *Quran* or from the sayings of prophet; they are seemingly without scriptural foundation, while undeniably possessing a profoundly Islamic character.”¹⁷⁵

The Sense of Unity argued that there was a lack of any exoteric relationship between Islam and Art; consequently, it sought to assert a connection between the esoteric aspect of Islam and Art. Ardalan and Bakhtiar connected Islam to Art on the basis of a mystical view elaborated on by symbolism. However, some Islamic architecture scholars (such as Al-Alami and Necipoglu) have denied any such mystical view. Necipoglu argued that views should only be accepted on the basis of historical evidence and stated: “Geometry ornament emerges as a multilayered sign system adaptable to a wide variety of signification contexts, rather than as a static mould of timeless forms detached from historical memory and context—bound cultural codes of recognition.”¹⁷⁶ Similarly, Al-Alami argued that: “The interpretation of the central features of early Islamic architecture does not have to depend on already present mystic views.”¹⁷⁷ This view is similar to that of Grabar. Al-Alami stated:

...most speculations about architecture as expression of a mystic world—view do not have any historical basis in the early Islamic period. This supports the critic formulated by Grabar against any religious or philosophic interpretation of early Islamic architecture, which he considers as retro- projection of later schemes of the past.¹⁷⁸

These discussions show the conceptual homologies and contradictions present in *The Sense of Unity* and other related studies. An additional contradiction also exists in the methodology of the study. Methodologically, *The Sense of Unity* cannot be considered a historical based study. Hillenbrand, Grabar, Pirnia,¹⁷⁹ Al-Alami and Necipoglu all

¹⁷⁴ Oleg Grabar, *The Formation of Islamic Art* (New Haven: Yale University Press, 1973), 85.

¹⁷⁵ Titus Burckhardt, *Art of Islam: Language and Meaning* (London: World of Islam Festival Publishing Company, 1976), 8.

¹⁷⁶ Gülru Necipoğlu, *The Topkapı Scroll: Geometry and Ornament in Islamic Architecture: Topkapı Palace Museum Library* (Santa Monica, CA: Getty Centre for the History of Art and the Humanities, 1995), x.

¹⁷⁷ Mohammed Hamdouni Al-Alami, *Art and Architecture in the Islamic Tradition: Aesthetics, Politics and Desire in Early Islam* (London; New York: I B Tauris, 2011), 1.

¹⁷⁸ Al-Alami, *Art and Architecture in the Islamic Tradition*, 252.

¹⁷⁹ An Iranian Islamic architecture scholar.

studied traditional Islamic architecture on the basis of historical evidence and were interested by factors such as dynastic power, the background and origin of elements, structural abilities and the function of spaces. Conversely, Ardalan and Bakhtiar did not pay attention to these factors in their study of early Islamic architecture and even the terms used for some common factors differ. While some scholars (such as Grabar and Hillenbrand) studied society to identify the impact that Islamic society had on the character of Islamic architecture, Ardalan and Bakhtiar noted the role of society because of its effect on traditional craftsmen and stated:

...in the art and architecture of traditional society the principles of tradition inspire Man's creative energies and integrate the whole of society into a totality. In such a society the distinction usually made today between the sacred and the profane is either transcended by a metaphysical knowledge that pierces through all veils of separation or it is removed through the integration of all aspects of life into a sacred unity outside of which nothing exist.¹⁸⁰

One of the most fundamental differences between Ardalan and Bakhtiar and other scholars concerns their attitudes towards tradition. For historians, the changes that occurred in different eras are important, as they enable traditions to be divided into many smaller periods with different features and styles; however, for Ardalan and Bakhtiar entire periods of tradition were assumed to be the same and fluctuations were not considered to be significant.¹⁸¹

Notably, Ardalan and Bakhtiar are the only scholars to have asserted that the traditional craftsmen had a significant role. In their view, the traditional artist created an external art form inspired by wisdom received from the spirit; thus, the art form guided Man to higher states of being and, ultimately, towards unity.¹⁸² Snodgrass and Akkach considered the role of Traditional Man, but not to the same extent.

The role of rituals in the training of Traditional Man in relation to cosmology and the esoteric aspect of Islam created another point of difference between *The Sense of Unity* and other studies. Other scholars of Islamic architecture viewed rituals differently. In

¹⁸⁰ Ardalan and Bakhtiar, *The Sense of Unity*, 3.

¹⁸¹ Ardalan and Bakhtiar "did not define it because in 1970 when ... writing the book, most of the world was familiar with the term 'traditional'. Traditional society is one that still exists today in the Islamic world, but it is a way of life that is fast disappearing. There is no time frame for it." Laleh Bakhtiar, e-mail message to author, 12 June 2013.

¹⁸² Ardalan and Bakhtiar, *The Sense of Unity*, 7.

historical studies, rituals were seen as important and traditional religious architecture dictated the form and size of spaces for the particular functions of rituals. Burckhardt, however, viewed the link between art and rituals differently and made the following two points: first, the role of art was to express the beauty of rites; and, second, these rites needed to be protected. Burckhardt stated: “sacred art therefore fulfils two mutually complementary functions: it radiates the beauty of rite and, at the same time, protects it.”¹⁸³ Here, protection refers to the arts safeguarding rites; for example, pictures should not be placed in mosques to avoid distraction during prayers. Conversely, in *The Sense of Unity* the role of rites was emphasised to achieve a contemplative state through prayer, fasting and an abiding respect for *Shariah* Law, to enrich the whole of daily life. Theoretically, achieving this meditative state creates a certain solitude that allows Man to appreciate the rhythms of nature and the cosmos. For Ardalan and Bakhtiar, such awareness should bring about a serenity; the first step in Man’s spiritual ascent.¹⁸⁴

In summary, the ideas on the role of Traditional Man and of rituals in Man’s training are contributions to Islamic architectural studies attributable to *The Sense of Unity*. These ideas resonate with the views of Islamic architectural scholars, such as Burckhardt; however, Ardalan and Bakhtiar’s approach remains different.

¹⁸³ Burckhardt, *Art of Islam*, 83.

¹⁸⁴ Ardalan and Bakhtiar, *The Sense of Unity*, 10.

1.3.2 Sources

In the following section, the primary and secondary sources of *The Sense of Unity* are analysed to demonstrate three major points. First, that *The Sense of Unity* was based on philosophy rather than history. Second, that Nasr was the most influential scholar to influence the thinking of Ardalan and Bakhtiar in *The Sense of Unity*. Third, that some arguments and ideas were not fully supported by the book's sources.

The Sense of Unity was based on four early sources: the *Quran*, *Rasail* by Ikhwan al-Safa,¹⁸⁵ *Fusus al-Hekam*¹⁸⁶ by Ibn Arabi¹⁸⁷ (1164–1240) and *Mathnavi*, a poetry book written by Rumi¹⁸⁸ and Gazzali¹⁸⁹ (1058–1111). Ibn Arabi's book was an important source of *The Sense of Unity*, as was Ikhwan al-Safa's book; however, the Rumi poetry book, *Mathnavi*, was the most influential source. These early texts, cited in later writings, including Henry Corbin's *Creative Imagination in the Sufism of Ibn Arabi* and Nasr's *An Introduction to Islamic Cosmological Doctrine*, were major sources for *The Sense of Unity*, and contained the ideas of Ibn Arabi, Ikhwan al-Safa. Nasr, Burckhardt and Guenon (each of whom have more than one book listed in the reference section of *The Sense of Unity*). Nasr, who wrote the introduction of *The Sense of Unity*, was the person who had the most influence on this book and Ardalan and Bakhtiar's frequent citation of his ideas reflects this. Burckhardt followed Nasr, and his work *Alchemy* is the next most cited book in *The Sense of Unity* after Nasr's *Introduction to Islamic Cosmological Doctrines*.

Among the major sources of *The Sense of Unity*, particularly in the first chapter, there was not any significant historical study and the focus remained on Islamic philosophy. Thus, Ardalan and Bakhtiar's understanding of Islamic architecture took root in philosophy rather than history.

¹⁸⁵ As stated above, *Ikhwan al-Safa* is a group of scholars; however, their exact identities (i.e., the place and time of their writings) are unknown. Many different ideas exist in relation to their identities and the community to which they belonged. Their most significant corpus is the *Rasail*.

¹⁸⁶ That is, the *Bezels of Wisdom*.

¹⁸⁷ Ibn Arabi is the most well-known *Sufi* and one of the most prolific figures in the history of *Sufism*. See Akkach, *Cosmology and Architecture in Premodern Islam*, 23.

¹⁸⁸ See footnote above re Rumi.

¹⁸⁹ Abū āhmad Muammad ibn Muammad al-Ghazālī (known as Al-Ghazali or Algazel to the Western medieval world) was a Muslim theologian, jurist, philosopher and mystic of Persian descent.

Nasr had a stronger influence on *The Sense of Unity* than did other scholars. Indeed, Ardalan and Bakhtiar cited five books by Nasr in *The Sense of Unity*; the most frequently cited being *Introduction to Islamic Cosmological Doctrine*, which was used to discuss the esoteric and exoteric; the relationship between Man and symbols; *tawhid* (i.e., unity); the first principle of Islam; and the participation of Man in symbolic creation through his actions, speech, song and architectural creations. Discussions on these subjects contained Gnostic terms and views including unity, *batin* and *zahir*.

Three Muslim Sages and *Science and Civilization in Islam* were two other important sources for *The Sense of Unity*. Each of these books was cited three times. The first book covered topics including: the roots of traditional societies in illumination; the significance of craftsman in *Sufism* and the role of horizontal and vertical causes in existence of creation. The breath of the Divine (as the very substance of cosmic creation) and mineral divisions used in alchemy were topics of the second book. *Three Muslim Sages* was mostly about the history of illumination and the position of creation in traditional societies. *Science and Civilization in Islam* addressed cosmic creation. Other subjects discussed by Ardalan and Bakhtiar according to Nasr's works included the significance of numbers in symbolism and the impact of rituals on Man to ensure he was in harmony with nature. These subjects were considered in *History of Islamic Philosophy* and *Islamic Studies*; however, another of Nasr's texts, *Introduction to Islamic Cosmological Doctrine*, contains a profound discussion on numeric symbols. This discussion showed that Ardalan and Bakhtiar applied Nasr's Islamic views to architecture.

In *The Sense of Unity* citing an idea to a specific source did not mean that the idea was opposed by other sources. Ardalan and Bakhtiar did not deny the existing homologies between sources. Even in their notes section, similar ideas from other sources were used to support these homologies. At times, Ardalan and Bakhtiar attempted to explain a specific subject or term from various angles, using different sources to demonstrate the common points; for example, in terms of the importance of centrality, Ardalan and

Bakhtiar cited the work of Elide and, at the same time, used Ibn Arabi's idea about the centrality of the world.¹⁹⁰

Ardalan and Bakhtiar did not always refer to citations to approve or reject an idea; rather citations were used to provide a wide contextual basis for the study. For example, in terms of the sacred unity of traditional life Ardalan and Bakhtiar referred to Guenon, Schuon and Coomaraswamy and, two paragraphs later, to Abdol Hadi's idea (i.e., *Sufi*) on the integration of exoteric and esoteric dimensions in traditional society.

The arguments in *The Sense of Unity* do not follow a linear order. Another feature of Ardalan and Bakhtiar's writing is that they avoided using direct quotations, creating an obvious distance between their text and its sources. For example, in relation to the view of craftsmen Nasr stated: "*sufism* as a way of spiritual realization and the attainment of sanctity and gnosis is an intrinsic aspect of Islam revelation of which it is in fact the heart and inner or esoteric dimension."¹⁹¹ Ardalan and Bakhtiar referred to this and stated: "the guild is often directed by a master who is both a *Sufi* and craftsman who possesses a conscious knowledge of the principles governing his art."¹⁹²

¹⁹⁰ Ardalan and Bakhtiar, *The Sense of Unity*, 132.

¹⁹¹ Seyyed Hussein Nasr, *Three Muslim Sages: Avicenna, Suhrawardī, Ibn 'Arabī* (Cambridge, Harvard University Press, 1964), 83.

¹⁹² Ardalan and Bakhtiar, *The Sense of Unity*, 5.

1.4 Conclusion

This section briefly reviews the analyses of *The Sense of Unity* presented in this chapter to frame and outline the conclusion of the chapter. Basically, the main aim of this chapter was the recognition of Ardalan's understanding of Iranian traditional Islamic architecture. This recognition will be used in the next chapter to analyse Ardalan's design principles in the light of the debate surrounding tradition and modernity.

In Chapter 1 *The Sense of Unity* was analysed from two perspectives: the internal and the external. From the internal point of view, the main ideas of the book, their backgrounds and relationships were analysed. From the external point of view, Ardalan's approach to traditional Islamic architecture was compared with other Islamic architectural scholars such as Burckhardt, Hillenbrand, Al-Alami, Necipoglu and Grabar.

From the internal view, in *The Sense of Unity* two fundamental concepts play key roles in the discussion of the book. These two concepts were analysed in the mutual relationship between Divine–Man, Divine–Art, and Art–Man. The following paragraphs review these key concepts, which are essential to the recognition of Ardalan's understanding of Iranian traditional Islamic architecture and lead to the conclusion that his understanding is completely based on Gnosticism. Additionally, from the external view, the comparisons between these key concepts and other studies in the field were reviewed to assess Ardalan's contribution to the studies of traditional Islamic architecture.

One of the key concepts in *The Sense of Unity* is 'Creative Man'. Chapter 1 discussed how this concept is defined in the relationship between the Divine and Man. Creative Man enabled Ardalan to emphasise the similarities between Man and the Divine. In *The Sense of Unity*, the concept of the arc of descent and ascent is adapted from Hermetic sources and integrated with the concept of microcosm and macrocosm from *Sufi* doctrine to define Creative Man. As discussed in Chapter 1, this integration emphasises the possibilities of Man rather than Man's position or state of being. Significantly, it reflects the faculties of the Divine and gives Man a greater share of Divine qualities

than that given by the Hermetic view. As a consequence of this concept a new term was introduced by Ardalan: 'Traditional Man'. The definition of Traditional Man is made in the relationship between the Divine and Art and is supported by the relationship between Man and the Divine and the position of Man as Creative Man. According to the analyses in Chapter 1, based on *Sufi* doctrine Ardalan demonstrated that Traditional Man was able to achieve a balance between the material and spiritual worlds. By defining these abilities and positions, Ardalan gave a key role to Traditional Man in traditional Islamic architecture. Consequently, in *The Sense of Unity* Ardalan considered the principles of traditional architecture from Traditional Man's perspective.

The second key concept is the relationship between the Divine and Art. Chapter 1 discusses how Ardalan applied the esoteric dimension of Islamic cosmology as defined in *Sufi* doctrine to demonstrate this relationship. According to this Gnostic relationship, all the main ideas of traditional architecture, such as sense of place and continuity of positive space, were defined in *The Sense of Unity*. In fact, Gnosticism is the foundation of the arguments presented in the book.

Analysing these two concepts confirms that Gnosticism was an inseparable component of the arguments and discussions in *The Sense of Unity*. Thus, Chapter 1 concludes that Ardalan had a Gnostic approach to Islamic traditional architecture. This conclusion is also supported by analysing the main source of *The Sense of Unity*. These analyses revealed that Ardalan was inspired by Rumi and his poems. In fact, *The Sense of Unity* has its roots in Gnostic literature. Additionally, these analyses highlighted the pivotal role of Nasr's ideas on Islamic philosophy in forming the book. Consequently, Ardalan's understanding of Islamic architecture is based on Gnosticism and philosophy rather than being influenced by historical events and geographical boundaries, as opposed to historians' methodologies.

Additionally, from the external perspective, exploring the differences in approaches used in *The Sense of Unity* and other Islamic architectural studies demonstrates Ardalan's contributions to Islamic architectural studies. In Chapter 1 this exploration reveals that Ardalan's contributions are largely to the basic understanding of Islamic architecture and also in redefining the principles of Iranian traditional Islamic

architecture. In fact, the role of Traditional Man in *The Sense of Unity* gave Ardalan a specific approach that is unprecedented in comparison with other studies in the field. Through this specific approach Ardalan redefines the principles of Iranian traditional Islamic architecture and introduces new ideas, such as sense of place and positive space continuity, which are not found in other studies.

The first conclusion of this chapter will be used in Chapter 4 to identify the role of *The Sense of Unity* in the issues of tradition and modernity. Chapter 3 will discuss how in the early 1970s some scholars, such as Nasr, emphasised Gnosticism as the privileged feature of Eastern culture against Western culture; consequently *The Sense of Unity* can be recognised as the result of this emphasis.

CHAPTER 2: ARDALAN AS AN ARCHITECT

2.1 Selected Projects and Contributions

In considering the body of work of Ardalán, this thesis suggests a new division of Ardalán's projects whereby Ardalán's architectural practices are divided as follows: (1) first generation: projects ,designed mostly in Iran from 1962 to 1978;¹⁹³ (2) second generation: projects designed when Ardalán returned to the United States (US) at the invitation of Harvard and Yale Universities in 1977 and prior to the Iranian revolution of 1979 (he contributed to many buildings in the US and some in France and Pakistan);¹⁹⁴ (3) third generation: projects designed predominantly in the Middle East,

¹⁹³ Projects in America: Engineering Materials Laboratory, University of California, Berkeley, CA and Hartford Insurance Office Tower, San Francisco, CA.

Projects in Iran: Archaeological Documentation of Bard-i-Nishandeh, Masjid-i-Sulaiman, Iran for Dr Roman Ghirshman, French Archeological Mission; Saman Residential Tower, Tehran, Iran with Farmanfarmayan; the Asian Game Centre, Stadium, Tehran, Iran with Farmanfarmayan; Historic Documentation of the Holy Kaa'ba and Masjid al Haram, Mecca, SA; Historic Documentation of the Bazaar of Isfahan, Kashan, Hamadan Iran; Historic Restoration of Safavid "Blind Caravansarai," Qazvin, Iran; Imam Sadegh University (formerly Iran Center for Management Studies with Harvard University), Tehran, Iran; Behshahr Home Office, Tehran, Iran (in a few sources the name of Yahya Foyozi is also mentioned); Bu Ali Sina University Master Plan and Building Design, Hamadan, Iran; Museum of Contemporary Art ,Tehran, Iran with Kamran Diba; Center for the Celebration of Music with 2000 seat Concert Hall, Tehran, Iran; Center for Children and Young Adults, Tehran, Iran; Nuran, City of Illumination, Solar City Master Plan for 100,000, Isfahan, Iran; Abbasabad Urban Development Master Plan.Tehran, Iran; Besat New Town Master Plan for 200,000, Mahshahr, Iran; New Town Master Plan for 70,000 - Bandar Shahpour area, Persian Gulf, Iran; Pardisan Environmental Park - Tehran, Iran; Arya Mehr University Master Plan, Student Union & Library, Tehran, Iran; Tappeh Eram, New Residential Community for 60,000, Shiraz, Iran; Malek Residence, Tehran, Iran; Ardalán Residence, Caspian Sea, Iran (from Ardalán's resume, Nader Ardalán, e-mail message to author, 12 January 2014).

¹⁹⁴ Second generation includes: The Alfred Luxury Apartment Tower, Lincoln Center, New York; Moscow Hotel Historic Renovation, Kiev, Ukraine; American Mutual Insurance Co., The Beal Companies, Wakefield, MA; Faisal Islamic Bank Competition, Finalist, Cairo, Egypt; Gulf Investment Corporation Headquarters, Invited Competition, Kuwait; Price Waterhouse Historic Office Interiors Renovation, Boston, MA; Thomas H. Lee Office Interiors, Boston, MA; The Beal Companies Office Interiors, Boston, MA; H.N. Gorin Company Offices Interiors, Boston, MA; President's Plaza, Batman Corp., Lobby Interiors, Washington, D.C.; New England Telephone Conference Center, Boston, MA; Boston Harbor Clean-Up, Secondary Treatment Facilities Plan, MWRA, Boston, MA; Computer-based Comprehensive Preservation and Restoration Studies of the Old City of Jerusalem, for Crown Prince Hassan of Jordan, Jerusalem; Tufts International Research Center, Tufts University Development Corp., Boston, MA; King Abdul Aziz Air Base Facilities Management and GIS System Application, Dhahran, Saudi Arabia; Tracy Office Building Complex, Kiev, Ukraine; Umm Al Qura University Master Plan, Invited Competition, Mecca, Saudi Arabia; Carnegie-Mellon; University Master Plan and Design of Selected Buildings, Pittsburgh, PA (Invited Competition); Serena Hotel and Retail Center Study, The Aga Khan - Faisalabad, Pakistan; Medical Center and Hospital, King Abdul Aziz University, Jeddah, Saudi Arabia, Design Consultant to HDR; Houston Courthouse Development. Houston, Texas; Universal, Center for all Religions - Surrene, Paris, France (ibid).

particularly the UAE, after 1994.¹⁹⁵ It should be noted that similar factors (e.g., cultural, eco-social and environmental) existed in the first and third generations; however, because of the diversity of context in the second generation projects, only projects from the first and third generations were selected for study in this thesis.

In this thesis, five projects were selected from the first generation designs for discussion. Saman Towers was selected from the group of projects completed prior to the publication of *The Sense of Unity*. The Centre for Management Studies (now the University of Imam Sadegh (ICMS)), the Behshahr Headquarter Office (BHO), the University of Bu Ali Sina (BASU) and the Tehran Contemporary Museum of Art

¹⁹⁵ The third generation includes: Center for Genetic Engineering and Biotechnology, Al Ain, UAE (15,000 SM); Abu Dhabi Ecological Park Residential Development, UAE for Aldar Properties with ARUP and Klingstubbins, 7,500 population. Sustainable Community Master Plan and photo-voltaic roof canopies integrated with building designs; Al-Diriyah Residential Development, Riyadh, Saudi Arabia (5,000 population) with Koetter/Kim and Associates for Millennium Development International; Sustainable Desert Resort Hotel, Al Ain, UAE for Emirates Land Group; The Intelligent Tower, a 70 story sustainable office building in Doha, Qatar for the Gulf Organization for Industrial Consulting with ARUP and Klingstubbins (First Prize in International Design Competition); Saif Al Qubaisi Residence, Abu Dhabi, UAE; DAMAC Residential Towers, Tripoli, Libya; DAMAC Headquarters Tower Competition, Dubai, UAE; DAMAC Office Tower, Riyadh, Saudi Arabia; Besat City Center, Mahshahr New Town, Iran; Vanak Tower and Mixed Use Development, Tehran, Iran; 1,000 Room 5 Star Hotel & Mixed Use Development, Tehran, Iran; Four Seasons Hotel, Kuwait; Failaka Island Resort. Kuwait (First Place-BOT Competition); The Palm-Jumeirah Hotel - Dubai, UAE (First Place Design Competition); Arab Open University Master Plan, Amman Jordan; Arab Open University Master Plan- Kuwait; Sheraton Residential Hotel, Kuwait; Faisaliah Residential Tower, Kuwait; Jumaa M. Al Junaibi Residence, Abu Dhabi, UAE; Al Awadi Tower and Shopping Mall, Kuwait; The Diwan of H.H. the Ruler's Representative in the eastern region, Al-Ain, UAE; Four Points Sheraton Hotel, Kuwait; Dr Abdul Aziz and Donna Sultan Villa – Kuwait; UAE University Information Technology College, Al-Ain, UAE (First Place, World Design Competition); National Guard Medical Center, Kuwait; Al Sharq Waterfront Shopping Mall Development, Phase III, Kuwait (First Place, BOT Competition); Renovation of Al Jimi Shopping Mall, Al Ain, UAE for Mubadala; School of Architecture, Student Activity Center and Teaching facilities, UAE University, Al Ain, UAE (First Prize Award); Female Hostel for 1000 students UAE University, Al Ain, UAE (First Prize Award); Historic Restoration Quarter, Abdulla Al Ahmad Street, Kuwait; Science Laboratories, UAE University, Al Ain; Historic Renovation and Expansion of Al Nisf Diwaniya, Kuwait; National Bank of Kuwait, New Image and Prototypical Branch Banks, Kuwait; Four Point Sheraton Hotel, Kuwait; National Guard Medical Center, Kuwait; Yasmine Residential Tower, Kuwait; Faisal Sultan Villa, Kuwait; McKinnon Villa, Kuwait; Shaqab Equestrian Club, Doha, Qatar; Sea Palace for H.H. Sheikhha Fatima, Abu Dhabi, UAE; Ghantoot Racing and Polo Club, Abu Dhabi, UAE; Intercontinental Hotel Ballroom, Dubai, UAE; Starbucks Café, Kuwait; Bu-Khamseen Residential Apartments, Kuwait; Areej Apartments, Kuwait; Al Bahar Headquarters, Kuwait; KMSC Hospital, Kuwait; Kuwait International Airport Expansion Competition; Royal Meridien Hotel Redevelopment, Abu Dhabi, UAE; Al Sharq Waterfront Development, Phase III Festival Marketplace, Fish Market, Marina, Health Club, Kuwait; Kuwait Waterfront Development, Phase IV Competition (First Prize Award); Al-Bustan Shopping Mall, Salmiya, Kuwait; Fish and Vegetable Market, Jahra, Kuwait; General Motors Showroom, Kuwait; Mercedes Benz Showroom, Kuwait; Peugeot & Mazda Showroom, Kuwait; Al-Munther Office Building, Kuwait; Historic Restoration of American Hospital Conversion for Dar Al-Athar Al-Islamiyah, Kuwait National Museum, Kuwait; The Sultan Center: Salmiya Renovation, Kuwait Village and Shopping Mall; Al Mashreq Shops/Offices, Kuwait City; Kuwait City Souk Master Plan; Kuwait Sheraton Hotel - New Ballroom; New Shopping Center - Abu Dhabi, UAE; Adma-Opco Headquarters, Abu Dhabi, UAE (First Place-World Competition) and Abu Dhabi National Oil Company Headquarters Interiors, Abu Dhabi, UAE (ibid).

(TMCA) were selected from Ardalan's projects completed after the publication of *The Sense of Unity*. It is important to note that many of Ardalan's first generation projects were never constructed due to the Iranian revolution and, as a result, their architectural documents are not accessible.

Two projects were selected from Ardalan's third generation designs; that is, the ADMA Headquarters Office and the College of Information Technology (CIT). These two projects have been recognised as Ardalan's most important projects for this period. As in the first generation, some buildings in the third generation were never constructed; this may be because of the financial crisis in the Middle East from 2004 to 2008.

In this chapter, Saman Towers will be discussed briefly to give a sense of Ardalan's design nature, influenced by his training in America. This short discussion will be followed by an analysis of the Imam Sadiq University, which was highly influenced by ideas in *The Sense of Unity*, the BHO, BASU and TMCA. In the second part of this section, Ardalan's most recent projects, the ADMA and CIT, will be analysed and compared with his earlier projects. A comparison between projects completed prior to and after the publication of *The Sense of Unity* will show the influence of theory on Ardalan's practice. Additionally, a comparison between the first and third generation of projects will demonstrate the influence of modern conditions on Ardalan's design principles over time.

The following section will introduce these seven projects from the first and third generations, their architectural features and background and thus demonstrate the influence that *The Sense of Unity* had on Ardalan's projects. It will be argued that Ardalan used his understanding of the timeless traditions of Islamic architecture to enrich contemporary architecture. This section will conclude by showing that despite the rise of technology in construction and the modification of contextual and eco-social forces (apparent over three decades of design), the perennial principles of traditional Islamic architecture can be identified conceptually within Ardalan's projects.

The numbers of sources available in relation to the seven projects are not considerable. With the exception of a few articles written by Ardalan about his projects, the majority

of the texts on these projects come from interviews with Ardalan. As this limited number of sources was not considered sufficient to analyse Ardalan's design work, the author visited selected projects in the Middle East and obtained visual documentation of these projects, including photography, floor plans and sections. It should be noted that these projects have never previously been studied in relation to one other and, more importantly, have not previously been analysed in light of *The Sense of Unity*.

2.2 Five Projects in Iran (1969–1977)

2.2.1 The Saman Towers (1969)

From 1966 to 1972 Ardalan worked at the influential firm of Aziz Farmanfarmaian (1920–2013). Farmanfarmaian had trained at the *Ecole des Beaux Arts*. At this firm, Ardalan worked as a senior architect and then Farmanfarmaian's design partner.¹⁹⁶ During this period, private clients, including the Plan Organization and some Iranian Royal Family members, commissioned projects with this firm.¹⁹⁷ In the 1960s, the Royal Family sought to bring a Western image to Iranian daily life. The Saman Towers were the first luxury apartment high rises in Iran. Since Ardalan had experience in designing high-rise buildings in San Francisco, he was chosen to design the Towers.¹⁹⁸

In Iran, the Saman Towers have been categorised as modern architecture.¹⁹⁹ The title 'modern' was not granted merely because of their height and form; the technology of construction used in this project was unprecedented in Iran. Ardalan used pre-cast concrete with load-bearing interior and exterior walls. Due to the lack of technology and skilled workers in Iran, Ardalan had to import a pre-cast technology factory from Holland to help establish the new pre-cast technology in Iran (see Figure 2.1).²⁰⁰

In this project, the ideas articulated in *The Sense of Unity* (such as centrality and unity and multiplicity) cannot be seen and no traditional themes or elements are visible. Some 20 years after this project, Ardalan admitted that the Saman Towers were not culturally

¹⁹⁶ Over time, this firm grew to include over two hundred people. Shahla Haeri, "Interview with Nader Ardalan" (Boston: Foundation for Iranian Studies Program of Oral History, 1991), 18.

¹⁹⁷ "For the duration of the 1960s and 1970s, the government intensified its assaults on the religious establishment. It cut off Ulama income from shrine and mosque endowment; declared the King as both religious and political leader of Iran; portrayed the clerics as "medieval black reactionaries;" discouraged the historical use of mosques and Madressas; prevented publications on religious matters; intensified the activities of the religious corps in rural areas; and in 1975 replaced the Muslim calendar with royal calendar, beginning not with prophet Muhammad[s] but with Cyrus the great." Talinn Grigor, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs* (Periscope Publishing Ltd., 2009), 162.

¹⁹⁸ Haeri, "Interview with Nader Ardalan," 19.

¹⁹⁹ Vahid Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran (Styles and Concepts in Iranian Contemporary Architecture)* (Tehran: Elmememar, 2013), 243.

²⁰⁰ Haeri, "Interview with Nader Ardalan," 20.

and environmentally appropriate for Iran; however, he did not realise this until the Towers had already been constructed.²⁰¹



²⁰¹ Ibid, 21.



Figure 2.1: Interior and exterior images of the Saman Towers

Source: Author.

2.2.2 The University of Imam Sadiq^(a.s.) or Iran Centre of Management Studies (1970-1973)

The ICMS was selected for study due to its importance in contemporary Islamic architecture. In 1989, it was considered for an Aga Khan Award because of Ardalan's endeavours to revive traditional architectural principles. Ultimately, the award was not granted, as "Ardalan was on the Aga Khan Steering Committee and it would have been a conflict of interest;"²⁰² however, the technical review published made favourable comments and noted that while the ICMS project did not use any direct formal elements or decorative traditional motifs, its connotations to tradition were spatial, morphic, syntactic, symbolic and abstract.²⁰³

Background and the History of Construction

The first phase of this project was offered to Farmanfarmaian and Associates in the autumn of 1970 when Ardalan was a partner. It was completed in September 1972 and the centre opened, but could house only 60 resident students. Ardalan's own firm, The Mandala Collaborative, completed the second phase of this project in May 1973.²⁰⁴ By the completion of the second phase in 1974, it had been enlarged to house 120 students.²⁰⁵

The Iranian Science Minister gifted the university a site area of 87,000 square metres.²⁰⁶ The cost of the second phase has not been published; however, the cost of the first phase was reasonable at \$160 USD per square metre. This amount did not include the landscaping cost. Thus, the total cost in phase one was \$1,000,000 USD²⁰⁷ for a construction that had a floor area of 6,200²⁰⁸ square metres. Low expenditure was achievable, as two simple structures defined the project. For the short span buildings

²⁰² Nader Ardalan, e-mail message to author, 25 September 2014.

²⁰³ Atilla Yucel, "Imam Sadegh University, Technical Review Summary" (paper presented at The Aga Khan Award for Architecture, 1989).

²⁰⁴ Nader Ardalan, "ICMS Architect's Records" (paper presented at The Aga Khan Award for Architecture, 1989).

²⁰⁵ Ibid, 6.

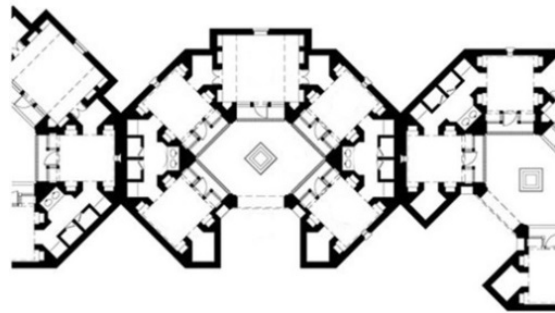
²⁰⁶ Nader Ardalan, "Iran Centre for Management Studies" (paper presented at The Aga Khan Award for Architecture, 1989).

²⁰⁷ Ardalan, "ICMS Architect's Records."

²⁰⁸ Ardalan "Iran Centre for Management Studies."

(such as the units around the main courtyard) load-bearing bricks with barrel vaults and concrete bond beams were used.²⁰⁹ For longer span buildings “in-situ concrete frames, beams with flat slab and reinforced concrete columns were preferred.”²¹⁰ The buff-coloured brick is exposed on exterior façades while some interior parts of walls and ceilings are also covered by white cement plaster.²¹¹ The simple structures and cost effective building practices meant that all the contributing consultants on the project could be Iranian.²¹²

The educational plan was for short and intensive supplementary courses at post-graduate level.²¹³ For convenience, students were to be accommodated on the university campus. Thus, the design of students’ accommodation was a priority and accommodation was placed next to classrooms and around a courtyard. The courtyard consisted of a large garden surrounded by 16 small blocks (see Figure 2.2). Student accommodation was located on the north and south side; lecture rooms on the western side; the administration department on the eastern side; a library in the middle; and sport facilities outside the garden (see Figure 2.3).



²⁰⁹ Ibid.

²¹⁰ Yucel, “Imam Sadegh University, Technical Review Summary.”

²¹¹ Ibid.

²¹² Consultants included: the structural engineer, Zareh Gregorian, the furniture consultant, Mohammad Naraghi and the mechanical/electrical contractor, Mehdi Larizadeh. See Ardalan, “ICMS Architect’s Records.”

²¹³ J.B. Kassarian and Nader Ardalan, “The Centre for Management Studies, Tehran,” in *Higher-Education Facilities*, ed. Margaret Bentley Sevcenko (Cambridge, Massachusetts: Aga Khan Program for Islamic Architecture, 1982), 23.



Figure 2.2: Floor plan and photo of Unit

Source: Author.



a



b

Figure 2.3: a. University of Imam Sadiq and its surrounds; b. Library

Source: a. The University of Imam Sadiq. b. Author.

Relationship Between *The Sense of Unity* and the ICMS

Ardalan has claimed that the design principles of the ICMS were based on ideas in *The Sense of Unity*, including *zahir* and *batin* and that positive space continuity was intrinsic to the enclosed garden concept and the student residential courtyards.²¹⁴ Identifiable in the ICMS are concepts such as centrality, unity, macrocosm and microcosm and traditional order-making systems.²¹⁵ The following sections consider the relationship between *The Sense of Unity* and this project by analysing Ardalan's sketches and the site plan.

²¹⁴ Ardalan, "ICMS Architect's Records."

²¹⁵ In a third email message Ardalan expressed his agreement with this observation. Ardalan, e-mail message to author, 25 September 2014.

The Concepts of Centrality and Unity

From a sophist perspective, the central point of a circle is symbolic of the Divine manifestation at a timeless moment. In sacred geometry, “the circle surpasses all other geometric patterns as the symbol of cosmic unity, its inner core or hidden centre becoming the timeless moment of the revolutions of time and the dimensionless point of the encompassing space.”²¹⁶ Thus, the inner core of a circle shows the primordial presence of the Divine and, consequently, a circle embodies the reality of the Divine presence and its unity. As Akkach stated, the circle is the state of first determination.²¹⁷

This model of centrality was expanded in the ICMS; each unit contained a central point and surrounding points were arranged around this centre on a small scale. This pattern was repeated on a large scale throughout the complex. Entire units included points around the library (the central point of the complex). Thus, a sense of unity unfolds both in the small- and large-scale designs. Additionally, each unit or module was repeated in the floor plan of the entire complex. The existence of 24 inscribed octagons inside circles confirmed modularity. Further, this similarity and the repetition of units emphasise the symbolic meaning of unity and multiplicity.²¹⁸

Ardalan emphasised the idea of centrality by using the concept of inwardness in the units on a small scale and on a large scale in the garden (see Figure 2.4). In relation to the design process for the university, he stated: “what better symbolism for the idea of centrality, of inwardness?”²¹⁹ Thus, the module of this project shows centrality by its inward looking nature. This centrality culminates in the units (see Figure 2.5). In initial sketches for this project, the floor plan of each unit was chambered on concentric circles. These concentric circles created common centres and Ardalan placed a tree at the central point of the courtyard of each unit (see Figure 2.6).

²¹⁶ Critchlow, *Islamic Patterns*, 5.

²¹⁷ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 174.

²¹⁸ In addition, they symbolise the beginning point of the universe as: “everything begins with divine essence, the creation of the world begins with the intellect or the pen, the spatial formation of human body begins with the sacrum and the construction of the corporeal domain of heaven and earth begins with the rock which is the sacrum of the cosmic formation, so likewise the laying out of traditional Islamic buildings, cities and gardens begins with the establishment of the centre.” Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 261.

²¹⁹ Kassarian and Ardalan, “The Centre for Management Studies, Tehran,” 25.

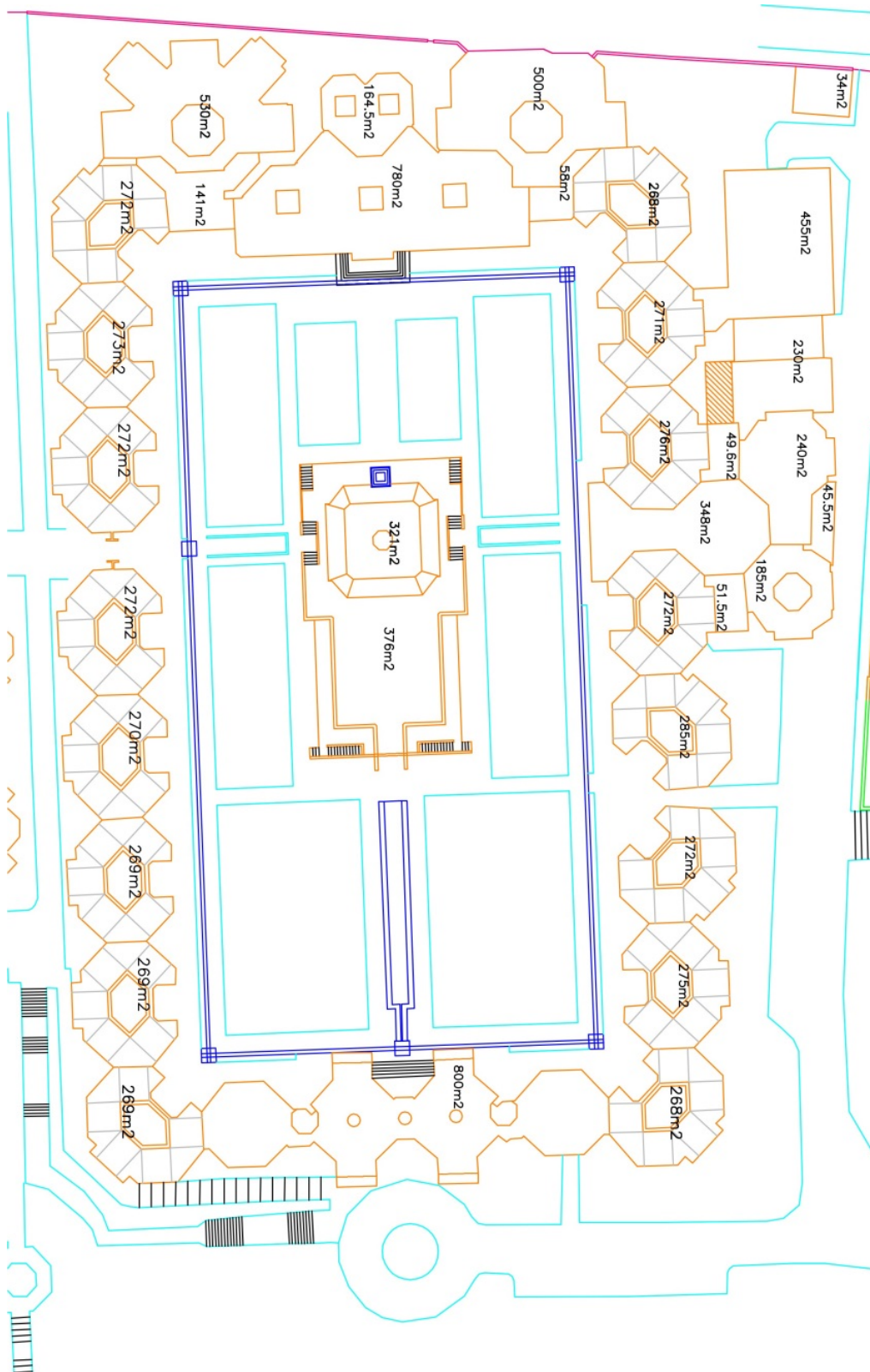


Figure 2.4: University of Imam Sadiq's site plan

Source: Author.

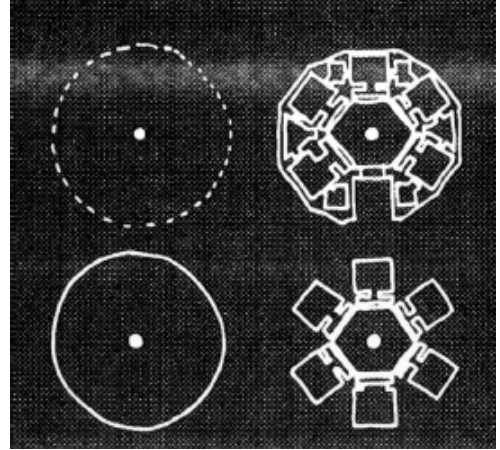


Figure 2.5: Centrality in the units

Source: Drawings from Kassarian and Ardalan, “The Centre for Management Studies, Tehran,” 26 and photo from author.



Figure 2.6: Central points in the units

Source: Author.

In Ardalan’s sketches, an octagon was inscribed in the biggest circle with eight common points. These points were marked before the octagon was drawn. Consequently, in the second stages of drawing, the unit’s floor plan comprised a central point and its

connections (radiuses) of eight points on a locus circle (see Figure 2.7). In *Sufism*, a circle, its centre and radius reveal the relationship between the Divine and Man and the unity between the Creator and creatures. Further, this ternary (i.e., centre, radius and circumference) symbolises the first comprehensible form of unity and multiplicity and also the relationship between the knower (the essence), known (the names) and knowledge (connections) (see Figure 2.8).

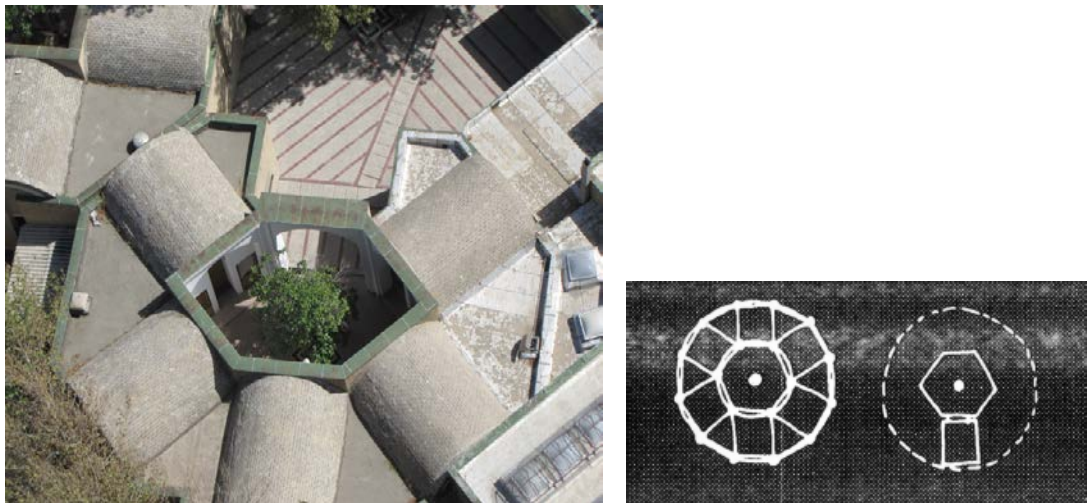


Figure 2.7: Radiuses in the units

Source: Drawings from Kassarian and Ardalan, “The Centre for Management Studies, Tehran,” 26 and photo from author.

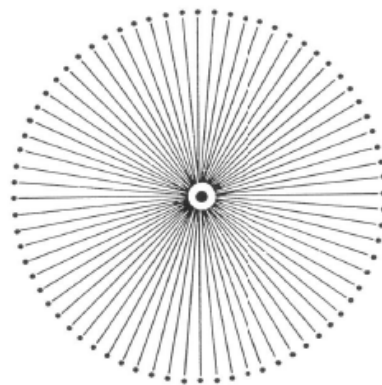


Figure 2.8: Symbolic relationship between the Divine and universe in Sufism

Source: Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 116.

Centrality is not limited to traditional Islamic architecture. Indeed, it has been incorporated in many traditional forms of architecture.²²⁰ Ardalan used centrality as part

²²⁰ Stanislaus Fung, “Undergraduate Papers” (University of New South Wales, 1982).

of his understanding of Islamic architecture. In centrality, a point is the most important principle of geometry in both sensible and intelligible realms, such that: “As the principal point is the progenitor of space, the geometric centre is the generating principle of figures.”²²¹ Thus, “Every traditional architectural form that functions as a symbol has a centre; geometrically and spatially the building expands from a point.”²²² This trend imitates the production of multiplicity from unity and the significance of the central point is cosmic; the centre of every space equates to the original essence of the universe.

Microcosm and Macrocosm

Ardalan was inspired by both the traditional garden-yards of residential buildings and the Paradise gardens in Iranian traditional architecture.²²³ He successfully combined the two diametrically opposed practices of inward and outward looking-ness. As a result, depending on a viewer’s location (i.e., if they are standing in the library or in a unit), two perspectives into the main courtyard exist: inward looking-ness and outward looking-ness. The library building and its surrounding yard is outward looking while the units are inward looking (see Figure 2.9).

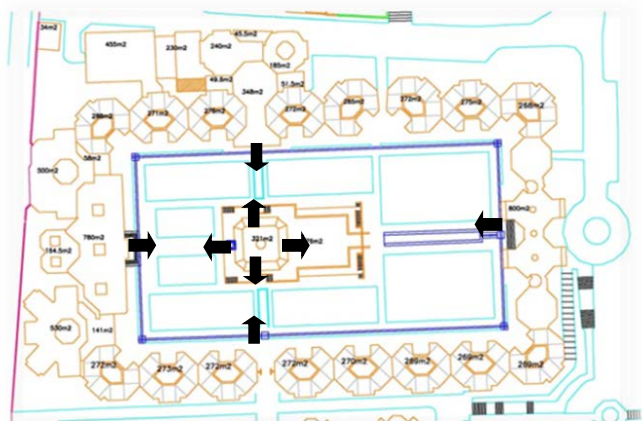


Figure 2.9: A combination of inward and outward looking perspectives

Source: Author.

²²¹ Ibid.

²²² Snodgrass, *Architecture, Time and Eternity*, 58.

²²³ Kassarjian and Ardalan, “The Centre for Management Studies, Tehran,” 26.

For Ardalan, integrating inward and outward perspectives was not limited by traditional Iranian architecture; however, as he acknowledged in *The Sense of Unity*, there are two different motives for each perspective. The first motive relates to the earth; it is corporeal and extends outward to the enveloping heavens (i.e., a macrocosm). The second relates to a physical presence; it is inward in direction and looks towards the hidden treasure at the seat of Divine spirit (i.e., a microcosm). Consequently, just as “the universe is composed of a microcosm and a macrocosm,” the university contains the symbolism of a microcosm and a macrocosm.²²⁴

The ICMS also includes order-making systems as articulated in *The Sense of Unity*. Concentric and linear systems were discussed comprehensively in *The Sense of Unity* and are evident in the spatial arrangement of the ICMS. All the spaces within the units and, on a larger scale, the units in the entire architectural complex themselves were arranged around centres and reflect the concentric order that expresses “the principle of sacred pattern in a static manner”²²⁵. From another perspective, arranging units along a straight line presents the linear order that “expresses the principle of the sacred pattern in a dynamic manner.”²²⁶ Each side of the main courtyard was based on this linear order (see Figure 2.10). The best traditional example of this type of ordering is a bazaar. A bazaar is composed of several units (modules) that are approximately similar to each other in a linear order and are “formed by the repetition of a spatial units, creating a number of individual concentric spaces.”²²⁷

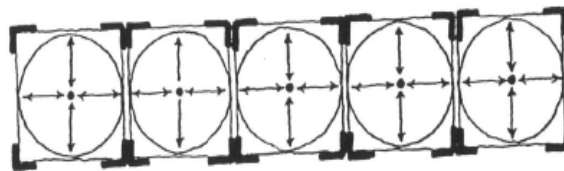


Figure 2.10: Linear order system

Source: Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 249.

²²⁴ Ardalan and Bakhtiar, *The Sense of Unity*, 30.

²²⁵ Akkach, *Cosmology and Architecture in Premodern Islam*, 240.

²²⁶ Akkach, “The Sacred Pattern of Traditional Islamic Architecture,” 241.

²²⁷ Ibid.

Overview

In the ICMS, each unit is an individual concentric space and is spatially independent, but simultaneously follows the same pattern manifested by the whole building. Such designs appear in traditional Islamic architecture and show the alternative dimensional aspects of unity and multiplicity. Akkach noted that in traditional Islamic architecture: “Large architectural complexes, which comprise many interrelated spaces with varying size and significance, can always be broken down into their constitutive units, which reveal the same underlying patterns as the whole.”²²⁸

Ardalan implemented his ideas in his designs. Despite a lack of well-known traditional elements in its design, the ICMS reflects contemporary Islamic architecture based on Islamic conceptual principles and is an early outstanding example of critical regionalism.²²⁹ The ICMS deserves more recognition within the world of Islamic architecture and the wider architectural community, as it embodies the main idea of Islamic conceptual architecture; that is, a sense of unity. The influence of *The Sense of Unity* becomes clearer when the ICMS project is compared with projects designed prior to *The Sense of Unity*. Next, other selected projects will be briefly analysed to identify the relationship between ideas in *The Sense of Unity* and these projects.

²²⁸ Ibid, 245.

²²⁹ Kenneth Frampton, “Prospects for a Critical Regionalism,” *Perspecta* 20 (1983): 150.

2.2.3 Behshahr Headquarter Office (1971)

The BHO is an example of Ardalan's first generation work. In fact, it was the second project that Ardalan designed after writing *The Sense of Unity*. In this section, the background and architectural features of this project will be briefly discussed. Then, Ardalan's point of view and source of inspiration will be examined. This discussion will reveal points not considered by other studies. Finally, similar to other projects, ideas from *The Sense of Unity*, as reflected in this project, will be discussed.

Background and Architectural Features

The BHO is located in Tehran's inner area. Some 40 years ago this area began to be referred to as the 'new' Central Business District (CBD) of Tehran. Consequently, it became fashionable for companies to relocate their offices from Tehran's traditional bazaar to the new CBD. The owner of the Behshahr Company, Haji Agha Lajevardi, decided to relocate his Timcheh type space offices from the bazaar to the new CBD.²³⁰

As the Ardalan and Lajevardi families had known each other in the US,²³¹ this project was offered to Farmanfarmaian's firm where Ardalan was a partner. Ardalan was nominated as the principal designer and project director.²³² The design's process started in 1971, one year after the ICMS. Some three years later, the building was ready for occupancy; however, following the Islamic revolution, it was the Ministry of Iranian Education who occupied this building, not the Behshahr Company.

The built-up area is comprised of seven stories (five above ground floors and two levels of underground parking) and is approximately 20,000 square metres (see Figure 2.11). The block size is 50 metres by 50 metres. There is a courtyard in the middle of the block accessible from the first floor and, interestingly, a smaller courtyard exists with a waterfall at its middle, accessible at ground level (see Figure 2.12). The design was based on several concentric squares. The floor plans were ordered around the main

²³⁰ Ardalan, e-mail message to author, 12 January 2014.

²³¹ Ibid.

²³² In an architectural history book an additional name was mentioned as co-designer; that is, Houshang Zahed. Iraj Etesam and Hassanali Poormand, *Memari Moaser Iran, 75 Sal Tajrobeh Banahaye Omomi (Contemporary Architecture; 75 Years Experience in Public Buildings)* (Tehran: Payam Sima, 2010), 88.

centre of the courtyard and keeping the spaces in square or rectangle shapes was a priority. Thus, most of the divider walls are not concentric (see Figure 2.13).

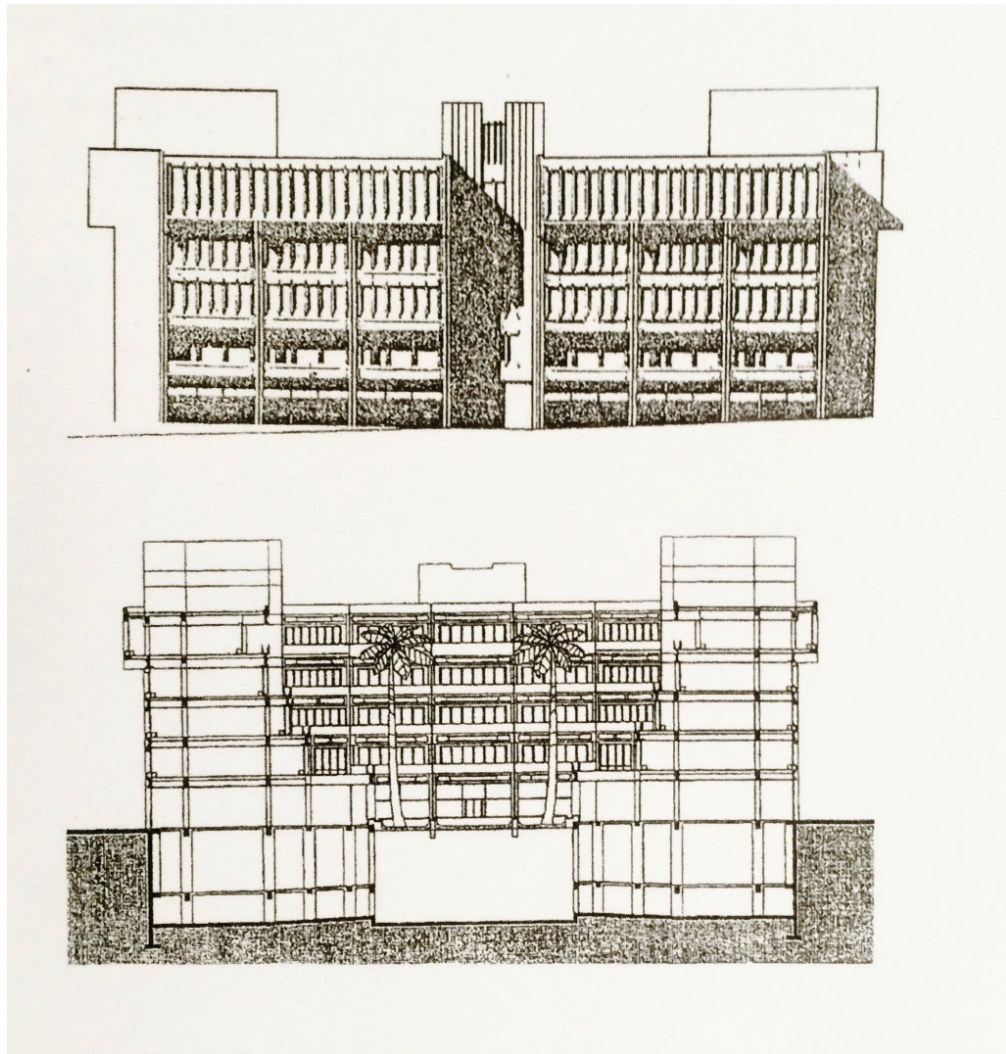
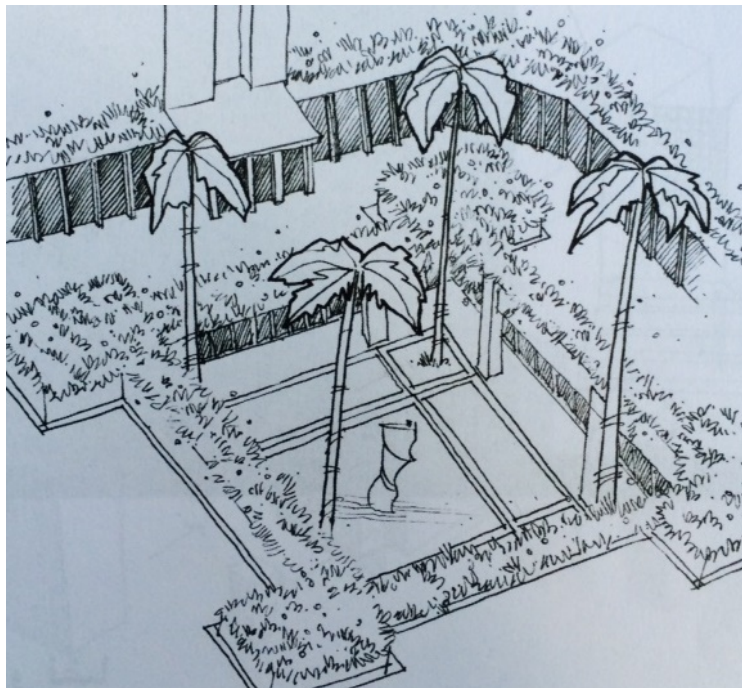


Figure 2.11: Sketches of section and elevation

Source: Mohsen Feysi and Mahdi Khak Zand, *Tajziye va Tahlil Dah Asar az Memari Moaser Iran*(*Iranian Contemporary Architecture: Analysing 10 Projects*) (Tehran: Matin, 2010), 52.



a



b

Figure 2.12: Courtyard and waterfall

Source: a. Ardalan, e-mail message to author, 12 January 2014; b. Mohsen Feysi and Mahdi Khak Zand, *Tajziye va Tahlil Dah Asar az Memari Moaser Iran*, 52.

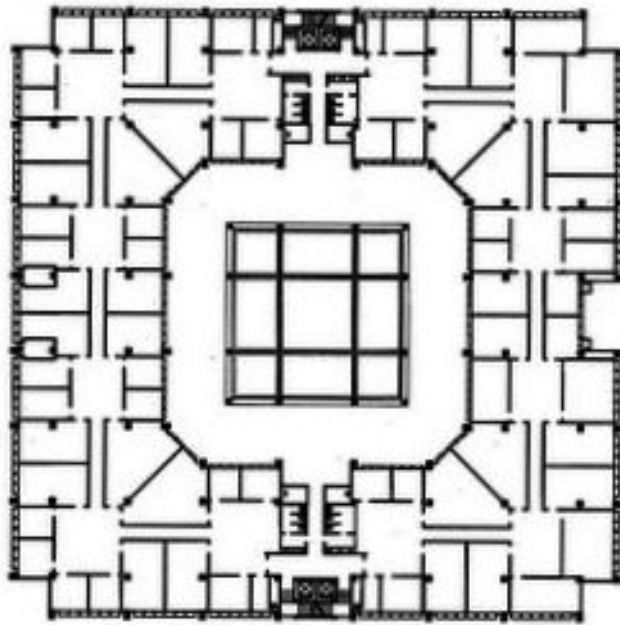


Figure 2.13: Floor plan

Source: Ardalan, e-mail message to author, 12 January 2014.

Generally, the building is symmetrical in two and three dimensions, as well as in the floor plans and elevations. Interior and exterior spaces are quite simple and apart from a few traditional ornaments at the main entrance there is no decoration.²³³ Exposing the structure emphasised this simplicity. Exposed structures were not unprecedented in Ardalan's projects; however, in the ICMS project, the structure was not exposed completely in the façades. One description of the building states: "The façades in Behshahr building are composed of pre-cast concrete with deep recesses and cantilevers to cast shadows on the glass and reduce glare."²³⁴

²³³ In this respect Ardalan states: "Proceeding to the surrounding auditorium, 20 linear meter x 4 meter clay murals by the Iranian sculptor Arabshahi, on two side walls depicting a 3-D aerial impression of the historic city of Kashan, attested to the hometown origins of the Ladjevardi family while also serving as acoustic buffers to sound. A carefully curated art programme throughout the upper offices brought contemporary Iranian art to throughout the project ... [also] I want to say to you in both ICMS and particularly in Behshahr building I have always worked with great artist, draftsman, so Arabshahi on that time was just also 28 years old he was doing beautiful carving in terracotta so if you go to Behshahr's auditorium I have got mineral 30 meters in Arabshahi's carved." Nader Ardalan, interview by Hamid Rad, Tehran, 28 October 2013.

²³⁴ Ardalan, e-mail message to author, 25 September 2014.

Inspiration and Pre-existing Analysis

The design of the BHO has been well documented in Iran. It has been described in at least five books, with particular attention given to its spaces and architectural features. Ardalan has stated that “the building is another outstanding example of critical regionalism;”²³⁵ however, he has never written or been interviewed about this project. These books have overlooked some important points; while they discussed the similarities between the geometry and siting of the BHO and other traditional Iranian complexes, they have not discussed its important similarities with Le Corbusier’s La Tourette and Louis Kahn’s Library of Philip Exeter Academy.

It is clear that Ardalan’s BHO was inspired by La Tourette in terms of the façade’s layout and its finishing material (see Figure 2.14). Further, the floor plans and the geometry of the courtyards indicate that Ardalan was also inspired by the Library of Philip Exeter Academy (see Figure 2.15). In this library, Kahn used a large, central open space. Use of a symmetrical layout and a central point is common in Kahn’s architecture and is also symbolic as opposing modern architecture.²³⁶

²³⁵ Ibid.

²³⁶ John Lobell, *Between Silence and Light : Spirit in the Architecture of Louis I. Kahn* (Boston: Shmahal, 2008), 100.



a



b

Figure 2.14: a. La Tourette by Corbusier; b. Behshahr Headquarter Office by Ardalan

Source: a. www.studyblue.com; b. Ardalan, e-mail message to author, 12 January 2014.

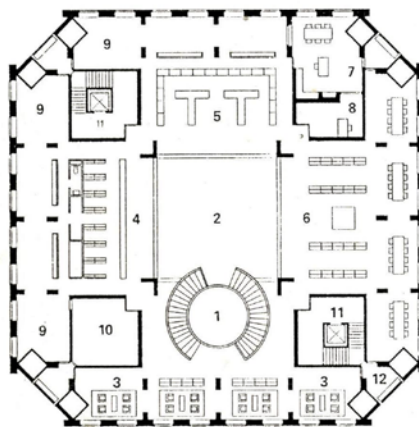
In a recent interview with the author, Ardalan stated: “I just transferred the spatial concept of a Timcheh²³⁷ [where Lajevardi had his offices before] into a Caravansarai²³⁸ courtyard space, but made it composed of two courtyards inside one another by stepping one courtyard down, as inspired by the Madrasah/Mosque of Agha Bozorg in Kashan (see Figure 2.16).”²³⁹ In relation to the façade and structure of this project, Ardalan stated: “I was also inspired by La Tourette by Le Corbusier, as I had completed my Masters in Architecture in 1962 at Harvard studying with Dean Jose Luis Sert, who was a protégé of Le Corbusier and had introduced us to Corbusier’s work.”²⁴⁰ However, Ardalan did not indicate his possible inspiration from Kahn’s famous library, which was designed almost at the same time as the BHO.

²³⁷ Timcheh was a courtyard; its surrounding chambers were used for commercial purposes in traditional bazaars.

²³⁸ Caravanserai was a roadside inn with several rooms around a courtyard where travellers could rest.

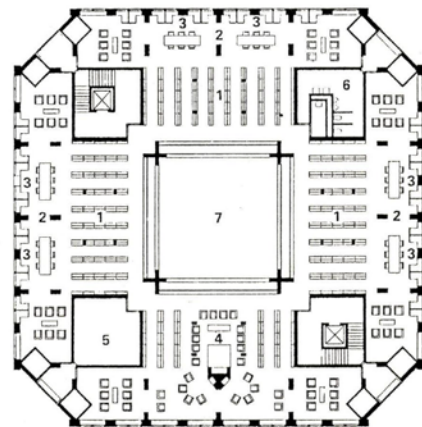
²³⁹ Ardalan, e-mail message to author, 12 January 2014.

²⁴⁰ Ibid.



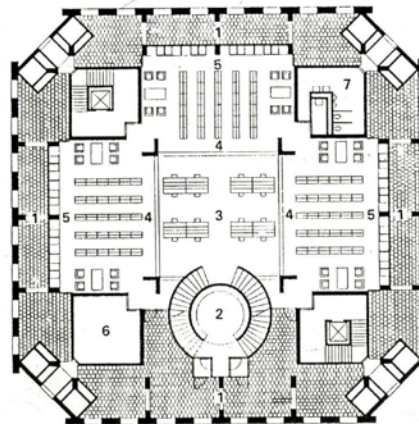
2 层平面图, Second-floor plan.

- | | |
|------------------------|------------------------|
| 1. entrance stair | 7. librarian's office |
| 2. central space | 8. secretary's office |
| 3. current periodicals | 9. work area |
| 4. circulation desk | 10. copying room |
| 5. card catalogue | 11. elevator and stair |
| 6. reference desk | 12. portico |



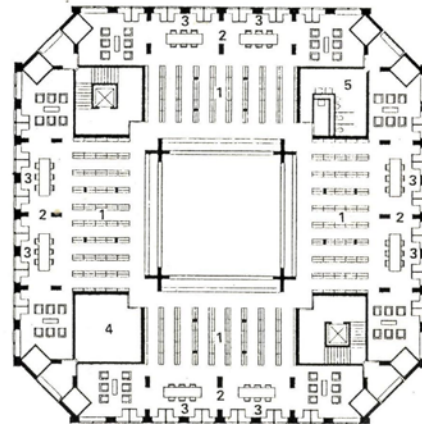
4 层平面图, Fourth-floor plan.

- | | |
|-------------------------|--------------------------------|
| 1. general book stacks | 5. listening room |
| 2. general reading area | 6. toilets |
| 3. carrels | 7. upper part of central space |
| 4. fiction area | |



1 层平面图, First-floor plan.

- | | |
|--------------------------|-----------------------|
| 1. arcade | 5. carrels |
| 2. entrance | 6. archivist's office |
| 3. periodical index area | 7. toilets |
| 4. back numbers area | |



3 层平面图, Third-floor plan.

- | | |
|-------------------------|-------------------|
| 1. general book stacks | 4. listening room |
| 2. general reading area | 5. toilets |
| 3. carrels | |

Figure 2.15: Library, Philip Exeter Academy, designed by Louis Kahn

Source: Tohio Nakamura, "10 Works by Louis I. Kahn," *Architecture and Urbanism*, 1983: 164.



Figure 2.16: Agha Bozorg in Kashan, Iran

Source: www.Iran-daily.com

For Iranian authors, the BHO is a good example of post-modern architecture in early 1970s.²⁴¹ Generally writers have noted the combination of the courtyard (a traditional element) with the concrete façade. This building included some features of a modern project; for example, its elevations were not dependent on the floor plan and the floor plans (divider walls) were not dependent on the structure. A traditional concept (i.e., the courtyard) was also included, but it did not change the modern architectural design to a post-modernist design. Notably, Le Corbusier's work, La Tourette, also had a courtyard.

From the perspective of this thesis, the BHO cannot be called 'post-modern', as Ardalan used contemporary materials and technology to present his timeless principles. Comparing other post-modern projects of the same period with the BHO highlights this issue. In Ardalan's view, material is an instrument that can be used to implement ideas:

²⁴¹ Etesam and Poormand, *Memari Moaser Iran*, 441.

The structural and materiality of the building came from the fact that I had recently introduced to Iran in 1968 the Precast concrete industrial building technology (Shock-Beton from Holland), which I had used in the two Saman Towers [well known as a modern project]. This system allowed modularity, open spans and the scale of a modern office building ... the outer shell of the Behshahr building is resultant of the expanding inner space of the central courtyard realized in concrete cantilevers. The traditional structure of brick or masonry architecture could not allow cantilevers, but modern concrete delights in such feats. Are we to be limited by not using new technology that can be used to realize timeless archetypes?—Of course not. The New Creation (*Khalq i Jadid*)—the ever refreshing new realizations and innovations is our mandate for being, however, so much more profound if it recapitulates a perennial comprehension of the larger essence or meaning of existence.²⁴²

The last chapter of this thesis discusses the question of whether Ardalan is a post-modern architect.

Ardalan's Architectural Principles

At least three ideas were introduced as reflecting Ardalan's design principles in the BHO project: geometrical shapes, centrality and positive space (as manifested in the courtyard concept). These three principles have been applied in almost all of Ardalan's projects. The positive space of the courtyard was the first principle to attract attention. The courtyard in this project allowed Ardalan to create a private area, away from street noise and provided better natural light for other spaces. Generally, courtyards have a strong centre in the geometry of floor plans, particularly when spaces face a courtyard. In the BHO all of the spaces were arranged around the centre of the courtyard. This centre was emphasised by a flow of ontological spiralling water.²⁴³ The floor plans show four concentric squares around the centre (see Figure 2.17).

²⁴² Ardalan, e-mail message to author, 12 January 2014.

²⁴³ The central fountain was designed by the great sculptor Karl Schlemminger and is made of Lucite and stainless steel.

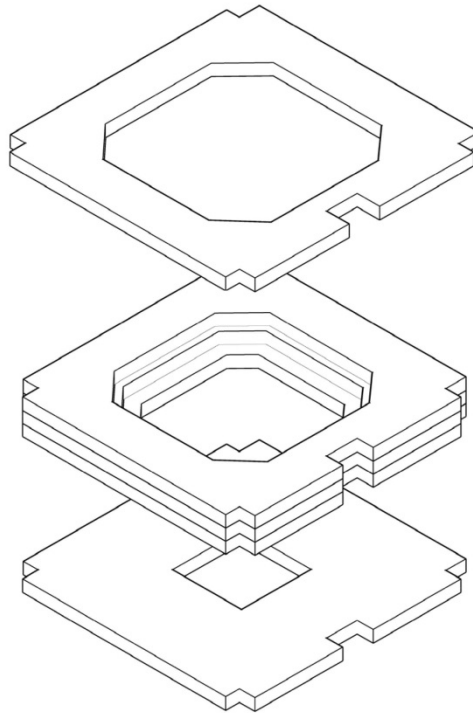


Figure 2.17: Concentric squares placed on top of one another

Source: Author.

Additionally, in the floor plans, façades and geometric shapes (particularly, squares and rectangles) were frequently used (and can be seen in all of Ardalan's projects). Consequently, in a three dimensional analysis, cubes have a key role in the main mass. This design feature helped Ardalan to modularise the structure of the BHO project. In this respect he stated:

I have used the multiple of the 90 cm module (1.80 m, 3.60 m and 7.20 m) in most of my buildings as it related well to the human anatomy and to contemporary European/Iranian building industry measurements of materials. In the case of Behshahr Headquarter Office, the entire prefab systems required modularisation for economy of means and satisfied my aesthetic desire for order in the façade and the entirety of the project.

In fact, Ardalan always tried to minimise the cost of projects through modularisation and the avoidance of finishing materials and ornaments.

Ideas from *The Sense of Unity* and the Behshahr Headquarter Office

The BHO was Ardalan's second project following the publication of *The Sense of Unity*. As stated above, the ICMS represents the closest practical example of the ideas in *The Sense of Unity*; however, this thesis argues that these ideas are also present in Ardalan's other projects. The BHO building represents some of these ideas.

In the BHO, a central point is present in two and three dimensions and all spaces are arranged around this central point. The ordering system in this project is based on a central point. From a theoretical point of view, centrality represents the idea of unity of being and can be described as the most important principle of Islamic architecture in *The Sense of Unity*.

In comparing the atmosphere of the courtyard to the outside of the building, the concept of a hidden treasure or the inner reality of things is revealed. The courtyard is a small, cool garden with a pool and waterfall and acts as a counterpoint to the hot, dry weather of Tehran. The concept of an inner reality and the relationship between the hidden and manifested (in Islamic philosophy, *zahir* and *batin*) were discussed comprehensively in *The Sense of Unity*. A lack of ornamentation on the façades and similarities between interior and exterior elevations reflect similar ideas. Ardalan tried to show that *zahir* and *batin* are not different, but that *batin* is more important than *zahir*.

2.2.4 Bu Ali Sina University (1974)

The BASU is located in Hamadan, in the north-west of Iran. It was designed a few years after the publication of *The Sense of Unity*. This section analyses the architectural features of the BASU. However, before its architectural features are discussed, its design history is reviewed to reveal the intention and purpose of its designers and clients. Following the review of the background of this project, this section considers the architectural and structural features of this building, specifically its lighting system and the structure of its dome. This section concludes by considering possible Islamic concepts conveyed by the geometry and forms of the BASU.

Background and Architectural Features

The Iranian Ministry of Education and the French Ministry of Education jointly sponsored the BASU.²⁴⁴ It was planned to be built in Hamedan as the largest university in north-west Iran. The design brief sought the incorporation of indigenous ideas. As Ardalan had earlier been credited with the design of the Iran Centre of Management Studies, he and George Candilis of Paris (1913–1995) were invited to participate in this project. Candilis has been credited with the design of the Berlin and Toulouse Universities. Ardalan believed that the design capabilities of his firm were greater than those of Candilis' firm; however, in the 1970s, due to a shortfall in indigenous capability and the scale of the project, there was a sense that an association with foreign partners would enrich the work.²⁴⁵ Interestingly, the original drawings and sheets were signed only by 'Mandala' and the extent of Candilis's participation in the design process is unknown. Ardalan stated: "we all made sure that in any of these associations it was very clear that we were interested in pursuing certain lines of thought, and if people were not interested in pursuing these lines of thought, we would not associate with them."²⁴⁶ Thus, it may be that the government imposed the foreign architect formally, but, practically, he had little to do with the design.

²⁴⁴ Haeri, "Interview with Nader Ardalan," 41.

²⁴⁵ Ibid, 43.

²⁴⁶ Ibid, 44.

Dr Ghobadian, an architectural historian of Iranian Contemporary Architect, has described the BASU and the ICMS as the most celebrated of Ardalan's projects in Iran.

However, Ardalan has stated:

[After the Revolution of 1979] all construction budgets were cut, all professional fees not paid, the Chancellor [of BASU] was removed, and the architect, without any work or means of support stayed on at Harvard Design School. Construction stayed at standstill due to the Iran/Iraq War and once it commenced, the budget was slashed to total inadequacy, and like a fatherless child, BASU grew lacking adequate budget, quality construction and supervision (although some valiant former Mandala employees did their best to attend to the project) and very poor post-construction maintenance. Instead of achieving a built work worthy to be called "Architecture," it was just a building. For these reasons, I do not consider the completed BASU project representative of my intentions, the many hours of concentrated effort by a team of gifted designers and a caring client.²⁴⁷

However, arguably, the BASU still conveys Ardalan's ideas, even if budget limitations and a lack of maintenance meant these ideas were not well executed. This thesis seeks to discover the influence of the ideas in *The Sense of Unity* on Ardalan's projects; these ideas have mostly been crystallised in his conceptual designs. This is also why Ardalan's un-built projects have been considered in this thesis.

Similar to the ICMS, in designing the BASU Ardalan used buff-coloured bricks for the exterior façades and in construction (rather than concrete), applied geometric shapes and included a courtyard. However, two major differences exist between these two projects. First, the BASU was designed for 10,000 students (i.e., its capacity is 10 times greater than that of the ICMS).²⁴⁸ Second, the weather in Hamedan is considerably colder than the weather in Tehran where the ICMS was built.

The main building of BASU consists of three storeys of classrooms and laboratories. The block was designed as a square; each side is 130 metres (see Figure 2.18). The middle floor (main entrance) is connected to the main street by a footbridge. On the middle floor, four corridors divide the mass into four blocks, each containing a courtyard and a central point, with a domical space (*Chahar Sou*) linking all these parts together (see Figure 2.19). Due to the cold weather in Hamedan, the courtyards are not

²⁴⁷ Ardalan, e-mail message to author, 25 September 2014.

²⁴⁸ Haeri, "Interview with Nader Ardalan," 42.

used for distribution, but instead provide natural light to the classrooms and a view to nature.

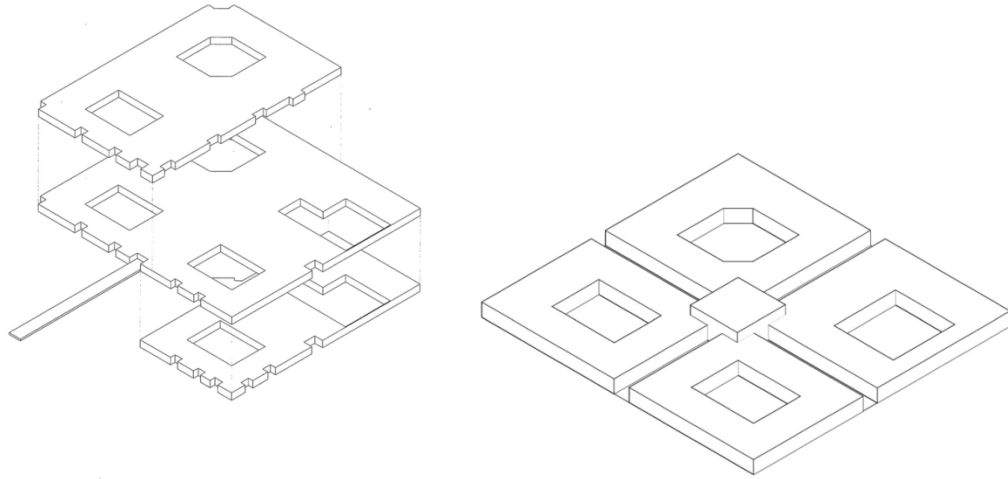


Figure 2.18: The block combination

Source: Author.

Lighting

The most significant feature of this project is its lighting system. A block 65 metres wide is very solid; thus, providing natural light for this space was difficult. The courtyards assisted Ardalan in this respect. The four courtyards and the large yard surrounding the complex provide natural light to all classrooms; most of the classrooms face the courtyards rather than the surrounding yard.

The width of the classrooms and the environmental situation created tiny openings. Thus, Ardalan had to use indirect lighting from skylights in the corridors. To receive more natural light, each classroom facing the courtyard has at least one opening to the corridors (see Figure 2.20). The corridors do not open to the courtyards or the yard, even though most of them are located next to the yard. Ardalan designed special skylights to light the corridors (see Figure 2.21). These skylights are in the form of a triangle; one side of the glass is located on the roof and another along the corridors.

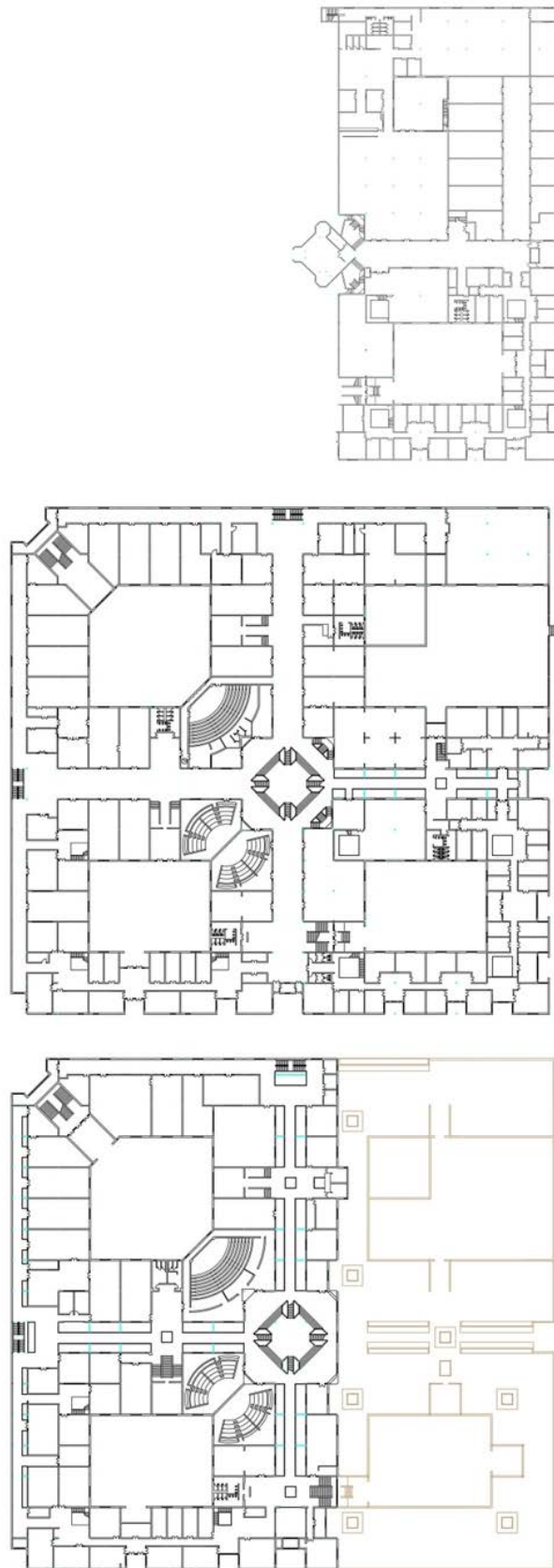


Figure 2.19: Floor plans

Source: Author.



Figure 2.20: Corridors opened to receive extra natural light

Source: Author.



Figure 2.21: Skylights

Source: Author.

One issue that arose was that only the highest floor would be able to use the light from the skylights. To address this issue, Ardalan designed the corridors on the top levels to be suspended so that light could be directed to the ground level; that is, the corridors on

the top levels were designed not to connect with their surrounding walls. Consequently, a visual connection existed between the ground level and the first level (see Figure 2.22). These suspended corridors allow indirect light from the roof to reach inside the block, it also means that both levels really appear to be separate. The indirect lighting method and suspended corridors were designed not for aesthetic reasons, but to address environmental issues. Ardalan also tried to keep the spaces out of the cold weather.

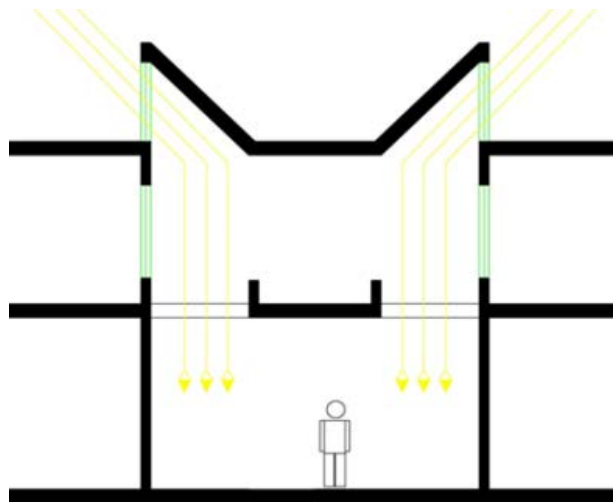




Figure 2.22: Suspended corridors

Source: Author.

Modularisation

Another feature of this complex is modularisation. Floor plan dimensions show a specific module in large and small scales. At the small scale, distances between divider walls are multiples of 7.2 metres; for example, the size of classrooms is 14.4 metres by 7.2 metres and the width of corridors is 7.2 metres or 3.6 metres. This grid module can also be seen in the structure, as the distances between columns are 7.2 metres or 3.6 metres. On a large scale, the mass consists of eight blocks and, due to the topography of the site, two blocks were moved top down (see figure analysis). Each block is approximately 65 metres by 65 metres. In fact, each block is (9 metres by

7.2 metres) by (9 metres by 7.2 metres) and the whole of the complex is (19 metres by 7.2 metres) by (19 metres by 7.2 metres).

Structure

The structure of this project can be studied from two angles; that is, the exposed and the new style of the domed *Chahar Sou*. The structure was quite simple: steel with a maximum 7.2 metre span.²⁴⁹ Interestingly, all the beams, columns and their connectors are exposed (see Figure 2.23).²⁵⁰ Exposed structures were not unprecedented in Ardalan's work, but given that Ardalan stated that he did not supervise the construction of this project and that the project faced budget restrictions, this exposition may not have been intended.



²⁴⁹ Despite changing the span of some columns placed in the walls, in the floor plans Ardalan remained extremely faithful to modularisation.

²⁵⁰ No plaster or any other finishing materials were used to cover the even beams in the roof. Additionally, the colour used for the metals strongly contrasted with the colour of the walls to emphasise the exposition.



Figure 2.23: Exposed structures

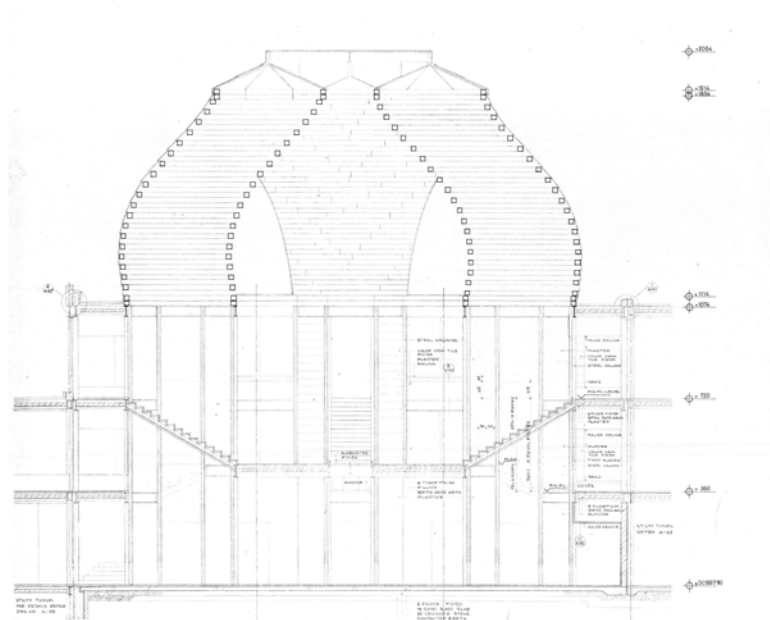
Source: Author.

These exposed structures and the modulation culminated in the central dome, the *Chahar Sou*. The *Chahar Sou* is located at the middle of the mass. Domes symbolise Islamic and traditional architecture; however, Ardalan has not used domes in any of his other projects. The structure and material of the dome is quite innovative, it was designed with the Iranian Structural Engineer Zareh Gregorian. For the BASU, a ring in octagonal form was used as a model for this dome (see Figure 2.24). Hundreds of metal rings were arranged to make the dome. The dome conveys traditional concepts using contemporary structures and materials.²⁵¹

²⁵¹ In reaction to this construction, Ardalan stated “in this particular university, I tried to use indigenous systems of construction and signs and symbols of architecture that would be more indigenous to Hamedan and Persian architecture.” Haeri, “Interview with Nader Ardalan,” 43. The system of construction was simple; however, it cannot be viewed as an indigenous system in the



sense applied by Fathy in New Gournah. Additionally, no sign or symbol indicates Hamedan. In an interview with the author, Ardalan emphasised the term “indigenous system” and stated: “Hamadan was famous for its clay products with buff (*Ghari*) brick readily available in the nearby brick kilns and Iran had begun production of its own steel in Isfahan.” Ardalan, e-mail message to author, 12 January 2014.



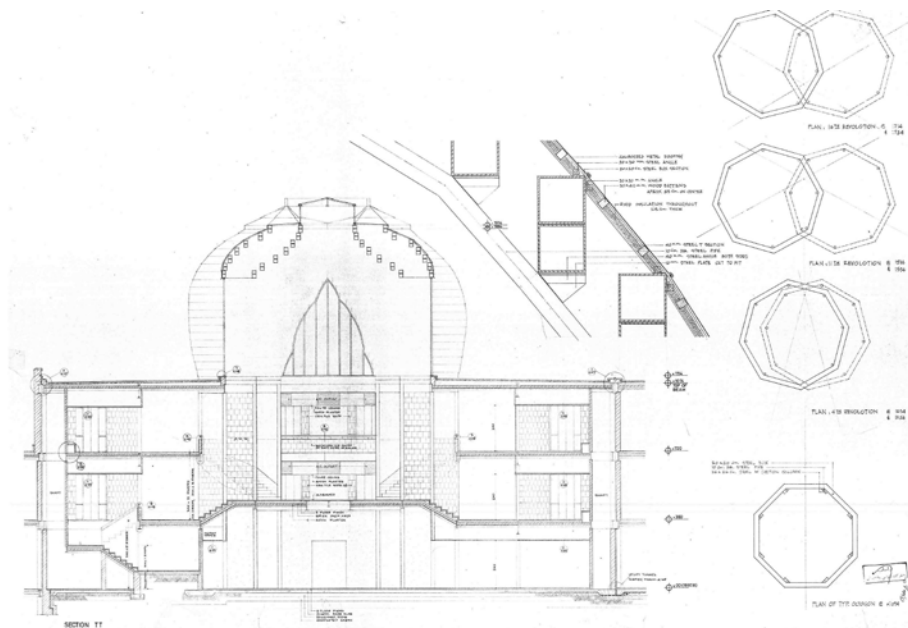


Figure 2.24: The structure of the dome

Source: Photos from author and drawing from The University of Bu Ali Sina.

Ideas from *The Sense of Unity* and the Bu Ali Sina University

The influence of *The Sense of Unity* can be seen in the BASU project as well as in the ICMS and the BHO. Ardalan stated:

...our design response was to build using the “Traditional Forms” described in *The Sense of Unity* with environmental adaptation as key principal—compact, courtyard forms; the “Positive Space Typology;” the *Chahar Sou*; and the idea of making something “Extraordinary” out of the “Ordinary” by employing a very simple brick and steel palette of materials.²⁵²

In this project, concepts such as centrality, unity and multiplicity, and *zahir* and *batin* can be identified. In the following paragraphs, the BASU is analysed in light of *The Sense of Unity* and Ardalan’s understanding of Islamic architecture.

The site plan of the BASU shows that centrality was clearly emphasised in Ardalan’s design. Each block contains four parts and each part has its own centre located at the middle of its courtyard. All these parts are symmetrically arranged around a central point. The centre is further emphasised by the dome. The circle symbolises cosmic unity

²⁵² Ardalan, e-mail message to author, 12 January 2014.

(the main principle of Islam). *Sufism* expanded this Islamic principle. Ardalan comprehensively discussed the role of unity in traditional Islamic architecture. This will be discussed further in Chapter 3.

Additionally, in *Sufism* the relationship between the Divine and the universe is interpreted in relation to unity and multiplicity. In architecture, modularisation represents the concept of unity and multiplicity; various spaces are formed based on a specific module and have an independent character generated according to a union module. As discussed above, the floor plans of the BASU are completely modular, reflecting the concept of unity and multiplicity.

Questions arise: What was the intention of the designer in applying modularisation? How much of this interpretation reflects the architect's intention? Obviously, the idea of unity and multiplicity may not have been the only reason for modularisation. Perhaps, the aesthetic harmony of the visually repeated patterns and the economy of construction costs were other considerations. However, Ardalan has confirmed that modularisation represents the concepts of unity and multiplicity in his projects.

2.2.5 Tehran Museum of Contemporary Art (1967-1977)

In contrast to the previous projects, the TMCA is quite well known in Iranian contemporary architecture. Despite this, in keeping with the analyses of other projects, this section begins with explanations of the architectural features of the TMCA. It then critiques the existing studies in order to expose gaps in the understandings. Finally, similar to the other projects, ideas from *The Sense of Unity* as reflected in this project will be analysed.

Background and Architectural Features

The TMCA is located on the East side of Laleh Park in the heart of Tehran. It is noteworthy not only for its exhibitions, but also for its architectural appearance. The TMCA has been the subject of much discussion in Iran; however, it is actually unknown who commissioned the TMCA (some documents list the Management and Planning Organisation as the commissioner while others list Farah Diba, the last Queen of Iran). It is also unclear why the design process took 10 years (from 1967–1977). Further, there has been some debate over who designed the TMCA; some sources nominate Kamran Diba as the architect of the project;²⁵³ however, Ardalan has stated that he was asked by Diba to design the TMCA.²⁵⁴ This study acknowledges Ardalan as the co-designer of the TMCA and recognises it as one of Ardalan's projects. It should be noted that the TMCA was designed during the time Ardalan was researching Persian architecture. In this section, the architecture of the TMCA and its relationship with *The Sense of Unity* will be analysed and its similarities and differences with previous projects will be highlighted.

This museum consists of eight structures that turn 45 degrees from the axis of the main entrance and avenue, and comprises 4,224 square metres.²⁵⁵ These eight blocks are chained together around three courtyards set inside one another by steps (see Figure 2.25). Varieties in ground level can be seen in all eight blocks, but within the interior,

²⁵³ See Kambiz Navai, Vahid Ghobadian, Iraj Etesam and Amir Bani Masoud.

²⁵⁴ Ardalan has stated that Diba admitted the role of Ardalan in the design process; this was recorded in an Aga Khan Interviews with Diba about the project. Ardalan, interview by Hamid Rad, Tehran, 28 October 2013.

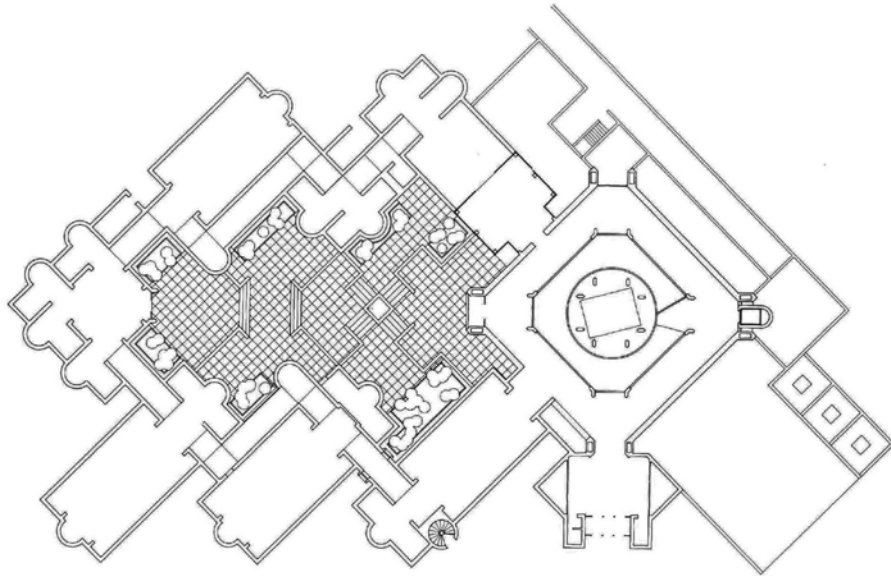
²⁵⁵ Etesam and Poormand, *Memari Moaser Iran*, 349.

visitors are unaware of this, as the blocks are connected to each other by ramps. The path of visitors begins in the main hall immediately after the main entrance and ends at the same location, but one level down (see Figure 2.26). Interestingly, the interior spaces of the structure have been left exposed and the surfaces are not clad with any finishing materials (see Figure 2.27). For the most part, the exterior façades are composed of earthen toned stone blocks, cream coloured concrete, copper for the curved part of the skylights and dark coloured glass (see Figure 2.28). Skylights form a major part of the façade; four distinct skylights called the *Chahar Sou* rise up from the top of the main hall (see Figure 2.29).²⁵⁶ As only a few openings give tide views of the courtyards, most natural light comes through the skylights. It has a smooth and vertiginous circulation (the main foyer constitutes both the start and end point of visitors' path), the skylights are reminiscent of traditional wind towers and the exposed concrete (precisely made) is an outstanding feature of this building.



a

²⁵⁶ The direction of these skylights is considerable; they all face the north east, “like a whole crowd who is watching enthusiastically an interesting display at the far distance.” Kambiz Navai, “An Architectural Analysis: The Museum of Contemporary Art, Tehran, Iran,” *International Journal of Architectural Research* 4(1) (2010): 196.



b

Figure 2.25: a. Museum of Contemporary Art, Tehran; b. floor plan of the Museum

Source: a. www.dox.cz; b. Kamran Diba, *Building and Projects* (Hatje: Stuttgart-Bad Cannstatt, 1981),

38.



Figure 2.26: Circulation system

Source: Author.



Figure 2.27: Exposed concrete

Source: Author.





Figure 2.28: Exterior material

Source: Author.

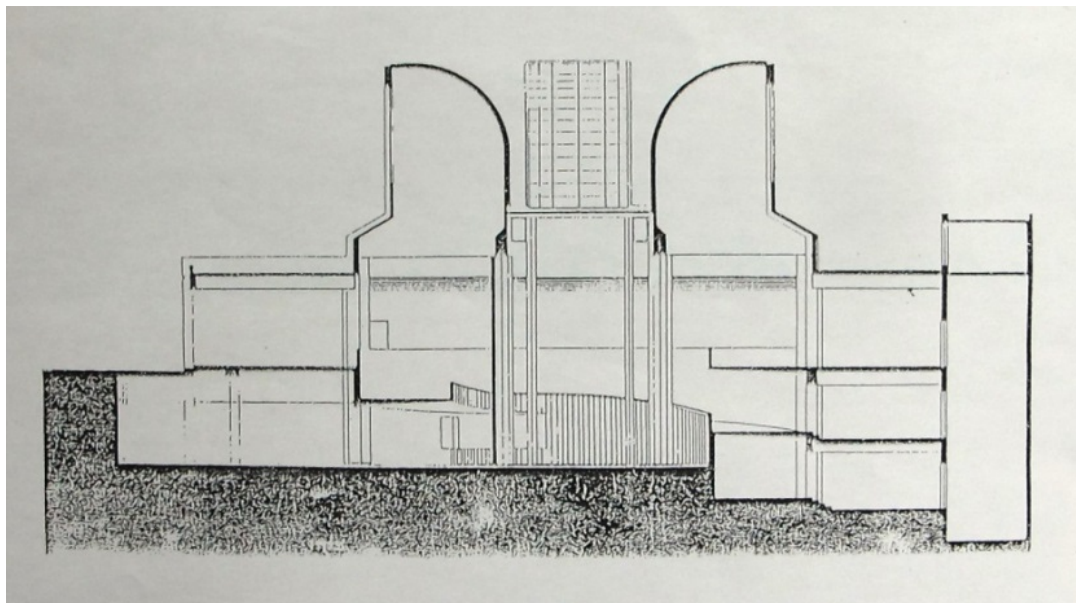




Figure 2.29: Central skylights of the Chahar Sou

Source: Photo from author and drawing from: Kamran Diba, *Building and Projects* (Hatje: Stuttgart-Bad Cannstatt, 1981), 38.

In comparison to Ardalan's other projects, centrality was not given any attention in the design of the TMCA. While its galleries were arranged around a roof top sculpture courtyard, known as the central space, geometrically, no central point exists in this complex. However, from a purely functional perspective the main hall (i.e., the *Chahar Sou* space) could be considered the central space. Externally, this centre is emphasised by four skylights located above the void inside the spiral ramp. The skylights are very similar to traditional wind towers and only their functions were modified. Traditional elements (such as domes, minarets and wind towers) have rarely been applied by Ardalan in his architecture; Ardalan has always tried to modify or recreate these original shapes.

Interestingly, exposed material, a lack of ornamentation, a natural lighting system and a courtyard (Ardalan's signatures) are present in this project. Ardalan previously used pre-cast concrete in the Saman Towers and the BHO; however, it was not used here. The cast in place concrete must be constructed very precisely. Exposed construction

materials and a lack of ornamentation can also be found in other projects. The TMCA's creative use of lighting was similar to that previously used for the BASU. The concept of the courtyard was also repeated in this project; interestingly, courtyards are not common in museums around the world.

Pre-existing Analyses

The TMCA has been frequently discussed in Iranian sources. *Contemporary Architecture 75 Years' Experience in Public Buildings*,²⁵⁷ *Iranian Contemporary Architecture*,²⁵⁸ *Iranian Contemporary Architecture Analyzing 10 Projects*,²⁵⁹ *Building and Projects*²⁶⁰ and *Style and Concept in Iranian Contemporary Architecture*²⁶¹ are all books that have considered this museum. In all these sources, this building is introduced as an example of a modern style combined with traditional principles. The circulation system and the use of exposed concrete²⁶² are recognised as modern principles and assumed to be influences of Le Corbusier.²⁶³ Conversely, the geometry of the floor plan, the use of octagonal forms, the traditional roof style and the wind tower are noted as representing traditional Iranian architecture.²⁶⁴ Different sources refer to the TMCA as representing different movements; for example, for the majority of these sources, the TMCA is simply considered post-modern architecture; however, Vahid Ghobadian refers to the TMCA as Iranian Novel Architecture, and Ardalan "places TMCA as one of the earliest of critical regionalism."²⁶⁵

Surprisingly, none of these sources considers the unified architectural vocabularies in the museum, or at the least the two projects of Jose Luis Sert (1902–1983):²⁶⁶ Fondation

²⁵⁷ Etesam and Poormand, *Memari Moaser Iran*.

²⁵⁸ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*.

²⁵⁹ Mohsen Feysi and Mahdi Khak Zand, *Tajziye va Tahlil Dah Asar az Memari Moaser Iran (Iranian Contemporary Architecture: Analysing 10 Projects)* (Tehran: Matin, 2010).

²⁶⁰ Kamran Diba, *Building and Projects* (Hatje: Stuttgart-Bad Cannstatt, 1981).

²⁶¹ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*.

²⁶² Todao Ando was not active in 1967.

²⁶³ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 275; Feysi and Zand, *Iranian Contemporary Architecture*, 123.

²⁶⁴ Feysi and Zand, *Iranian Contemporary Architecture*, 123.

²⁶⁵ Ardalan, e-mail message to author, 25 September 2014.

²⁶⁶ Sert was the most well known of Spain's modern architects. Roza M. Malet, ed., *Sert 1928-1979: Half a Century of Architecture: Complete Work* (Barcelona: Fundació Joan Miró, c2005), 1.

Maeght in Saint Paul-de-Vence, France (1958–1971), and Fundació Joan Miró in Barcelona, Spain (1968–1975).

In fact, on closer view, the TMCA resembles the Fundació Joan Miró in its floor plan geometry and spatial sequences (see Figure 2.30). More importantly, sequenced courtyards, a connecting ramp and a sliding roof—known as the main features of Fundació Joan Miró²⁶⁷—can be seen clearly in the TMCA as well. More apparent similarities can be found in the Fondation Maeght, particularly in its finishing material and interior and exterior facades. Similar to the TMCA, the facades of the Fondation Maeght are composed of exposed reinforced concrete cast, brick and stones (see Figure 2.31).²⁶⁸ From a visual point of view, the most stunning resemblance between the TMCA and some of Sert's buildings can be seen in the innovative shape of the skylights that are found, in addition to in the above buildings, in Braque House in Saint Paul-de-Vence, France, 1958 (see Figure 2.32). In fact, this shape of skylight, interpreted in the above Iranian sources as the symbol of an Iranian traditional wind tower, is recognised as a distinctive element of Sert's architecture.²⁶⁹

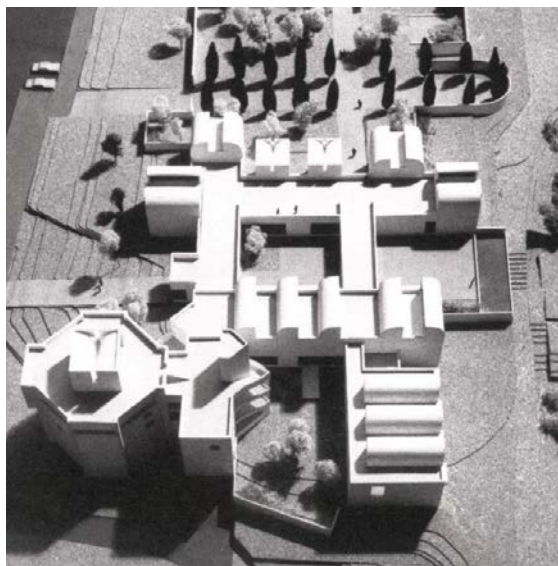


Figure 2.30: Fundació Joan Miró

Source: Josep M. Rovira, "Fundació Joan Miró," in *Sert 1928-1979: Half a Century of Architecture: Complete Work*, ed. Josep M. Rovira (Barcelona: Fundació Joan Miró, c2005), 325.

²⁶⁷ Josep M. Rovira, "Fundació Joan Miró," in *Sert 1928-1979: Half a Century of Architecture: Complete Work*, ed. Josep M. Rovira (Barcelona: Fundació Joan Miró, c2005), 325.

²⁶⁸ Knud Bastlund, *Jose Luis Sert; Architecture, City Planning, Urban Design* (London: Thames and Hudson, 1967), 171.

²⁶⁹ Patricia Juncosa, "Fondation Maeght," in *Sert 1928-1979*, ed. Rovira, 240.

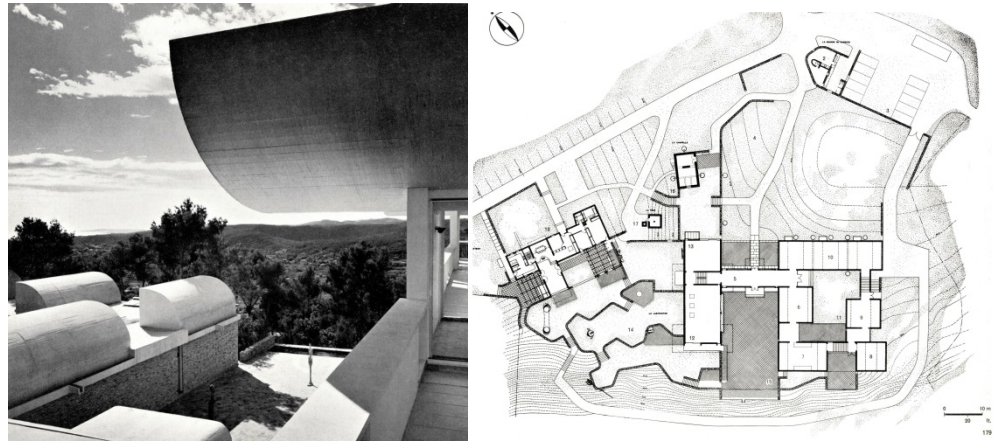


Figure 2.31: Fondation Maeght

Source: Knud Bastlund, *Jose Luis Sert; Architecture, City Planning, Urban Design* (London: Thames and Hudson, 1967), 171.

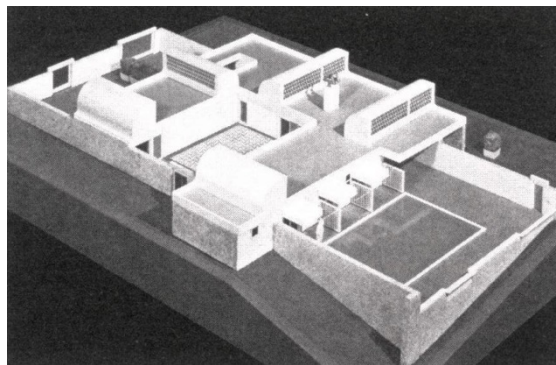


Figure 2.32: Braque House

Source: Source: Jordio Pesudo, "Braque House," in *Sert 1928-1979*, ed. Rovia, 246.

It is interesting to note that earlier in 1958 Sert used skylights with a slightly different shape in Joan Miró's Studio building in Palma De Mallorca. In this project the roof is articulated into a number of catalan vaults (a traditional type of low arch) acting as skylights and a ventilation system (see Figure 2.33).²⁷⁰ Octavio L. Borgatello, who analysed this project in *Sert 1928-1979 Half a Century of Architecture*, believes that in this project Sert was inspired by Antoni Gaudi and Mediterranean architecture.²⁷¹ In addition, in early sketches of the Fondation Maeght, Sert used the same vaults of the roof to catch the light. However, Sert, a teacher at Harvard University, changed the shape of the skylights in the final design based on the results of a study by Harvard

²⁷⁰ Octavio L. Borgatello, "Joan Miro's Studio," in *Sert 1928-1979*, ed. Rovia, 191.

²⁷¹ Ibid.

students on making skylights more efficient.²⁷² It is interesting to note that at this time Ardalan was a student of Sert's at Harvard.²⁷³

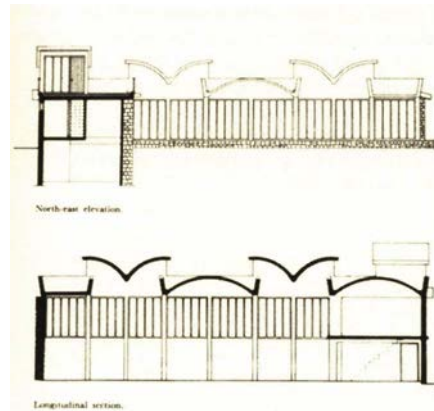


Figure 2.33: Initial form of Sert's skylights in Joan Miró's Studio

Source: Octavio L. Borgatello, "Joan Miro's Studio," in *Sert 1928-1979*, ed. Rovia, 191.

As discussed in the introduction, Ardalan became familiar with modern architecture through Sert's courses at Harvard University. Thus, it is not surprising that Ardalan would be inspired by Sert's projects that were designed and built before or at the same time as the TMCA. The similarities noted above confirm that, in contrast to initial appearances and in line with the previous projects discussed in this chapter, Ardalan's TMCA did not emphasise traditional Iranian elements.

Ideas from *The Sense of Unity* and the Tehran Museum of Contemporary Art

Generally, courtyards and the idea of centrality were key connectors between practice and theory for Ardalan. However, the idea of centrality cannot be recognised in the floor plan of the TMCA; rather, the ideas of *zahir* and *batin* and motion in microcosm play an important role. The application of the ideas of *zahir* and *batin* was not unprecedented in Ardalan's earlier projects. Indeed, in his earlier projects the relationship between exterior and interior spaces suggested the idea of *zahir* and *batin*; however, the TMCA crystallised this relationship in interior spaces. The circulation begins in the hall on the ground floor near the main entrance and passes through all the galleries before returning

²⁷² Patricia Juncosa, "Fondation Maeght," in *Sert 1928-1979*, ed. Rovia, 240.

²⁷³ See page 13 of this thesis.

to the same location, but on the underground level. A small pool of oil is located in the middle of this hall (on the underground level) that reflects the light from the sun coming through the four central skylights and passing through the ground level's void (see Figure 2.34). Interestingly, the pool cannot easily be seen by visitors on the ground level due to the height of the void's edges. Symbolical, this motion from the ground to an underground level represents the motion from corporeality to inner reality. This motion is introduced in *Sufism* as a microcosm and the inner reality is a hidden treasure that reflects the Divine.



Figure 2.34: The pool of oil that reflects the sunlight coming through the skylights

Source: Author.

2.3 Two Projects in the UAE (1990–2005)

2.3.1 Selected Projects

The Abu Dhabi Marine Operating Company (ADMA)²⁷⁴ and the College of Information Technology (CIT)²⁷⁵ were selected for study, as these two projects are Ardalan's most recent works²⁷⁶ and thus the last part of his design chain. These two projects form part of Ardalan's third generation of work.²⁷⁷ Based on the categorisation of Ardalan's works, these (and other) projects followed the publication of *The Sense of Unity*.²⁷⁸ In this study, only projects from Ardalan's first and third generation works were selected, for two reasons. First, the majority of Ardalan's projects in the 1980s were built outside the Middle East and, consequently, their context differs from the first and third generation projects. Second, considering the first and third generations at the same time will reveal whether Ardalan's principles have changed over time.

Of Ardalan's projects designed and constructed post-1990, the ADMA and the CIT were selected for two reasons. First, these two projects were built in the UAE, a culture close to that of Iran (the location of Ardalan's first generation projects). Additionally, the economic situation of the UAE from 1990 to 2002 was similar to Iran's economic situation in the 1970s. Second, the functions of these two projects were similar to the three celebrated projects of the first generation; that is, the BHO (1972), the ICMS (1973) and the BASU (1974). The similarity of the contexts, eco-social situations and programmes all helped to efficiently analyse Ardalan's principles across the decades.

Through analysing the ADMA and the CIT and comparing these projects with projects from the first generation, this study considers the following: (1) Ardalan's design principles; (2) how Ardalan followed these principles during various periods; and

²⁷⁴ The ADMA is located in Abu Dhabi, the capital of the UAE. Ardalan entered the design competition of this project through the Boston based Jung Brannen Association in 1990 (Ardalan's resume).

²⁷⁵ This college is part of the UAEU, the first national university of the UAE. This university is located in Al Ain, the third city of the UAE and was founded in 1976 by the late Sheikh Zayed Bin Sultan Al Nahyan. The UAEU has grown over recent decades and the number of students has now reached 14,000. The CIT was designed in 2002 by KEO international consultants (who won the design competition). At the time Ardalan was the vice chancellor in KEO.

²⁷⁶ After these projects, Ardalan designed several other projects, however, these have not yet been built.

²⁷⁷ The first generation refers to the 1970s, the second refers to the 1980s and the third refers to the 1990s.

²⁷⁸ Ardalan, interview by Hamid Rad, Tehran, 28 October 2013.

(3) how technology has impacted on Ardalan's ideas. This section also considers how ideas in *The Sense of Unity* were crystallised in various projects.

2.3.2 ADMA (1990)

Background and Architecture

The ADMA is an office tower belonging to the oil and gas industry of Abu Dhabi. Two companies with a combined staff of 1,200 occupy this tower.²⁷⁹ In 1990, the design for the tower by Jung Brannen and Associates was selected as the winner of an international competition. The ADMA is the first project of the third generation of Ardalan's works. Ardalan was the design principal of the ADMA and personally designed and directed the project.²⁸⁰

The project has been described as follows: "The original design was for two separate towers linked with a bridge. However, as the project developed this concept become less viable and the design was changed to two towers tied together with a large atrium."²⁸¹ In fact two squares plus a quadrant, described as a large square, form the main shape of the 15 storey tower (see Figure 2.35). The tower faces north to a landscaped Corniche and the Persian Gulf. A lobby with two entry points is located on the ground level.

²⁷⁹ The ADMA-OPCO and ADGAS.

²⁸⁰ Ardalan, e-mail message to author, 25 September 2014.

²⁸¹ Joanne McGinley, "Transparent Heritage," *World Architecture* 65 (1998): 52.

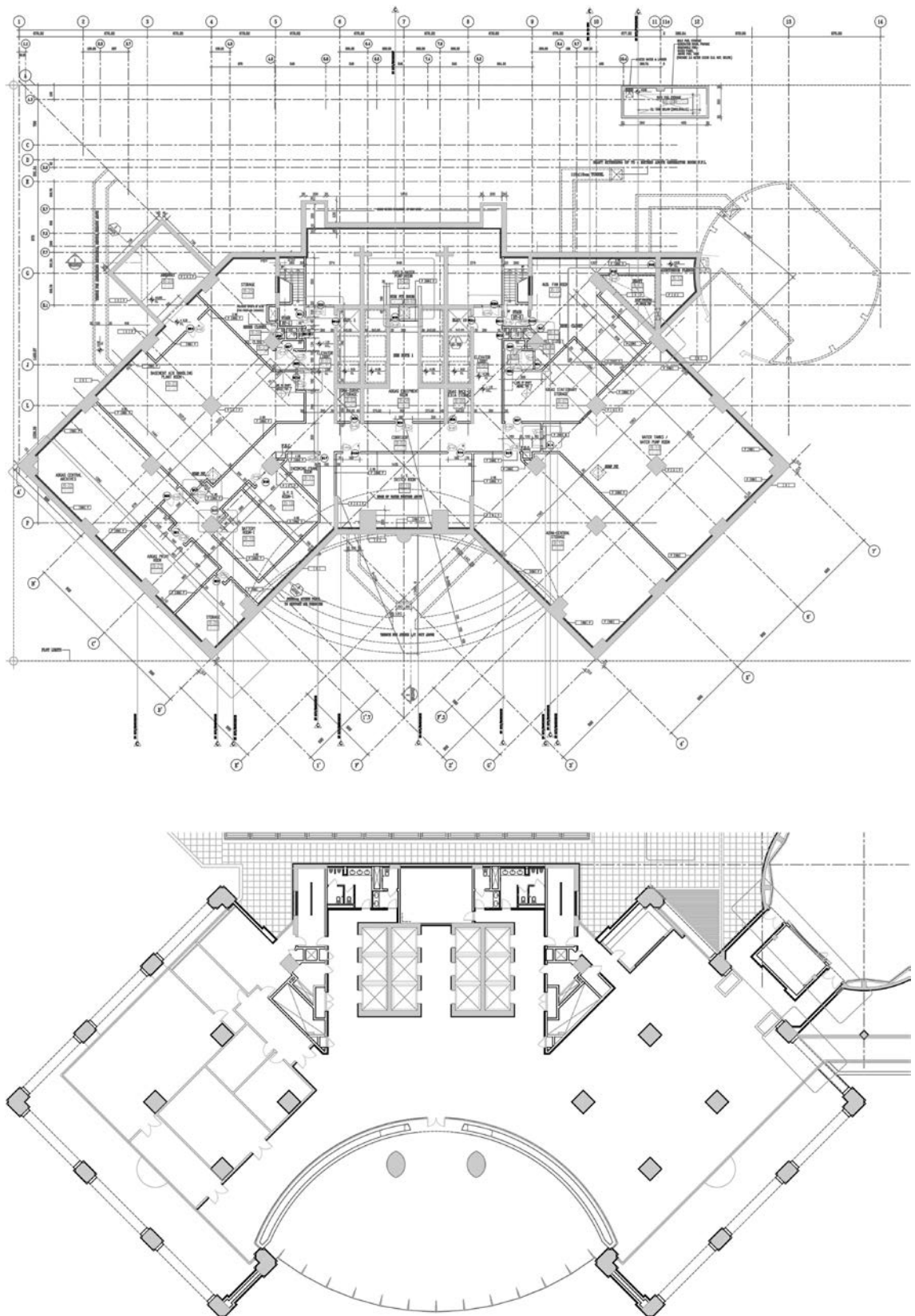


Figure 2.35: ADMA floor plans

Source: ADMA modified by author.

Notably, local values were important to the client who asked the design team to take them into account. Ardalan stated: “The client sought a landmark design that would functionally integrate the architectural heritage of the region with the contemporary advances available in construction industry.”²⁸² Thus:

Before the design ever began, the design team researched the archaeological history of the UAE, visited the ethnographic museums of the country and recorded the cultural artefacts of the place for indigenous patterns and forms...The culmination of these research studies provided the design and client team with a sense of a “higher” purpose in the conception and construction of the headquarters.²⁸³

The client’s aims in designing the ADMA were similar to the subject of this study. This study attempts to analyse the architectural features of the ADMA to identify Ardalan’s traditional principles and the principles of contemporary architecture. Comparisons between the ADMA and other projects highlight Ardalan’s intentions and, importantly, show how technology, function and other forces influenced his design principles.

A Modern Façade with Traditional Patterns

The façades are a combination of two different styles (i.e., a free skin façade and non-free skin façade). Both styles have been considered modern for their time. Curved glass panels held up by exposed steel trusses from the interior cover the north side of the building. This part of the façade is independent of the floor plan and interior spaces. In contrast, the other façades are clad in stone and, similar to Ardalan’s first generation of works that had an outer shell that was not separate (see Figure 2.36), are not independent of the inside spaces. The floor plan can be seen as a free plan in the modern sense; however, there are no panoramic windows as would normally be expected in modern architectural designs.

²⁸² Nader Ardalan, “Simultaneous Perplexity: The Paradise Garden as the Quintessential Visual Paradigm of Islamic Architecture and Beyond,” in *Understanding Islamic Architecture*, ed. Attilio Petruccioli and Khalil K. Pirani (London: Routledge Curzon, 2002), 12.

²⁸³ Nader Ardalan “Building in the Persian Gulf,” in *Iran, Architecture for Changing Societies: An International Seminar*, ed. Philip Jodidio (Umberto Allemandi and C. for Aga Khan Award for Architecture, 2004), 79.



Figure 2.36: Free skin and non-free skin façades

Source: Author.

Three patterns can be seen on the stone of the façades: a composition of squares, a circle inscribed in a square and skewed lines.²⁸⁴ This composition is similar to Islamic and traditional patterns as found in Islamic and traditional buildings. These kinds of pattern refer to the idea of centrality and, based on the number of squares, also symbolise other Islamic notions such as the number of the prophet's companions or the stages of Paradise. The pattern of skewed lines represents the 'tree of life' (see Figure 2.37).

Interestingly, there is another elevation that was designed for the night and cannot easily be seen during the day. This elevation is located behind the glass façade and functions as the façade to the atrium. This interior façade is not visible due to the reflection of the exterior façade. The interior façade is clad in light-hued granite panels featuring the tree of life as the dominant pattern. Two porches and several niches are located on the

²⁸⁴ Ardalan stated: "We researched the regional system of irrigation of the date palm oasis that characterises the country and interviewed the users to understand their cultural and social patterns of space usage and daily activities." Ardalan, "Building in the Persian Gulf," 79.

interior façade. Two large crescent shapes are designed on the axis that open at middle levels into the atrium. Ardalan considered this façade and its patterns to be an integration of tradition and technology. The geometry of the arch, described in the details sheet, confirms its roots in Islamic architecture of the 12th century (see Figure 2.38).



Figure 2.37: Patterns on the exterior façade

Source: Author.

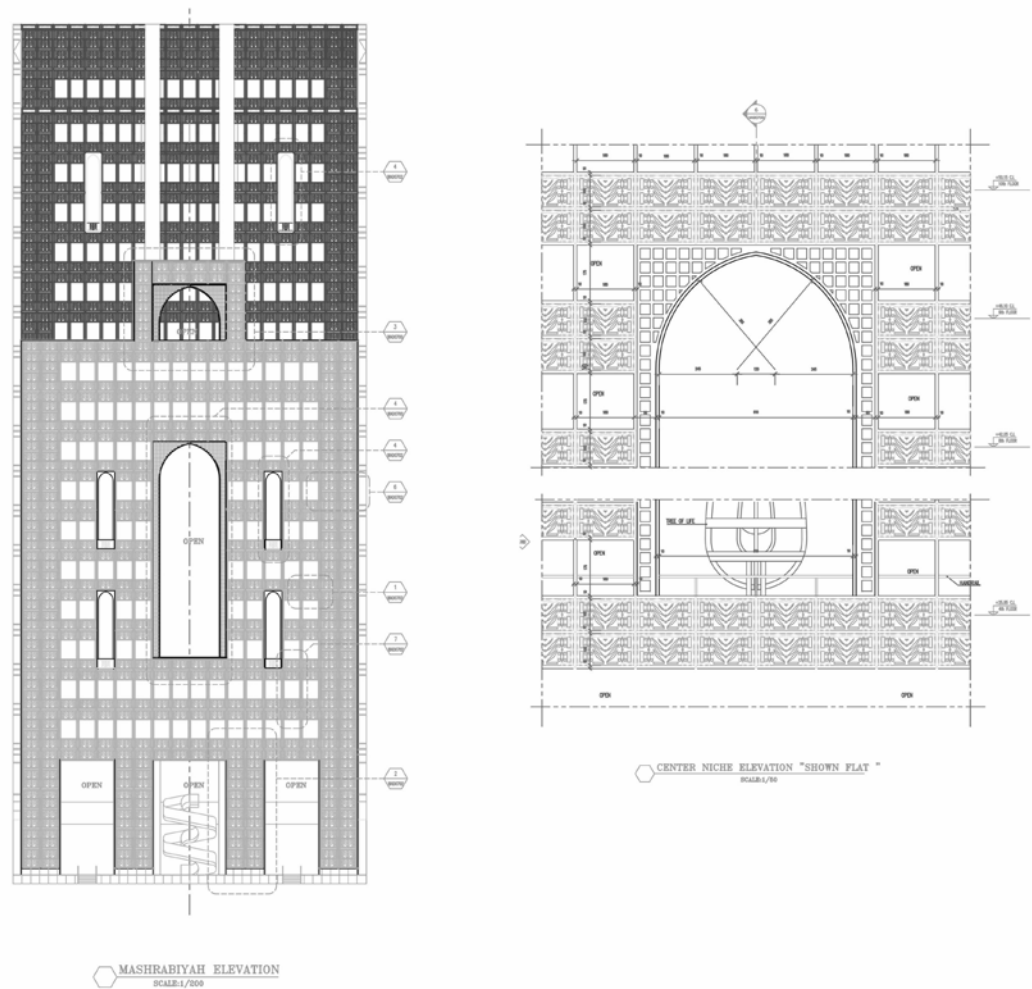


Figure 2.38: Traditional geometry and patterns on the interior façade

Source: ADMA modified by author.

From a comparative view, it is important to note that the finishing materials of the outside and inside of the ADMA are not similar to those used in previous projects. The use of curved glass is absolutely unprecedented and stone was rarely used in the first generation of Ardalan's work. Further, prior to the ADMA, Ardalan had never used any pattern or ornament in the traditional sense and, additionally, his first generation structures were often exposed; however, in the ADMA, the structure is completely hidden.

In his first generation works, Ardalan easily applied traditional paradigms such as courtyards and domes. However, in the ADMA, due to the modern situation and likely also due to eco-social issues, Ardalan incorporated traditional patterns with modern materials to keep the traditional theme of the project.

Geometric Shapes and the Idea of Centrality (Ardalan's Architectural Principles)

There are clear differences between the first generation of Ardalan's work and the ADMA; however, some similarities remain. These similarities are based on geometry and an idea from *The Sense of Unity*. Similar to all his other projects, simple geometric shapes (e.g., squares and circles) form the outlines of the floor plans. Simplifying the floor plan shows two big squares, one small square and a circle merged together around a central triangle (see Figure 2.39). However, the centre is not as clear as in other projects and, consequently, cannot be perceived by users. While the mass is not symmetric around a centre, the architecture was formed based on a central point in the mind of the designer.

In addition to the concept of centrality, Ardalan's article about the ADMA and analysing its architecture identified other ideas from *The Sense of Unity*, including the *zahir* (manifested), *batin* (hidden), microcosm and macrocosm.

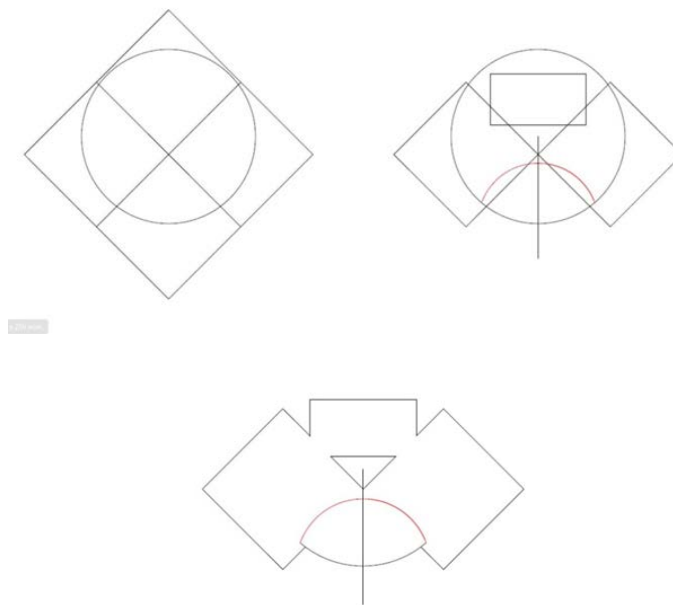


Figure 2.39: The identification of the central point in floor plans

Source: Author.

Ardalan's Understanding of Islamic Architecture as Demonstrated in the ADMA

The atrium or 'vertical garden' is the outstanding design feature of the ADMA and is associated with the idea of Paradise in Islamic philosophy. Prior to this project, Ardalan used courtyards in their traditional forms in his projects (a courtyard was also used in the CIT, built a few years after the ADMA). Traditionally, an atrium represents the concept of a courtyard; however, in the ADMA, the atrium represents the concept of a traditional garden. Ardalan referred to this garden as a 'visual paradigm'. The concept of a garden is close to the concept of a courtyard in Iranian traditional Islamic architecture. The importance of a garden and the differences between a garden and a courtyard based on *Sufi* doctrine are discussed further below.

In an article on the ADMA,²⁸⁵ Ardalan discussed the concept of a garden and a courtyard in Iranian traditional Islamic architecture in relation to a sense of place and *zahir* and *batin* (ideas also discussed in *The Sense of Unity*). Ardalan noted that a garden is "a manifestation of the centrifugally oriented form of the microcosm [macrocosm], symbolizing the manifest (*al-zahir*) and *tazbih* dimension of the Absolute," and a courtyard is "a manifestation of centripetally oriented form of microcosm symbolizing the hidden (*al-batin*) and *tanzih* dimension."²⁸⁶

Generally, a garden in Iranian traditional Islamic architecture represents Paradise. The visual paradigm of the Paradise garden is comprehensively described in the *Quran*. In Islamic lands, the inspiration of these descriptions can be seen in various forms of art, including miniatures, carpets and architecture. In addition, due to the environmental situation of Iran and countries of the Persian Gulf, gardens play an important role in the traditional architecture of this region in creating shadows and cool areas.

Thus, the atrium in the ADMA has three important roles it: filters natural light,²⁸⁷ brings a traditional theme to the building and, finally, represents Islamic notions. Further, from a *Sufism* perspective, this atrium represents the concept of the *zahir* (i.e., manifest) and

²⁸⁵ Ardalan, "Simultaneous Perplexity."

²⁸⁶ Ibid, 10.

²⁸⁷ "The intense climatic conditions that are associated with this part of the world were taken into account when the atrium design was first conceived." McGinley, "Transparent Heritage," 52.

the outward motion of a macrocosm. These features, as well as the environmental and sustainability aspects of this design, were not unprecedented in Ardalan's work. The concepts of *zahir* and *batin* and the motions of microcosms and macrocosms had been seen in his earlier projects. However, in comparison to his other projects, Ardalan's understanding of Islamic architecture is more abstract in the ADMA.

2.3.3 College of Information Technology (2002)

Background and Architecture

In the following paragraphs, the architectural features of the CIT will be discussed, including finishing materials and geometry, to highlight the use of Ardalan's principles in the design process. However, first, it is necessary to become familiar with this project.

The CIT was designed in 2002 for a student population of 3,000 male and female students. The four-storey building is the central feature of the Campus Master Plan. It is located approximately in the middle of the university's site and exactly on the main axis. The building has a variety of functions and at ground level includes a reception hall, prayer halls, a cafeteria and student lounges; classrooms and laboratories are located on other levels. The floor plan of the CIT is an oval (120 metres by 80 metres) with a core at its middle. Surrounding the core is an atrium (32 metres by 32 metres) that is lit naturally through the roof. A wide pathway, known as Student Street, divides the mass into two parts and connects the atrium to the exterior. Several glass bridges connect the core and two parts of the building to each other and complete the circulations of the top floors (see Figure 2.40).

The following section compares the CIT with Ardalan's previous projects to identify design principles. This comparison shows how Ardalan's principles evolved over his 50 years of professional experience because of technology, eco-social issues and the creative development natural to an architect (not because of modernity).²⁸⁸

²⁸⁸ Ardalan believes that the author was too fixated on phase one of his youthful career and less appreciative of the fact that a vital architect, like any human being, progresses through different developmental stages of life that allow him to grow and mature with experience. See Erik H. Erikson, *Childhood and Society* (New York: Norton and Company, Incorporated, 1950).



Figure 2.40: Central atrium

Source: The University of Al-Ain.

Modern Technology and Traditional Patterns

It seems that the most common point in Ardalan's structural systems is their expense.²⁸⁹ Concrete or steel, or combinations of both, have been used in his projects. A square grid has been used often (except in the ADMA) to make the structure easily constructible

²⁸⁹ Ardalan disagrees with this statement and has stated that it is the totality of forces (i.e., natural and socio-cultural forces and the collective forces of quality, time, economy and the creative imagination) that allow an outstanding architect to be built. Ardalan, e-mail message to author, 25 September 2014.

and economical (see Figure 2.41).²⁹⁰ Generally, architecture that fulfils its direct utilitarian purpose and no other is based on the idea of fundamentalism and, consequently, modernism.

Structures were exposed in Ardalan's first generation buildings culminating in the BASU and the TMCA. Conversely, in the CIT, excepting the trusses, the structure was clad in finishing materials. Generally, Ardalan's decisions to expose or hide structures were related to the prevalent architecture of the time, as Ardalan attempted to follow the international (contemporary) styles of his time.



Figure 2.41: Construction process

Source: The University of Al-Ain.

²⁹⁰ Nader Ardalan, "Eternal Simplicity: Information Technology College, Al Ain, UAW; Architects: Keo International Consultants," *Architecture Plus: Architecture of a New World*, 1 (2002): 49.

Ardalan's different use of finishing materials and ornamentation show how his design principles changed over time. Finishing materials and the façade for the CIT suggest modern architectural design. First, similar to other prevalent modern architecture in the region, the façade was independent of the floor plans with panoramic windows. Second, wide curved glass with very precise (fine) joining suggested the application of high technology (see Figure 2.42).²⁹¹ Using high technology was not limited to the size of the glass panels. Indeed, "The outer skin of the rotating spiralling ellipse evolved as a transparent veil built in high performance glass, using heat mirror technology and south façade shading through solar cell screens."²⁹² Apart from the Saman Towers, this level of technology had not been used in the first generation of Ardalan's projects.



Figure 2.42: Wide curved glass in the central core

Source: The University of Al-Ain.

²⁹¹ Ardalan stated: "careful and correct use of glass technology to reduce heat gain and solar shading are perfectly justified contemporary use of material opportunities of the 20/21st century." Ardalan, e-mail message to author, 25 September 2014.

²⁹² Ardalan, "Eternal Simplicity," 51.



Figure 2.43: Islamic calligraphy in the College of Information Technology

Source: Ardalan, e-mail message to author, 25 September 2014.

The ornamentation in this project also bore no similarity to Ardalan's other projects. There are two main differences between ornamentation in this project and Ardalan's first generation projects. First, ornamentation can rarely be seen in Ardalan's first generation work. Second, Islamic or traditional patterns were used in the ornamentation of the CIT; for example, tiles with the engraving 'ALLAH' were used for wall decorations in the prayer halls (see Figure 2.43). In an email message to the author, Ardalan commented that: "Islamic architecture is noted for its use of geometric and calligraphic ornament, which reinforces the sense of unity—I felt courageous enough in [the] CIT to so design."²⁹³ He also stated that the geometric repeat pattern shape used

²⁹³ Ardalan, e-mail message to author, 25 September 2014.

inside the stone walls lining the Student Street façades was inspired by a traditional pattern typically found in ancient pottery in Al Ain (see Figure 2.44).²⁹⁴

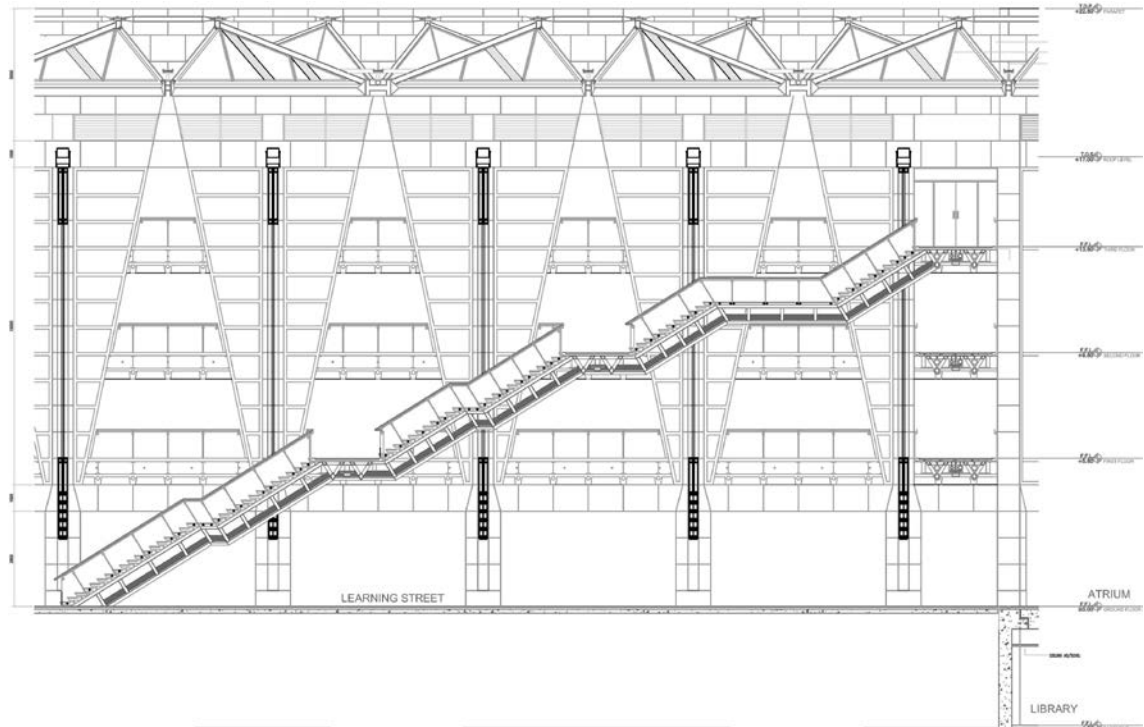


Figure 2.44: Traditional pattern adopted for internal façade

Source: Photo from: Ardalan, e-mail message to author, 25 September 2014; drawing from The University of Al-Ain modified by author.

²⁹⁴ “Contrasting to the shimmering glass external image, the gateways, streets and atrium are surfaced in stone. The stone walls provide a feeling of permanence, durability and help to bring the sense of tradition into architecture. This spirit of relevance to historic tradition, and in particular, to the UAE, and specifically Al Ain, is even further enhanced by the selection of geometric shape of the street and its surface treatment.” Ardalan, “Eternal Simplicity,” 51.

Repeating Geometric Shapes and the Concept of a Courtyard

Geometric shapes are a common point between the CIT and other projects. Geometric shapes, particularly circles and squares, were frequently used in the CIT's floor plans. It appears that Ardalan has been following a specific purpose in repeatedly using these shapes in his works. This purpose can be identified from ideas in *The Sense of Unity* and are discussed further below.

Interestingly, even in relation to geometry there are two differences between the CIT and other projects that can be seen if the geometric shapes of the floor plans are compared. First, the outer shell in the CIT does not depend on the interior spaces and their shapes. In Ardalan's first generation works, there was no outer shell. Indeed, in those projects there was a reciprocal relationship between the total shape of masses and the interior shapes; for example, the ICMS had interior walls in octagonal shapes around the courtyard that were concentric and similar to the radiuses of a circle (see Figure 2.45). Conversely, in the CIT, the outer line was elliptic; however, the interior walls were not concentric and the exterior walls had limited spaces (see Figure 2.46). Second, all the first generation projects were more or less symmetrical. However, in the CIT, the student pathway divided the mass into two parts and was off the main axis of the ellipses. It appears that Ardalan tried to disturb the symmetrical planning arrangement of the CIT at the last stage of the design process.²⁹⁵



Figure 2.45: Unit floor plan in the University of Imam Sadiq

Source: Author.

²⁹⁵ In relation to this, Ardalan commented: "to me the symbolic aspects of both plans have the same message: unity in multiplicity/multiplicity in unity." Ardalan, e-mail message to author, 25 September 2014.

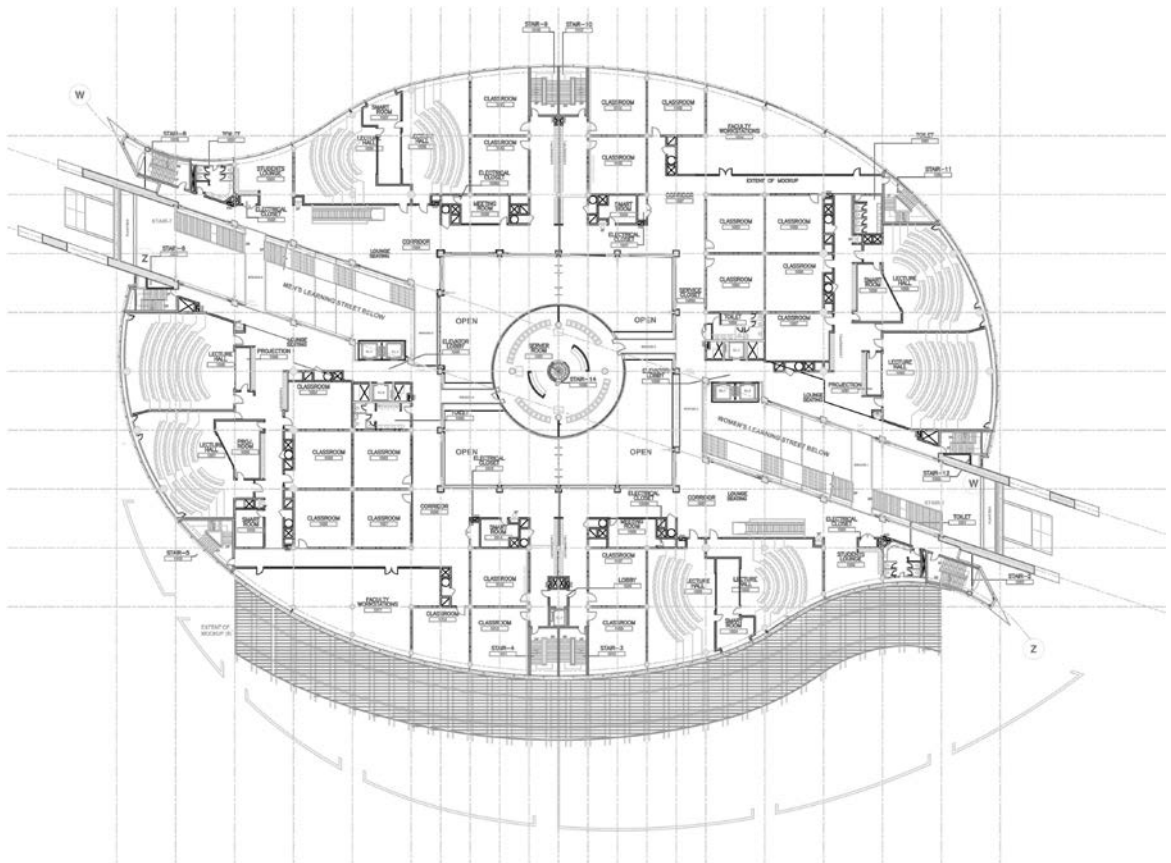


Figure 2.46: The ground floor plan in the College of Information Technology

Source: The University of Al-Ain modified by author.

The courtyard, or in this case the atrium, is the one element that has always been repeated in Ardalan's projects. This repetition could be related to the idea of centrality, the environmental situation or the importance of natural light. It is important to understand how the form and function of courtyards have changed over time. Ardalan's use of courtyards shows that traditional forms can be used fluidly, while their essential symbolic message is maintained. The courtyard is a traditional principle and Ardalan has exploited it in different ways in his most recent projects to appropriately reflect contemporary architectural trends. In the CIT, the atrium around the central core with glass cap represents the idea of a courtyard that allows filtered natural light into the middle of the mass (see Figure 2.47).

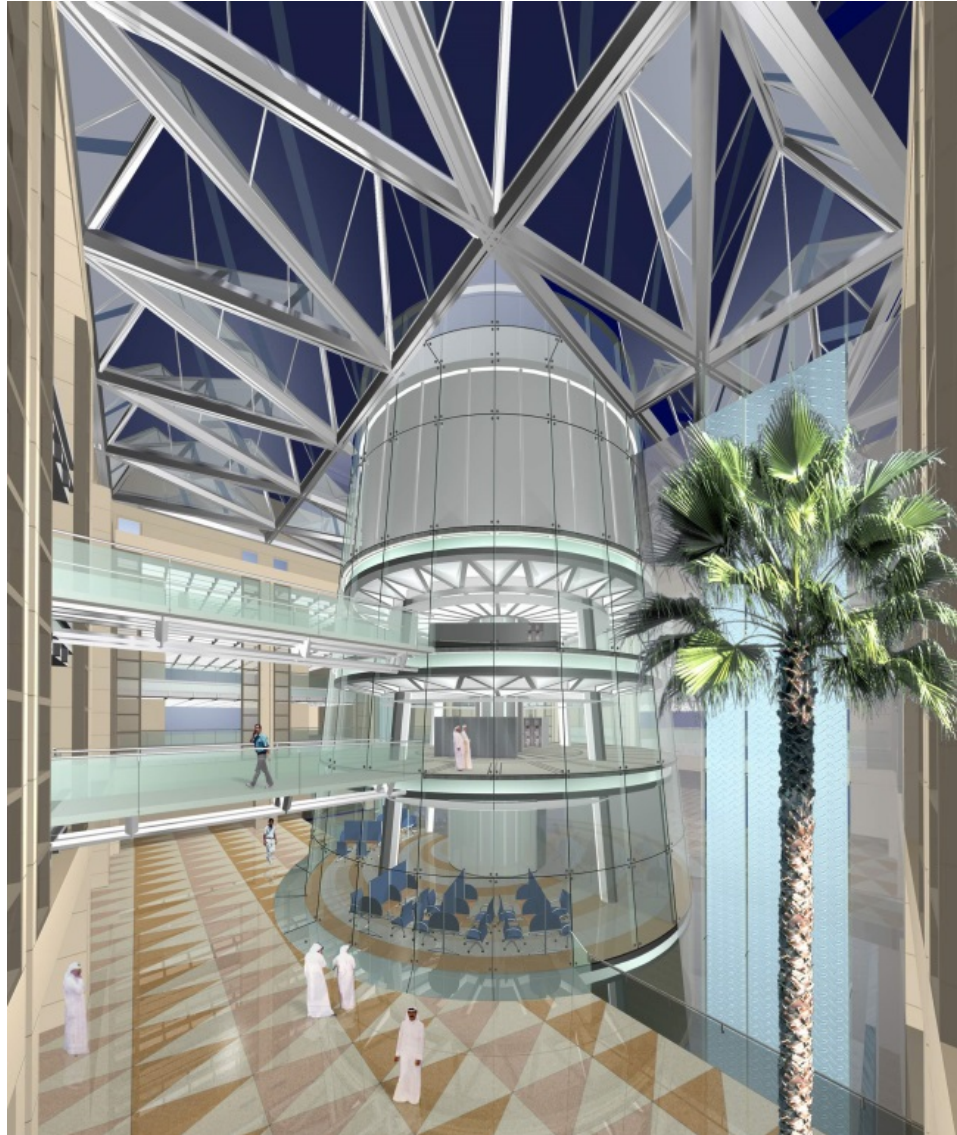


Figure 2.47: Core view of atrium (3D)

Source: Ardalan, e-mail message to author, 25 September 2014.

Identifying the similarities and differences in Ardalan's work reveals how his attitudes have evolved in relation to his dynamic expressions of Islamic and traditional principles in architecture. It appears that the attitudes of Ardalan's clients and market expectations changed in 1990s. However, geometry and some other traditional concepts are still present in Ardalan's most recent projects and should be analysed in the light of ideas from *The Sense of Unity*.

Ideas from *The Sense of Unity* and the College of Information Technology

The idea of centrality, acknowledged in *The Sense of Unity*, can be seen in the CIT and other projects. From a sophist perspective, the central point of a circle is symbolic of the Divine manifestation at a timeless moment. In the CIT, the concept of centrality appears in both small and large scales. Centrality is represented in the squares and circles used in the floor plans. Additionally, regardless of the individual characteristics of the circles and squares in the CIT, the main geometric shapes were arranged to convey the concept of centrality. The core of the building is a circle that is surrounded by a square and then an oval (i.e., a deformed circle). These geometric shapes are concentric (see Figure 2.48).

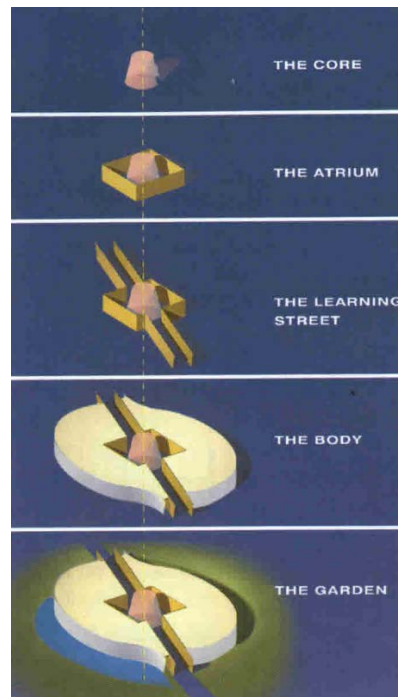
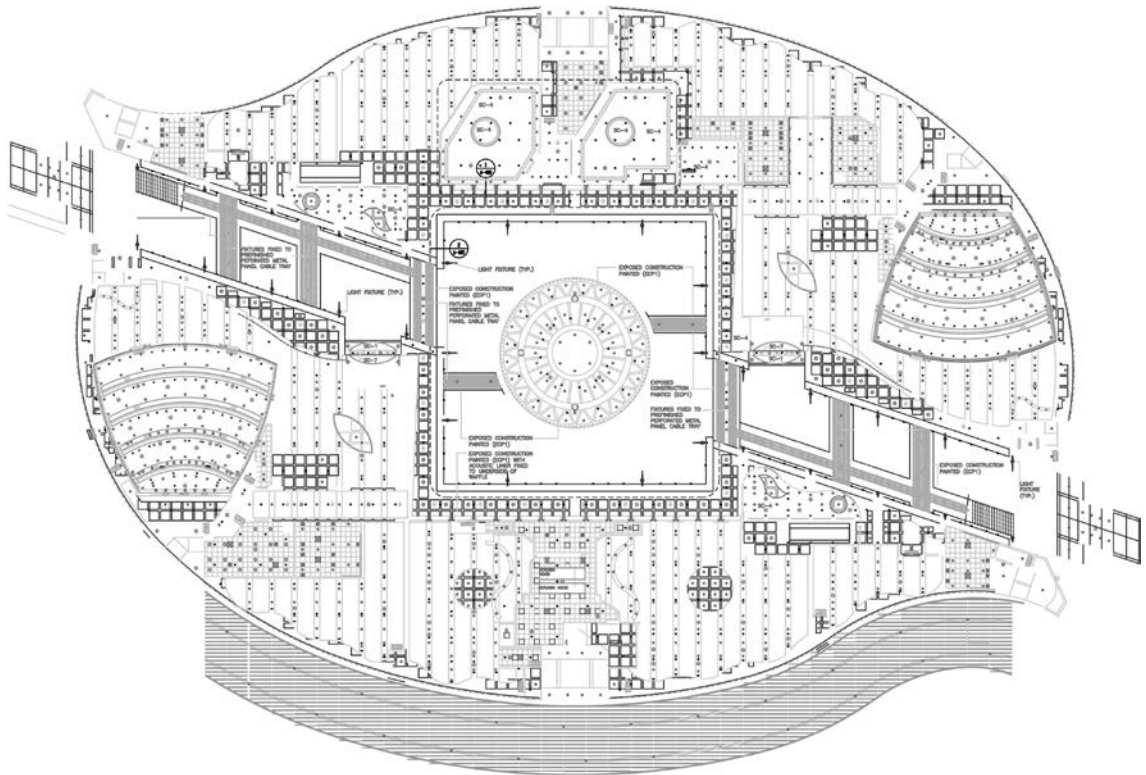


Figure 2.48: Form making concept

Source: Ardalan, e-mail message to author, 25 September 2014.

Technology assisted Ardalan in designing the CIT. In the ICMS, the forms of the units around the courtyard are octagonal; however, in Ardalan's primary drawings, their forms were circular. It appears that due to technical issues, Ardalan had to modify the circles in the ICMS to octagons. However, in the CIT, Ardalan was able to create a circular core using wide expanses of protected high performance glass, operated electronically by internal sunshades to control glare and reduce heat.

In addition to the concept of centrality being emphasised by geometry, the function of the space emphasise the concept of centrality. The core was used as the server centre of the CIT; thus, the core is the heart of the college. The pattern of the roof reflects centrality and the intentions of the designer. The roof is covered by carefully designed coloured glass that filters and reduces the heat of the sun in the interior, and a circle in the middle of a square is shown at the centre of the project (see Figure 2.49).



a



b

Figure 2.49: The roof pattern emphasises the idea of centrality and the concept of microcosm and macrocosm; a. reflecting ceiling floor plan; b. the model of project

Source: The University of Al-Ain.

Another idea from *The Sense of Unity* that can be identified in this project relates to the *Sufi* doctrine on the universe. Under this doctrine, the universe contains a macrocosm and a microcosm and two motions towards the Divine are assumed in these two realms. This concept was also used in the ICMS, where an inwards view symbolised the inward direction towards the hidden treasure—that is, the seat of the Divine spirit (i.e., a microcosm)—and an outward view symbolised an outward directions towards the enveloping heavens (i.e., macrocosm). In the CIT, the pathway symbolises a microcosm, as it begins from the outside and goes towards the core or the centre. This suggests that the centre represents the seat of the Divine. Interestingly, the pattern on the roof shows two outside ways towards the middle of the square. In fact, this is a reflection of the ground level pathway. The width of the pathway and its reflection on the roof pattern demonstrate Ardalan's intention to crystallise the concept of a microcosm and macrocosm.

In summary, the CIT is similar to other contemporary architecture in the Gulf region that is called 'modern'. Notably, Ardalan refers to it as "the New Creation ... a balanced integration between the traditions and contemporary opportunities."²⁹⁶ However, a comparison between this project and earlier projects shows that modern principles are not similar and depend on time and context. Ardalan attempted to implement his understanding of Islamic architecture in a number of different ways. Different programmes or structures did not stop him from expressing ideas from *The Sense of Unity*. In relation to his intention for this project, Ardalan stated: "[the] reaffirmation of order in the universe and the interconnectedness of all existence is an eternal message of faith and a vital new inspiration wishing to be expressed in architecture, especially in Islamic cultures so rooted in faith and with such an illustrious architectural heritage."²⁹⁷

²⁹⁶ Ardalan, e-mail message to author, 25 September 2014.

²⁹⁷ Ardalan, "Building in the Persian Gulf," 79.

2.4 Comparison Between Ardalan's Projects from the Perspective of *The Sense of Unity*

Earlier in this chapter, Ardalan's projects were individually analysed to clarify the relationship between his ideas and practice in the light of the debate around tradition and modernity. In this section, the application of ideas from *The Sense of Unity* in certain of Ardalan's projects is reviewed, particularly in relation to each other. Further, Ardalan's design principles (as identified in the analyses of the projects) are compared with his statements.

According to the discussion in "Short Biography of Ardalan," Ardalan's oeuvre can be divided into three parts: the period prior to *Sense of Unity*; the immediate *Sense of Unity* period, and that post *Sense of Unity*. A comparison between the projects in the first and second periods makes the book's influence on Ardalan's projects clear. Similarly, comparing the influence of *The Sense of Unity* on the projects from the second and third periods reveals how Ardalan's understanding of Islamic architecture is manifested in different forms over time. The following paragraphs highlight the principal discoveries discussed in detail in this chapter and compares projects from the three periods. The projects selected for this comparison are recapped in the following table.

Name of Project	Year	Location	Period
Saman Towers	1969	Tehran, Iran	First
ICMS	1970–1973	Tehran, Iran	Second
BHO	1971	Tehran, Iran	Second
BASU	1974	Hamedan, Iran	Second
TMCA	1967–1977	Tehran, Iran	Second
ADMA	1990	Abu Dhabi, UAE	Third
CIT	2002	Al Ain, UAE	Third

Ardalan's most important project from the period prior to *The Sense of Unity* was the Saman Towers. In the late 1960s, these towers represented modern architecture in

Iran.²⁹⁸ As discussed earlier in this chapter, this project was the first high-rise luxury apartment tower and also the first time that pre-cast concrete was used in a project in Iran. The complex includes two towers with a modern appearance. The towers were built on a platform that functioned as a yard. In contrast to the other projects in the second and third periods, the complex is not symmetrical; there is no courtyard and no sense of centrality.

The Saman Towers project was followed by the Asian Games Stadium (1970) and the ICMS (1971–1972). Comparing the architectural features of the Saman Towers to the ICMS revealed a significant change in Ardalan's attitude. It is known that Ardalan started the research for *The Sense of Unity* after designing the Saman Towers and completed the manuscript before the construction of the ICMS. Such a dramatic change over three years cannot be attributed to eco-social forces. Ardalan has stated that his new understanding of Islamic architecture influenced his projects following the Saman Towers.

He claimed that the Asian Games Stadium was the first building in which he tried to express ideas from *The Sense of Unity*; that is, a sense of place and *zahir* and *batin*. However, those concepts had only begun to blossom and were not yet clear in his mind.²⁹⁹ This statement may be emotional, as Ardalan was probably limited by very precise codes of design for the stadium at a time when he was wishing to express his new understanding. Accordingly, the difference in the interior and exterior atmosphere of a stadium may be attributable to the design brief, and it cannot be assumed that it was directly affected by the concept of *zahir* and *batin*.

From the perspective of this study, the ICMS is the first project that was clearly impacted by ideas from *The Sense of Unity*. Ardalan later introduced this project as “the

²⁹⁸ As discussed above, these were the first high-rise luxury apartments. It was also the first time that precast-concrete was used in a project in Iran

²⁹⁹ Haeri, “Interview with Nader Ardalan,” 22. Ardalan also stated: “I began my research on Iranian Architecture, pre- and post-Islamic periods in early 1965. By 1968, when I designed the 100,000 seat earthen stadium, I was already using my research findings about Choga Zambil (2000 BC Elamite), the mud fortresses of Bam and courtyards of Kashan, where *Zahir/Batin* were common conversations among fellow teachers and locals. Certainly, a tree is not born overnight—it slowly grows from seeds, matures and then blossoms. The stadium design had seeds of my later thinking, but ICMS was it full blossoming for that stage of my career.” Ardalan, e-mail message to author, 25 September 2014.

first test case in conjunction with *The Sense of Unity*”³⁰⁰ in two different interviews. However, he never explained the details of this influence.

As stated above, certain of the ideas and concepts, such as centrality, unity and multiplicity, microcosm and macrocosm discussed in *The Sense of Unity* were applied to the ICMS project for the first time.³⁰¹ Since these ideas were identified in the project and discussed extensively earlier in this chapter, here they are reviewed only briefly. In this project Ardalan arranged 16 octagons around the central courtyard (a large rectangle) while each octagon has a small courtyard with a tree at its centre to emphasise the concept of centrality in both the small and large scales of the design. Additionally, the concept of inwardness in the octagons and in the central courtyard resonates with the concept of centrality. Ardalan’s initial sketches confirm this interpretation. Further, the ideas of microcosm and macrocosm that are discussed in *The Sense of Unity* as two different motives for each perspective are addressed symbolically in this project through a combination of inward and outward looking-ness, depending on the viewer’s location. In the central courtyard, the library building is outward-looking and the surrounding units are inward-looking.

In summary, in comparison with Ardalan’s other projects, this project has three important features. First, it applied Gnostic ideas from *The Sense of Unity*, such as *zahir* and *batin*, microcosm and macrocosm, centrality, unity and multiplicity and the circle of existence. It appears that Ardalan wanted to show his new theoretical attitude in this project. Second, the method chosen to convey these concepts was simplistic. Indeed, at this time, Ardalan did not have enough experience to use more artistic or complicated instruments. Third, there are some clear similarities between the geometry and situation

³⁰⁰ Haeri “Interview with Nader Ardalan,” 25. See also Akhtar Badshah, “A Fusion of Nature and Culture in Design (Interview with Nader Ardalan),” *Mimar*, 40 (1991).

³⁰¹ Ardalan said: “My architectural philosophy/professional career effectively started in Period 2, when I returned to Iran after 18 years abroad. *The Sense of Unity* was a research study into the morphology and design traditions of Persian Architecture up to the end of the 19th century. It did not constitute the entirety of my personal architectural philosophy in 1970, which was in the process of formation at that time. As a practicing Architect, ICMS was one of my first occasions to test the possible application of some of the SU research findings in a real project in Iran of the late 20th century. For the most part, it was rewarding to see how some of the traditional ideas (such as *Zahir/Batin*, “Positive Space Continuity” or the use of traditional brick construction, etc.) were able to be applied to the needs of very contemporary building programs having to accommodate a Harvard Business School curriculum. However, there were many other SU themes that were not applicable to ICMS,” Ardalan, e-mail message to author, 12 January 2014.

of buildings in the ICMS and other traditional Iranian complexes. This level of similarity has never been repeated in any of Ardalan's other projects.

Following the ICMS, Ardalan's approach became more moderate and stable. In the ICMS, in addition to conceptual principles, the general themes of the complex forms suggest Iranian traditional Islamic architecture. In Ardalan's other projects, architectural features and structural systems were often designed in conjunction with modern architecture, but were still influenced by the conceptual principles of Islamic architecture. After the ICMS, Ardalan tried to enrich his modern knowledge with his Gnostic views and conceptual principles from Islamic architecture. The BHO was the first project in which Ardalan emphasised the concept of centrality, *zahir* and *batin* and also applied the high technology previously used for the Saman Towers.

As discussed in detail earlier in this chapter, in the BHO the concept of the courtyard is repeated in several concentric squares as the stories of the building are placed around the central point. On the large scale, the concept of centrality is clearer in this project than it is in the ICMS. Additionally, the concept of an inner reality and the relationship between *zahir* and *batin* are crystallised in this building due to clear differences between the atmosphere inside the courtyard and outside on the street side. These features are combined with a pre-cast concrete façade, which gives a modern appearance to the building.

The integration of modern technology with the ideas of *The Sense of Unity* continued in Ardalan's subsequent projects. For example, the BASU has an innovative dome, which looks modern. It is made up of hundreds of metal rings in an octagonal form. Four blocks are built symmetrically around this dome. Each block has its own centre located at the middle of its courtyard, to express the concept of centrality. Additionally, the modularisation of the plan and structure and the independent character of each space relies the concept of unity and multiplicity in this project, while respecting the unity of the complex.

In the TMCA this integration can be seen again. Pre-cast concrete is used while the concept of courtyard, *zahir* and *batin*, and microcosm and macrocosm can be identified.

However, *The Sense of Unity*'s ideas are expressed more artistically here than in other projects. For example, while in the ICMS inwardness and outwardness-looking represent the concept of microcosm and macrocosm, in the TMCA a ramp begins at the main entrance and descends gradually to the underground level, where a pool of oil is located and reflects the light from the central skylights, representing the concept of microcosm. From a Gnostic viewpoint, the microcosm contains a motion from corporeality to inner treasure that is a reflection of the Divine.

The same trend can be identified in the projects of the third period; however, in the ADMA and the CIT Ardalan was able to express conceptual principles of his understanding of Iranian traditional Islamic architecture without simplification and through a contemporary style using the technology of the time.³⁰² Generally and from a comparative view, the finishing materials are not similar to those used in previous projects. The use of curved glass is absolutely unprecedented in Ardalan's former works. Further, some patterns and ornaments with a traditional theme can be found in the third period. Interestingly, the structures are no longer exposed.

In the ADMA tower the façade is clad with stone and glass. The glass panels are wide and curved, and are joined without the use of a steel frame. The ideas of *The Sense of Unity* can be identified in this project, but are not as explicitly expressed as in previous projects. For example, the concept of centrality cannot be perceived by users since the mass is not symmetric around the centre. However, centrality is referred to in the design process, as discussed in the earlier analyses presented in this chapter. Even the concepts of courtyard and *zahir* and *batin* are expressed in this tower through a vertical garden in the atrium.

The CIT also conveys *The Sense of Unity*'s ideas. The floor plans are arranged around a central point, which is surrounded by an atrium. The latest and best available technology at the time allowed Ardalan to create a circular core using wide expanses of protected high performance glass. In addition to the concept of centrality, the concept of

³⁰² This trend can be seen from a sophisticated view. As the poet Rumi wrote: "I was raw, I was cooked, and I was burnt."

microcosm and macrocosm is expressed through the pattern of the roof and also the main pathway that passes via through centre and divides the mass.

These analyses highlight the fact that Ardalan was following specific design principles influenced by *The Sense of Unity*; however, these principles have never been limited to specific forms (e.g., courtyards).³⁰³ In fact, the rise of technology in construction and the modification of contextual and eco-social forces over three decades have not been ignored in Ardalan's architecture, in spite of his loyalty to Iranian traditional Islamic architecture.

This section has endeavoured to link Ardalan's understanding of Iranian traditional Islamic architecture and his design principles; however, Ardalan has never emphasised this link in his articles. Even in his recent article about the ADMA where ideas from *The Sense of Unity* are considered, the book itself is not explicitly mentioned. In the first interview with this author Ardalan initially dismissed the relationship between the book and his design principles, but agreed that this relationship existed under specific circumstances. Indeed, Ardalan believes that the influence of his understanding of traditional Iranian Islamic architecture on his design principles has been shaped within a larger context that he calls the "four forces of design."³⁰⁴

He stated:

My theoretical research writings and built works have been broadened over time to include four forces of design: environmental adaptation, cultural relevance, functional purpose and technological innovation ... My "four design forces" approach is based upon the relevance of the proposed design to its environmental and cultural context, thus when building in Iran, it sought to be suitable to that context, but a bank in the US needs to be relevant to a very different context. I may bring in my Iranian genetic tendency for nature, geometric patterns, hidden/manifest, etc. but the architecture wants to be a truthful expression of its place, but bearing an ontological sense of its being. In this I am partial to Martin Heidegger or Louis Kahn's sense: A great building must, in my opinion, begin with the unmeasurable and go through the measurable in the process of design, but must in the end be unmeasurable.³⁰⁵

³⁰³ Including a courtyard is a traditional principle and in Ardalan's most recent projects, he tried to exploit courtyards in different ways to more appropriately suit modern architectural perfection. In the CIT, the atrium around the central core with glass cap represents the idea of a courtyard bringing natural light to the middle of the mass.

³⁰⁴ Ardalan, e-mail message to author, 12 January 2014.

³⁰⁵ Ibid.

2.5 Conclusion

Earlier, Chapter 1 explained Ardalan's understanding of traditional Iranian Islamic architecture, as expressed in *The Sense of Unity*. Chapter 2 aimed to analyse the relationship between Ardalan's understanding of traditional Iranian Islamic architecture and his projects. The analysis of this relationship will make clear Ardalan's practical approach to the issues around tradition and modernity. This section summarises the analyses in Chapter 2 and reviews their achievements.

Most of Ardalan's projects are not documented, and they have never been analysed from the perspective of *The Sense of Unity*. By providing architectural documents and gathering pre-existing discussions, Chapter 2 analyses a series of Ardalan's projects to identify the influence of *The Sense of Unity* in his work. For this purpose, projects were selected from three different periods: the Saman Towers, from the period prior to *The Sense of Unity*; the ICMS, BHO, BASU and TMCA from the period of *The Sense of Unity*; and lastly, ADMA and the CIT from the period post *The Sense of Unity*.

In summary, the individual analyses of Ardalan's projects, together with the comparison between the projects of the first and second periods demonstrated that some Gnostic concepts, such as *zahir*, *batin*, centrality, unity and multiplicity, microcosm and macrocosm, which were identified in Iranian traditional Islamic architecture in *The Sense of Unity*, can be found only in the projects from after the publication of the book. Further, comparing the influence of *The Sense of Unity* on the projects from the second and third periods revealed: (1) the form of expression of the aforementioned concepts gradually changed over time; (2) projects built within a few years after the publication of *The Sense of Unity* contained a few traditional forms and elements, while in the later projects the traditional appearance was replaced with elements representing the contemporary architecture of their time.

As a result of this analysis, Chapter 2 concludes that despite the rise of technology in construction and the modification of contextual and eco-social forces over three decades, all of Ardalan's projects after the publication of *The Sense of Unity* were inspired by the book; however, this inspiration was not always similar or equal.

Ardalan's understanding of Islamic architecture was manifested in different forms over time. In fact, Ardalan had been trying to follow specific principles conceptually and he had not limited the expression of these to specific forms.

In relation to the next chapter, the discussion and analysis presented in Chapter 2 shows how Ardalan applied the principles of Iranian traditional Islamic architecture to the concepts of contemporary architecture. In fact Ardalan tried to respect traditional architecture while taking the advantage of contemporary architecture. His endeavour can be analysed from a broader view in the light of the debate surrounding tradition and modernity. Consequently, an additional area of study is exposed that allows Ardalan's attitude to be compared with others of his time in the following chapters.

PART TWO: ARDALAN IN CONTEXT

CHAPTER 3: THE HISTORY OF TRADITION AND MODERNITY IN IRAN

3.1 *Qajar* Era (1779–1925)

This chapter considers and analyses the historical events of 200 years (i.e., 1779–1979) and three dynasties: the *Qajar*, the first *Pahlavi* and the second *Pahlavi*. Arguments proceed chronologically. The main intentions of the leaders of the modern movement, social modifications and related criticisms are analysed. In the section entitled “Architecture and Urbanism,” the influence of modernity is considered and different styles of architecture in each period are discussed. Additionally, criticisms about modern Iranian architecture and the innovative styles used to preserve traditional architecture and local values are analysed.

Historically, a preliminary movement towards modernity began in the *Qajar* era (1779–1925). This movement was scattered and occurred slowly. To analyse the modern movement in Iran, it is necessary to understand that modernity was welcomed in the *Qajar* period. In this section, the Iranian movement towards modernity, its influence on Iran and, more specifically, its influence on architecture and urbanism are discussed. This movement was dependent on prominent individuals (such as ministers or princes) and, consequently, there was no conformity in its strategies. Two important authorities, Abbas Mirza (x–1833) and Amir Kabir (1844–1889), played an important role in this respect. The movement towards modernity in the *Qajar* era can be divided into three periods. The first period relates to Abbas Mirza, while the second and the third periods relate to the Amir Kabir and Mashrofeh revolutions, respectively (the latter revolution occurred in the late *Qajar* era). There are two reasons for this categorisation. First, there was a considerable gap between the first and the second periods. Second, modifications in the third period were the result of the earlier endeavours. The effect of modernity can

be seen more clearly in Iranian society in the third period, which occurred after the industrial revolution in France. In the following sections, emerging modernity in these three periods will be analysed.

3.1.1 First Period: Abbas Mirza

The first period occurred when Abbas Mirza was in power as the crown prince. A war between Russia and Iran acted as trigger for the early movement in modernity, as Iran was defeated due to a lack of modern equipment. Consequently, Abbas Mirza realised that the only way to increase Iranian power was to outfit Iran with European knowledge and technology.³⁰⁶ Architectural historians³⁰⁷ believe that before this time, Iran's relationships with European countries meant that it already had some familiarity with modernity in Europe; however, it was only when the Iranian Royal Family's power was threatened that modernity became important in Iran. The first steps towards modernity taken by Abbas Mirza included sending students and labourers to Europe, translating European sources, increasing trends between Iran and Europe and running small factories based on European methods.³⁰⁸

Abbas Mirza attempted to send students to France in accordance with an agreement between Iran and Napoleon.³⁰⁹ The French government had first suggested this in 1807; however, ultimately, this did not occur. Instead, the first two Iranian students (Mohammad Kazem and Haji Baba Afshar) went to England in 1809 to study medicine and painting.³¹⁰ England accepted the Iranian students and offered scholarships to increase their influence in the Iranian court.³¹¹ While the first two students were unsuccessful, in 1815 a second group of five students was sent to England to study European languages, civil engineering, medicine and military science.³¹² This group was also unsuccessful. However, while these students did not meet expectations, their journeys had positive effects on Iranian society. Notably, it led to the publication of the

³⁰⁶ Vahid Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 26.

³⁰⁷ Ghobadian, Katozian and Masoud.

³⁰⁸ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 27.

³⁰⁹ Ibid.

³¹⁰ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 15.

³¹¹ Ibid, 13.

³¹² Ibid, 14.

first newspaper in Iran in 1837 and the first printing machine was brought to Iran by one of those students.³¹³

When Abbas Mirza died, the first stage of the modern movement came to an end. Architectural historians such as Bani believed that, compared to other countries such as Egypt and Turkey, a lack of support from the King made Abbas Mirza unsuccessful.³¹⁴ A lack of funds and unrest within Iranian boundaries meant that there had been no serious decision to adopt modernisation strategies. Further, changes to the Iranian military occurred more slowly than expected and European regimes suspended their support from time to time on the basis of the political situation. Thus, in this period, strategies for modernisation were dependent on individuals.

3.1.2 Second Period: Amir Kabir

A few years later, Amir Kabir began a path known as the second period of the *Qajar* era. The changes Amir Kabir made were based on observations from his travels to Russia and Turkey (this reveals why no conformity can be seen in his actions).³¹⁵ Amir Kabir established a new school for higher education; he also opened new weapons factories and various organisations within the Iranian army.

Based on the unsuccessful experience of Abbas Mirza in sending students overseas, Amir Kabir established a new school in Iran, Dar Al-Fonoun (1842). Amir Kabir employed Austrian teachers at this school (rather than English and French teachers). Freydon Adamiyat, who graduated from Dar Al-Fonoun, stated:

Amir had visited many schools in Russia and read discussions of many other important schools in Western countries and also he knew about modern schools in Turkey ... Dar Al-Fonoun was a new cultural centre active in three different directions: first, clarifying limits of traditional education system and knowledge in Iran by introducing new scientific principles. Second, translating Western scientific books for spreading knowledge among Iranians. Third; Dar Al-Fonoun graduated students formed a new class in Iranian society whom were called later on intellectuals.³¹⁶

³¹³ Ibid, 15.

³¹⁴ Ibid, 11.

³¹⁵ Ibid, 18.

³¹⁶ Freydon Adamiyat, *Amir Kabir Va Iran (Amir Kabir and Iran)* (Tehran: Amirkabir, 1975).

In addition to the effect Dar Al-Fonoun had on the Iranian educational system, this was the first time that the government paid educational costs. Dar Al-Fonoun did not attempt to match itself with the traditional Iranian education system. Consequently, Dar Al-Fonoun's students were not familiar with the courses offered.

3.1.3 Third Period: Results of the First and Second Periods in Society

The movement towards modernisation by Abass Mirza and Amir Kabir's in the *Qajar* era lacked a theoretical basis. Indeed, it was based only on their observations and understandings of modernism. Their endeavours were undertaken to gain power against Western countries and their neighbours. Communications and exchanges between Iran and Western countries led to some superficial modifications at the top levels of Iranian society and changed the expectations of Iranians towards their government. By way of example, Naser Al-Din Shah Qajar (1831–1896) was the first Iranian king to travel to Europe three times. These travels led to changes to the furniture of his court and changes to the clothes of his courtiers. It is unclear why similar modifications were not seen in middle class Iranian society, as they too would have been under influence of the modern movement; however, religious beliefs may have been the reason for this.

As a result of Amir Kabir and Abbas Mirza's endeavours, communication between Iranians and Europeans modified some major parts of Iranian society. These modifications can be categorised as follows:³¹⁷ (1) Industrialisation: The importation of Western products to Iran created a movement towards industrialisation. This also forced Iranian manufacturers to modify their traditional systems to be more effective. (2) Exportation: Iranians began exporting their agricultural products, including tea, sugar and tobacco. (3) Migration to cities: Increased income in rural areas and the increased activity of brokers and investors in agricultural products led to migration from rural areas to cities.

Importantly, the changes that occurred in the first and second periods supported the movement towards modernity in the third period. From 1903 to 1905, under the

³¹⁷ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 21.

influence of intellectual and educated people, protests occurred in which the middle classes opposed the Royal Family. These protesters wanted to reduce the king's power and found a parliament similar to that in European countries, particularly England. It was called 'Mashroteh', which translates as 'conditional'.

From Ghobadian's point of view, Mashroteh was informed by: (1) the Iranians becoming familiar with European countries, their power systems and social rights over recent decades; and (2) the poor education and hygienic systems in Iran.³¹⁸ Some historians (such as Bani) referred to the influence of people who visited Western countries in this movement; however, modern schools and publications were the most important factors in the Mashroteh movement. In addition, religious clergymen and intellectuals encouraged people to insist on limiting the government's power through the creation of a parliament. Interestingly, while both intellectuals and clergymen criticised the government and the King, their approaches differed. Intellectuals believed that a lack of commonwealth law, updated knowledge and an abundance of religious superstitions had led to a despotism that had to be broken by the Mashroteh. Conversely, clergymen believed that the unlimited power of Royal Family had led to corruption.

In summary, movements towards modernity in Iran began after it was defeated in war due to a lack of modern equipment. Consequently, to maintain power, the Iranian Royal Family took steps towards modernity and forming relationships with Western countries. They began by modifying the Iranian army and educational system at a high level. These changes were followed by the emergence of services such as hospitals, a newspaper, trains, electricity and banks. The relationship between Iran and Europe also led to reform in Iranian agriculture and manufacturing. After a few decades, and as Iranians' knowledge of European societal rights and the limitation of the power of European governments increased, protests broke out that led to the establishment of a parliament in Iran. Ultimately, the Royal Family could not control the consequences that had arisen by their welcoming modernity into Iran.

³¹⁸ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 91.

3.1.4 Criticisms on Modernity in the *Qajar* Era

Over time, as modernity spread in Iranian society, it began meeting with opposition. Modernity lacked a theoretical basis in Iran; however, this was not the reason it was opposed; rather, individuals seeking personal benefits opposed it. These opponents came from different backgrounds and fields and, while not against modernity, opposed it because the modifications caused by modernity threatened their benefits.³¹⁹ At the end of *Qajar* era, the Royal Family had initially welcomed modernity to increase Iranian military power; however, because it limited his power in parliament, Mohammad Shah became the most important and powerful person to oppose modernity.

3.1.5 Urbanism and Architecture

In this study, it is important to highlight the impact of early modernity on Iranian urbanism and architecture. This section attempts to identify changes in architecture and urbanism in the *Qajar* era by comparing maps of Tehran in different periods. A comparison between the prevalent architecture of this period and the former period should show how Iranian architecture was influenced by modernity in the *Qajar* era.

From an urban perspective, excepting the capital city of Tehran, Iranian cities were left unchanged during the first and second periods of *Qajar*. Four maps of Tehran exist from 1826, 1852, 1858 and 1868. The 1858 map shows that the green areas around Tehran had decreased due to an increasing population; however, the old part of city had not changed and still consisted of four suburbs with two main squares connected by a bazaar. In the 1868 map, the old part of the city was still dense and compacted with irregular and narrow routes; however, new areas, often on the north side, were less compacted and wider and straighter streets can be seen. A new building at the royal palace also changed the skyline and pergolas and clock towers became more common than domes and wind towers. Early in the third period, the first regulations for the city

³¹⁹ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 24.

of Tehran were passed. While practically, these regulations did not change Tehran's context, they were a foundation for future change.³²⁰

Ghobadian cited two reasons for these changes to Tehran. First, General Bohler, a French teacher at Dar Al-Fonoun, designed the new part of the city. Thus, the new Tehran was likely influenced by Hausmann City in France. Second, the streets became wider because of the increasing number of horse drawn wagons.³²¹

Similar influences can be seen in a small town south-west of Iran and occurred due to the discovery of oil in the south-west of Iran at Masjed Solayman in 1870. From 1871, England discovered and exploited the oil of Masjed Solayman. Consequently, the first new Western style town was built at Masjed Solayman. The influence of modernity on Masjed Solayman is not comparable with other cities, including Tehran, as English architects designed this city for English engineers in oil companies and no social and cultural barriers existed.

Architecture was also impacted by early modernity in the *Qajar* era. Considerable changes occurred the middle of the second period. These changes often manifested in ornaments and elevations. Additionally, some neo-classic elements such as, the balcony, classic column, pergola and exposed staircases became a part of Iranian architecture; for example, Dar Al-Fonoun, 1851, was the first building to contain neo-classic elements. Ghobadian listed the effect of Western architecture on various parts of buildings as follows:

³²⁰ Aliakbar Dehkhoda, *Dictionary* vol. 31 (Tehran: Tehran University 1970), 109, quoted in Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 59.

³²¹ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 55.

Ornaments	Real images of humans or planets, Greek and Roman forms, shapes and sculptures
Elements	Pergolas, balconies, classic columns and circular arches
Elevations	Combination of Iranian and European neo-classic or European neo-classic
Sections	Hipped roofs
Plans	Outwards looking, balconies and staircases used decoratively
Materials	White metal used for ceilings and steel used for columns

It is important to note that these architectural changes were not limited to houses in Tehran; Bani noted that similar adaptations occurred in houses in Tabriz (the second city of Iran).

In summary, the influence of Western architecture on Iranian architecture began with ornaments and elevations before gradually extending to floor plans. Thus, outward looking plans became the norm rather than inward looking plans and Iranian architectural styles disappeared. Interestingly, while some buildings in the late *Qajar* period were similar to the neo-classic style of European buildings, the majority of buildings were not influenced by Western architecture. The gap between ‘ordinary’ people and aristocrats was reflected in the buildings. Other similar modifications in the *Qajar* era should also be considered. There is no evidence of a theoretical basis for these changes in the architecture; these changes appear to have occurred because of the observations of users and architects.

3.2 First *Pahlavi* Era (1925–1941)

3.2.1 Accelerating Modernity

In this section, historical events and eco-social forces (seen in light of the modern movement in Iran) will be analysed. Particular attention is given to the influence of modernity on politics and how the new economic situation, the increasing the role of women in society and educational plans accelerated the modern movement in Iran.

Historically, modernity appeared in Iran in the *Qajar* era; however, the first *Pahlavi* is known as the beginning of modernity in Iran for three reasons. First, in the *Qajar* era the influence of modernity was mostly limited to the noblesse (i.e., the upper-class) and castles. Conversely, in the first *Pahlavi* era almost all social classes were affected. Second, in the first *Pahlavi* era the scale of influence of modernity was considerable and could be seen in both the economy and society. Third, all these influences happened in less than 20 years and modernity became pervasive in a short time.

Despite differences in speed, scale and area, modernity appeared in both eras; however, in relation to power, modernity had opposite influences. The last king of *Qajar* was overthrown because he could not manage the government. Following this, Reza Khan became King and established the *Pahlavi* dynasty in 1925. Reza Khan was an opinionated person and despite not believing in democracy, he obtained power through parliament (a result of modernity from the *Qajar* era). Thus, modernity caused despotism.

Despite the despotism of the first *Pahlavi* era, the Iranian people were mostly satisfied, as the King controlled and managed the country. They may have compared their present situation to the late *Qajar* period in which rebels made parts of Iran unsafe. In addition to safety, the economic situation improved during this time. While oil was discovered in the late *Qajar* period, oil trading first began in the early *Pahlavi* period. It made the King rich and allowed him to take steps towards industrialisation and modernity. A railway system was the first step; Reza Shah connected the Caspian Sea in north to the Persian Gulf in south. Then Iran National Bank also granted many low rate loans to

encourage industrial investors to run modern factories. Resultantly, the number of industrial factories increased 17 fold in a short period.³²²

Reza Shah was opposed to the influence of religion in politics and in this period tried to cut its roots in power and society. With this aim, Reza Shah changed the system of justice from Islamic to non-Islamic. In the *Qajar* era, clergymen were judges in the courts; however, Reza Shah changed this and employed judges from Switzerland. Additionally, a translation of French Commonwealth law was used instead of Islamic law.³²³ Reza Shah also banned the majority of religious ceremonies, changed the Iranian Islamic calendar and, more importantly, banned the veil for women.

In encouraging the middle class towards modernity, Reza Shah took three steps. First, women were encouraged to engage in social activities and discrimination based on gender became a serious crime. Consequently, women were able to work in hospitals, schools and even factories. Second, based on Western fashion, national clothes were designed that everyone (men and women) had to wear them in public. Third, music schools were opened that taught traditional and Iranian music, as music in Islam had been forbidden, this action was a step towards the Westernisation of Iranian society.

These changes show Reza Shah's desire to make Iranian people similar to Western people. However, other than his modifications to the industrial fields and educational system, many of these actions were merely superficial movements towards modernity. Changes to the educational system played an important role. Reza Shah implemented a French educational system in place of the traditional system to ensure that adolescents would be ready to study higher degrees at universities. He also established the first university in Iran; that is, Tehran University (1934). The academic staff and the lecturers of Tehran University came mostly from European countries and were assisted by Iranians who had graduated from European universities.

In summary and from a cultural point of view, in this period some dramatic changes took place that can be considered as the main cultural modification in the contemporary

³²² Mikhaeil Ivanove, *New History of Iran*, trans. Houshang Tizabi (Tehran: Eslouj, 1977), 80.

³²³ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 186.

history of Iran. First, Reza Shah attempted to modify and improve the education system from a traditional style to an international style.³²⁴ Second, Reza Shah defined new systematic organisations for handling affairs. In these new definitions, he aimed to follow Western countries and stop the interference of religious beliefs. These changes created opportunities for study and work in major cities.³²⁵ Consequently, a wave of migration began from rural areas to large cities.³²⁶ As a result, population density began to change for the worse.³²⁷ In addition to the above social modifications, Reza Shah's endeavour to detach Iranian people from their religious beliefs by banning the veil and some rituals led to the emergence of a new social class who were living in cities, educated and worked for the government, while at the same time trying to distance themselves from traditional customs.

3.2.2 Criticisms on Modernity in the First *Pahlavi* Era

The modern movement in Iran has been criticised from different perspectives, including by advocates of traditionalism or Islam. However, even scholars who agree with the essentiality of modernity have criticised the modern movement in the first Pahlavi era. In this section, these criticisms will be discussed and different analyses about modernity in Iran in the first Pahlavi era will be considered.

From a philosophical point of view, Abd Al-Karim Soroush argued that modernism is not the same as modernity. Modernity refers to the condition of becoming new unintentionally and by nature, while modernism is an ideology for replacing the new with old. In this ideology, the new is preferred to the old.³²⁸ Thus, in modernism, new demands, customs and ideas bring about a new series of relationships between manufacturing, economy and society. Conversely, modernity is based on a new attitude and cosmology that are made internally and cannot be exported. However, it should be

³²⁴ Said Laylaz, *Moje Dovom: Tajadodsazie Amerane (Second Wave: Dictated Modernity)* (Tehran: Nilofar, 2013), 472.

³²⁵ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 186.

³²⁶ Laylaz, *Moje Dovom*, 471.

³²⁷ Mohammadali Katozian, *Eghtesad Siasei Iran (Political Economy of Iran)* (Tehran: Papirous, 2006), 322.

³²⁸ Abdalkarim Soroush, *Biger Than Ideology* (Tehran: Serat, 1996), 350.

noted that Iranian historians have not always acknowledged these differences in definitions and these terms have often erroneously been used interchangeably.

Many historians, such as Katozian, Bani Masoud and Kianeï, have criticised the modern movement in Iran on the basis that it was not ideological; for example, Kianeï argued that a superficial understanding of development and innovation identified the external situation of Western societies as a symbol and reason for modernity. Consequently, social behaviour, literature and even clothing became important so that Iranians would be viewed as the same as their Western equivalents.³²⁹ Katozian referred to this as being 'pseudo-modernist'; this brought a new meaning to Westernism.³³⁰ Katozian believed that the modern movement was based on an irrational attitude towards Iranian Islamic identity and a passionate excitement for Westernisation.³³¹ Due to their national humility, the King and, consequently, the government were keen to follow Western countries in all aspects even beyond rational boundaries.

Similarly, Bani Masoud believed that the Iranian movement towards modernity was a partial reflection of rationalism in Europe. He interpreted rationalism as a combination of actions used to establish new organisations in society, the secularisation of government and society and the industrialisation of economy. He defined the relationship between the government and its people. In this model, materiality was given priority over spirituality.³³² Bani Masoud did not explain the term 'partial reflection'; however, it appears that the speed at which these modifications occurred was at least six times faster than that in Western countries (e.g., if compared to the Renaissance).

Alternately, Ghobadian argued that the difference between the modern movement in Iran and Europe depends on its application. The modern movement in the first *Pahlavi* era was conducted by the government and was not fully developed, particularly in politics. Thus, Ghobadian referred to this as 'governmental modernity'. Conversely, in

³²⁹ Mostafa Kianeï, *Memari Dore Aval Pahlavi (Architecture of First Pahlavi Era)* (Tehran: Institute of Study for Contemporary History of Iran, 2004), 156.

³³⁰ Katozian, *Eghtesad Siasei Iran*, 145.

³³¹ Mohammadali Katozian. "Dolat Va Jame Dar Doran Reza Shah," (Society and Government in Reza Shah Period) in *Dictated Modernity* ed. Toraj Atabaki (Tehran: Ghoghnoos, 2006), 150.

³³² Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 184.

Europe, modernity began with the middle classes and was conducted mostly by intellectuals.³³³

These above analyses show that leadership influenced the movement. The aims and intentions of leaders differed. While Europeans tried to limit the power of governments through political development, in Iran, Reza Shah wanted to limit the power of his opposition—clergymen—to retain his power. Thus, modernity provided a justification for Reza Shah to secularise Iran so that he could ban religious ceremonies and reduce the power of clergymen.

3.2.3 Urbanism

Before analysing the influence of the modern movement on architecture, it is important to become familiar with modifications in urbanism. A short discussion follows that highlights important changes in Iranian cities caused by the modern movement. The first change relates to the placement of defensive equipment around cities. Changing techniques of warfare (e.g., the modernisation of weapons) meant that keeping battlements and moats around cities was pointless. By destroying these ramparts in the first *Pahlavi* era, the skylines and the views of cities changed considerably.

In the cities, changes appeared in urbanism with the importation of vehicles to Iran. In 1933, councils were officially commissioned to widen streets based on the scale of vehicles.³³⁴ Wide streets emerged in all Iranian cities in the first *Pahlavi* era. This action changed the contexts of cities and also influenced the architecture. Prior to widening the streets, buildings were inwards looking and the borders of pathways were unremarkable. However, following the widening and conversion of pathways to streets, buildings on the edges faced towards the street and façades became important. Consequently, buildings became outwards looking and retail shops began to be built on the edges of streets.

³³³ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 130.

³³⁴ Ahmad Safardost, *Dar Jostejoye Hoviyat Shahri Rasht (Searching for Identity of Rasht)* (Tehran: Sazaman Omran va Nosazi Shahr Tehran, 2005), 86.

The most important feature of these new streets was their shape and direction. Regardless of the urban texture and fabric of cities, streets running north-south and west-east cut through them. Reza Shah gave councils the power to destroy anything blocking the new streets. At the intersections of these streets, squares were built containing important buildings such as banks and post offices. These buildings were built according to the European style and, consequently, the appearance of cities became modern in a short time.

This new urbanism and changes to the context of the cities led to criticism. The most important criticism was that the identity of cities and suburbs were being destroyed by these changes. Further, there was no apparent harmony between traditional contexts and the new streets. The streets were merely an additional layer imposed over the cities. In fact, the urbanism of the first *Pahlavi* era was not similar to what had occurred in Europe; it failed to respect traditional contexts.³³⁵ While Iranian cities needed to change, the methods and plans used to achieve this change were poor and disorganised. Surrounding walls and traditional gates were assumed to be a sign of retardation and demolished. Additionally, to make the new streets straight, many traditional buildings and memorials were destroyed.³³⁶

The new cities were also subject to social influences. New organisations and educational and entertainment centres were established in the cities. These changed the population balance and economic prototype. In its first publication, in relation to urbanism, one Iranian architectural magazine stated:

A few reasons led to increasing the population of Tehran such as growing the number of high schools and entertainment centres and more importantly increasing job opportunities caused by new projects and developing governmental organisations. Consequently, many people migrated from rural areas to Tehran.³³⁷

³³⁵ Kiane, *Memari Dore Aval Pahlavi*, 184.

³³⁶ Katozian, *Eghtesad Siasei Iran*, 155.

³³⁷ Hamid Ishragh, *Architect*, 1 (1956).

3.2.4 Architecture

In this section, the features of architecture in the first *Pahlavi* era will be analysed and the differences between the approaches of historians highlighted. This section will attempt to determine weaknesses in architectural historians' discussions. Additionally, a new categorisation based on architects, rather than architecture, will be introduced.

Architectural historians have divided the architecture of this period into three to six styles based on architectural features. The three styles common across these different categorisations include: (1) traditional architecture; (2) modern architecture; and (3) neo-classical architecture.

Traditional architecture is similar to the architecture of the *Qajar* era. However, this term does not appropriately describe this type of architecture, as the term 'traditional' cannot be limited to buildings only a few decades old. The features of this style confirm that this term is inappropriate. The elevation and other elements of this architecture are similar to the *Qajar's* buildings; plans are outwards looking, exterior walls are clad with brick, bluish tiles and *arabeegue* are used, buildings are covered by hipped roofs and steel or wood is used for beams or columns.³³⁸ Outwards looking plans do not comply with traditional Iranian architecture. Additionally, the form of the roofs and the new materials used reflect the steps that were being taken towards modifications. Most buildings in this style were designed and constructed by uneducated architects who belonged to the middle or lower social classes of Iran; however, all the important projects in this style were designed by two foreign architects: Nicolay Marcove and Andre Godar. Their important projects included schools such as Alborz, Shahreza and Falahat. The government employed these foreign architects, who were familiar with Iranian traditions, to design schools and other projects that incorporated traditional elements and forms reminiscent of earlier styles, but also reflected nuanced changes towards modernity.

Flourishing modern architecture in Western countries can be tracked back to 1885, the same time as the *Qajar* era in Iran and the beginning of the modern movement in Iran.

³³⁸ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 147.

Prior to the first *Pahlavi* era, no buildings were referred to as modern.³³⁹ Ghobadian believed that was due to the lack of technology and new materials available in Iran.³⁴⁰ However, after a few decades and in the first *Pahlavi* era, concrete and steel were imported to Iran. At this point, Iranian modern architecture was not very similar to its Western counterparts, due to differences in culture and social situations.³⁴¹ Indeed, as a style, Iranian modern architecture only flourished some 30 to 40 years after European modern architecture. The most important features of modern style were: the use of straight lines, particularly in elevations; new industrial ornamentation created using steel or stone; the use of unpatented bricks, cement and sometimes stone in façades; and the combination of simple and geometric masses. These features are indicators of the European 'art deco' style.³⁴² Art deco became prevalent in Europe after 1925, at the same time the Chicago style became popular in America. As Iran's relationship with Western countries was limited to Europe and Iranian architects being trained in European countries, not North American, from 1925 to 1941, there is no trace of the Chicago style in Iranian architecture of the first *Pahlavi* era. Examples of important buildings in this style include the Foreign Ministry Palace designed by Vartan Avanesian and Gabriel Gourkian in 1312; the Hotel Abali designed by Avanesian in 1935; and the Ferdosi School designed by Ronald Dobrule in 1938.

Neo-classical architecture occurred at the same time as modern architecture and before the First World War in Europe. Some historians (e.g., Bani Masoud and Parvis Rajabi) have stated that Reza Shah, like other dictators of his time, tried to show his grandeur through architecture, and that as he was interested in following Hitler and considered Germany the best prototype for the future of Iran, he paid attention to the neo-classical architecture prevalent in Germany.³⁴³ These historians relate neo-classical architecture to fascism and three principles: grandeur, stableness and speed.³⁴⁴ A list of projects in

³³⁹ In studies by historians, including Ghobadia, Pakdaman, Masoud, Bavar and Mokhtari, this matter can be seen clearly.

³⁴⁰ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 200. In addition to social and economic forces, new materials such as concrete and steel have played an important role in modernisation. These materials introduced a new style to architecture. Architecture complies with the social and economic forces of the time because of their role in saving space, time and money. Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 228.

³⁴¹ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 194.

³⁴² Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 203.

³⁴³ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 199.

³⁴⁴ *Ibid*, 200.

this style supports this idea. The government commissioned most of these projects, including the Qazvin Municipality (1314), Tabriz Municipality (1312) and Telegraph Office (1305). Conversely, this thesis argues that Reza Shah and his government wanted to make Iranian society as similar as possible to European societies. Thus, it was not important to the government what styles of architecture were copied from the Europeans. Neo-classical architecture was imported to Iran as a model of the modern movement. Due to the propaganda of applying European style to everything, both the neo-classical architecture of European countries, particularly Germany, and modern architecture influenced Iranian architecture. Two reasons support this idea. First, European neo-classical architecture can also be seen in the *Qajar* era and was not limited to the *Pahlavi* era. Second, Ghobadian identified a second form of the neo-classical style called rational neoclassicism.³⁴⁵ Rational neoclassicism flourished at the *Ecole des Beaux Arts* in Paris after the First World War. This style is a combination of modern and classical architecture. Thus, the source of Iranian neo-classical architecture was not limited to Germany.

It is worth noting that using symmetrical plans and elevations, placing entrances on the main axis, using semicircle arches and horizontal segments in façades, placing domes in the middle or corners of buildings, applying Greek columns and ornaments with bricks or plastering façades are all features of Iranian neo-classical architecture. Conversely, in rational neoclassicism, ornaments are a focus and classic elements such as columns, arches and domes are not used; instead, stairs are important and lobbies have high heights.³⁴⁶ A consideration of these two groups of features shows that some historians were confused in their analysis of the roots of neo-classical architecture in Iran.

National architecture is another style from the first *Pahlavi* era. Many historians have identified and analysed this specific style of architecture that combines the technology of modern architecture with traditional motifs; however, considerable differences can be seen in their analyses about the roots of this style. For example, Cyrus Bavar stated that this style was suggested by foreign architects and engineers employed by the

³⁴⁵ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 167.

³⁴⁶ *Ibid*, 171.

government;³⁴⁷ however, Bani Masoud stated that national architecture was a form of neo-classical architecture based on fascism that used Iranian traditional motifs instead of European motifs.³⁴⁸ Parvis Rajabi presented the most interesting idea when he stated that Reza Shah creatively combined modern architecture with pre-Islamic Iranian traditional architecture—Reza Shah assuming he had to protect the national identity and traditional customs of Iranian architecture, but believing that only modern architecture could meet the current demands of Iranian society. In fact, the national architecture could be called the style of Reza Shah.³⁴⁹ A list of projects in this style, all government commissioned, supports this idea, including the Imam Reza Hospital, the Post Office Building and the Anoshiravan School. The features of national architecture are similar to neo-classical architecture and include: using symmetric and outward looking plans, placing balconies, wide stairs and high columns on the main axis and entrance, high entrances and using Achaemenes' sculptures and traditional arches, especially in façades, without using cement. In this style, traditional elements in ornaments and façades were borrowed from Iranian architecture and Islam. It is important to mention that unlike the *Qajar* era, pre-Islamic traditional architecture first came to attention in the first *Pahlavi* era due to the policy of secularisation.

A New Categorisation in Architecture

For historians, features of architecture play a key role in categorising the architecture of the period (i.e., 1925–1969); however, architecture in the first *Pahlavi* era could also be categorised on the basis of architects. Groups of architects can be identified by their beliefs and attitudes. Further, architects and their works can be distinguished according to their training styles.

Architects who had been trained traditionally—that is, without university education—repeated the prevalent architecture of the *Qajar* era. These architects tried to apply some advantages of modern architecture to their works, particularly in terms of material and

³⁴⁷ Cyrus Bavar, *Negahi Be Peydayesh Memari No Dar Iran (Looking at Emerging Novel Architecture in Iran)* (Tehran: Nashr Faza, 2009), 67.

³⁴⁸ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 199.

³⁴⁹ Ibid.

structure. This group of architects built the majority of residential buildings for the middle and lower levels of society.

Another architectural style belongs to the group of Iranian architects who graduated from Western universities. This first generation of Iranian architects, including Mirza Alikhan, Karim Taherzadeh Behzad, Vartan Avanesian, Gabriel Gorkian, Mohsen Foroghi, Poul Abkar and Aliakbar Sadiq, all aimed to follow the modern style of their time. Their works were a partial reflection of the styles determined by the Vienna School and Bauhaus School, but they did not always comply with European architectural styles due to differences in their social situations and religious beliefs. As discussed above, the movement towards modernity was not as strong in Iran as it was in Europe. Consequently, architects in this group tried to illustrate an Iranian version of modern architecture. Their endeavours form the early modern architecture of Iran.³⁵⁰

Foreign architects make up the third group. These architects were usually employed by government sectors for important projects (e.g., industrial projects). Their designs were more similar to those found in modern European architecture, as the codes, standards, materials and functions were the same; for example, a German architect, Fisher, designed the Dokhaniaat Headquarter Office in Tehran, and three companies from Denmark and Sweden designed and built the first cement factory in the south of Tehran.

3.2.5 Early Issues of Tradition and Modernity in Architecture

Early modern architecture in Iran has been always a controversial issue. Part of this controversy can be traced back to social situations and the prevalent attitudes of intellectuals in the first *Pahlavi* era. Consequently, rising criticism about modernity in ideological fields resulted in early debates on tradition and modernity in architecture. In this section, the discourse on tradition and modernity in architecture and related new styles are considered. The following questions arise about early Iranian modern architecture: Were the demands for modern architecture caused by new technology or

³⁵⁰ As mentioned earlier, modern architecture can be seen in Iran from the late *Qajar* era; however, in the first *Pahlavi* era, Iranian modern architecture was more similar in origin to that of Western countries.

by new social situations? Were the new styles dictated by any authority? This section attempts to answer these questions.

Bani Masoud believed that Iranian architecture has never been faithful to modern architecture.³⁵¹ The reasons behind his argument have been outlined in Vartan's articles. Vartan, as mentioned above, was a prominent modern architect in the first *Pahlavi* era. He stated:

...the formulation of our new buildings is dangerous. A few architects, to demonstrate their attitudes are copying European buildings without any attention to their environmental and social situations. That is why people always complain about them. Modernism is a fact but cannot be similar everywhere but needs to differ from one place to another. Modernism necessitates variation based on location, environment and social situation and should represent local people and their customs.³⁵²

Thus, due to differences between Iranian and Western societies, modern European architecture could not be applied in Iran without modification. As stated above, some of the main differences between Iranian modernity and European modernity arose because of the speed of the changes in Iran. In this respect, Hoshang Sayhoun, a graduate from the first generation of Tehran University, has pointed out that because of the high speed of modifications, Iranian society could not completely digest them. Such attitudes informed the early discourses on tradition and modernity in Iran and finally led to the new style of architecture known as national architecture.

In relation to the second question posed, it should be recalled that the clients of most of the important projects were Royal Family members or the government. Thus, it is unsurprising that they dictated their preferences. However, in relation to tradition and modernity, an interesting point arises as to the role of government. Reza Shah was strongly against traditional approaches and customs, so much so that he even forced people to change their manner of dressing and banned rituals. He paid especial attention to the Iranian identity and ignored whatever was related to Islam, as he viewed Islam as his first internal enemy. Further, modernity provided him with a justification for maintaining his power over clergymen. As Reza Shah was aware of the inapplicability

³⁵¹ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 194.

³⁵² Avanessian Vartan, "Masael Marbot Be Memari Dar Iran (Issues About Architecture in Iran)," *Architect*, 1 (1961): 5, quoted in Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 194.

of modern architecture to the entirety of Iranian society, he tried to highlight pre-Islamic Iranian architecture. He followed a similar approach in other areas and ran a massive propaganda campaign on the power of the Iranian empire before Islam. For similar reasons, he also changed the name of the country from 'Persia' to Iran (as it was referred to before Islam).³⁵³

These points show that since the beginning of modernity in Iran and because of a superficial understanding of European modernity and the speed of change, tradition and modernity have been always an issue in Iran. Iranian society was not ready to accept modernity and this tension forced leaders of the modern movement to consider a combination of tradition with modernity, particularly in architecture.

³⁵³ Isa Sedigh, *Cultural History of Iran: From Beginning until Present* (Tehran: Tehran University, 1975), 237.

3.3 Second *Pahlavi* Era

3.3.1 Eco-social Forces and Modernity

At the close of the Second World War, the Allies had occupied Iran and Reza Shah had been exiled to South Africa. With the support of the Allies, Reza Shah's eldest child, Mohammad Reza, became King and the second *Pahlavi* era began in 1941. This section considers the continuation of the modern movement in this period, particularly, the influence of modernity on Iranian society, economy, urbanism and architecture. In addition to criticisms on modernity, the issues of tradition and modernity generally and in architecture specifically will be considered.

Following the rule of Reza Shah, power was not transferred to Mohammad Reza easily. As Mohammad Reza was quite young and inexperienced, England and Russia interfered directly in Iran's internal and external affairs. These interventions made the dominion of Mohammad Reza weak and fragile. In 1953, he dismissed the Prime Minister, who had attempted a coup against him, with the support of America to increase his own power. This was the first time that America would play a role in Iranian contemporary history. From then on, Mohammad Reza paid particular attention to America (rather than Europe) in a variety of areas, including politics, economy and technology. Thus, the US became the prototype for leaders of the modern movement in the second *Pahlavi* era.

At the beginning of the *Pahlavi* era, Reza Shah directly dictated some changes to society in light of modernism; however, these changes were not all supported by society. The passing of time allowed these changes to become more balanced and stable. Thus, in this period, the natural influence of modernity appeared in Iran society and Mohammad Reza was able to follow his father's policies with some flexibility. A high income also accelerated these social modifications.

Social Changes and the Emergence of a New Social Level

Two decades into the second Pahlavi era, social indicators (including education, the hygienic system, the rate of migration, social class differences and prosperity) changed

rapidly due to the high income of the government derived from land modifications³⁵⁴ and oil exports.³⁵⁵ The numbers of students at different levels grew by 77 per cent. Additionally, universities received more support and became more popular. Consequently, the number of students at universities increased by 65 per cent.³⁵⁶ The medical system improved because of the increasing number of hospitals and clinics. However, as the number of general practitioners and dentists only increased by 43 per cent, the government had to employ foreign doctors at public hospitals and clinics to meet the needs of society.³⁵⁷ It is important to note that all these improvements occurred unevenly across rural areas and cities.³⁵⁸

As mentioned above, because of the increasing number of people migrating to major cities to find better jobs, the model of population density in Reza Shah's period changed.³⁵⁹ It also increased in the second *Pahlavi* era as people began attending universities and seeking better medical services. Increasing the number of higher educational centres in the major cities was not only an attraction for young rural people, it also led to the expansion of the middle class. These individuals, trained in the light of modernity, were called intellectuals and the government described them as the modern models for the entire society. Generally, the middle class was secular and held a positive attitude towards modernity.³⁶⁰

The middle class was the main target for the cultural strategy of Mohammad Reza. In the second *Pahlavi* era, the government adopted a strategy as part of the modern movement that had two main aims. The first aim was to revive Iranian pre-Satari, Jalal, Islamic culture and promote the idea of "returning to our ancient roots."³⁶¹ For example, Mohammad Reza called himself the heir of Cyrus (the most famous king of the Iranian

³⁵⁴ Land modifications were part of the White Revolution conducted by Mohammad Reza Shah to limit the power and wealth of landowners.

³⁵⁵ Exploiting oil occurred nationally early in the second *Pahlavi* era. Consequently, exporting oil became the primary source of income for the government.

³⁵⁶ Laylaz, *Moje Dovom*, 472.

³⁵⁷ Ibid, 473.

³⁵⁸ Ibid, 471.

³⁵⁹ Katozian, *Eghtesad Siasei Iran*, 322.

³⁶⁰ Seyyed Alireza Azghadi, *Tarikh Tahavolat Siasi Va Ejtemaei Iran (yThe History of Political and Social Modifications in Iran)* (Tehran: Samt, 2004), 161.

³⁶¹ Jalal Satari, *Derbi Dolat Farhangi, Negahi Be Barkhi Takhavolat Farhangi Va Honari Dar Bazpasin Salhaye Nezampishin* (Tehran: Markaz, 2000), 236.

Empire in 500 BC) and changed the Iranian calendar from solar to Imperial. The second aim was to promote Westernisation.

Some historians such as Bani Masoud argued that these two aims were in conflict with one another. Thus, they began to criticise the modern movement in the second *Pahlavi* era.³⁶² However, following these principles can be interpreted in the debates of tradition and modernity. Mohammad Reza was more liberal than his father and, consequently, religious people had more freedom to follow their rituals and ceremonies; however, it should be noted that he was anti-Islam for the same reasons as his father and heterogeneous principles assisted him in this respect.

Another Point of View

Generally, there is a negative attitude towards the Mohammad Reza era in books published after the Islamic revolution in 1978; however, Abrahamian (1940) analysed the second *Pahlavi* era with a positive attitude in his book *A History of Modern Iran* (2008). He believed that Mohammad Reza's economic policies and plans, especially the 'White Revolution', improved Iran's economy and created many job opportunities in the private sector and, more importantly, led to a small industrial revolution.³⁶³ Further, Abrahamian argued that Europe was not an ideal model for Mohammad Reza, but that the King sought a lifestyle superior to Western countries and blamed European countries for their economic and social issues. The King believed that he could present a model better than capitalism and communism by combining the pre-Islamic style with modernism. Conversely, some Western authorities stated that, like Napoleon, Mohammad Reza was too ambitious.³⁶⁴

Abrahamian (and other historians) noted that there was a gap between the various levels of the society, but his description of the middle class differed from others. In his view, the middle class was not limited to secular and modern people. He argued that approximately 22 per cent of Iranians could be placed in this level and should be divided into two groups of 'traditional' and 'white collar'. The second group included

³⁶² Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 256.

³⁶³ Ervand Abrahamian, *A History of Modern Iran* (New York: Cambridge University Press, 2008), 241.

³⁶⁴ *Ibid*, 240.

people employed by organisations in either the private or public sectors. People working in bazaars (i.e., traditional business) belonged to the traditional group. It is important to note that despite a reformation and modernisation of the economy, more than 50 per cent of trade continued to be conducted at the traditional bazaars. Further, these traditional businessmen had a strong relationship with clergymen and religious groups who supported their ceremonies, traditions and religious schools. It should also be noted that some oil income was spent opposing modernity.³⁶⁵

Social Tensions

Mohammad Reza planned the White Revolution to prevent any possible communist revolutions; however, the White Revolution caused serious tension in society and eventually led to the Islamic revolution of 1979.³⁶⁶ Three eco-social problems can be recognised as a consequence of the White Revolution. First, the White Revolution in rural areas granted land to peasants, but as there were insufficient arable lands, many peasants had to migrate to cities where there was a lack of job opportunities and the expense of living forced them to settle in very poor conditions. Thus, the gap between the middle and lower classes became wider.³⁶⁷ Second, despite expectations, the White Revolution did not distribute wealth evenly and Iran had the worst distribution of wealth of any country in the 1970s.³⁶⁸ Third, despite increasing the number of social indicators (such as students and hospitals) most people were unsatisfied, as there was an uneven distribution of hygienic, educational and other social services. For example, while only 20 per cent of the population lived in Tehran, the city was home to more than 60 per cent of government employees, 82 per cent of companies, 50 per cent of factories, 66 per cent of university students, 50 per cent of physicians, 42 per cent of hospitals and 72 per cent of publications.³⁶⁹ Overall, the eco-social situation of Iran appeared to be worse than in neighbouring countries (such as Iraq and Syria) with less income.³⁷⁰ Eminent leaders such as Dr Ali Shariati and Ayatollah Khomeini reflected these social

³⁶⁵ Ibid, 250.

³⁶⁶ Ibid, 252.

³⁶⁷ Ibid.

³⁶⁸ Ibid.

³⁶⁹ Ibid, 256.

³⁷⁰ Ibid, 257.

tensions in their opposition to the government. Dr Shariati, a graduate from France, was quite popular among the younger generation, including university graduates.

3.3.2 Criticisms of Westernism and the Emergence of Gnosticism

This section considers criticisms of modernity and Westernism in the second *Pahlavi* era. Initially, the majority of criticisms were raised in philosophy and literature and made on the basis of Gnosticism. The origin of the emergence of Gnosticism, especially in philosophy, is also discussed in this section. This section provides an understanding of the theoretical bases of the issues of tradition and modernity in architecture.

In addition to the social and political tensions mentioned above, the main criticisms related to the combination of Western and Iranian pre-Islamic cultures and the ignoring of Islam. Nodoushan (1925), for example, stated that the result of this combination was unrelated to Iranian culture. The government, as the cultural leader, was confronted practically and theoretically by Iran's original culture and it could not be separated from Islamic culture.³⁷¹

Another criticism related to the exaggeration of Westernisation. The number of scholars criticising Westernisation increased in the middle of the second *Pahlavi* era; for example, Al-Ahmad (1923–1969) wrote an influential book about Westernisation in which he stated: “Instead of following the west we should leave it ... since the west is not a hero.”³⁷² Al-Ahmad also identified Westernisation as being similar to colonialism and stated:

When “the West” passed the ignorance period of Middle Ages, it called us “the East” (from west coast of Mediterranean Sea to India). And in quest of sun, spice, silk and other goods, the West first came to East as spiritual Christian pilgrims (Bethlehem, Nazareth, etc.); after that as armoured crusaders, merchants, Christian missionaries, and by the support of its ships cannons and finally as representative of modernity. This very latter is absolutely nonsense for the term “Estemar” (exploitation) is derived from

³⁷¹ Mohammadali Islami Nadoshan, “Bar Iran Chegozasht? Edare Iran Ba Farhang Gheyre Irani” (What Did Happen for Iran?), *Etelaat*, January 29, 1978, 5.

³⁷² Jalal Al Ahmad, *Gharbzadegi (Westernisation)* (Tehran: Jamedaran, 1986), 6.

“Omran” (constructing) and those who are searching for it deal with “Medina” (city).³⁷³

Naraghi is another scholar who criticised Westernisation. He argued that the West had nothing special to offer the East. However, he suggested a combination stating: “today it is necessary for the East to borrow Western technology while keeping its own cultures and civilisations because following Western growing models especially in the field of culture will result a negative consequent for Eastern societies.”³⁷⁴

Other scholars such as Dariush Shayegan and Borujerdi shared similar views to Naraghi. Borujerdi compared Western and Eastern philosophy and stated that Western philosophy was based on reason, while Eastern philosophy was based on intellect and that is why metaphysics is ignored in Western countries. In his view, the social crisis in the West was caused by this ignorance.³⁷⁵ Similarly, Shayegan stated that there was a clear difference between Western and Eastern cosmologies and it was not possible to welcome Western technology without its side effects.³⁷⁶

The majority of criticisms about modernity in the second *Pahlavi* era were aimed at Westernisation, with scholars emphasising the advantages of Eastern philosophy over Western philosophy. They sought to remind intellectuals of the privileged position of the East. In the Middle East and from a philosophical point of view, philosophy cannot be separated from Islam; however, the government issued considerable propaganda against Islam. All these matters formed the basis for an emerging mysticism that was understood as a Persian version of Islam.

Talinn Grigor explained this situation as follows:

For the duration of the 1960s and 1970s, the government intensified its assaults on the religious establishment. It cut off Ulama income from shrine and mosque endowment; declared the King as both religious and political leader of Iran; portrayed the clerics as “medieval black reactionaries;” discouraged the historical use of mosques and Madressas; prevented publications on religious matters; intensified the activities of the religious

³⁷³ Ibid, 24.

³⁷⁴ Ehsan Naraghi, *Anche Khod Dasht (What He Had)* (Tehran: Amirkabir, 1976), 7.

³⁷⁵ Mehrzad Borujerdi, *Roshanfekran Irani Va Gharb (Iranian and Western Intellectuals)* trans. Jamshid Shirazi (Tehran: Farzan Rooz, 2005), 230.

³⁷⁶ Importantly, similar to Seyyed Hussein Nasr, Shayegan believed that

corps in rural areas; and in 1975 replaced the Muslim calendar with the royal calendar, beginning not with prophet Muhammad[s] but with Cyrus the great. The discourse on aesthetics, which ran the whole gamut from anti-colonialism to *Sufi* spirituality, was in tune with the political tides of the time.³⁷⁷

Nasr should be considered the most prominent scholar in introducing mysticism and particularly *Sufism* to contemporary scholars and intellectuals in the 1970s. The following section reviews his criticisms about Westernisation and fundamentalism and, more significantly, the mystical role of Man.

Seyyed Hossein Nasr

It has been noted by some historians such as Bani Masoud that the idea of bringing together Western technology and Islamic culture was similar to the ideas of Nasr; however, this is inaccurate, as Nasr believed that Islam should not be limited to rituals and *Sharia* laws.³⁷⁸ Additionally, Nasr believed Western understandings of Islam interpreted it as being part of fundamentalism (as suggested by some scholars), whereas he believed that despite some superficial similarities between Islam and fundamentalism, there were clear and important differences. He stated:

One must distinguish in all religions and civilization, not only between traditional and the modern, but also between authentic tradition and that pseudo-tradition which is also counter-traditional, but which also displays certain characteristics outwardly similar to traditional ... pseudo-traditional perspective is often identified with one form or another of “fundamentalism.”³⁷⁹

Nasr believed that the new interpretations of Islam and tradition would lead to a combination of modern technology and tradition that would not protect the East against the West. He also argued that without metaphysical knowledge, Man would not be successful, even in the West. He stated:

Although science is legitimate in itself, the role and function of science and its application have become illegitimate and even dangerous because of the lack of a higher form of knowledge into which science could be integrated and destruction of the sacred and spiritual value of nature. To remedy this situation

³⁷⁷ Grigor, *Building Iran*, 162.

³⁷⁸ Seyyed Hossien Nasr, *Traditional Islam in the Modern World* (New York: Chapman and Hall, 1990), 373.

³⁷⁹ Ibid, 18.

the metaphysical knowledge pertaining to nature must be revived and the sacred quality of nature given back to it once again.³⁸⁰

In Nasr's view, modern peace was not achievable because civilisations had become devoid of metaphysics. However, he believed that Gnosticism and particularly *Sufism*, coming from the spirit of Islam, could bring peace and offer integrity between Man and his nature. He stated:

Islam has quite unjustly been depicted as a religion of the sword and of war whereas it is a religion which seeks to bring about peace through submission to the Will of God, as the name Islam in Arabic meaning both peace and submission, indicates; and this is only made possible by giving each thing its due. Islam preserves a remarkable equilibrium between the needs of the body and those of the spirit, between this world and the next. No peace is possible in a civilization which has reduced all human welfare to animal needs and refuses to consider the needs of man beyond his earthly existence. Moreover, having reduced Man to a purely terrestrial being, such a civilization is not able to provide for the spiritual needs which nevertheless continue to exist, with the result that there is created a combination of crass materialism and an even more dangerous pseudo-spiritualism, whose opposition to materialism is more imaginary than real. And thus we are faced with the endangering of even the terrestrial life which today has come to be cherished as the final end in itself. One of the basic messages of Islam to the modern world is its emphasis on the importance of giving each thing its due, of preserving each element in its place, of guarding the just proportion between things. The peace that men seek is only possible if the total needs of man, not only his capacity of a thinking animal but also as a being born for immortality, are considered. To be concerned only with the physical needs of men is to reduce men to slavery and to produce problems even on the physical plane that are impossible of solution. It is not religion but modern medicine that has created the problem of over-population. But now religion is asked to solve this problem by accepting to forgo the sacred meaning of human life itself, if not totally, at least in part...Islam possesses all the means necessary for spiritual realization in the highest sense; *Sufism* is the chosen vehicle of these means. Now because *Sufism* is the esoteric and inner dimension of Islam it cannot be practised apart from Islam; only Islam can lead those who have the necessary aptitude to this inner court of joy and peace that is *Sufism* and which is the foretaste of the

³⁸⁰ Man, 14. Nasr also emphasises this matter in another book, stating: "The *Quranic* verse cited above defines the situation of man in this world in a manner that is at once perennial and universal. Man was created in the best stature (*a/:zsan taqwim*) but then fell into the terrestrial condition of separation and withdrawal from his divine prototype, a condition which the *Quran* calls the lowest of the low (*asfal safilin*). And inasmuch as the situation described in this *Quranic* verse pertains to the innermost nature of man it is a permanent reality that he carries within himself. No amount of supposed evolution and change can destroy the divine image which is his origin or the state of separation and hence wretchedness and misery in which he finds himself due to this very separation from his spiritual origin. Man carries both the image of perfection and the experiential certainty of separation within himself and these elements remain as permanent aspects and conditions of the human state above and beyond all historical change and transformation." Seyyed Hossein Nasr, *Sufi Essays* (London: George Allen and Unwin Ltd, 1972), 25.

“gardens of Paradise.” Here again the characteristic of the contemplative way of Islam, or *Sufism*, is that it can be practised anywhere and in every walk of life. *Sufism* is not based on outer withdrawal from the world but on inner detachment.³⁸¹

Unlike other Iranian philosophers, Nasr considered the place of art and architecture. In his view, Westernisation, through secularisation and fundamentalism, had a destructive influence on architecture in Islamic countries and limited the concept of architectural elements to their exoteric meanings, changed the attitude of architects and building users, and reduced their spiritual senses. Most importantly, he believed the current architecture revealed a downgrading of Western architecture.³⁸²

3.3.3 Urbanism and Architecture

Modern architecture, as influenced by the international style of Le Corbusier, Frank Lloyd Wright, Alvar Aalto and James Stirling, was the most prevalent style in Iranian architecture during this period. This section attempts to identify the features of this style and its roots in society. Additionally, the differences between various analyses of Iranian modern architecture are highlighted.

Before describing the modern architecture of the second *Pahlavi* era, it is worth noting the situation of urbanism. Its direction was generally similar to that of the former period, as Mohammad Reza followed his father’s policies in terms of urbanisation. Like his father, Mohammad Reza demolished the traditional architecture and built streets to create geometric blocks. The new, wide streets changed the character of the buildings, which in turn led to the buildings being more outwards looking than before. Consequently, courtyards almost totally disappeared from Iranian architecture.³⁸³ It should also be noted that Farmanfarmaian and his group provided the first master plan for Tehran in 1968;³⁸⁴ it contained the first highways in Tehran.³⁸⁵

³⁸¹ Ibid, 169.

³⁸² Nasr, *Traditional Islam in the Modern World*, 373.

³⁸³ Behroz Pakdaman, “Negahi Kotah Bar Shiveha Va Gerayeshhaye Memari Dar Tehran,” (Review of Architecture Styles in Tehran) in *Ketab Tehran* (Tehran: Roshangaran, 1994), 80.

³⁸⁴ The role of Farmanfarmaian’s firm was not limited to providing the first master plan of Tehran. The firm was quite active in designing and constructing the important buildings according to modern style. Skylines, especially in Tehran, changed due to emerging high rises and numerous other modern buildings.

In relation to architecture the situation differed from former periods. The main difference between modern architecture in the first and second *Pahlavi* eras relates to the fact that modernity was demanded by society and not simply dictated by authorities. In the *Qajar* and first *Pahlavi* eras, modern architecture was evident in public buildings; however, in the second half of the second *Pahlavi* era, modern architecture appeared in the construction of housing for ordinary people. Three eco-social factors caused this situation.

First, as stated above, economic reformations led to peasants migrating to the major cities, particularly Tehran. Thus, the population of Tehran, which was 1.5 million in 1953, reached 5.5 million in 1979.³⁸⁶ The government was aware of the problems caused by the increasing population and, consequently, Tehran's first master plan of 1968 stressed that the population should not exceed 5.5 million within the next 25 years. However, the government was unable to control the population growth as planned and houses and flats were in high demand. Consequently, the government tried to develop large residential complexes around Tehran to control the price of housing.³⁸⁷ The private sector also was active in smaller projects in this area. Over 20 years (i.e., from 1955–1975), the percentage of new houses increased two times, resulting in a 70 per cent increase in Tehran.³⁸⁸ Thus, modern architecture in Iran peaked with residential projects.³⁸⁹

The Bank of Rahni was an executive for the government in residential projects. The engineering department of this bank often included architects from Western countries. In an Iranian journal, *Art and Architecture*, published in 1971, some complexes were introduced and the quality of materials and the low prices based on the government policies were noted (these plans have been included in the Appendix). In relation to the

³⁸⁵ Bernnand Orcad, "Shahrsazi Va Bohran Shahri Da Ahd Mohammadreza Pahlavi," (Urbanisation and Urban Crisis in Mohammadreza's Period) in *Tehran Paytakht Devist Sale*, ed. Shahriar Adl and Bernnad Orcad (Tehran: Sazman Moshaver Fani va Mohandesi Shahr Tehran, 1996), 234 quote in Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 222.

³⁸⁶ Abrahamian, *A History of Modern Iran*, 251.

³⁸⁷ Ibid, 276.

³⁸⁸ Pakdaman, "Negahi Kotah Bar Shiveha Va Gerayeshhaye Memari Dar Tehran," 76.

³⁸⁹ The most important residential complexes of second *Pahlavi* era are: Four Hundred Units 1950, Koye Narmak 1954, Nazi Abad Complex 1955, Can residential Complex 1960, Yousif Abad Complex 1961 and Ekbatan. Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 278.

Nazi Abad Complex, for example, it was mentioned that the Bank of Rahni had decided to build apartments for low-income earners at the King's request. Consequently, the engineering department provided plans and sketches and the minister inaugurated the construction process in 1970. This complex consisted of eight blocks with 232 units for the railway labourers and teachers.³⁹⁰

Second, as mentioned above, a new social class emerged as a result of an increasing number of university students and improved educational standards. This new social class was a combination of the top and the middle level classes and its members had no issues with modernity. It appears that the government viewed the lifestyle of this new class as a prototype for all society. In Tehran's first master plan, Tehran society was divided into three groups: high-, middle- and low-income earners. The lifestyle of the high-income earners was similar to that of Europeans, and the middle-income earners aspired to the lifestyle of the high-income earners. In the master plan, emphasis was placed on the social demands of Western styles; for example, no areas were allocated for mosques or other religious spaces.³⁹¹

Third, in the second *Pahlavi* era (particularly its second half), educated architects from Tehran University and Western countries designed the buildings. Tehran University had been open since 1934, although its architecture faculty was not established until 1941. Its chancellor was Andre Godard and lecturers included Mohsen Foroghi, Houshang Sanei, Abdolaziz Farmanfarmaian and Houshang Seyhoun (all graduates from European schools such as the *Ecole des Beaux Arts*). Its educational model was adopted from *Beaux Arts*, and in 1961 it changed to an American model. The first generation of graduated architects from Tehran University thus developed an interest in modern architecture. Additionally, in this period, Western magazines, journals and books were available in Iran and influenced on the preferences of architects, users and clients.

Ghobadian viewed modern architecture of the second *Pahlavi* era differently. He studied public buildings to identify the design principles of the prevalent styles. Ghobadian believed that Iranian modern architecture in this period was inspired by three

³⁹⁰ Mahmod Arjmandi, "Talashhaye Omrani Bank Rahni Iran," *Art and Architecture* 10–11 (1971): 120.

³⁹¹ Abdolhamid Eshragh, "Tarh Jame Shahr Tehran," *Art and Architecture* 5 (1970): 48.

different Western sources: high and late modern architecture and organic architecture.³⁹²

Organic architecture is a combination of nature and technology and can be categorised as modern architecture. It had a historical precedent in rural areas and was mostly used in landscaping; however, Islamic gardens were usually geometrical and non-organic. Approximately five public parks and private gardens were designed in the second *Pahlavi* era according to the principles of organic architecture.³⁹³

High modern architecture belonged to architects such as Vartan Avanesian who were quite active late in the first *Pahlavi* era. Buildings in this category include banks, shopping centres and movie theatres. Ghobadian identified 12 buildings in this style with the following design features: industrial ornamentation, straight and curved lines, flat roofs and cement and stone plaques used in the façades.³⁹⁴ In the West, late modern architecture included three other styles: sculpturalism, brutalism and minimalism. In sculpturalism, curvy forms were made from concrete; for example, the New York Airport and Sydney Opera House. Brutalism became popular from 1950 to 1970 and used concrete without any finishing materials so that its harsh surface could be seen in the façades. Sainte Marie de La Tourette by Le Corbusier is an example of this style. The famous slogan of 'less is more' belongs to minimalism. Straight lines, flat surfaces and avoiding unnecessary elements were features of this style. Mies Van Rohe's projects are the best example of minimalism.³⁹⁵

All these styles were major influences on Iranian modern architecture in the second *Pahlavi* era. Ghobadian noted that late modern Iranian architecture had the following features: a lack of ornamentation, modern materials and technology, flat roofs, long horizontal sliding windows, horizontal segments in the façades and used exposed concrete and cement or stone plaques as finishing materials.³⁹⁶ Additionally, he identified 61 public buildings, including hotels, universities, train stations, libraries and

³⁹² Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 237.

³⁹³ Ibid, 257.

³⁹⁴ Ibid, 240.

³⁹⁵ Ibid, 241.

³⁹⁶ Ibid, 256.

mosques in this style.³⁹⁷ Interestingly, he classified four projects from Ardalan in this style: the Azadi Stadium, Saman Towers, the BHO and Kanon Parvaresh Fekri. The architecture of Kanon Parvaresh Fekri, by an unknown American architect, was also classified as having this style.³⁹⁸

Ghobadian believed that projects designed in accordance with the late modern styles were similar to their Western versions for a number of reasons. First, due to considerable increases in oil prices, the government had sufficient income to fund projects. Second, the relationship between Iran and Western countries culminated in this period. Third, some famous modern architects from Western countries were invited to Iran to attend seminars and design important projects, including John Calvin Portman, Jorn Utzon, Leo Ming Pei, Kenzo Tange, Philip Janson and Louise Kane.

In contrast to Ghobadian, Bani Masoud refers to Iranian architecture in the second *Pahlavi* era as being ‘pseudo-modernism’.³⁹⁹ He compared the floor plans of residential buildings in Iran with those of Western countries and argued that in Iranian buildings some traditional beliefs were incorporated. In his view, the manner in which privacy was incorporated into Iranian architecture was different.⁴⁰⁰ However, this is not the only reason for his use of the term pseudo-modernism. Technology resulted in a gap between Iranian modern architecture and its Western equivalent. In many large projects, foreign consultants and technology were used; however, this was not possible for small projects such as private houses. For example, in the Saman Towers, designed and constructed in the late 1960s, pre-cast concrete was used. This was unprecedented in Iranian architecture, as the private sector could not afford such costs. Thus, modern architecture did not grow equally across all types of architecture in Iran between the 1940s and 1970s.

Mansour Falamaki (1934) is another architectural historian who agreed with Bani Masoud, but for different reasons. He believed that Iranian architecture in the second *Pahlavi* era was not modern or new. It was not modern because its theoretical bases

³⁹⁷ Ibid, 244.

³⁹⁸ Ibid, 243.

³⁹⁹ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 267.

⁴⁰⁰ Ibid, 289.

were significantly diverse and even antithetical in Iran. Further, it was not new because it could not be disconnected from its traditional roots. Consequently, Falamaki suggested the term ‘contemporary’ architecture.⁴⁰¹

It is important to note that in this chapter all recent prevalent styles of architecture in Iran are described and analysed separately based on their periods. These periods together form the contemporary history of Iran. In the following paragraphs, these styles are summarised as characterising Iranian contemporary architecture. Since their technical features are described earlier, this section aims to highlight their relation to previous historical periods and Western architecture.

As discussed earlier in this chapter, Iranian contemporary architecture was influenced by the modern movement in Iranian society and Western architecture’s modern period. However, it is worth clarifying that the contemporary architecture of Iran was inspired by two other major architectural styles, both individually or in combination with each other, including: Iranian ancient architecture, specifically Parsy and party styles, and Iranian Islamic architecture, particularly the Isfahani style.⁴⁰² That is why Iraj Etesam believes that Iranian contemporary architecture is a partial interpretation of modern architecture and did not agree that it originated in the West.⁴⁰³ Additionally, Western architecture in the modern period, which Iranian sources term ‘modern architecture’, has not had an independent character in Iran. Bani Masoud believes that this dependency has occurred due to a lack of clear social bases for modern architecture in Iran.⁴⁰⁴

Recalling the analyses of eco-social influences on Iranian contemporary architecture in addition to the above factors confirms that Iranian contemporary architecture is a fusion style.⁴⁰⁵ Both modern and traditional architects moderated this fusion.⁴⁰⁶ On the one

⁴⁰¹ Mansour Falamaki, *Sheklgiri Memari Dar Tajarat Iran Va Gharb (Creating Architecture in Iran and West Trading)* (Tehran: Paykan, 1992), 487.

⁴⁰² Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 339.

⁴⁰³ Iraj Etesam, introduction to *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, ed. Ghobadian, 1.

⁴⁰⁴ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 527.

⁴⁰⁵ Mazyar Asefei and Elnaz Imanei, “Risheyabi va Shenakht Avamel Degargonsaz Rooh Memari Gozashte Iran,” (Recognition of the Architectural Spirit of the Past, Iran), *Hoviyat Shahr* 19 (2015): 75.

side, modernists aimed to link modern architecture with Iranian tradition for localisation; however, this linkage was not wholly tolerated by Iranian society. This approach forms a series of architectural styles Bani Masoud calls 'Insider Architecture',⁴⁰⁷ which was modern architecture modified by integrating some elements from Iranian traditional architecture. On the other side, traditionalists were based in Iranian traditional knowledge of architecture, which was passed through generations, and aimed to maintain an Iranian identity rooted in traditional culture and religious beliefs. They applied contemporary technology if required to address new demands while respecting the Iranian traditional lifestyle. Ideally, they demanded the preserving of intangible heritages, continuity of traditional culture and reviving of traditional Islamic architecture.

3.3.4 The Issues of Tradition and Modernity in Architecture

As criticisms of Westernisation increased, the issues of tradition and modernity in architecture became controversial and caused significant dilemmas among architects and the government (the main client of large projects). These dilemmas arose as clients and architects tried to respect Iranian tradition while using modern facilities and standards. This section will consider examples of the dichotomies in large projects commissioned by the government through articles published in Iranian journals and newspapers in the early 1970s. It will conclude with an explanation of a new style of architecture that developed from the debates on tradition and modernity.

Regardless of religious arguments, modernism existed in Iranian society from the beginning of modernism. In the 1960s, nationalist arguments were raised initially in relation to social issues and led to a new intellectual current.⁴⁰⁸ As mentioned above, some scholars in literature or philosophy criticised Westernism and emphasised the advantages of being against the West.

⁴⁰⁶ Sobat Sanei, "Barrasi Avamel Tasirgizar va Chegoneghi Tasir Anha dar Memari Moaser Iran," (Analysing the Influential Factors on Iranian Contemporary Architecture), *Honar* 157 (2000): 34.

⁴⁰⁷ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 186.

⁴⁰⁸ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 268.

Criticisms of modernism and Westernism also affected the popularity of modern architecture. Ardalan stated:

...by that time, the proponents of aesthetic and conceptual paradigms of architectural design in Iran had split into at least two branches—the majority of the first group of practicing architects pursued the modern international style, somewhat limited by available technology and local know how that could be overcome by collaborating with international engineering consultants. A smaller group of architects nurtured contemporary design solutions that grew directly out of the environmental and cultural context of Iran's rich architectural heritage, and was expressed either through a historical monumentalism or through a critical vernacular regionalism.⁴⁰⁹

As the middle and top classes of society expected high living standards, the prevalent forms of modern architecture in Iran seemed inappropriate. Architects sought to address this issue; however, finding an alternative that responded to the demands of society and at the same time corresponded to societal culture was not easy. The Queen, who had been a student of architecture at the *Ecole speciale d'Architecture* in Paris in the late 1950s, played an important role in finding a solution.⁴¹⁰ She hosted a series of international conferences through the Ministry of Housing and Urban Development called "The Interaction of Tradition and Technology." The first conference was held in Isfahan in September 1970. Many famous architects attended these conferences, including Louis Kahn and Hassan Fathy.⁴¹¹

Due to political considerations, the Queen did not intend to bring the spirituality of tradition back to Iranian architecture; rather, she sought a compatible interaction between technology and Eastern culture. In her opening speech at the congress, she stated: "the technological progress of our time" has provided "unlimited facilities and new horizons for those who create our human environments."⁴¹² However, the

⁴⁰⁹ Nader Ardalan, "The Abbasabad Story: Personal Insights and Recollections of Its Planning and Architectural Designs, 1966 to 1978." See appendix 3.

⁴¹⁰ However, she never finished her architectural studies. See Hamed Khosravi, "Politics of DeMonst(e)ration," *Tehran Projects* 6 (2013): 3.

⁴¹¹ The other architects invited included: Paul Marvin Rodulph, Buckminster Fuller, Georges Candilis, Abdollah Koran, James Stirling, Moshe Safdi, Kenzo Tange, Mohsen Foroughi, Houshang Seyhoun, Kamran Diba, Nader Ardalan, Benis Abdol Ali (Morocco), Yoshinobu Ashihara (Japan), Ascano Damian (Romania), Michail Hosseinoff (USSR), Abdullah Kuran (Turkey), I. M. Kadri (India), Jiri Moravec (Czechoslovakia), Mino Mistri (Pakistan), Marta Nicalescu (Romania), Ludovico Quaroni (Italy), Luis Blanco Soler (Spain), Oswald Ungers (Germany), Philip Will, Jr (US) and Otello Zavaroni (France). Khosravi, "Politics of DeMonst(e)ration," 5.

⁴¹² Ibid.

conference took an expected turn on the first day when Kahn described tradition as a source of validity for architecture, stating: “Traditions are as golden dust falling in space. If one but had the possibility of grasping this golden dust, we would possess the powers of anticipation of the future.”⁴¹³

The speeches of Fathy and Kahn are known as the most influential in the tradition versus modernity arguments of the 1970s. Most architectural historians agree that in the 1960s, Kahn, and to some extent Hassan Fathy, inspired the Iranian architects who had intended to avoid modernist styles (undoubtedly, the influence of Kahn was greater than that Fathy).⁴¹⁴ In this process, greater emphasis was placed on traditional indigenous architecture than traditional Islamic architecture. Traditional indigenous architecture in the Iranian sense was very different to the indigenous architecture advocated for by Fathy. The most obvious difference between the two was that Iranian architects had never tried to use local and traditional materials in construction.

As a result of the conference, Tange and Kahn were invited by the Imperial family in 1973 to collaborate on a shared design for the master plan of the political and administrative centre of Tehran in the Abbasabad Hills. John L Rayward, an American developer, and a young Ardalan were brought on as project managers.⁴¹⁵ Very soon a conflict appeared in relation to the direction of the design, but “before Kahn’s untimely death, a gentlemen’s compromise had been reached between Kahn and Tange, who had agreed to basically use Kahn’s concepts for Abbasabad. It was very clear that Tange very much admired Kahn and respected his direction of design thought. Tange formally wrote this agreement in a letter to Kahn dated February 27, 1974.”⁴¹⁶

⁴¹³ Ministry of Housing and Urban Development, *Interaction of Tradition and Technology*, 1970

⁴¹⁴ Ardalan stated: “I and others had the opportunity to suggest that Kahn be an invited Speaker. Some of us felt that of the many international architects of that time, he had the most vital message to offer to us, as a new phase of massive building development was commencing in this historic country. How did his creative mind achieve the sophistication to poetically integrate a metaphysical approach to Architecture and advanced technology? We wanted to hear of how his thoughts of the timeless value of traditional architecture might influence the future direction of Iranian Architecture. Kahn did not disappoint us, for in his talk, he spoke about the beauty of realizations that lies within the creative intuition and quoted Rumi.” See *The Abbasabad Story* in the appendix 3.

⁴¹⁵ “Khosravi, “Politics of DeMonst(e)ration,” 5.

⁴¹⁶ See “The Abbasabad Story” in Appendix 3.

However, suddenly, at the end of 1974, the English firm of Llewellyn Davies International received the commission for this project and:

Jaqueline Robertson, an American architect who had been the Director of the Mayor's Office of Midtown Planning and Development for New York City, was brought by LDI to head the project. With him came most of his multi-disciplinary New York staff, totalling nearly 50 persons, to prepare both the master plan and the detailed urban design/architectural guidelines.⁴¹⁷

It is important to note that in contrast to the previous team, LDI was not interested in a traditional scheme. In this respect, Robertson wrote: "We have tried in this plan to avoid reshaping Iranian culture so as to make it fill any preconceived notions of twentieth century technology or town planning theory."⁴¹⁸

This story is an example of the influence of the tradition and modernity debate at the highest level of decision making. While Ghobadian and some other historians believed that Kahn's perspective guided Iranian architects of this period, a considerable dilemma can still be seen in the attitudes, directions and methodologies of Iranian architects and the government.

Another example of this dilemma can be seen in the first symposium on architecture and urbanism in 1970. This symposium was suggested at a conference on the interaction between tradition and technology. The secretary of the symposium, Badie, noted that a lack of clear vision or insight meant that developing cities and new buildings were not being based on modern standards and consideration was not being given to the geographical conditions and social situation of the country. Housing became an important issue at the symposium and it was noted that it could play a key role in bringing together traditional and new architectural principles.⁴¹⁹ Contrary to this clear aim, the outline of this symposium reflected a confusion in methodology and no certain solutions were reached or suggestions made; for example, in the outline it was mentioned that for urban planning, protecting traditional contexts should not cause any disturbance to the urban order, and in relation to architecture it was suggested that in the

⁴¹⁷ Ibid.

⁴¹⁸ Ibid.

⁴¹⁹ Mahmod Arjmandi, "Akhbar," *Art and architecture*, no. 10–11 (1971): 106.

design process of buildings, blind imitation of foreign projects and exaggerated imitation of traditional principles should be avoided.⁴²⁰

Similar confusions in methodology and details can be seen in the second edition of Tehran's first master plan. While paying attention to traditional features of society and also preserving traditional buildings were emphasised in descriptions, no further details were provided and no instructions were given on the protection of traditional contexts.⁴²¹ Thus, it appears that even though the architects and urban planners of this period were aware of the significance of the issues of tradition and modernity, they settled for slogans.

This superficial reaction against modernity was caused by the public's expectations. In the early 1970s, tradition and traditional architecture were brought to the public's attention. Consequently, architecture, with a splash of tradition, was in high demand. In Tehran's morning newspaper, *Etelaat* (1969), a controversial interview was published with an unknown architect about tradition and modernity in architecture. It stated that young Iranian architects were paying more attention to traditional Iranian architecture than modern architecture and these architects were trying to bring together traditional Iranian principles and ornamentation with modern technology and materials. It noted that their attempts were creating hope for the future of Iranian architecture and it was predicted that this style would become ever more prevalent. Due to public opinion, many Iranian architects (even those known as modern architects such as Farmanfarmaian) began to claim in the early 1970s that they were opposed to modern architecture in its Western expression. As mentioned above, Farmanfarmaian had graduated from Bozar and in the 1950s and 1960s was quite active as a modern architect.

Similar contradictory statements were also made by other architects; for example, while Seyhoun, who was also a graduate of Bozar, was introducing his design principles based

⁴²⁰ Arjmandi, "Talashhaye Omrani Bank Rahni Iran," 107.

⁴²¹ Eshragh, "Tarh Jame Shahr Tehran," *Art and Architecture* 5 (1970): 6.

on simplifications and functionalism,⁴²² he criticised modern architecture in Iran stating: “our Iranian modern architecture has no value for three reasons, our technology is not as high as west; it’s based on a superficial copy and it is not appropriate for environmental conditions in Iran.”

However, unlike Farmanfarmaian and Seyhoun, some modern architects rose up against this new tendency; for example, Avanessian who was a leading figure of modern architecture, reacted by publishing a newspaper article that raised two questions: (1) was the precious legacy (with its own features and conditions) suitable for the time or not? and (2) would modifications of traditional principles in accordance with modern style be suitable in meeting the demands? He stated: “Definitely rollback is not possible in any field...art should not be jailed in tradition and ignore our contemporary life style.”⁴²³ Avanessian also criticised the endeavours of architects in the first *Pahlavi* era for combining traditional motifs with modern architecture, stating: “when women have no veil anymore and can walk in streets without any hesitating, buildings should turn their face to streets and there is no point for following traditional styles.”⁴²⁴

Avanessian believed that modernity was not a choice, but a condition. He also blamed the modern architecture of the first *Pahlavi* era and stated that if traditional approaches had become popular at this time, it was due to the negligence of modern architects of the previous period. He noted that most of these architects has graduated from Western schools and as they were inexperienced could not reconcile modern architecture with the environment of Iran.⁴²⁵ Similarly, in the journal of *Art and Architecture*,⁴²⁶ Bavar argued that modernism was the result of technology and could not be ignored. He also stated that modernism had not dramatically modified traditional architecture and had not created a new ordering system or typology, but only brought facilities and technics.⁴²⁷

⁴²² What I design is in accordance with programs and clients’ needs without too many ornaments so simplification is my aim. See Houshang Seyhoun, “Mosahebe Ba Seyhoun,” (Interview with Seyhoun) *Bank Sakhtemani* 1 (1961): 12.

⁴²³ Avanessian, “Memari Iran Dar Dorahi Sabk Meli Va Jadid,” 38.

⁴²⁴ Ibid, 37.

⁴²⁵ Ibid, 39.

⁴²⁶ Articles on the issues of tradition and modernity became very popular in Iranian architecture journals. *Art and Architecture* was one of the most popular journals among Iranian architects. It had been published in Tehran since 1969 in three languages: Farsi, English and French.

⁴²⁷ Cyrus Bavar, “Darmored Memari,” *Art and Architecture*, 2 (1969): 32.

As traditional approaches became popular and architects began imitating traditional Iranian architecture, these approaches were also subject to criticism. Buildings that were originally modern became traditional as high technology was used on their structures and façades to add arches and other traditional ornaments to cover their modernity.⁴²⁸

Based on these arguments it seems that in the second *Pahlavi* era, modernity was equal only to technology. Consequently, Iranian architects judged the prevalent modern architecture in Iran by the application of technology in construction. Conversely, the advocates of tradition, while admitting the necessity of technology, blamed modern architecture for a lack of coordination between modern principles and Iranian culture.

Two interesting points arise from these arguments. First, while the Iranian people in the second Pahlavi era were religious, their culture was not recognised as traditional and the speed of their modern movement in architecture did not occur at the same pace as it occurred in wider society. Second, most traditionalists did not have a theoretical basis for their arguments; however, their initial criticisms were derived from philosophy and literature and thus could be used as the foundation for architectural arguments.

The Emergence of a New Style of Architecture

As a result of the debates on tradition and modernity, a new style of architecture gradually emerged that advocated traditional values. Simplistically, this new style appeared to be similar to the post-modern style of the West. However, the principles of Iranian architects in relation to traditional architecture were unclear and had no theoretical foundation. Thus, architectural historians have analysed this style differently and refer to it by different names. This section will consider these analyses.

Some architectural historians such as Iraj Etesam believed that this new approach (like modernism) was still a form of Westernism and was just the Iranian version of post-modernism. In their view, as post-modernism emerged in Western countries, Iranian architects paid more attention to traditional architecture and began combining it with modern architecture.⁴²⁹ However, Ghobadian and Masoud opposed this view. In this

⁴²⁸ Mahin Zand Pirnia, "Naghdi Bar Kohangaraei Memari No," *Art and Architecture*, no. 3–4 (1970): 93.

⁴²⁹ Etesam and Poormand, *Memari Moaser Iran*, 88.

respect, Ghobadian cited Seyhoun's idea that post-modernism in Iran began 30 years earlier than in the West and thus had an independent character and should be referred to as Iranian novel architecture.⁴³⁰ Ghobadian ignored the philosophical basis of the new approach and stated that it was not similar to previous periods and was not simply a combination of modern architecture with traditional elements and ornamentation. In Iranian novel architecture, tradition and modernity are considered equals.⁴³¹ He classified all architects who tried to respect traditional architecture as Iranian novel architects, including Ardalan, Seyhoun, Amanat and Diba.

Conversely, in light of the eco-social forces appearing in literature and philosophy, Masoud argued that in the middle of the second *Pahlavi* era, vernacularism and historicism became very popular in architecture and all scientific societies, but was not only related to post-modernism. He called this new style "modern with a historical approach." Masoud recognised two internal reasons for this style: (1) restrictive political activities and lack of freedom of speech leading to vernacularism as a medium to stand against the King; and (2) protests made against Western cultures in the third world that encouraged Iranian scholars and intellectuals to voice their criticisms.⁴³²

⁴³⁰ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 266.

⁴³¹ Ibid, 283.

⁴³² Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 268.

3.4 Conclusion

From a historical point of view, Chapter 3 has explored the context of Ardalan's projects by analysing the history of the modern movement and the debates around tradition and modernity in Iran. Additionally, this chapter has analysed the influence of modernity in Iranian architecture and urbanism. From an analytical point of view, Chapter 3 has considered the background of Iranian criticism against Westernisation and analysed the situation that led to raising the debate on tradition and modernity. The following paragraphs review these analyses and descriptions to highlight the conclusions of this chapter.

Chapter 3 highlights that in Iran the tendency to modernity flourished in the *Qajar* era, the modern movement sped up in the first *Pahlavi* era and reached a peak in the second *Pahlavi* era.⁴³³ This chapter also explains how in the second *Pahlavi* era the Shah tried to generate an artificial class with modern features in Iranian society, which led to social tensions. The analysis in this chapter reveals that debates on anti-Westernisation were raised in literature before architecture. In this respect, Chapter 3 concludes that Nasr played a key role in the debates on tradition and modernity by promoting the esoteric aspect of Islamic philosophy, and particularly *Sufism*, as a Persian interpretation of Islam against Western culture, while the Shah issued considerable propaganda against Islam as a non-Persian culture.

As discussed earlier, Chapter 1 highlighted Ardalan's Gnostic view in studying Iranian traditional Islamic architecture. Further, by analysing the sources of *The Sense of Unity* Chapter 1 revealed that Ardalan was greatly inspired by Nasr's ideas on Islamic philosophy and Gnosticism. Considering this together with the conclusions described above suggests that *The Sense of Unity* was inspired by the debates on anti-Westernisation in literature and philosophy rather than architecture.

From an architectural point of view, this chapter has explored the role of a series of conferences entitled "The Interaction of Tradition and Technology" and also the efforts

⁴³³ The second *Pahlavi* era ended with the Islamic revolution (it should be noted that the modern movement continued after the revolution, but this is beyond the scope of this study).

of many scholars, architects and even the Queen to preserve local values against the Westernisation of Iranian architecture in the late 1960s and early 1970s. Based on this exploration, Chapter 3 concludes that these efforts were not completely successful and caused confusion and dilemmas. The main reason for this failure is the lack of a clear plan and strategy to preserve and revive traditional architectural principles. Taking a closer view, the next chapter will explore Ardalan's attitude to this issue and it will analyse the differences between Ardalan and other active researchers and architects regarding the issues of tradition and modernity.

CHAPTER 4: ARDALAN AND THE ISSUES OF TRADITION AND MODERNITY

4.1 Ardalan's Position on the Issues of Tradition and Modernity

Ardalan's projects have been comprehensively discussed in the previous chapters and the relationship between the book and the projects precisely analysed. In Chapter 3 the context of Ardalan's projects was explored in the light of the debates on tradition and modernity. This section analyses Ardalan's attitude in these debates. These analyses are made from two perspectives: (1) differences between Ardalan and other researchers in studying traditional architecture, and (2) Iranian architectural historians understanding of Ardalan.

4.1.1 *The Sense of Unity Made Ardalan Specific*

As discussed in Chapter 3, in debating the issues of tradition and modernity some Iranian architectural researchers tried to provide a theoretical foundation for the integration of Iranian, Islamic and traditional values with contemporary architecture. Generally, the necessity of applying the essence of traditional Islamic architecture (rather than traditional elements) was emphasised, although different strategies were proposed.

The majority of architectural researchers have had a similar understanding of traditional Islamic architecture in Iran and followed historians such as Grabar and Hillenbrand. In their view, tradition can be divided into many smaller periods with different features and styles. In historic architectural studies, the originality of elements and forms were identified according to historical evidence and based on Imperial dynasties and eras. Consequently, in their studies, traditional Islamic architecture in Iran was analysed according to its quantitative dimensions; Ardalan, however, paid more attention to its qualitative dimension. The following paragraphs compare Ardalan's understanding of

traditional Islamic architecture with the understanding of others in the field to identify differences between Ardalan and others on issues of tradition and modernity.⁴³⁴

In studying traditional Islamic architecture in Iran, two major approaches can be seen: Islamic and non-Islamic. The principles for both approaches are similar. Mohammad Karim Pirnia, who studied Iranian traditional Islamic architecture and held a strong nationalist view, argued that the correct title for these studies is “Iranian architecture during the time of Islam.” In his view, there was no generic Islamic architecture and no question of incorporating Islamic principles in architecture; rather, he asserted that traditional architecture should simply be studied in empirical terms according to national boundaries and historical periods. Pirnia articulated six main principles that formed the basis of traditional Iranian architecture.⁴³⁵ First, avoidance of idleness; in traditional architecture specific applications were defined for each space. Thus, architects designed spaces and even ornamentation for particular functions not merely for beauty. Second, modularisation: a specific module was applied to each traditional architectural complex. Third, the character of traditional Iranian architecture was introverted. Thus, using courtyards and inwards looking buildings was common. Fourth, the spatial scales in these buildings were appropriate for particular human activities. Fifth, traditional architects designed buildings on the basis of existing materials in the project’s environment and structures were not separated from the design process. Sixth, in this kind of architecture there was a strong hierarchy of spatial linkages.⁴³⁶

Conversely, Mehdi Hojat believed that Iranian traditional architecture was completely inspired by Islamic notions. He argued that the appearance of Iranian traditional architecture might be in accordance with indigenous skills and technics of the time, but internally it was influenced by Islamic notions and laws (mostly in the form of rationalism).⁴³⁷ His principles of Islamic traditional architecture were similar to Pirnia. Hojat nominated the following principles: sustainability, independency on exotic

⁴³⁴ It should be recalled that Chapter 1 identified the contribution of Ardalan to Islamic architectural studies and compared his ideas to others on a different scale.

⁴³⁵ Mohammadkarim Pirnia, *Sabkshenasi Memari Iran (The Stylistics of Iranian Traditional Architecture)* (Tehran: Sorosh Danesh, 1989).

⁴³⁶ Ibid.

⁴³⁷ Mehdi Hojat, “Memari Islami Chist,” (What Is Islamic Architecture) *Agahinameh*, 6 (1994): 59.

materials, human scale, priority of function, avoidance of futility and avoidance of extra expenses.⁴³⁸

Darab Diba is another well-known researcher in the field of traditional architecture. He articulated eight features of traditional Iranian architecture without emphasising or rejecting the role of Islamic notions. First, he noted that traditional Iranian architecture had an introverted character due to the priority of interiors over exteriors in Iranian culture and the importance of an inner reality in the cosmology of traditional Iranian people. Second, the concept of centrality was seen in most traditional buildings and represented unity. Third, a strong incorporation of architecture and the environment could be seen in Iranian traditional architecture. Fourth, the reflection of lights and images played a key role in all spaces. Fifth, in Iranian traditional architecture, geometry had an important role based on Islamic philosophy and cosmology. Sixth, transparency was another key feature of this kind architecture and helped with the continuation of place and making spatial linkages. Seventh, ambiguity integrated with simplification was evident in this kind of architecture. Eighth, a rhythmic balance inspired by the environment could be identified in most Iranian traditional buildings.⁴³⁹

While these definitions about Iranian traditional Islamic architecture are vague, general and applicable to any type of traditional architecture across the world, this study does not criticise them. Indeed, the above paragraphs show the common understandings of Iranian traditional Islamic architecture that impacted debates on tradition and modernity. These common understandings differ from Ardalan's understanding as crystallised in *The Sense of Unity* for two reasons. First, due to the significance of qualitative dimensions for Ardalan. Second, due to Ardalan's Gnostic approach to analysing traditional architecture. While the ideas of *The Sense of Unity* were comprehensively discussed in Chapter 1, it is worth recalling some of the main points.

In *The Sense of Unity*, traditional Iranian Islamic architecture was analysed from different points of view, including in relation to the esoteric relationship between Islam and Art. To Ardalan and Bakhtiar, Traditional Man was able to achieve a balance

⁴³⁸ Ibid, 61.

⁴³⁹ Darab Diba, "Elham va Bardasht az Mafahim Bonyadin Memari Iran," *Memari va Farhang*, 1, 84–86 quoted in Habibi, *Sharh Jaryanhaye Fekri Memari Va Shahrsazi Dar Iran* Moaser, 238.

between the invisible and visible worlds. Thus, the authors defined the esoteric value and qualitative dimension of architectural elements (such as space, shape, surface, colour, light) and the view of Traditional Man in relation to these elements as being based in *Sufi* doctrine.⁴⁴⁰ For example, Ardalan and Bakhtiar identified a sense of place as the key feature of Iranian traditional architecture and stated: “the concept of place or ‘*makan*’ is composed of both the container (body) and the contained (soul) ... [and also] Place does not have a tangible existence but exists in the consciousness of the beholder who visually perceives physical boundaries while his intellect perceives the spirit as contained, defined with the boundaries.”⁴⁴¹ Based on this definition, space is a soul in the body of form.⁴⁴² Thus, the idea of sense of place, positive space continuity, unity and multiplicity and Creative Man are contributions from Ardalan and Bakhtiar to Iranian Islamic architectural studies.

Another significant difference between Ardalan and other Iranian architectural researchers in studying traditional architecture and, consequently, in the debates on tradition and modernity is related to the Gnostic view that was followed in *The Sense of Unity* and Ardalan’s projects. Gnosticism, in *The Sense of Unity*, was generally based on anti-Westernisation views. Thus, *The Sense of Unity* included criticisms of Westernisation and modernity and reflected criticisms of architecture in light of Gnosticism. As discussed above, in the 1950s and 1960s, criticisms in respect of Western scholars centred on a comparison between Western and Eastern philosophies. Gnosticism was seen as a point of difference. Nasr was an avant-garde scholar in this regard and, based on the analyses in Chapter 1, Nasr was the most influential source for the authors of *The Sense of Unity*.

Masoud identified *The Sense of Unity* as the only source connecting Gnosticism to Iranian architecture according to Nasr’s ideas. He described the book as follows:

Sense of Unity is the first and the last theoretical book about Iranian architecture with mystical and institutive approach...*Sense of Unity* is not

⁴⁴⁰ On explaining why *The Sense of Unity* pays specific attention to Traditional Man, Ardalan stated “when you want to deal with architecture, you had to go into who was producing the architecture. The architecture was produced by craftsmen.” Haeri, “Interview with Nader Ardalan,” 28.

⁴⁴¹ Ardalan and Bakhtiar, *The Sense of Unity*, 13.

⁴⁴² The relationship between space and form is a key to understanding the principles of traditional Islamic architecture. See Seyyed Hussein Nasr, introduction to *The Sense of Unity: The Sufi Tradition in Persian Architecture*, by Nader Ardalan and Laleh Bakhtiar (Chicago: University of Chicago Press, 1973), xiii.

comparable with other books such as *Stylistics of Iranian Architecture* by Mohammad Karim Pirnia...because *Sense of Unity* has a strong foundation in theory. According to ideas in this book...an architect in traditional societies was in fact a Gnostic and his architecture was a reflection of his understanding of universe.⁴⁴³

Gnosticism, in theory and practice, provided Ardalan with a specific understanding of architecture and differentiated his perspective from other prevalent perspectives on anti-modernism. This contrast is evident in a dialogue between Ardalan and Darab Diba (an advocator of traditional architecture). This dialogue was published in the *Journal of Architecture and Urbanism in Farsi* in 1999. It concerned contemporary architecture in Iran. Interestingly, while Diba spoke about the conflict between the East and the West, the failure of the East in following the technology of the West and the complexity and multiplicity of contemporary architecture, Ardalan emphasised the concept of unity, inner reality, microcosm and macrocosm (concepts derived from Gnostic cosmology). In the dialogue, Ardalan stated:

...we try to find the archetype and think about that imminent truth. We try to understand our culture appropriately and we will undoubtedly reach the unity of being, unity of universe, life and all the factors which form our minds through this romantic journey. Here, I think it's required to remind the necessity of studying Rumi's writings, since his argument is an eternal debate. We insist to place the West against the East. But this contrast is not correct. Spiritual journey and perspective brings us to the eternal bond. The internal journey and the intellectual bond is facilitated in this way and thus leads to recognizing the Creator. The debate of intellect and reason has always been alive and present in civilizations and this could be the strong point and power of contemporary art and architecture. To explore this entity, two journeys are required. The first is the inner journey (microcosm), which searches for the hidden spirituality. Understanding your soul is partially the recognition of the world. The second journey is a macrocosm, which is about the relationship between the man and nature and through this, we talk about the architecture and innovation in technology and achieve specific technical solutions. This journey is very important in the discovery and perception of the world and self. The reason is that it reveals the relationship between man and nature, culture and technology, and such issues in some extent ... There is a spiritual attitude toward life and eternal light when talking about the nature. It won't hurt to refer to people like Nasr, Corbin and Suhrawardi here. It is possible to reach wisdom through the salvation light and following this will be gnosis through which unity of entity can be gained. Conscious view of the aesthetics of Iran's culture or the special aesthetics of the land within the puzzling world turns plurality, diversities, and complexities into a unity that will end up in

⁴⁴³ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 272.

understanding the perfection of the Creator, i.e., the unity of human's view to God, the Creator. We say there is no God but Allah; it's a matter of being and not being, and a matter of death and rebirth (Fana/Baha) which is the basis of that debate. Can life be measured? Louis Kahn discusses the futility of measuring the unmeasurable. Louis Kahn seeks God and truth in what cannot be measured, only intuitively sensed ... Complexities and cognitive networks increase every day. If we do not achieve a resolved unity, we might easily become only immersed in the world of phenomenal knowledge and information. Or we may deal with minor issues and details in an illusion of achieving the basics ... Have a look at the Persian carpet: countless geometric or floral patterns are interwoven in different directions. But finally the central theme reconciles them easily into a unity and brings peace. If we do not figure out the existential essence of life, we surely will be lost in the details.⁴⁴⁴

In this dialogue, Ardalan refers to the poetry of Rumi and the ideas of philosophers such as Nasr, Corbin and Suhrawardi and thus demonstrates the roots of his attitude in literature and philosophy. Compared to other traditional architects of his time, Ardalan did not place the West against the East in his Gnostic view. For him, the differences between the East and West were similar to differences between reason and intellect in the visible and the invisible worlds. He sought "a timeless, universal place, a transcendent architecture."⁴⁴⁵

In the dialogue, another major difference exists in relation to the use of traditional materials. While in the second *Pahlavi* era using traditional material, at least for finishing parts, was a common feature of projects with traditional approaches, Ardalan's idea was quite conceptual. Further, his understanding of geometry was interesting and reminiscent of Titus Burckhardt's views about sacred geometry. Ardalan stated:

We should not insist on the use of traditional materials, but rather on the use of modern facilities with respect to culture, nature and art. What matters is the composition and construction, which is not an easy task for sure. We should not confine ourselves to using only the brick due to respect for the environment, culture, history and our traditions. This is a wrong approach to today's world. Each of the material can have their own higher richness and identity if they are produced well and relied on thought, creativity and art ... Pay attention to the concept of Mud and Mirror (Khesht va Ayeneh), as the mud is heavy and opaque, while the mirror is light and reflective, as complementary parts of a greater unity. Mirrors, glass, transparency and light

⁴⁴⁴ Darab Diba, "Seyr Tahavol Memari Shahri Dar Iran; Negahi Be Technology Gharb," (Considering the Modification of Architecture in Iran in Light of Western Technology) *Memari va Shahrsazi*, 54 and 55 (1999): 173. You can see entire of dialog in Appendix 1.

⁴⁴⁵ Nader Ardalan, e-mail message to author, 6 April 2015.

are concepts that are considered as timeless metaphors of smart construction of space in the architecture of Iran and the world ... I really think that the context of this beauty lies in the sense of order that geometry brings forth. Geometry allows us to grow from one place to another, and understanding sacred geometry is an art by itself that flourishes in the human heart.⁴⁴⁶

As argued in the previous chapter, in relation to issues of tradition and modernity in the 1970s, the necessity of applying traditional values in contemporary architecture was understood, but lacked a clear instrument and, more importantly, a theoretical basis. This caused dilemmas for architects. In this sense, *The Sense of Unity* provided Ardalan with a clear pathway.

To make clear the role *The Sense of Unity* it should be noted that for more than 30 years Ardalan followed the major concepts of his book step-by-step and the book theoretically supported his projects. He stated: “[In my firm] we carried out very methodical coincidence, professional and theoretical work, trying to extend this vocabulary and grammar of traditional Persian architecture. Thus, you see, the Iran Center for Management Studies was the first test case, really, of the full blown theory.”⁴⁴⁷ *The Sense of Unity* created a clear path for the issues of tradition and modernity for Ardalan.

Additionally, the importance of *The Sense of Unity* becomes clearer when other architects (who did not have clear theoretical bases for their arguments and thus experienced dilemma and confusion in their approaches) are considered. Ardalan described the contemporary architecture of his time:

The contemporary architecture that came principally to Iran through Tehran University was object-oriented buildings. Yes, they did take their students to study, but they came back with motifs, so they would build, for instance, the great buildings that were done for many of the bank buildings or the Ministry of Foreign Affairs, or the Ministry of War, has the Persepolis stairs and the lion eating the bull, etcetera. These are all just symbols or objects being taken. They weren't studying the philosophy of the place-making or the social idea of the building. I think, in fact, one of the great, great lack[s] of attention of the [unclear] school was twofold. One, it had no social content and, second, I think it had no ecological understanding. So they just took motifs.⁴⁴⁸

⁴⁴⁶ Diba, “Seyr Tahavol Memari Shahri Dar Iran; Negahi Be Technology Gharb,” 175.

⁴⁴⁷ Haeri, “Interview with Nader Ardalan,” 32.

⁴⁴⁸ Ibid, 36.

4.1.2 Classification of Ardalan

The above differences were not seen by architectural historians and researchers who did not understand Ardalan's attitude in relation to issues of tradition and modernity correctly, mostly because Ardalan's projects have never been analysed according to *The Sense of Unity* and were always seen as being isolated from Ardalan's theoretical basis. Consequently, Iranian architectural historians have classified Ardalan differently. This section reviews a few examples of these unrelated classifications.

Such different understandings can be considered from two points of view. First, these understandings can be considered in light of Ardalan's projects over time. Ardalan noted that he has always considered his theoretical approach and designed his work by integrating timeless traditions and contemporary opportunities, but not changed them.⁴⁴⁹ He asserted that he has been inspired by Lou Kahn's perspective in this respect and stated:

Traditions are as golden dust falling in the light of space—timeless. If you could put your hands out and grab some of the golden dust, you would have the powers of anticipation. That is how I view traditions—something immutably timeless and profoundly valid as principles of thought.⁴⁵⁰

However, a question arises: If Ardalan's theoretical attitude and architectural principles have remained the same over time, how can his projects be categorised into different groups? Ardalan has adapted himself according to contextual and social forces and the technology prevalent over time. While Ardalan has kept his key concepts, his work has changed through his creative imagination to represent measureable conditions in their context and immeasurable conditions whose context is ontological.⁴⁵¹

Second, when considering projects individually, each project can logically be placed into different groups on the basis of whether it contains the principles of both parts or has characteristics dissimilar to a specific group; for example, the BHO can be classed as a form of brutalism, which is part of modernism, but it can also be recognised as a

⁴⁴⁹ Ardalan, e-mail message to author, 12 January 2014.

⁴⁵⁰ Ibid.

⁴⁵¹ “[An] architect needs to be courageous and innovative enough to cultivate the Aristotelian ‘golden mean,’ to find the perfect balance between the past and the aspirations towards the future.” Ardalan, “Building in the Persian Gulf,” 81.

post-modern building with clear traditional themes. It cannot, however, be placed in both categories, as the characteristics of brutalism do not align with the traditional Islamic concepts. Additionally, a lack of traditional forms and elements makes this project un-homologous with other projects of its time and traditional themes.

In this respect, Seyyed Mohsen Habibi provided the closest interpretation of Ardalan's works. In his book, Habibi introduced Ardalan as a neo-traditionalist and explained that neo-traditionalists advocate recreating traditional and vernacular principles either in Islamic or ancient concepts. In his view, this group of architects was inspired by criticism against modernism in the 1960s and tried to reread the principles of regional architecture.⁴⁵² However, Habibi provides no further explanations and thus his interpretation remains unclear. Compared to Habibi, Etesam analysed Ardalan's projects as an example of post-modernism in Iran.⁴⁵³ However, in relation to the resynchronisation between emerging post-modernism in the West and Iran, if Louis Kahn cannot be considered a post-modernist, neither can Ardalan.

Ghobadian categorised all architects with traditional approaches as proponents of Iranian novel architecture. He noted that in the design process, architects considered modern standards and traditional principles together, traditional ornaments were used, traditional elements for modern performance were updated and modern materials and structures were used.⁴⁵⁴ Ardalan was classified as a member of this group even though these features, particularly traditional ornaments, cannot be seen in his projects.

Masoud's understanding of Ardalan is an example of another attempt at categorising Ardalan. While Masoud noted the importance of *The Sense of Unity* in connecting the traditional approach in architecture to its philosophical basis, he did not follow the role of *The Sense of Unity* in Ardalan's architecture. Similar to Ghobadian, he classified Ardalan and other advocates of traditional architecture as members of the same group.

⁴⁵² Habibi, *Sharh Jaryanhaye Fekri Memari Va Shahrsazi Dar Iran Moaser*, 35.

⁴⁵³ Etesam and Poormand, *Memari Moaser Iran, 75 Sal Tajrobe Banahaye Omomi*, 441.

⁴⁵⁴ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 265.

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⁴⁵⁵ Ardalan, e-mail message to author, 12 January 2014.

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⁴⁵⁷ “[An] architect needs to be courageous and innovative enough to cultivate the Aristotelian ‘golden mean,’ to find the perfect balance between the past and the aspirations towards the future.” Ardalan, “Building in the Persian Gulf,” 81.

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⁴⁵⁸ Habibi, *Sharh Jaryanhaye Fekri Memari Va Shahr-sazi Dar Iran Moaser*, 35.

⁴⁵⁹ Etesam and Poormand, *Memari Moaser Iran, 75 Sal Tajrobeh Banahaye Omomi*, 441.

⁴⁶⁰ Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 265.

4.2 Ardalan and the Idea of the Contemporary

In this section, Ardalan's architecture is considered from another perspective. In addressing issues of tradition and modernity in the Middle East, earlier arguments have considered the ideas and theories generated from the inside, but have not considered the theories of anyone outside this circle. Here, Giorgio Agamben's theory of the contemporary will be considered; such an approach is unprecedented in the analysis of traditional Islamic architecture.

Agamben argued that the theory of 'contemporaries' is multi-faceted and can be analysed from six aspects. Three aspects of Agamben's ideas in relation to the concept of contemporaries are evoked and discussed in this thesis. The alignment between Ardalan's works and Agamben's views makes Ardalan 'contemporary' in Agamben's view.

First, Agamben's perspective on the relationship between contemporary and present time must be considered. Generally, and from a terminological point of view, the term 'contemporary' belongs to time. Indeed, 'contemporary' means happening or existing at the same time. In history and architecture, contemporary often refers to a specific period with particular features. Agamben (1942),⁴⁶¹ however, provided a new view on the concept of contemporary. Agamben's understanding of the contemporary was based on Nietzsche's idea that "the contemporary is untimely." This understanding defined a different reciprocal relationship between 'time' and 'contemporary'. Thus, from Nietzsche's point of view, this relationship was irrelevant.⁴⁶² This does not mean that these two concepts are totally separate; rather, it means that their relationship can be defined under specific circumstances. Agamben identified this circumstance as the: "relationship with time that adheres to it through a disjunction and an anachronism."⁴⁶³ Thus, those who are truly contemporary "neither perfectly coincide with [their time] nor adjust themselves to its demands."⁴⁶⁴

⁴⁶¹ Agamben is an Italian philosopher known for his work on the concepts of the state of exception.

⁴⁶² Giorgio Agamben, *What Is an Apparatus? And Other Essays*, trans. David Kishik and Stefan Pedatella (California: Stanford University Press, 2009), 40.

⁴⁶³ Ibid, 41.

⁴⁶⁴ Ibid, 47.

The second aspect relates to the importance of perceiving the darkness of the epoch. Agamben argued that “the contemporary is the one whose eyes are struck by the beam of darkness that comes from his own time.”⁴⁶⁵ He discussed perceiving the darkness as a singular ability and refereed to the “neutralization of the lights that come from the epoch in order to discover its obscurity ... which is not separable from those lights.”⁴⁶⁶ He stated that brightness leads to blindness. This feature of brightness was also emphasised by Islamic philosophers; for example, Suhrawardi stated that “the difficulty of knowing God is due to brightness ... there is nothing brighter than the sun, if the sun did not go down by night, or if it were not veiled by reason of the shade, no one would realize that there is such a thing as on the face of the earth.”⁴⁶⁷ From this point of view, darkness is essential to understand lightness. This concept is clearer if another aspect of the idea of the contemporary (in Agamben’s sense) is considered. He stated: “the present is nothing other than this unlived element in everything that is lived ... the attention to this unlived is the life of the contemporary. And to be contemporary means in this sense to return to a present where we have never been.”⁴⁶⁸

The combination of these second and third aspects demonstrates that the contemporary, in this sense, is a gap of previously unconsidered prevalent ideas and abundance and the frequency of prevalent ideas are the lights that come from the epoch and make observers blind. Thus, by paying attention to gaps, the darkness of the epoch should be perceived.

To demonstrate his perception of the darkness of his time, it is necessary to analyse the level of commonality between Ardalan’s works and his time and the level at which prevalent ideas in his projects were followed.

First, if a specific time and adjustment to the demands mentioned in the first aspect could be interpreted as responding to social forces and following the governing principles of a society in the sense of tradition and modernity, then architecture could be

⁴⁶⁵ Ibid, 45.

⁴⁶⁶ Ibid.

⁴⁶⁷ Margaret Smith, *Readings from the Mystics of Islam; Translations from the Arabic and Persian, Together with a Short Account of the History and Doctrines of Şūfism and Brief Biographical Notes on Each Şūfī Writer* (London: Luzac, 1950).

⁴⁶⁸ Agamben, *What Is an Apparatus?*, 52.

inspired by factors common to the works of other contemporary architects and also elude being affected by eco-social demands. In the period of Ardalan, some Iranian eco-social forces encouraged architects to adjust their designs according to demands; for example, high-rise construction was popular in this period as a sign of wealth and modernity. Conversely, some architects such as Seyhoun tried to apply traditional elements to their designs to respect Iranian traditional culture. Ardalan, however, tried to keep his distance from these two sides. This accords with Agamben's definition of contemporary. Second, if Ardalan had paid attention to the gap between prevalent ideas on tradition and modernity and perceived the darkness of his time, he would have been known as contemporary in the sense of Agamben.⁴⁶⁹

While previous discussions on the differences between Ardalan and other architectural researchers on issues of tradition and modernity demonstrated the alignment of Ardalan's approach with Agamben's idea of the contemporary, the following paragraphs draw limited comparisons between a particular feature of Ardalan's projects and two well-known Iranian architects to highlight the differences in relation to geometry and materials. Seyhoun (1920–2014) and Farmanfarmaian (1920–2013) were selected for these comparisons, as all architectural historians agree that they played an important role in the formulation of Iranian architecture in the 1960s and 1970s. Seyhoun was the chancellor of the Faculty of Art at Tehran University for six years, and by the late 1970s Farmanfarmaian directed the biggest architectural firm in Iran with more than 400 professional employees.⁴⁷⁰ Another reason for selecting these two architects relates to their similarities. They both tried to applied modern technology in their projects as much as possible. More importantly, like Ardalan, they both graduated from a modern school of architecture and were the most famous architects of the 1960s and 1970s. Mokhtari (an architectural historian) believed that Farmanfarmaian and Ardalan had a deep understanding of the Iranian traditions applicable to modern architecture.⁴⁷¹

⁴⁶⁹ Ardalan considers his work to be an aspect of Perennialism as expressed in architecture. Due to the integral use of timeless archetypal elements in his designs, his work defies time, as it seeks to express an eternal set of simultaneously tangible, yet intangible values that can philosophically be termed Coincidence Oppositorum (i.e., the union of opposites). Ardalan, e-mail message to author 6 April 2015.

⁴⁷⁰ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 311.

⁴⁷¹ Eskandar Mokhtari, *Miras Memari Modern Iran (the Heritage of Modern Architecture of Iran)* (Tehran Daftar pajoheshhayeh Farhangi, 2011), 218.

Seyhoun was classified as a modern architect with a historical tendency. Farmanfarmaian was initially classified as a modern architect, but gradually turned to Iranian traditional architecture. He stated: “I could not see some important points. I did not think that we were inheriting a precious architecture. Initially, I was just following famous Western architects because of the demands of the market.”⁴⁷²

Seyhoun’s most celebrated project is Bu Ali’s tomb (1938) in Hamedan. Some historians have stated that it shows Seyhoun’s deep understanding of Iranian traditional architecture because of the geometrical proportions applied in its elevations and floor plans.⁴⁷³ By considering the geometry of this building, one can see Ardalan and Seyhoun’s different approaches towards traditional architecture.



Figure 4.1: Bu Ali’s tomb (left) and Ghabous Dome from 10th Century (right)

Source: Wikipedia.

The building consisted of two main parts: a basement and a dome. Columns in the basement’s façade and the dome’s form are the most noteworthy features. The dome

⁴⁷² Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 214.

⁴⁷³ Ibid, 205.

reminds the viewer of a tomb from the 10th century in the north of Iran (see Figure 4.1). Additionally, in Bu Ali's tomb, Seyhoun stressed the form of the square, which was used in the floor plan of the basement; however, unlike Ardalan, this emphasis was not made because of the symbolic meaning of square. Seyhoun stated that there were 500 single squares in the floor plans and details. The elevation is symbolic of a man with open hands and refers to Bu Ali (see Figure 4.2).⁴⁷⁴ However, if this form suggests Bu Ali, then it also recalls the '*Uomo vitruviano*' of Leonardo da Vinci. Additionally, there are 10 columns in the basement's façade; the form of the columns recalls European classical architecture. The number 10 refers to the 10th century in which Bu Ali lived (according to the Iranian Islamic calendar).⁴⁷⁵

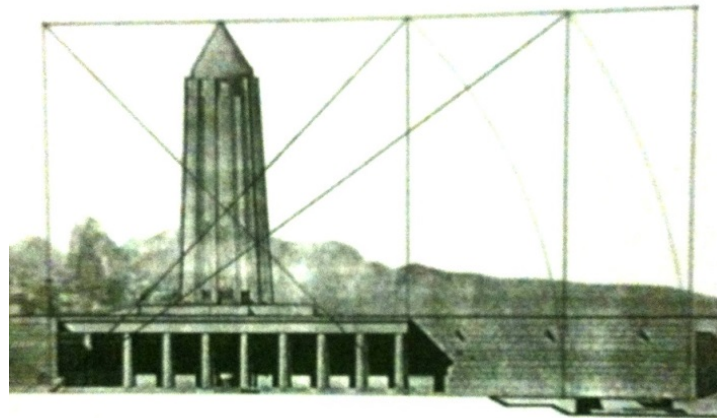


Figure 4.2: Geometrical proportions in the elevation of Bu Ali's tomb

Source: Housing Seyhoun, *Half a Century Artistic Activities in the World of Art and Architecture* (Houston: Sabco Intrests, 1998), 85.

In the 1960s and 1970s, geometry was rarely considered for its symbolic meanings even in projects where architects tried to follow traditional principles. Indeed, advocates of traditional architecture used traditional proportions and symbolic numbers and frequently applied particular geometrical forms in floor plans or elevations that had historical roots.

Conversely, Ardalan paid attention to specific geometrical shapes and not merely because of their pervious use in traditional architecture. Ardalan tried to find esoteric

⁴⁷⁴ Ibid, 302.

⁴⁷⁵ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 50.

meanings symbolically; that is, meanings based on his understanding of Iranian traditional Islamic architecture. For example, in the city of Hamedan, Ardalan designed the BASU. A big dome was located at the middle of the university, specifically, at the crossing point of the major north-south and east-west circulation systems. He viewed the dome as a contemporary *Chahar Sou*; however, its structure was completely different from traditional domes (see Figure 4.3). Indeed, even its form was dissimilar to traditional Iranian domes. However, the dome emphasised Ardalan's concept of centrality, an Islamic concept of Gnosticism.



Figure 4.3: The unusual structure of the dome at Bu Ali Sina University

Source: Author

A similar approach can be seen in Ardalan's design for the ICMS. In this project, Ardalan incorporated a few traditional forms and elements (similar to Seyhoun). He also tried to use the concepts of traditional forms; for example, Ardalan used octagonal forms and emphasised their central points.

As mentioned in earlier chapters, from a geometrical point of view and according to Ardalan's sketches, the octagons were inscribed in the biggest circle with eight common points. These points would have been marked before the octagon was drawn;

consequently, the second stage of drawing the unit's floor plan comprised a central point and its connections (i.e., radiuses) with the eight points of a locus circle.

Ardalan tried to express his understanding of Islamic cosmology based on²¹³ Gnosticism and, specifically, the *Sufi* doctrine. He stated:

In *Sufism*, the visual sense of a circle is one of the supreme symbols of the relationship of man and spirit. In the macrocosm, man (*jism*) lies at its center, the radii are as the souls (*nafs*) of other beings moving towards the perimeter and the encompassing circumference is as the infinite embrace of the Divine (*ruh*). In the microcosm, the relationship reverses, with man (*jism*) as the circumference, the radii his soul (*nafs*) seeking the spirit (*ruh*) that lies at its center.⁴⁷⁶

This ternary (i.e., centre, radius and circumference) symbolises the first comprehensible form of unity and multiplicity and also the relationship between the knower (the essence), known (the names) and knowledge (connections).

Ardalan's projects can also be compared with Khayyam's tomb (1951), another project of Seyhoun located in the city of Nayshabor. The importance of this project related to the form and materials used in the tomb. Both are pertinent to this discussion; however, its geometry relates to the discussion above and the materials used lead to a new comparison between Ardalan and Seyhoun.

The height of this tomb is 22 metres and its structure is steel covered by concrete. It is comprised of 10 columns. The inside and outside surfaces are covered by tiles and small pieces of stone. The inspiration for idea of the form came from 'Karbandi' (Mandala). Karbandi was often used in traditional Iranian architecture under domes as an ornamental structure. Geometrically, Karbandies transform a square to a circle. Seyhoun stretched the form of Karbandi in this project. Seyhoun also used tiles as ornaments for the inside and outside of Khayam's tomb (see Figure 4.4). Tiles were used as ornaments in Iranian traditional architecture from the 10th century until the 19th century. In each period of history, specific colours and patterns of tiles were used. Seyhoun also used tiles in other projects (e.g., the tomb of Attar, 1952, and the Kamal Al-Molk, 1952).

⁴⁷⁶ Ardalan, e-mail message to author, 6 April 2015.

Farmanfarmaian is another well-known architect who used tiles in some of his projects to make a connection with Iranian traditions. The Iranian Pavilion in Montreal (1967) is one such example. The façade of this building attracts people because of its fancy patterns and the bluish colour of its tiles. The tiles were used precisely on the surface of small cylinders (see Figure 4.5). The outside of this ornament reflects Iranian traditional architecture. In relation to this project, it has been said: “For making an Iranian building I covered entire of façades with blue tiles so observers can understand that this is an Iranian building and it is not Chinese or Indian.”⁴⁷⁷

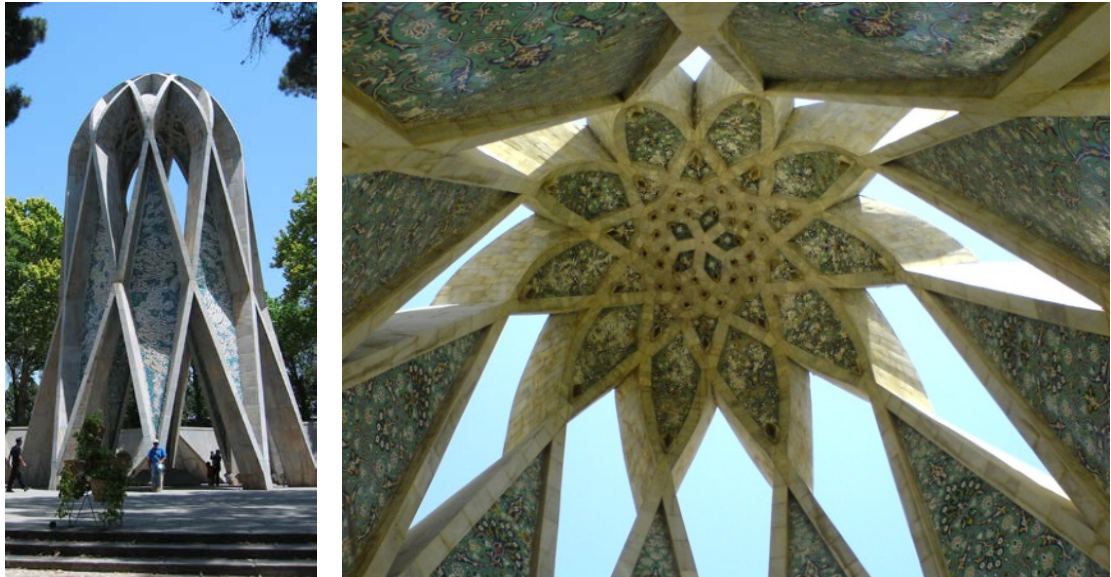


Figure 4.4: Khayam's tomb

Source: www.hippowalpapers.com

⁴⁷⁷ Masud, *Memari Moaser Iran, Takapoei Beyn Sonat Va Modernite*, 313.



Figure 4.5: Tiles on the façade of the Iranian pavilion

Source: www.caoi.ir

From the 1950s to the 1970s, tiles with traditional colours and patterns were used in some projects, this has been referred to as a superficial factor by advocates of tradition in architecture. It is important to note that this approach is not similar to Fathy's approach to traditional architecture; Fathy used traditional materials not only as ornaments for façades, but also as cheap structures for his projects.

Conversely, Ardalan did not always emphasise the use of traditional materials. Indeed, he did not necessarily show the relationship between his architecture and tradition through his use of materials. In his projects, different types of material for façades were used depending on the projects' budgets and the structures. Façades in Ardalan's projects were covered by brick, concrete, cement, curved glasses and metal. Structures

were exposed in some of his projects and hidden in others. Interestingly, Ardalan did not use any sort of traditional ornaments; here his approach differed from the majority of traditional Islamic architects.

On a small scale, Ardalan may have chosen not to use any ornaments in his design projects because ornaments can be interpreted as a form of brightness. Ornaments can strike the eyes and thus would not have allowed observers to perceive the particularly esoteric meanings and Islamic concepts Ardalan expressed symbolically in his designs. On a large scale, Ardalan did not follow any common approach and, mostly, his works are not similar to others. The only feature repeated in Ardalan's projects was the use of Islamic concepts and these Ardalan tried to represent symbolically. The differences between Ardalan and other architects of his time (particularly advocates of tradition) show that Ardalan's attitude can be considered as contemporary from Agumben's point of view

This idea of contemporary, however, does not cover the entirety of Ardalan's endeavours and all of his projects, including the TMCA, symbolically express Islamic concepts through geometry. Notably, Ardalan also used the form of the traditional 'wind tower' for lighting. This kind of connection to Iranian traditional architecture is similar to that used by Seyhoun and discussed earlier.

4.3 Conclusion

This section briefly reviews the analyses of Ardalan's thought and work in the light of the debate around tradition and modernity to outline the conclusion of Chapter 4. The analyses presented in this chapter were based on the previous chapters; consequently, it is worth remembering that Chapters 1 and 2 explained Ardalan's understanding of traditional Iranian Islamic architecture and outlined how he applied the principles of traditional Iranian Islamic architecture to his architecture. Chapter 3 investigated the context of Ardalan's projects and the background to the issues of tradition and modernity in Iran.

The main aim of Chapter 4 was to recognise Ardalan's attitude to the Iranian issue of tradition and modernity in comparison to that of other researchers and architects. To do this, Chapter 4 analysed Ardalan's thought and work from three perspectives: 1) the differences between Ardalan and other researchers of traditional architecture; 2) other Iranian architectural historians' understanding of Ardalan; 3) the similarities between Ardalan's architecture and Giorgio Agamben's idea of the contemporary. The following paragraphs review these analyses and draw the conclusions from them.

From the first perspective, Chapter 4 compared *The Sense of Unity* with the outlined studies of Iranian traditional architecture. This comparison highlighted that regardless of the differences in the methodology of these studies, the common understanding of the principles of Iranian traditional Islamic architecture that have impacted the debates on tradition and modernity are vague, general and able to be applied to any type of traditional architecture across the world. Additionally, in Chapter 3, which discussed the issues of tradition and modernity in Iran in the 1960s and 1970s, it was shown that the necessity of applying traditional values in contemporary architecture was understood by Iranian architects; however, the lack of a clear and comprehensive understanding of Iranian traditional architecture caused dilemmas for them. Consequently, Chapter 4 concludes that *The Sense of Unity* saved Ardalan from this confusion by providing a clear recognition of traditional Islamic architecture and consequently a theoretical foundation for his architecture.

From the second perspective, Chapter 4 analysed Iranian architectural historians' understanding of Ardalan and highlighted their differences, since Ardalan has been introduced as a neo-traditionalist, neo-classicist and novel architect and his projects have also been variously categorised.⁴⁷⁸ These analyses were supported by the key role of *The Sense of Unity* in the issue of the debate around tradition and modernity, as well as by the fact that Ardalan's projects have never been analysed according to *The Sense of Unity* and have always been seen as being isolated from his theoretical basis. Consequently, the second conclusion of Chapter 4 is that Iranian architectural historians did not understand Ardalan's attitude towards the issue of tradition and modernity correctly, and classified him inappropriately, as they ignored the role of *The Sense of Unity* in his work.

From the third perspective, to rectify this misunderstanding, Chapter 4 suggested a new classification for Ardalan's architecture. In this chapter Ardalan's architecture was examined against Giorgio Agamben's ideas on concept of the contemporary, which is unprecedented in the analysis of traditional Islamic architecture. Chapter 4 demonstrated the alignment between Ardalan's architecture and the concept of the contemporary. Thus, Chapter 4 concludes that Ardalan's projects after *The Sense of Unity* can be classified as contemporary Islamic architecture.

⁴⁷⁸Behshahr Headquarter Office is viewed as post-modern architecture (Etesam and Poormand, *Memari Moaser Iran*, 441.); brutalism is also noted (Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 246). The ICMS, BASU and Tehran Contemporary Museum have also been nominated as Novel Iranian Architecture. Ghobadian, *Sabk Shenasi Va Memari Nazari Dar Memari Moaser Iran*, 267.

CONCLUSION

Summary

This section reviews the purpose and the structure of this study, and recalls the conclusions of each chapter to highlight their relationships. Finally, this section suggests a new area for further developing this research.

Debates on tradition and modernity in architecture have flourished in Iran since the early 1960s. The main purpose of these debates has been to preserve traditional values and vernacular architecture against Westernisation and modernism. This study has focused on Ardalan's scholarly and design work to analyse his attitude to these debates.

The structure of this study is in two parts. The first part attempts to analyse Ardalan's character as a scholar and an architect. The second part analyses Ardalan from a broader view in comparison with other scholars and architects active in the debates on tradition and modernity in Iran.

To understand Ardalan as a scholar, in Chapter 1 this study analysed *The Sense of Unity* from both the internal and external viewpoints. From the internal viewpoint, the analysis of the ideas of *The Sense of Unity*, their relationships and background allowed the conclusion that Ardalan had a Gnostic approach to traditional Iranian Islamic architecture, which is radically different from other historians' methodologies. The differences between Ardalan's approach and the conventional approach were analysed from the external viewpoint to identify Ardalan's contributions to Islamic architectural studies. Additionally, exploring the primary and secondary sources for *The Sense of Unity* not only validated these conclusions, but also revealed that Ardalan's understanding of Islamic architecture, rather than being influenced by historical events and geographical boundaries, was considerably inspired by Rumi, mystic poetry, and Nasr's ideas on Islamic philosophy.

To understand Ardalan's work, Chapter 2 analysed a series of projects from different periods of his professional career. This was done based on the earlier analysis of Ardalan's understanding of traditional Iranian Islamic architecture. Analysing these

projects, both individually and in relation to each other, showed that after publishing *The Sense of Unity* Ardalan's projects in the Middle East were inspired by the ideas addressed in the book, although the levels of this inspiration have not always been equal. The ideas of *The Sense of Unity* have been primarily conveyed in geometry rather than in traditional ornaments and elements.

As mentioned above, the second part of this thesis aimed to analyse Ardalan from a broader perspective. Chapter 3 reviewed the history of the modern movement in Iran and its influences on contemporary Iranian urbanism and architecture. It also explored the endeavours of scholars and architects to preserve traditional Islamic values and Iranian vernacular architecture against Westernisation, in order to present the context in which Ardalan worked. Chapter 3 concluded that although many efforts were made to preserve and revive traditional Iranian architecture, these efforts were not completely successful due to the lack of a clear plan and strategy.

Chapter 3 also demonstrated that with respect to the theoretical foundations of the debates on tradition and modernity in Iran, from a philosophical point of view Gnosticism became important in these debates as a privileged feature of Eastern culture against Western culture. Nasr was an avant-garde scholar in this respect.

Chapter 4 brought together the results of the previous chapters to analyse Ardalan's theoretical and practical attitudes to the Iranian debate around tradition and modernity in architecture. Analysing the differences between Ardalan's understanding of traditional Iranian Islamic architecture and others in the field revealed that the conventional thinking on traditional Iranian Islamic architecture was vague and general, and able to be applied to any type of traditional architecture across the world. Chapter 4 also analysed Iranian architectural historians' opinions of Ardalan. By considering the differences in their thinking on Ardalan, and given that his projects have never been analysed in relation to *The Sense of Unity*, it was concluded that Iranian architectural historians' opinions of Ardalan's projects were contradictory and incorrect, since they did not consider the influence of *The Sense of Unity* on his work. To rectify this, Chapter 4 suggested a new classification of Ardalan's architectural attitude in line with the thought of Agamben on the concept of the contemporary. In this regard, the

differences between the design principles apparent in Ardalan's projects and several other outstanding projects of his time were analysed in relation to the debate on tradition and modernity. Consequently, Chapter 4 concluded that due to the alignment between Ardalan's architectural attitude and the concept of contemporary redefined by Agamben, each of Ardalan's projects after *The Sense of Unity* can be classified as contemporary Islamic architecture.

Reviewing the conclusions of this study shows that preserving traditional architecture is not limited to the application of traditional elements to contemporary architecture, since Ardalan's projects are conceptually inspired by traditional architecture, while most of these principles are conveyed by geometry in his projects, rather than by ornaments or other well-known traditional elements. However, this raises the question as to whether the intention of architects to conceptually apply the principles of traditional architecture to contemporary architecture is enough? Or should these concepts be understandable by the users as well? This question could be addressed in future studies.

APPENDIX 1

This section contains the transcript of the first interview with Ardalan in Tehran on 28 October 2012.

Interview with Nader Ardalan

28 October 2012, Tehran

Ardalan: I think it is a most auspicious that having come to Tehran to be jury for the Shams Tabrizi in Iran is very wonderful occasion that meet and talk about this subjects because have been judging 240 entries for this project and it has raised a lot of beautiful discussions here in Tehran with lovely friends about what it means to design a place for spiritual master and how we represented it in architecture specially someone like Shams I believed by beloved Mulana Jalaledin Rumi on the 13th century gifted to the world who wrote “Masnavi” up to age of 37, 22000 couplets of master piece of Persian is called the “Persian Goran” but this is gifted mufti meets Shams at 37 years old, Shams is 60, and he immediately falls in love spiritually and he turns into inner form , Ice to fire, Mulana burns when in time Shams leaves after 3 years. He says: “I was raw, I was cocked, and I was burnet.”

This is the experience that I am going through. How do you develop an architecture for such a palace to become memory so this conversation we having must be on that level, right, your PhD should teach us and those who read your book, I hope it comes a book, it is worthy and I am sure it is worthy, that is a lesson about how to bring the spirituality into architecture and to be honest with you it is not Islamic spirituality only because if it is true spiritual it must transcend one people it must be universal. Is the divine only in Islam?

No Divine is beyond own religion. You remember the wonderful poem of Mulana [so] you know, what is to be done [by] all Muslims neither Christian nor Jew nor Zoroastrian nor.. This is no that and keeps on going. He says I actually find no place, my trace is traceless.

You are dealing with this aspect of transcendent aspect of [life]. I believe architecture that be truly meaning must resonate at this highest level. If it is good [on] that level then

it also be Islamic or Christian, does not matter, but because we born in this context we read and are more familiar with literature of our culture and of course what is truly our culture is really ancient and it is not the fact that other people are not ancient. It is a fact that we had culture and a civilization. I mean we taught that.

When I start my research with Roman Ghirshman⁴⁷⁹, I first saw him at Masjid Solayman and he was drawing Passargad we thought that Iranian civilization went back to Marlick, 7000 BC even more ancient since the last great ice age dominated the civilization survivals. Let's say at least 10000 years as living civilization. My research in Persian Gulf that deeply to along the element of civilization and the element of Sumerian civilization, 2-3000BC, they are already saying yes our ancestors said these to us so already before them the idea of courtyard house of cosmic architecture must deeply into these people so this the civilization that has been called the Cradle of civilization so you are writing about a long devolving series of civilization that have lived on this land and have come and gone. Therefore it is Elamite, Zoroastrian, Sonny Islam and then suddenly a transformation occurs during the Safaviye period, mainly in vision Shia, from a strange place I that found in Hoof Hoof in the west of Saudi Arabia where the Galbantian civilization [was], these things of "Batin" and "Zahir" that you and I used, came to Shia [from Galbantian civilization] and also went to the Fatima in Egypt and founded Ismailiye civilization, they brought by Safavi. They believed in the Shia Sufism of early Safaviye [period]. So we [Iranian] became Shia in 16-17 century, you know that.

We just get in to this and of course this idea of master -disciple spirituality is pre Islamic, the Zoroastrian system (Dr Farhangmehr's book). He [Farhangmehr] is a friend. He wrote a lots of books about mystical tradition of Zoroastrian and it is exactly [same as] the Sufism.

We should find how in fact you should write about now; I hope you are going to deal with it as applied theory.

Please do your PhD as an applied theory. Do not stay at theory and find more.

Would you allow me to give my first impression?

First of all you entitled "Ardalan as a scholar and an architect" I would say you might consider Ardalan as an architect scholar because as you emphasized, it makes separate. In general there is a question of emphasize. Ardalan is primarily a professional architect

⁴⁷⁹ French archaeologist in Iran

he researches, writes, teaches primarily to design and built work. Therefore the reemphasizing would be more representative of Nader.

I did a quick analysis of total pages that you have written and the amount that you wrote about Ardalan as an architect is about 40 pages and it's only about 6 projects. I have done 200 projects⁴⁸⁰ from city to furniture to hospital to school to houses; I think I have to send you a CV like applying for a job.

I know that you went to Shahla Haeri but I think as an architect you really need to put barriers on your emphasize. This is where you came in, should be of your interest. Right now I sense the interest of you is more scholarship and less architects so you put a lot pages, 120 pages, for scholar aspect of Nader. Very nice but please do not. Because in the work is the proof of pudding that's my contribution.

I am very good student I read and repeat a lot of things, I wrote these things to try to understand, and I believe this likes digestion. You eat this cake, to taste the cake I describe it but the eating is the proof of the pudding is in the eating so I eat these subjects to transform me.

You put a lot of discussion about tradition and modernity and it is very true once as you use [the] word tradition and traditional form but people misunderstand that you suggest ritual progressive backward looking traditionalist, no no. in that tradition there is universal timeless and in that timelessness [there] may be the possibility of new creation, what is happening in every second consequently, because you are no more than 7 years old, [as] the oldest cellule on your body, Cellules just re-born and re-dying instantly Ok now just because you are using the same idea of cellule that worked for your grandfather and goes back to beginning of Homo sapiens so are you a traditionalist? No you are externalist that's we are looking for.

We need to go back, Iranian architecture, and try to look at our origins. Where did come from?

Best we know is we came from some create theory at 13000000 years ago there was something called "big bang" and you and I were only cosmic dust and waves temporarily [unclear] and transformed to this form and to be transformed to something else. We are transforming every instant in our life.

Passing below or on the bridge is never the same. I do not like to check your work. Correct your emphasize and select the representative references, both references and

⁴⁸⁰ Just 11 projects are mentioned in Ardalan's official website.

projects. If you are dealing with particular topic “Ardalan” that is more representative of this person. Because he must represents a type. The only interest is the typology of spatial there has been but he is a typology but he did not do unique case study that all are interesting, right?

By the way I have never worked in Israel; I have been hired by the Harvard University and by king of Jordan to do resources studies of the old city of Jerusalem which belongs to eternal God. So my studies like a preservation study of Baba Hotta area which is the Muslim area of Jerusalem and the king of Jordan contracted with me to do the first computer study of the preservation visual base of the old city of Jerusalem. Take that one out because that one is misinforming.

I think the detail of Ardalan as an architect you wrote has 3 parts, the pre *Sense of Unity*, the immediate *Sense of Unity* and the mature Ardalan.

Definitely I was an architect chain Harvard and built my first building in the part one of pre *Sense of Unity* in San Francisco. So I built Saman with association but you know I was doing the drawing that was put into construction contract in San Francisco. My first rebuilding was the materials testing lab at the University of California. I mean the idea of conception, (of course I was child I was just 22, you know circumstances, some guy get sick and another guy is not a right person and then I was an Iranian quite passionate to do my first building, it is a building still up), this building was next to very historical building and I know immediately that I had to respect this history because it is considered in the University of California as a historical monument. I was already very respectful so my building tried to be respectful, any way that was my first building.

I also did other pre *Sense of Unity* buildings because in the NIOC⁴⁸¹ I was designing, I have done many donations. It was a school for children in Masjed Solayman and I truly believe that we built it for 50 cent per square meter in 1964. Out of local stone from the mountains of Masjed Solayman and then the [using] Iranian Oil company had lots of pipe lines to [unclear] over load bearing stone for beams and then in that area there is a beautiful place area called Shoshtar which is the most fantastic architectural of empire of Sasanian and also there is a place which reeds grow, the type of reeds that Mulana talks about that “ney.” You know his poem about the reeds.

These reeds as you know they are bondable together and then make slabs of reeds that are about 3-4 cm thick or less. As you can bend them [I] used as a vault. I built the

⁴⁸¹ *National Iranian Oil Company.*

school [by] stone, pipe and then bent reeds that formed roofs and then we covered all with cement. That was the first building then we get museum to preserve artifacts of Masjed Solayman.

On that time one of the first designs [was] with Kamran Diba for the museum of modern art in Tehran and Diba has taken all [its] credits. I did this because I came up on weekends to Tehran and Kamran has just come back to America. He (Kamran) said:” Nader I have a boutique and I have a restaurant and also I have an office and the queen has given me this museum but I do not have time to do it, would you please do it?” so for nothing but you can eat all you wanted in the restaurant, it was in Rasht Street. Any way I did the design and it was not built until 1976 when I was in America.

That was the pre *Sense of Unity*. Please, you must include project of my works. That project was nominated for the Aga Khan award. They send people out, they recorded [the meeting], and asked [Diba] about technical team. He [Diba] said Ardalan was also co designer. On that time I was in steering committee of Aga Khan Award. We cannot give a prize to our steering committee [members] so the project was [got] out of competition but through that process they documented what was the truth about the design so I think that is a project that I am very proud of.

Pres *Sense of Unity* means that I was already researching and traveling to places like Kashan and Yazd and also photographing so that time this was 1966 I was doing this design [modern art] and that was getting me into “Badgir”⁴⁸² and “Norgir”⁴⁸³. I think that 2 projects occurred during the writing of *The Sense of Unity* so on one part you are researching and writing and you are building at the same time so the first design is for the ICMS, the Iran Centre for Management Studies, which is Imam Sadiq (a) University . I am very happy you used that but please do not over emphasize that. The only reason is that has been documented so people think that is Nader but that was Nader as a baby Nader, you know 1969. Because I was teaching at the Tehran University and use to take students to the different cities and we spend a weekend. We were like masonries. We sketch out the town and [ask the students] you go this corner; you do this drawing of this building and use to meet at night at the hotel, it was a school at night, and we would talk. This was really useful for students. We went into historic works, do and get that dome; the “Badgir” was not working right? ... And purely reported and students said: it

⁴⁸² Tower wind.

⁴⁸³ Skylights.

works this way sometimes right sometimes wrong... We were drawing and photographing.

On that time my friend Habib Lagevardi, who has been a long-time friend, he was studying business at Harvard when I was studying architecture, and we have known each other since 8-10 years old, he said I want to start this school [ICMS] so we did this design while I was a partner of Aziz Farmanfarmaian and he was not very interested because Aziza want to do two things. He was interested in bringing very modern architect and also he would do very elegant Gajar houses these two are pieces of this man and I was doing a vernacular village. It was too humble, it was not grand but the next project that we got it was a big success that the queen opened to the big success. Because on that time she was trying to do folkloric and encouraged the crafts. By the way it was the first of that crafts movement. It became something that others saw old so they did some piece good-bad and generally others were interested. I think it truly was the time of regionalism although that term had not yet been advanced but we knew although those have been trained in the west, in Bauhaus and International Style.

We already knew in early 60's that was not enough. That was too sticking of culture. That's why working with Charles Bassett⁴⁸⁴ in SAO, San Francisco was pleasure because Bassett had been trained and worked with Saarinen⁴⁸⁵. Saarinen was a modernist but he was [also] a craftsman so with Charles and Chaco we draw, (do you know Chaco? He was the director of design. He was 40 years old but on the weekends he would go to museum and learn how to draw better), and follow his crafts style that was the beginning of what was turned by Ventur⁴⁸⁶ and others post-modernist.

We were not interested in history. We were interested in identity and relevant. We knew identity when I came back and did Saman and others. I was very proud to bring new technology. I brought pre cast load bearing architectural concrete technology to Tehran in 1966. Saman is carried on 5 cm load of bearing post tensioning concrete. We did a floor of building in a week it was unbelievable and we found beautiful quartz which has silica in it in Iran. We took whit cement put quartz crushed in it for aggregate and so Saman was a beautiful load bearing pre cast concrete in quartz and white cement. I do not think it had been done even in the world but we were doing that in Iran. That was the beauty of the opportunity of Iran and with technology I did Behshahr for Haji Aga

⁴⁸⁴ Edward Charles Bassett (1922–1999) was an American architect.

⁴⁸⁵ Eero Saarinen (1910-1961).

⁴⁸⁶ Robert venture (1925).

Lagevardi. They wanted to move out the Bazaar for an office and I did a court yard. So I did Behshahr[building] by my friend ,Mehdi Kosar, he used to be head of architecture faculty at the Tehran University and he was in Aga Khan committee as well at the same time and he nominated that building because he has said to me: “Nader that both are traditional and modern and technical because you used technology in Saman but you go to western building but you use technology in Behshahr and you go to traditional building.” so these are interesting buildings and [still] exist.

I want to say to you in both ICMS and particularly in Behshahr building I have always worked with great artist, draftsman, so Arabshahi on that time was just also 28 years old he was doing beautiful carving in terracotta so if you go to Behshahr’s auditorium I have got mineral 30 meters in Arabshahi’s carved. What was he doing? He was doing the roof plan of Kashan in terracotta so I mean it was a fine period of young people, Zenderodi was doing painting, and we were all in crafts movement that was in the period of writing of *The Sense of Unity*.

Post *Sense of Unity* to be honest occurred at the period that none of us knew it was the beginning of the end, 1973. Iran was going through the OPEC crisis and suddenly Iran earning 16\$ per barrel and Iran took off like a rocket (between 73-78) and the pace of change was so rapid. That small group of people, who were doing it, was so busy [with] changing the course of history of Iran to bring into modern age that there was no paying attention that you only representative 5-10% of Iranian population and 90% of population was [in] traditional society. They could not keep up with you. They were not educated like you and so it was intension and I did a lot building in much bigger scale on that time but many of them were not built because iran was spending a lots of energy [on] master planning designing, things that need 2-3 years to prepare drawings and then very large budget so the oil change brought legally more funds to Iran but really the money did not solve to flow until 1975. By that time, such bad luck of project were built and then few buildings we got, some universities began to build but not a lot. My biggest concentration on that time was the Asian Games and I had worked in San Francisco with a group of people who were doing huge baseball and football field for Oakland, California. You are in an office right to next you this is being done, young kids always asking what are you doing?, so it was always sharing. When I came back Aziz wanted very much to do an earthen stadium. I had been doing buildings with people were doing it [stadium]. Also at the Harvard we had a wonderful professor. His

name was Professor Yearsi Soltan who had been the right hand of Le Corbusier. Harvard when I was studying there was run by Jose Luis certain school was really influenced by Le Corbusier and Busier came to Harvard only once when I was there on that time he was doing his only building which the Carpenter of art centre which is a strange building but it is built. Any way this gentleman [Soltan] was very good polish architect had done an earthen stadium in Poland for 100000 people and our [project] was [for] 100000 [capacity] so I said to Aziz I know how I should do it and also I did the master plan of stadium [before] because we had to do everything [at the University]. The idea of Asian games is beginning of is the beginning of how to use the earth and how built with the earth because the stadium, very quickly I want to tell you, is an earthen dam because the site of Asian games was about 163 hectares in place called Rabbit valley with [an] old river base in the middle of the site.

How do you use the site? You take a disadvantage and make it advantage. We took the earth to deeper this valley and then packed it at the bottom in the southern portion of the valley because I could then, from the near, divert a river channel to make this into a lake so earthen dam held the lake and the lake fed a hundred hectares of trees as so we built our own “Makan,” the sense of “place making” that you must add. Therefore the earthen dam very nicely can become a stadium and the centre of this donut is the where that you play football. That’s how the 100000 people stadium was conceived. Very very wonderful experience that we had to build it for 2500th years ceremony [of royal family] or something [else] and then we continue doing more building for Asian Games.

By that time I had done enough works, 6 years with Aziz, and my book was published and I knew that I had to go my own way. I had a vision and approach that need to test out without being compromised by being in a group that might feel that they should go some other way, ok. Until today some of my friends and my partners are my wonderful friends and others are competitive, they say ohhh. That’s the nature of being a creative person. You create jealousies. I mean this is art and you have to express and I believe truly if you take and add most modest. We try to look at references. The “Hadith ghodsī”⁴⁸⁷ says: God was a hidden treasure and he wish to be known and therefore he created the world. I believe that if you take the most modest and get the most profound level of responsibility; that is a responsibility to be worthy, to be known. Therefore those are jobs as an individual.

⁴⁸⁷ Sacred saying

I came to know yourself and that is of course you're difficult because you hit two parts of us. You hit and I believe I made only one correction that I dared and I want to say to you. There is a very important aspect, those two parts you called the intelligible and the sensible, I do not know if I feel comfortable with the world "intelligible" because it's very presumptuous. I only believe that you can intuit this domain and so that's one change that I made. I believe, in intuition for me, when you go this path it is esoteric path then you seek because it's a very long path. It's a path that is not expected very much by many people and so you are always looking for other people who have a sense that this may have an opportunity. So you ask them and I had a pleasure of chatting with [these] people. That's how I have intuited this as a sensible idea that you need to have a way with those things that you cannot understand there is a mystery. You fool yourself and you can understand and that be called scientific matters and you got train to use partition rational part to deal with that but everybody is written about the fact that's very poor and I think I do not need to go all that because I am sure that's the subject that is controversy but it's so well studied. That we know that the rational measuring instrument called brain. , Another sense just measuring partial sensible world, I truly believe that other world you can only intuit because you have to have the sense of it that's why I think *The Sense of Unity* is only intuitive title because you intuited must be an order in the universe. There are things that worth, the sunrises at the mornings and sunsets, the moon rises, there is a lots of things that keep you going so must be ordered and so this order is something that you are really seeking for and I believe as an architect there are description of how you can share with people the idea of the sense of order through geometry and shapes and spaces and I think that in our particular creative Iranians with this environmental context is positive space systems , the idea of positive spaces which is another aspect you must write about that. I think it is very important aspect of this theory of architecture is that: the external the container is really a subsequent result of inner space creation.

Now I have done at the Harvard [a research] which is finished, 865 large format A3 pages with 600 original diagrams which all are done by over 16 month study by 20 people at Harvard and 200 people in the region from all the universities we studied the past history of settlements in ten cities from 8 countries, two from Iran: Bandarlenge, Bandarabbas, Dubai, Abu Dhabi, Masghat, Dhahran, Bahrain, Kuwait, Doha and Basre, So very nice typology. We were interested in the past description as before Carbon

technologies change the Persian Gulf countries. Before oil how they survived and we put at three scales: 1/ the region 2/ the city 3/ the neighbourhoods and the units the typology of houses in ten cities, not just one, and many. And then we analysed through the 10-14 scientific software system, very technical process.

APPENDIX 2

This text is part of a dialogue between Darab Diba (a traditionalist in the debates on tradition and modernity) and Nader Ardalan about the features of Iranian contemporary architecture. This dialogue was published in Farsi in “Seyr Tahavol Memari Shahri Dar Iran; Negahi Be Technology Gharb,” *Memari va Shahrsazi* 54/55 (1999): 171-180.

Darab Diba: We live in a complex world. Scientific values based on the industrial development that used to constitute the main body of the modern movement in architecture, along with all the intellectual assurance and certainty, have been replaced by sensational and emotional values, or at least this has created a doubt and brought up the question of whether or not the intellectual argument can be quite helpful, or will all our dreams come true by drinking this happiness potion?

Modern movement was developing with so much of a confidence and certainty and it also brought along a kind of behavioral unity in architecture. But today, in the history of time lapse, the roots of this confidence have been shaken and now we are faced with a world of attitudes, schools and styles that each have their own followers. And even if it's not the case, a big doubt is quite obvious in the attitude towards the history which has happened during the historical development of West philosophy. Uncertainty principle has found a place among the old solid and constant intellectual bastions and some modernist and innovative architects have created new ways for the design, understanding, and perception of architectural spaces. A type of superposition has been formed by visible and invisible strata which each have a distinct material from the others and their volume does not necessarily lead to unity and sequence.

Robert Venturi's 1960s manifesto on contradiction has now grown quite pale. But complexity shows its dignity in between every work of art and architecture. The complexity, once considered to be a negative value in modernism, is now moving in the forefront of any event and its way will be paved when its complexity turns into

pluralism; this in turn is a type of tolerance of space perception in the evolution of human societies, and strict and dogmatic rules can't be imposed on it.

Today we have entered the third millennium, i.e. the year 2000. But we also maintain the voice of Rumi and Hafiz era in our hearts as an Iranian. Are Eastern and Western worlds in conflict, or are we really moving into a single global village as a result of electronic communications. How do maintaining the entity and debates of identity by themselves make sense when facing importing powerful and massive forces, and strange scientific events which are expanding every day? We might mentally see ourselves as belonging to a wider world. But we still live in the Third World (according to the colonial West) in terms of many social issues, technical and technological facilities and realities, and we can only see the world's different art schools on the big movie screen in the shadows of our administrative and economic problems and just regret. For soon, we realize the cultural differences and remember that we constantly design projects which not only very few of them are built, but also they are built in such a way that we no more tend to count them as deserving to our own abilities in terms of economic changes and optimizations.

Norman Foster, in one of his last interviews, states that light is the main material in the architecture. In his view, the space argument is about the selection of light shine and architecture relies on scientific and industrial advances which completely provide the required context. Modern architect's longing, i.e. bringing natural light into the building, reaches its peak on Foster's recent works. Then we turn our heads and remember that neither we were inventors of the single bolts architecture, nor we are really capable of its constructions in our environment. Of course, this is not surprising. When Louis Kahn arrives in Pakistan and the Indian Sub-Continent in 1960s, he soon discovers that the architecture of the area does not accommodate advanced technology and this architecture should be constructed with more dignity, solidity, and especially more materials. Spiritual-mystical discussions of this type of architecture have their language from the administrative realities of the environment. William Kurtz, a researcher of contemporary architecture in the world, has very interesting and worthy of contemplation ideas in pursuit of this discussion. He states his views about two very different types of architecture, i.e. the advanced architecture of the West and the

architecture in the other part of the world. Following all the issues and all existing architectural styles and movements, I must courageously state that the contemporary architecture has two very important aspects: the complexity and multiplicity; these characteristics are due to the relationship between science and culture in today's world, and also contain the dialogues of civilizations.

Now I would like to talk to you about this issue. You're an outstanding Harvard alumni who have written the book "Sense of unity" and you abundantly appreciate the architecture in Islamic countries.

Nader Ardalan: I think in today's world, we are faced with a massive change and I would like to refer to a universal change. Many issues have altered, especially the reception and perception of the world. Rational and scientific approaches based on the opinions of people like Newton or Einstein which rely on the origins of the existence of space and time, make it very difficult and sometimes impossible to evaluate the phenomena. Although we have sometimes lost a connection due to analysis of nucleus, we have also made clear many local factors through science. Although its generalities are still floating.

What subject have you evaluated? What is the essence of life? In what you see the Earth's structure now? And what is the source of life and its existence?

I would like to talk more about the waves background and pattern. Waves foundation alters the structure of Earth generalities. And other factors and livings are vital and associated parts of this big world. The discussion on the dialogue between the west and east, internet and all modern means of communication have created a universal man who is in search of his identity and unity despite this overlap. We try to find the archetype and think about that immanent truth. We try to understand our culture appropriately and we will undoubtedly reach the unity of being, unity of universe, life and all the factors which form our minds through this romantic journey. Here, I think it's required to remind the necessity of studying Rumi's writings, since his argument is an eternal debate.

We insist to place the West against the East. But this contrast is not correct. Spiritual journey and perspective brings us to the eternal bond. Internal journey and emotional bond is facilitated in this way and thus leads to recognizing the Creator. The debate of

intellect and emotion has always been alive and present in civilizations and this could be the strong point and power of contemporary art and architecture.

To explore this entity, two journeys are required. The first is the inner journey (microcosm) which searches for the hidden spirituality. Understanding your soul is partially the recognition of the world. The second journey is a macrocosm which is about the relationship between the man and nature and through this; we talk about the architecture and innovation in technology and achieve specific technical solutions. This journey is very important in the discovery and perception of the world and self. The reason is that it reveals the relationship between man and nature, culture and technology, and such issues in some extent.

In facing the nature, we are in some kind of environmental crisis in most countries of the world and the desire to dominate the nature has made us depressed. I think we need to learn how to live with nature and how to face it. Today a crisis is created in dealing with nature and underlying environmental factors due to overpopulation, environmental pollution and basically Westerners' tendency to dominate the nature in the process of development and production. To understand this point, take a look at the modern architectural movement of the twentieth century. Nature has always been respected in the East and human's adherence to it lies in the realm of cultural values. We've always tried to live with nature and have never tended to dominate it.

There is a spiritual attitude toward life and eternal light when talking about the nature. It won't hurt to refer to people like Nasr, Corbin and Suhrawardi in here. It is possible to reach wisdom through the salvation light and following this will be gnosis through which unity of entity can be gained. Conscience view to the aesthetics of Iran's culture or the special aesthetics of the land within the puzzling world turns plurality, diversities, and complexities into a unity which will end up in understanding the perfection of the Creator, i.e. the unity of human's view to God, the Creator. We say there is no God but Allah; it's a matter of being and not being, and a matter of death and survival which is the basis of that debate. Can life be measured? Louis Kahn discusses measuring the evaluation by what that cannot be measured. Louis Kahn seeks God and truth in what that cannot be measured.

Complexities and cognitive networks increase every day. If we do not achieve a resolved unity, we might easily become immersed in the world of knowledge and information. Or we may deal with minor issues and details in an illusion of achieving the basics.

Have a look at the Persian carpet: countless forces are interwoven in different directions. But finally the central factor reconciles them easily and brings peace. If we do not figure out the existential essence of life, we surely be lost in the details. Darab Diba: wisdom, knowledge, and technology have a strange taste. The image of allegorical space is always present in contrast to positivist spaces, and matter and materials have mainly been means for a higher truth. Even when it was talked about the roof and shelter, the roof was also a means for flying and ascension, and thus it wasn't of any high efficiency sense; these include theories raised by Wright.

But where is the unity of existence and how should it be approached? Does architecture, like philosophy and literature, essentially have the potential to turn body and matter into spiritualities? Do the mass of matter and materials allow the achievement or it's just architects' dream to uplift their own position?

Theoretical discussions are easier than the content of their physical components. Despite theories of architecture, there's a certain distance between thought (opinion) and the body of existence. This issue is even observed in works of people like "Ando" who is undoubtedly a true and honest architect. But the world is moving and the harsh capitals of finance and economics world pursue their own certain political issues while being unresponsive and oblivious to population, energy, poverty and injustice pressures. It's as if we live in a world that philosophers and writers talk about the facts and mission of life and the world, and beside them are politicians with quite demagogic outward who just follow the common goals of their own.

Nader Ardalan: The issues of population and energy are quite serious. Today, movements such as bioclimatic, green architecture, appropriate architecture, stand-alone and solar energy, and recycling are undoubtedly very important. Talks towards

technology are too harsh. But to be honest, if low / high tech move in the right direction, they both can be useful provided that they have proper bond with nature.

We spoke about Norman Foster. He uses two factors: technology and light. We see the manifestation of light through technology in his work and this is an excellent encounter with the application of technical facilities. Development and evolution of technology is vital. The growth of civilization is associated with change and innovation. And the means for the revival of this evolution of technology has always been alive in human civilization.

Look at Masjed-e *Jomeh* of Isfahan which is constructed using masonry materials and brick. But innovation in construction has led to a style of emotion and perception of space. The art of appropriate use of materials is more important than the decision of using the brick or metal for the building.

If you refer to the history of architecture, you will realize that all innovations have always been associated with a revolution in the technology. We should not insist on the use of traditional materials, but rather on the use of modern facilities with respect to culture, nature and art. What matters is the composition and construction which is not an easy task for sure.

We should not confine ourselves to using only the brick due to respect for the environment, culture, history and our traditions. This is a wrong approach to today's world. Each of the material can have their own higher richness and identity if they are produced well and relied on thought, creativity and art. When you're under the dome of the Masjed-e *Jomeh* in Isfahan, you helplessly feel how light the dome seems; the lightness of sky and light are the synonymous concepts of a bigger concept in which architecture plays a role. Pay attention to the concepts of brick and mirror Brick, as the land heavy base and mirror, as the superior actual conversion. Mirrors, glass, transparency and lighting are concepts that are considered as timeless metaphors of smart construction of space in the architecture of Iran and the world.

I would like to draw your attention to another issue: the eternal architecture; there has always been the constant struggling to get out of the darkness and heaviness and reach the light and lightness, i.e. out of an inanimate material, building something which calls the heavens.

Darab Diba: That is, indeed beauty is something that shines through the light in your heart and draws you close to the eternal truth.

Nader Ardalan: I really think that the context of this beauty lies in the geometry. Geometry allows us to grow from one place to another, and understanding sacred geometry is an art by itself that flourishes in the human heart.

Darab Diba: Norman Foster's intellectual framework is also a technology that turns the matter into the dream; the infinite which has the sky behind. The real and virtual image. Interpretation of the world in the sky. Conformity of these two images has always been present in Iran's architecture; and how difficult it is to be achieved. But when you study well enough, you see that all the great works of world architecture have followed this principle: offering the human a superior space in which the intangible world of imagination and latent aspirations has been manifested through the material and the construction. Hassan Fat'hi was questioned how light enters the stone. He answered: if you entered the light in God's entity, you can also enter it into the stone. Because if the light was entered into the stone, it means that the light is in your entity.

Nader Ardalan: The concepts of reflection and truth are very important; Waves theory; It's the geometry which allows reflection; Geometry - man - world. In the book "Sense of unity," I have discussed so much about heaven, square, unity, circle, and the center and its instances in four arch architecture. Arata Isozaki says: I'm still looking for the geometry (as) a Mandela. It's the sense of plurality and multiplicity in the unity and the rotation of factors around an eternal center, and this is the most beautiful sense of multiplicity in unity.

29- In the other context, I consider the convention in the continuation, but in change and progress. Gehry's symbolism is based on Louis Kahn's works. And if today Norman Foster can work in this way, it is due to the efforts of Mies Van der Rohe's. Louis

Sullivan invents an artistic skyscraper. But in another time, Wright, his disciple, achieves a different perfection in his work. Le Corbusier develops a modular architecture. But there were the Renaissance, humanism, Fibonacci, Leonardo da Vinci and others before that.

Tradition does not make sense without progress and change. I remember that at the International Congress of Shiraz in 1975, Buckminster Fuller said: We are at a crossroads of the world in Iran; A bridge between one place to another.

Where is the center of the East and the center of West? We must seek the complexity and unity instead of complexity and chaos that many are caught by.

Have you ever asked yourself why Madonna, this controversial singer, is now willing to play mystical poetry and music so that she might reach to a new dimension which has previously been hidden for so many? I've taught in many universities of the world. Subject of myth and allegory have always been attractive to young architects. It can be said that a generation reach the inner shining salvation through architecture; perhaps they reach a cognition which is beyond the architecture and building materials. But the unity of architecture is not related to the simple or complex compounds or shapes. We have to be very alert and conscious in understanding the unity of architecture and not be misled by stereotyped images.

Darab Diba: Which architect do you think really succeeded in implementing these ideal concepts?

Nader Ardalan: I think Louis Kahn. He has always believed in a divine and supernatural dimension in his thought and design and all his geometry is the means and context to access to higher ideals.

Darab Diba: How about Ando Tadao?

Nader Ardalan: He is more looking for a style based on culture and thought. For example, Hassan Fathi has a great place in arts and craft. He was a Muslim architect who had philosophical and cultural beliefs inside. But in regard to producing

architecture, he was rather a real architect who could build with the people and for the people.

Darab Diba: Hassan Fathy was an interesting man. I met him in Cairo in 1990 before his death. He was the bearer of a distinct architecture in accordance with the customs of the Islamic world at the height of modernism and modern and international movement of architecture. He really helped us in his time. But today, we regret that Egypt has not followed his way and his work has just remained as a memorable work in the minds of architects and students. There, the builders are hurriedly producing architectures with no identity and value in the cities.

36- The same situation exists to some extent in Iran where there's a large distance between ideas of intellectuals and those of businessmen and builders. But this last group continues to work due to arrogance, economic jealousy, and lack of professional ethics.

Nader Ardalan: What do you think about Le Corbusier and the Modular?

Darab Diba: Le Corbusier was an innovative architect and some of his works are wonderful. But personally, I appreciate Louis Kahn so much. I've carefully read several books by Le Corbusier. He also had two speeches at our school.

39- He awakened the architectural sense in a higher position than building. But he rarely had poetic and spiritual knowledge and was more dependent on the principles of visual arts and plastic work such as volume, light, and so on. It is said that he was the greatest architect of the 20th century. No doubt he taught us everlasting lessons. But Louis Kahn has a different peace, serenity and spirituality. The first time I saw him at the International Congress of Isfahan in 1970, he made a tremendous impact on me. Maybe it was his compatibility with our nature that made us such followers of him at that time. In 1990, while visiting and inspections of the Dhaka House, I noticed a peculiar quality in his work once again that has been very useful for me.

He suggests body type proportions as the intellectual shaping theory of space formation about the modular. We can observe a mix of demographic discussions and intellectual argument (reasoning) in here. But the modular couldn't provide ethics for the architecture growth. Although it was an appropriate response to the form chaos of aristocratic upper classes, the aesthetic derived from modular intentionally abandoned

the spiritual reality. This is a part of the functionalism which was severely criticized in the postmodern era.

Nader Ardalan: A new language of architecture is proposed for this century. However, the discussion of eternal work will remain completely alive; especially in the future architecture of Iran. We are at the crossroads of East and West and two worlds have been located in our hearts throughout history.

Darab Diba: Will this dialogue bring richness or disintegration to us in the architecture? In the "desert wolf," Hermann Hesse asks himself that who is he or what is left of his identity and originality.

East-West dialogue is very useful and necessary. But few individuals have come out victorious from this journey. They all believe in it theoretically. But practically in their work, they unconsciously go under the control of a style which they do not know well. But due to its modernity and its being up-to-date, they defend it so detailed as if they are Derrida, Labisky or Kibnis. On my trip to India, while talking to students of architecture schools, Doshi, Rewal or Curea, I clearly saw how much they protect their culture and civilization. They trust it and consider it as a solution to global knowledge and ideas. Yes, poverty is so high in India. But humanity and the knowledge I saw there was not comparable to any other place in the world. Raj Rewal considers himself as a modernist architect. But his fibers of beings are mixed with Indian culture. It's also exactly the same about Doshi and Curea.

At the beginning of 2000, we must undoubtedly develop in our minds the art and architecture theories of a greater world with open arms. Because inertia and stagnation in the past is a gradual death. Of course, it's not at all an easy task to win this journey, and connections of information, schools, and sciences.

Nader Ardalan: That's right. We truly live in a world in which fundamental changes are taking place. And we should get the most benefit out of them. Therefore, the architecture design in this framework is very difficult and theories must be accompanied

by reflection and relaxation. Our heart and soul must always be open to innovations and developments in the world.

Darab Diba: Absolutely. The architectural language is the result of this tolerance or accompanied with allegory and metaphor. And in seeking solutions for essential and basic issues such as population needs or poverty, one bring brightness and the other brings humanity. We wish to link these two factors. But in a world where architecture is supported by money and capital, we must ask ourselves how much we can succeed as an architect.

Nader Ardalan: In the end, I would like to say that I am very happy that today in Iran, we can see the cultural efforts through magazines - and especially in this issue of *Journal of Architecture and Urbanism*.

We need to make discussions, and how good it is that young architects are actively participating in these discussions. This dialogue should be kept alive, and cultural activities, review writing, and other construction programs must be developed. Of course, this development must be accompanied with appropriate solutions of its time.

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