

**Latest Attempts in Iranian Architecture towards the  
Authenticity: A Model of Modern Tectonics in  
Relation to Lightness**

**Ghazal Farjami Ardekani**

Submitted to the  
Institute of Graduate Studies and Research  
in the partial fulfillment of the requirements for the Degree of

Doctor of Philosophy  
in  
Architecture

Eastern Mediterranean University  
March 2015  
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

---

Prof. Dr. Serhan iftiođlu  
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Doctor of Philosophy in Architecture.

---

Prof. Dr. zgür Dinyrek  
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion, it is fully adequate in scope and quality as a thesis for the degree of Doctor of Philosophy in Architecture.

---

Prof. Dr. Yonca Hurol  
Supervisor

---

Examining Committee

1. Prof. Dr. Gulser Celebi
2. Prof. Dr. Aysu Akalin
3. Prof. Dr. Ugur Dagli
4. Assoc. Prof. Dr. Mukaddes Fasli

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## ABSTRACT

Undoubtedly, some modern movements, which began in Western countries, have also affected other regions of the world. Iran is one of those countries affected by modernity, which creates a challenge to traditional ingrained thoughts and lifestyles. Architecture in Iran has undergone a number of radical modifications, which have resulted in many attempts to achieve authenticity. That is why contemporary Iranian architecture can be classified into 4 different periods with regard to the challenge of balancing a modern approach with authenticity. As tectonic developments results in faster, low-priced and efficient construction methods, lightness has become an important indicator of modern tectonics. In order to deal with the challenge of combining authenticity and modernity, the concept of modern lightness appears in a very distinctive way in Iran. This study is based on a hypothesis, which is designed to prove whether the modern light architecture of the 4th generation of architects in Iran is authentic, or not. A model of modern lightness has been proposed with reference to interviews with seven pioneers of the new generation of architects and observations and analysis have been carried out as part of the 60 project. It has been discovered that there are many authentic characteristics in the architecture of these pioneering architects.

**Keywords:** Modern tectonics, Authenticity, 4<sup>th</sup> generation of contemporary Iranian architects, Lightness

## ÖZ

Şüphesizdir ki, Batı ülkelerinde başlayan bazı çağdaş hareketler, dünyadaki diğer bölgeleri de etkilemiştir. İran da geleneksel ve kökleşmiş düşünce ve yaşam tarzına meydan okuyan çağdaş mimarlık hareketinden etkilenmiştir. İran mimarisi özgünlük elde etmek için birçok radikal değişiklikler geçirmiştir. Bu nedendir ki Çağdaş İran Mimarisi özgünlük ile modern yaklaşımı dengelemeye çalışan dört farklı dönemde sınıflandırılır. Hızlı üretilebilen, düşük fiyatlı ve verimli yapım yöntemleri, hafifliği de önemli bir çağdaş tektonik mimari göstergesi olarak sergilerler. İran'da modernlik ve özgünlük arayışı çok farklı bir hafiflik kavramını beraberinde getirir. Bu çalışma, İran'daki dördüncü nesil modern mimarların, tasarladığı çağdaş hafif mimarinin özgün olup olmadığını sorgulayan bir hipoteze dayanır. Sunulan tektonik hafiflik modeli, yeni nesil mimarlardan yedi öncü mimar ile yapılan görüşmeler ile bu mimarların 60 projesinin gözlemi ve analizine dayalı olarak elde edilmiştir. Sonuç olarak, dördüncü nesil öncü mimarların ortaya koyduğu mimarlığın pek çok özgün özelliklerinin bulunduğu ortaya çıkmıştır.

**Anahtar kelimeler:** Çağdaş tektonik, özgünlük, dördüncü nesil çağdaş İran mimarları, hafiflik .

## **To My Lovely Parents**

## **ACKNOWLEDGEMENT**

And now I am here, at the end of part of my way and in the beginning of the rest. It has passed with its all difficulties and what remained for me is a great deal of priceless experiences and memories. However, I'll never forget that I am standing in this place because of endless support of my dear parents who encouraged me every minute of the years of expatriation. Although, words cannot express my feeling, I will always be grateful to them.

I would like to express great appreciation to my supervisor Prof. Dr. Yonca Hurol because of her patient guidance and encouragement through my thesis process. I would also convey my special thanks to Assist. Prof. Dr. Guita Farivar Sadri who magnificently impressed my life and always helped me to move forward. I am also, really grateful to Assoc. Prof. Dr. Ugur Dagli and Assoc. Prof. Dr. Mukaddes Fasli without whose instructions finishing this study was impossible. I have to say thanks to Prof. Dr. Aysu Akalin and Prof. Dr. Gulser Celebi who kindly accepted to attend my jury defense and enhanced my work with their beneficial comments.

And to end I have to say thanks to my friends whom I relied on their kindnesses and I owe them all.

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# Chapter 1

## INTRODUCTION

Following on as it does from the age of traditional life styles and masonry buildings, the modernity, which followed the industrial revolution gradually, started in Western countries as a technological, socioeconomic, and cultural movement. Later this trend affected other countries as well but in a different way. In Iran, which still was dominated by traditional ideas, the entrance of modernity as an imported commodity has sometimes resulted in chaotic outcomes. The sudden invasion of new tectonic improvements resulted in a considerable amount of novelty. When intensive tendencies towards being modern fascinate a society, a complete departure from a thousand years of tradition may appear to be impossible, so this may result in a loss of authenticity.

Lightness has become the dominant indicator of modern tectonics in the architectural field. The massive, modest appearance of masonry buildings has been transformed into naked, transparent features with no compatibility with cultural or climatic issues. Thus, many glass-covered buildings have now been covered by brick walls. So, what happens to the concept of modern light tectonics with regard to the essence of a movement towards authenticity? Does it change into the mere physical characteristic of the concept of lightness or does it still have any authenticity? In how many different ways has lightness appeared in contemporary Iranian architecture and how it has been employed as an authentic characteristic in recent years?



This challenges involved in balancing the traditional and the modern for the sake of authenticity have resulted in three different periods in contemporary architecture in Iran, which now seems to have been followed by a fourth generation. Between 1921 and 1941, using the forms of ancient Iranian architecture was still the main design principle. From 1941-1978 onwards the main styles were based on modern architecture but the past was taken into account with the use of geometries and patterns. From 1978-2001 acknowledging the meanings of older Iranian architecture was seen as important, and searching for quality of the space became the central discussion instead of merely thinking about the forms. From 2001 until now there has been an attempt to transform the theories of the previous generation into practical forms and go beyond these discussions. There will be a more comprehensive explanation of these approaches in chapter 4. Having passed through these viewpoints on the past, this 4<sup>th</sup> generation is looking for authenticity and modern tectonics simultaneously in their architectural works. They try to move forward while allowing authenticity to show itself intrinsically in the spirit of the spaces which are created. They are trying to balance tradition with the use of new technologies. Therefore, this research is an attempt for examining that if there is any authenticity in usage of modern light tectonics in 4<sup>th</sup> generation of contemporary architecture of Iran.

## **1.1 Approach**

The starting point of this research has been based on “Authenticity” as one of the dominant implications after radical changes caused by modern movement. Searching about the concept of authenticity as a philosophical term, it firstly refers to being new and original which does not look like the others.

During early modern era the pioneers of this new movement in architecture tried to create novel entities on behalf of new structural techniques. These new architectural edifices were totally new and they did not have any similarities with any buildings before. Still authenticity was implied to any new presentation of these leader architects who were trying to demonstrate new performances.

This definition bring about new arguments which implies that everything in this world is an imitation of the others and how would it be possible to prove that it is new. New debates around the concept of authenticity during modern era results in reconsideration of previous discourses. This time authenticity has been called to the matters which refers to their origins.

Since, modernism caused radical ruptures from traditional approaches new interpretations formed around the concept of authenticity. Therefore, debates around the concept of authenticity appeared as challenges between modern as an indicator of novelty and tradition for a reference to origins. Apparently, modernism appeared as a new agenda which affects every aspects of societies. Moreover, since industrial revolution has originated from western countries their society gradually became ready for facing this evolutionary process. That is why adaptation of modern approaches with archaic situations also gently has solved.

However, countries such as Iran which were far from these new political, social and economic modifications encountered with the new situation while traditional attitudes and lifestyles were still dominating the whole society. Entrance of modern issues to a

country with thousand-year background results in a dilemma which ends up as an attempt looked for authenticity.

In the beginning of the chaos occurred, traditions and modernism were standing in opposition with each other. Traditionalists were fighting for regaining the lost values of past while modernists were struggling for representing new vistas for negotiation with the world. These challenges which firstly starts with the loud voice of traditionalists has been moderated through years of contention. With the passage of time modern thoughts become signs of luxury while traditions were known as symbol of retardation.

Therefore, architecture as a mean of reflecting the situation it has been created in, was not far from these challenges. That is why, history of contemporary Iranian architecture is based on different approaches of dealing with traditional and modern issues. Usage of new materials and technological improvements results in new architectural features which fascinates people.

Since, transparency and lightness were the main indicators of modern tectonics, new appearance of the buildings has nothing to do with introverted culture of Iran with more than 60% of desert regions. Fascination of earlier ages with delicate and naked buildings give its place to unsatisfactory of living in such spaces. The challenge starts and architects tried to propose the best solutions; sometimes by imitating forms of traditional architecture, sometimes by following the same patterns of those and in further attempts reinterpretation of meanings and implications. Whereas, through all these attempts new construction techniques were considered.

However, the young architects of recent years in Iran tried to reinterpret these modern tectonic characteristics such as transparency and lightness to achieve architectural spaces which are not only modern but also adopted with cultural and climatic issues. Since, division of the history of contemporary Iranian architecture is based on the architect's orientations towards past, it seems that it entered to a new period with new ideas and manifestations (Figure 1).

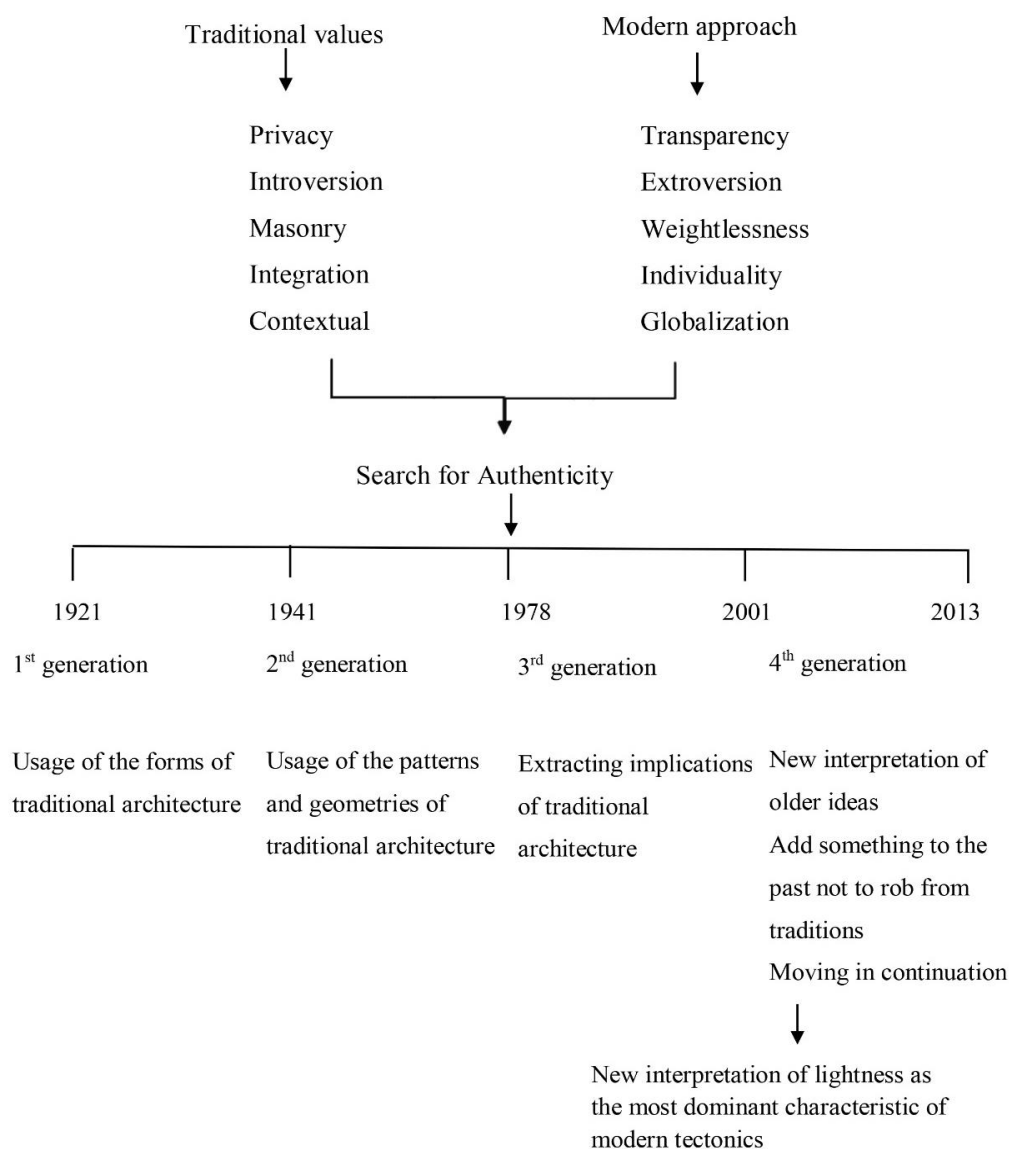


Figure 1: Approach of the Thesis process

Iranian architecture is not a special kind of architectural works. Whereas, Iranian architecture is the result of considering the issues of the context that hosts it. So, the authentic Iranian architecture is the one which is ingrained in cultural, social, technological, economic and climatic conditions of Iran in different periods. Authentic architecture is not about some predetermined criterion which can be followed in every architectural works but it is a dynamic issue which not only goes along through the time but also tighten its roots in the origins. That is why it is needed to examine the ideas of this new generation of architects in Iran in order to perceive their attitudes. How these architects tried to define authenticity and how they interpreted the concept of lightness in their projects in order to preserve the authentic characteristic of their works.

Therefore, in this research Chapter 2 and 3 are defining the Idea of authenticity and modern tectonics in western literature and architecture. Afterwards, Chapter 4 is allocated to define these concepts in Iranian architecture. Based on these literature reviews and analysing the projects and interviews a model of modern light tectonics has been achieved which used to prove the hypothesis.

## **1.2 Problem Statement**

Usage of new technological improvements, results in more efficient construction facilities in terms of time and cost. Accordingly, new techniques were based on any kind of structures and materials, which could decrease the weight for the least cost and faster process. That is why transparency, and lightness become the most dominant characteristic of recent buildings. Therefore, these new developments which, resulted in new emergence of buildings and cities, also create a kind of challenge with traditional ways of construction. Although moving along with these technological

improvements seemed unavoidable, ignoring thousand years of traditions was also impossible. So, concepts such as authenticity has considerably discussed and argued during modern era.

The challenge between modern and tradition bring about different results in various regions and countries. Iran as an under developing country which faced modernism as an imported commodity while the society was totally sank in traditional thoughts experienced years of challenge among them. This challenge which, formed the basis of the history of contemporary Iranian architecture, appeared in new way in recent generation of architects in Iran. Their interpretation about traditional implications while attempting to move forward with modern facilities results in different characteristics of authentic using new construction technologies.

Although, there are plenty of researches, books and analysis on traditional architecture of Iran there is lack of researches and analysis on contemporary Iranian architecture. “Iranian Contemporary Architecture” by Amir Bani Masoud “The advent of new architecture in Iran” by Sirous Bavar, and “Weaving in and out and still Architecture and My Life’s Journey” by Ali Akbar Saremi are the only written books on history of Iranian Architecture. However, these books are about three previous generations of architects but not about the new movement in Iran.

Also, Hadi Mirmiran, Nader Ardalan, Darab Diba, Kamran Afshar Naderi are some of the architects of the 3<sup>rd</sup> generation who tried to reinterpret ideas of traditional architecture into the contemporary values in their projects and articles. But still there seems to be great gap and lack of written documents about contemporary architecture

of Iran. Since, now a days there are some journals which are trying to introduce these contemporary architects and their ideas with discussions on their projects it is needed for more efforts and researches on this field.

Since, Iranian architecture has been often the representation of the meanings and implications ingrained in cultural and contextual issues these ideas have been constantly represented in different periods in various ways.

During this research I started to interview with the architects of the third period such as Bahram Sadri, and Faramarz Sharifi. I suddenly find it out that there is a new generation of young architects in Iran who are not known well yet and they have been known as the continuation of the third generation while they were not because their projects and a few words published on their ideas were implied on a different kind of attitude.

On the other hand, although, idea of authenticity has been touched in theory of Iranian architecture it was not clearly defined because authenticity is a fluid term which is moving by time and there cannot be a defined framework for discriminating authentic works. Also, it has been a subject under different debates and arguments which formed the history of contemporary Iranian architecture. That is why this subject interested me for my PhD thesis.

### **1.3 Aims and Objective**

Throughout this research, which can be known as a hypothesis, it is going to be assumed that there is originality in usage of new technological movements in Iran. Since the tendency of reaching to lighter and lighter architecture increased throughout

the world this question will come to our minds that if usage of modern tectonics in contemporary Iranian architecture has any authentic characteristics which has ingrained in precedent architecture of this land as its origins or it is following the movements happened in the world specially in western countries. In this way it is important to clarify the aims of this research and the benefits of this research.

- Becoming familiar with the importance of authenticity in architecture which is related to the authentic idea
- Recognizing the authentic characteristics of Iranian architecture which makes it as a continual chain work following the technology of its time
- Defining the idea of modern tectonics which has resulted in lighter construction methods
- Analyzing the idea of lightness, its roots and also its appearance in both Iranian and Western architecture
- Achieving a model for evaluating authentic characteristics of using new technological improvements

#### **1.4 Methodology**

Since this research is an attempt to examine the authenticity of modern tectonics in contemporary Iranian architecture, a brief definition of the concept of lightness as the major characteristic of contemporary tectonics needs to be given. A number of members of the 4<sup>th</sup> generation of contemporary architects in Iran have tried to clarify this idea. Seven architects who were prize winners in the Memar competition, were selected to take part in a field study. Memar Architectural Competition is known as the most famous architectural event in Iran, which is based on novel ideas which presents Iranian architecture. Reza Daneshmir, Alireza Taghaboni and Arash



Mozaffari have each completed 13 projects, Rambod Eilkhani and Ramin Mehdizadeh have completed 4, Pouya Khazeli has completed 2 and Mohammad Majidi has completed 11.

They are the established pioneers of the fourth generation. Their work was discussed in recent volumes of the journals 'Architectural digest' and 'The Plan'. Their projects were visited and observations have been recorded accordingly. Also, an interview with each of these architects has been prepared in order to become familiar with their attitudes towards both authenticity and the concept of lightness in modern tectonics. A recursive abstraction of the texts has been used and a model of modern lightness in tectonics has been developed as the main methodology for analysing the observation notes and interview texts. This model which has been proposed, clarifies the authentic emergence of modern tectonics in contemporary Iranian architecture.

Based on literature part and interviews and also analyzing the projects a model of modern light tectonics has been proposed. The basic indicators of modern tectonics have been taken from literature of tectonics which is explained in Chapter 3 and different criterion of each have been extracted from both literature and interview analysis while the ways that they have been achieved have been determined by both interview and observation abstractions. According to this conceptual model a hypothesis has been formed which is approved during this research. In this research it has been examined through the hypothesis that usage of new technological improvements within the 4<sup>th</sup> generation of architects in Iran has authentic characteristics (Figure 2).

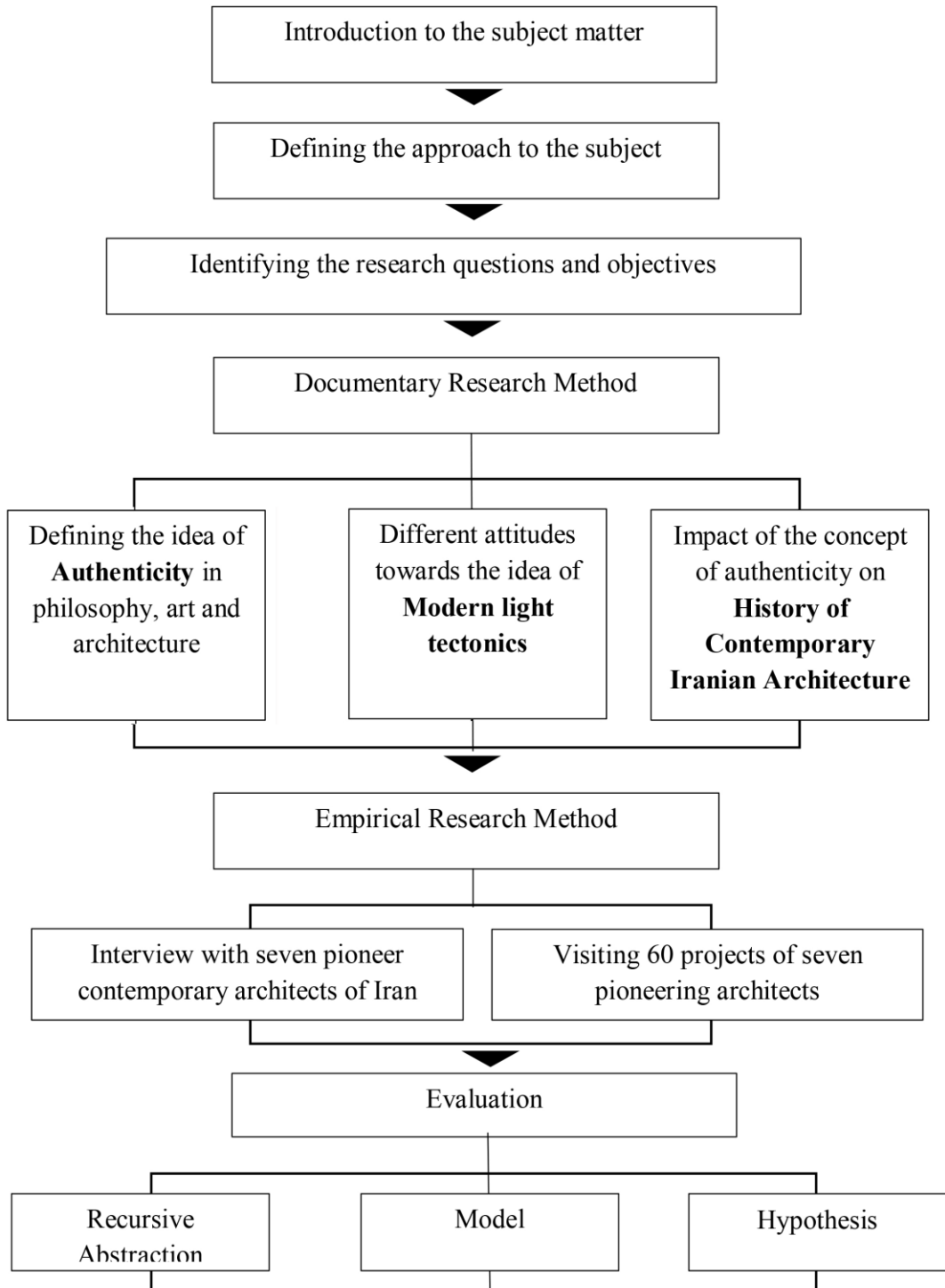


Figure 2: Structure of the thesis

Afterwards, with the help of these methodologies and the proposed model, a hypothesis of the authenticity of modern lightness within the 4<sup>th</sup> generation of contemporary Iranian architecture has been proved. It means that the model has been examined on the case studies as 60 projects of 7 pioneering architects. In this way evaluating the model based on the selected projects has clarified that which characteristics of modern light tectonics have been used authentically in contemporary architectural works of these architects. It also has been determined that which characteristics were used more dominantly than the others. Therefore, the hypothesis has been proved that if there are any authentic usage of modern tectonics in terms of lightness in projects of the 4<sup>th</sup> generation of contemporary Iranian architects.

## **1.5 Limitations**

The process of this research will be limited into lightness as an essential indicator of modern lightness, which has become more dominant in West mostly after Modernism. In this research the field of study will be focused on contemporary Iranian architecture and also through the history contemporary Iranian architecture the fourth and recent projects will be examined. Studying on authenticity through lightness, it also seems crucial to have a brief but precise look at the precedent architecture of this land as well as contemporary ones as the origins of architecture of today. Since, the contemporary Iranian architecture has been divided into four periods the last generation, which is the most recent one will be more considered. Furthermore, Western architecture will be studied in order to examine lightness through its history. Considering the fact that after the industrial revolution architecture has been divided into specialty professions and engineering isolate itself from architects, this approach will be examined which is why lightness will be surveyed mostly through tectonics as the art of building.

Therefore, in this thesis for becoming familiar with the general idea of authenticity Chapter 2 can be read and for recognizing the concept of modern tectonics Chapter 3 has been written. Examining these two variables in Iranian philosophy and architecture Chapter 4 has been prepared. Based on these literatures and interview and observation analysis a model of modern tectonics has been proposed in Chapter 5 which has been used for proving the hypothesis.

## **Chapter 2**

### **CONCEPT OF AUTHENTICITY**

Since, this research is an attempt for recognition of authentic usage of new technological improvements it seems necessary to have a survey on the meaning of authenticity. In this way this chapter has been written in order to clarify the concept of authenticity. Obviously, it is needed to know that which criteria have to be considered for examining the authentic characteristics of a phenomenon. Therefore, it is firstly tried to find the roots of the word through dictionaries and also its origins as a philosophical term. Afterwards, different attitudes towards the issue of authentic art works has been discussed which is followed by determination of authentic architectural edifices. These steps help to achieve the major criteria for examining the authentic issues in architectural fields.

#### **2.1 Concept of Authenticity as a Philosophical Term**

Authenticity and also originality have vast amplitude of meanings, which demonstrate variety of different worlds but in accordance with thesauruses “legitimacy” and “genuineness” are the two nearest words related to authenticity as synonyms.

According to thesaurus and dictionaries, the word authenticity can be defined as the quality of being genuine or not corrupted from the origin, also truthfulness of origins, attributions, commitments, sincerity and intentions, which bring us to the question of what origin itself means. Authentic share the sense of actuality and lack of falsehood or misrepresentation. It also carries a connotation of authoritative certification that an

object is what it is claimed to be (Dictionary.com, 2013). Furthermore, originality not only means “being the earliest form of something” or “Preceding all others in time” but also refers to the origins, which is why it is tried to find the origins of the word authenticity. Also, searching for the roots through history and past time is the necessity in process of seeking for authentic characteristic.

The perception of past events has been a challenge for a long time especially during modernism through which it becomes more dominant. According to T.S. Eliot a modern poet who mentioned in one of his poems the fact that:

“Time present and time past  
Are both perhaps present in time future,  
And time future contained in time past.  
If all time is eternally present  
All time is unredeemable” (Scofield, 1988, p. 202).

In this way, it can be said that passing through dictionaries, philosophy has had a long-term challenge with the process of being authentic. It is difficult to determine the origin of the notion of authenticity but perhaps, the earliest account of authenticity that remains popular is Socrates' admonition that "*the unexamined life is not worth living*" (Wordiq.com, 2010).

Afterwards Plato one of the initial philosophers in this field mentioned that the nature surrounded us is the primitive model of an archetype. The concept of archetype can be defined as the pure mental forms that were imprinted in the soul before it was born into the world. So, any imitation from the nature is imitating a mimic one which is worthless.

In this way an artist is imitating the nature but in this process it is the essence of components, which have been combined. For instance the Greek temples have been the imitation of wooden structures before the time of their creation but by changing the materials and also other innovations they become more than a mere mimic (Schurman, 1894).

The concept of psychology archetypes was advanced by Carl Jung, for whom psychological framework archetypes are innate, universal prototypes for ideas and may be used to interpret observations.

"The archetype is a tendency to form such representations of a motif - representations that can vary a great deal in detail without losing their basic pattern ... They are indeed an instinctive trend" (Jung, 1978, p. 58).

In general, authenticity has been known as a negative space around inauthenticity. During 19<sup>th</sup> century, Soren Kierkegaard examined the loss of the genuine self in the mass, in society, and tried to present the process of recovering the authentic self within a theistic context. For Kierkegaard, true individuality is called selfhood, which in modern age the loss of being individual becomes a problem. Through its production of the false idol of "the public," it diverts attention away from individuals to a mass public that loses itself in abstractions, communal dreams, and fantasies (Sayers, 2009).

It is also worthy to mention the definition of authenticity from Heidegger's point of view whose ideas today prevails towards literature of architecture because of the meanings such as place, dwelling, and housing. Over the 20<sup>th</sup> century, Heidegger has discussed authenticity through the concept of Dasein. This word has been used by different philosophers before Heidegger, which have been determined as Being.

“In the question about the meaning of Being, what is primarily interrogated is those entities which have the character of Dasein” (Heidegger, 1978, p. 65).

It worth to explain that there is a different between “being” and “Being” in Heidegger’s point of view; the first “being” finally will die or perish but the second one which is in relation with the concept of Dasein is immortal. Heidegger also cited that Dasein as a German word in relation to the meaning of “Being there” can be authentic (to be itself) or inauthentic, which means that it comes from daily conventions with no identity (Dreyfus, Wrathal, & Malpas, 2000). What he has cited about a Greek temple as a great work of art is the fact that

“The temple, in its standing there, first gives to things their look and to men their outlook on themselves” (Leach, 1997, p. 120).

Here, is the place that mankind see themselves in the authentic work of art. The quest for authenticity has often been known as an impractical pretention of modernism, which presents itself as a “provocative otherness” and “ostensive novelty”. In fact, it is needed to redefine the original point of originality and authenticity, which involves the reassessing of basis and foundation of something in its origins.

“The origin of the work of art” stated that: "Origin here means that from and by which something is what it is and as it is. What something is, as it is, we call it essence or nature. The origin of something is the source of its nature" (Heidegger, 1978).

Heidegger’s attitudes had an enormous influence on formation of Hermeneutics, Existentialism, Deconstruction, Postmodernism and Continental Philosophy. In this way Jean-Paul Sartre as one of the initiate writers of Existentialism, the experience of “vertiginous”, which is important in the state of authenticity, can lead people to the



inauthentic way of life. For these philosophers and writers, the conscious self is seen as coming to terms with being in a material world and with encountering external forces and influences which are very different from itself; authenticity is one way in which the self-acts and changes in response to these pressures (Wordiq.com, 2010).

Obviously, authenticity is in relation with different human activities; for Sartre Jazz music can be a representation of freedom, because of its association with African-American culture, which keeps it away from Western culture as an inauthentic character in his attitude. On the other hand, Theodor Adorno scorned Jazz music, because it could give the appearance of authenticity but that was as much bound up in concerns with appearance and audience as many other forms of art. Moreover, seeing modern technology as distorting a more "authentic" relationship with the natural world, Heidegger in his latter writings has explored authenticity in non-technological experiences.

Most writers on inauthenticity in the 20<sup>th</sup> century considered the predominant cultural norms to be inauthentic; not only because they were seen as forced on people, but also because, in themselves, they required people to behave inauthentically towards their own desires, obscuring true reasons for acting (Wordiq.com, 2010). Bruce Baugh tried to give a comprehensive definition for the term of authenticity through Heidegger and Sartre's ideas which involves as a mortal condition of a being that can, represent the world in a distinctive way (Baugh, 1988, p. 479).

## **2.2 Authenticity of the Work of Art and Architecture**

Authenticity of the work of art has been a controversial issue, which attracted the attention of the numerous philosophers and art scholars over centuries. The oldness of

discussing this issue is as old as philosophy and the philosophy of art. There are variety of theories toward the definition of authenticity which mostly can be seen in the field of ontology of art, attitudes of Anglo-Saxon philosophers, Frankfurt style opinions, and compilation of the philosophy of Phenomenology, aesthetics criticism, psychology and hermeneutics.

In considering the authenticity of the work of art, at first it is important to pay attention to the meaning of the concept authenticity. Obviously, there are varieties of words which have the same meaning with authenticity, but the most prevailing ones which are related to this research are “originality” with the definition of being origin and authenticity as “genuineness” and “legitimacy”. In order to survey the authenticity of art works it is better to classify them in three categories, through which different meanings of authenticity can be examined.

- Unique works of art like a specific painting which have a materialistic and exclusive quality through which the question of being original or fake have been discussed. (Figure 26)
- Immaterial arts with the ability of renewed performance like music and theatre examined through the viewpoint of authentic performance (Figure 27).
- Reproductive arts such as photography and cinema through which the problem of authenticity in the period of disappearing of aura have been surveyed.

If the painting of Mona Lisa has been destroyed it can be claimed that the whole art of this painting have been ruined but can we said this about the Shakespeare writings? Of course not. If the first handwritings of his books were destroyed it cannot be said that

the whole art is ruined. In this way some kinds of art are unique with materialistic essence which loss of their materialistic nature will result in their disappearing but some of them have something beyond the external appearance. According to Oswald Hanfling, architecture is a unique art (Hanfling, 1992) (Figure 3).

It seems that argument with these formalism theorists with the contextualists is the fact that they have been merely preoccupied with the materialistic aspects of an art and being original or fake but it should be mentioned that an artwork has something more than this appearance, which rooted in many factors. Nelson Goodman had a theory, which asserted that the value of each art work is because of the information that we have about it not only because of the aesthetic senses (Goodman, 1976) (Figure 5).



Figure 3: Unique art, (Apsaraarunak, 2010)

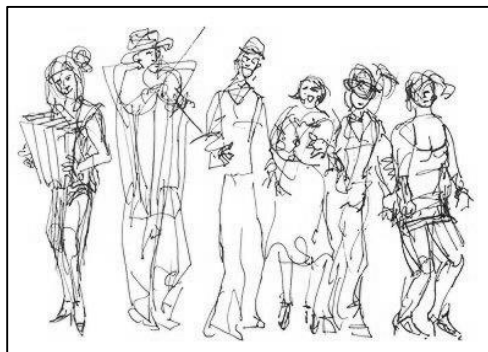


Figure 5: Performing arts, (Nazaka, 2006)

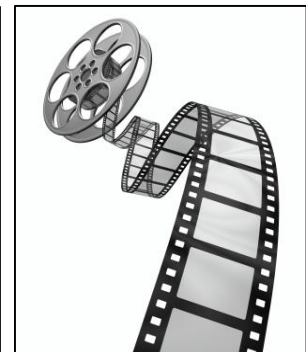


Figure 4: Reproductive arts, (SodaHead, 2013)

Debates around authenticity of immaterial arts such as music are in relation to the spirit of an art work. How can we claim that a performance of a sonata of Beethoven is authentic or not? Is it right to say that any perform after Beethoven's performance is fake and inauthentic? Roman Ingarden is one of the theorists, who argued about the authentic art performance and it can be asserted that the most authentic art

performances which architecture also can be one of them, is the one that is loyal to the soul of art (Figure 4).

The third types as reproductive arts have been argued mostly in Walter Benjamin's article called "*The work of art in the age of mechanical reproduction*" through which he cited that the possibility of fast reproduction and mass production of art works change their essence from being unique or even intangible and destroy the "holy aura" which means unique around them. But he also mentioned that the new form of mass arts like cinema and photography are proportionate with historical period and brings the beholders to a new perception and awareness, which is emancipation power (Benjamin, 2008).

He also mentioned the fact that:

"the presence of the original is the prerequisite to the concept of authenticity...in the case of the art object, a most sensitive nucleus-namely, its authenticity-is interfered with whereas no natural object is vulnerable on that score. The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which, it has experienced" (Benjamin, 2008).

The originality and distinctive manner of the artwork is based on the reorientation of the perception of that experience or subject according to the judgment of the percipient as the organizational principles of that work. Baugh also, define the authenticity of the work of art depends on its historicity through which each work of art can establish its own irreplaceable principles that others can refer to.

"A derivative work is one that refers to a prior work as having established its principles" (Baugh, 1988, p. 482).

Accordingly he pointed out that the works which are just new cannot be original not because of their immorality but because of the fact that they not being ingrained in the situation they cannot create their own world. Therefore, originality of an artwork is not about neglecting the past but about what past provides for the present time. He also mentioned that originality is returning to the past and reinterpreting it in a way that the present try to get rid of current descriptions and working out of its past.

“when, rather than fleeing into the past, however, past possibilities are explicitly related to the current situation, a new conjecture of possibilities and circumstances arises that constitutes an original interpretation of the past, and which brings the past into the present as a possibility” (Baugh, 1988, p. 483).

So, the works of art not only reflect the way that we appreciate the other artworks but also our culture, history and nature. What makes a work of art authentic is not about its ability to change the world but to transform experiences and revealing new possibilities (Baugh, 1988).

Therefore, architecture seems to be allocated to any of these three categorizations according to the viewpoint it has been considered. So, it can be authentic in any of these ways through which imitation and its origin dominates the other issues. Considering the classification of art works, architecture as a practical art with both aesthetics and functionality can be allocated to all these three categories of art. Different definitions and interpretations towards architecture can allocate it to any of these three classifications in order to be unique, immaterial or even reproductive as an authentic artwork. Therefore, it is tried to mention the ideas towards the concept of authenticity in architectural field.

Porphyrios named the quality of being authentic as classical which is the tradition in a modern voice. According to him, being built by a specific group of people during a specific period, the architectural work can be recognized just in terms of the conditions of its origin (Porphyrios, 1998). Also William Curtis calls this quality as a modern tradition which can be defined as new interpretation of age-old lessons (Curtis, 1983).

Passing through the literature of authenticity it is based on two main issues of originality or novelty and relation with past. Since, novelty and relation with past seems to be the indicators of authenticity they both can be interpreted in different ways. Neither novelty nor imitation has been considered always as positive or negative issues. It means that for achieving authenticity they both should be considered. In other words, not just being new or the mere relation with past cannot be resulted in an authentic work.

### **2.2.1 Novelty**

Undoubtedly, in order to have an authentic architecture it is not just about creating something novel and different from the others because it has to be related to its origins as well. Authentic architecture comes from an authentic idea, which is based on an authentic perception of human, nature and space as a junction point between these two.

It seems that idea of novelty become an important issue of the concept of authenticity for avoiding imitation which has been interpreted in different ways as well. Roger Kindler argued that originality is neither about novelty nor imitation.

“Whatever is done for the first time is novel, but it doesn’t therefore follow that it is original: to attain novelty, an architect has only to adopt the first whim that presents itself, but to be original demands either profound study or the most felicitous conception” (Kindler, 1974, p. 24).

Architecture imitates its own origins as a special tectonic form through the time (Porphyrios, 1998, p. 52). Proposing more richly new ideas it would be better to study what has been done before in order to become familiar with the ideas of the predecessors otherwise it would be an architectural entity which is just about details instead of principles which can result in beautiful individual parts while it doesn't match with the whole. It is an architecture, which concerns about form rather than spirit (Kindler, 1974).

According to Antoniades the author of the *Poetics of Architecture*, authenticity is a generic identity of a building, which should be known and followed by the architects while designing and metaphor can be helpful for creating new meanings in order to achieve an authentic architecture. Also he mentioned the fact that the true architecture is willing for a fare game, which is just the loyal explanation of the game conditions. Therefore, imitation and dishonesty will result in desolation (Antoniades, 2009).

However, Porphyrios in the book of "Classical Architecture" pointed out that architecture is always imitating its origins while assigning a special tectonic form to the all time-honored buildings (Porphyrios, 1998).

### **2.2.2 Relation with Past**

It seems that Claude Perrault for the first time questioned the classical attitude towards the totality of architecture to which nothing could be added and nothing could be taken away (Hartoonian, 1997). This is the point that new interpretations around this debate have been formed in order to have more comprehensive definition for architecture as a revolutionary process.

Also Porphyrios argued about the definition of classics as a kind of “timeless present” which simultaneously is both contemporary and archaic. Although, it won’t be possible to bring the past back scholarship can offer a historical understanding (Porphyrios, 1998). Accordingly, Semper in “*Science, Industry and Art*” alluded that architecture has lost its classical totality which makes it impossible to think about a comprehensive work based on a centre. His interpretation about “new” presents a different approach towards tradition in comparison with radical dislike of tradition during modernism (Hartoonian, 1997).

Gadamer mentioned that we can recognize history because it has made us and we inherit its experiences and also we base the foundations of our future on the situations past created for us (Warnke, 1987). Frampton, also supports this idea where he pointed out that innovation can be achieved just through rereading, remarking and recollecting the traditions which can revitalized just by the means of innovation as a two way relation (Frampton, 1996).

According to William Curtis the conflictions between two approaches of modern and post-modern about their orientation towards past is because of simplifying the relation between innovation and tradition and both are guilty because of ignoring the differences between an authentic transformation and pastiche. He also argued about this issue that there can’t be a check-list for determining the authentic qualities of an art work (Curtis, 1983). He also mentioned

“The artist who has found an appropriate language for a genuine myth will also possess the imaginative force to forge together past experiences into new unexpected wholes which are utterly convincing” (Curtis, 1983, p. 184).



According to Leon Krier in the book of “*Houses, Palaces, Cities*”,

“Architecture (Arche-tectonike) means literally 'Form of Origin'. - If this definition is relevant for the architecture of any organism and structure, it is fundamental for Architecture as the Art of Building. It is not that the principles of Architecture reach into an immemorial past that but their origin is forever present" (Krier, 2007, p. 119).

In order to have a responsible architecture to both physical and spiritual needs of human and nature authenticity acts an important role. Actually, repetition, dishonesty and desolation are not human expectations from architecture but logical novelty, relation with origins and sense of space and belonging are the real needs of human beings, and this is why authentic architecture becomes a more essential issue after the numerous changes of modernism. Louis Kahn supports this idea where he states,

“That is why it is good to go back to the beginning because the beginning of any established activity of man is its most wonderful moment. For in it lies all its spirit and resourcefulness from which we must constantly draw our inspirations of present needs” (Kahn, 1960, p. 115).

Furthermore, Demetri Porphyrios in the book of Classical Architecture has mentioned the fact that

“An artist is said to be original exactly when he takes up the challenge of tradition and makes us see something more than we already know. Originality, and thus the modern itself, consist in this distance between the new and the model as the new employs itself within tradition” (Porphyrios, 1998).

Therefore, novelty and relation with past are both the foundations of being authentic while ignoring each of them will takes us far from this concept. An authentic work of art never can be based on *ex nihilo*. It has to be considered that neither the mere novelty nor any kind of returning to the past can be resulted in creating an authentic artwork. It looks like a tree with roots in the ground while it grows more and more.

## Chapter 3

### MODERN TECTONICS

This chapter is an attempt for clarifying the origins of the concept of tectonics in traditional architecture and its definition in modern age. Also, it has been tried to define different approaches towards the concept of modern tectonics while the dominant indicators of the term based on Kenneth Frampton's ideas have been discussed. Passing through different attitudes towards the modern tectonics it seems necessary to explain the idea of lightness as the most dominant characteristic of new technological improvements especially in construction field. Furthermore, tendency of lightness has been considered as a philosophical term in history.

#### 3.1 Concept of Contemporary Tectonics

Tectonics derived from the Greek word called *tekton* as a builder or carpenter, the one who gave too much attention to his/her art works (Porphyrios, 1998). The poetic implications of the term have appeared in Soppo where the tekton supposed to be a poet who works with all hand materials (Frampton, 1996, p. 3).

During seventeenth century it has been replaced by the word technique coming from the Greek word *techne* means the art of making and in Heidegger's idea defines as both poetic and revealing (Hartoonian, 1997). *Techne* in Greek has been a word used for both of art and crafts while it did not carry the sense of technical issues. However it refers to a kind of knowledge implied method and consistency, which put man's intelligence into practice. Aristotle defined the concept as "a productive capacity

involving a true course of reasoning” which implies that *techne* is an embodied form of knowledge as its distinguished characteristic. Therefore, when a utensil becomes useful it shows the purpose beyond this selection of matter, which justify its form as well (Porphyrios, 1998).

There seems to be a duality in the concept of tectonics from Renaissance, which has been related to Christian duality between divine and earthy life. In modern discourses it appeared as duality of design and structure. However, according to Leon Battista Alberti, design and construction are two distinct ideas, which are interrelated. In other words, construction embodies the outline of design.

The concept of tectonics has been analyzed as an art and therefore its relation with poetics and aesthetics become an important debate through different discourses. During 1982 Adolf Heinrich Borben stated that the term is more relevant to aesthetics than the technological issues.

“Tectonic becomes the art of joining. “Art” here is to be understood as encompassing *techne*, and therefore indicates tectonic as assembling not only of building parts but also of objects, indeed of artworks in a narrow sense. With regard to the ancient understanding the word, tectonic tends toward the construction or making of artisanal or artistic product” (Frampton, 1996, p. 4).

Passing through the origins of the concept of tectonics in traditional Greek world new debates around it have formed after modernism. It can be seen that the concept of tectonics has been defined differently with the passage of time. In some of these proposed theories the technological aspects of tectonics have been dominated while in some of the others poetics and aesthetical issues have mostly been considered. It seems

that these two seemingly different aspects of tectonics, which have been discussed within different discourses and names in their essence, convey a kind of confliction between basic static rules, tradition or poetics and new improvements as physical aspects or dynamicity.

According to Porphyrios, *techne* in its essence conveys both senses of necessary and freedom. Sense of necessary in tectonics comes along with technological structures, construction and materials while freedom implies an analogy with play. He also mentioned that this connection between play and order is making the concept of tectonics reasonable (Porphyrios, 1998).

According to the two basic aspects of tectonics as necessary and freedom which affects modern idea of tectonics Billington, mentioned that technology conveys to different aspects one of which is structure which is local static and permanent and the other is machine as the dynamic, universal and transitory aspect of technology. The former stands for continuity, tradition and protection of society while the latter stands for change, mobility and risk (Billington, 1985).

Technique has been defined as the manner of using technical elements of art while during eighteenth century the relation between art and science has been disappeared. Therefore, during nineteenth century two main approaches of socio-cultural determination of historical values and social improvements through technological developments have been emerged (Hartoonian, 1997, pp. 2,29).

According to Karl Otterfreid who stated the first use of the term in architecture through 1830,

“tectonic is an applying to a series of art forms such as utensils, vases, dwellings and meeting places of men, which surely form and develop on the one hand due to their application and on the other hand conformity to sentiments and notions of art. We call this string of mixed activities tectonics; their peak is architecture which mostly through necessity rises high and can be a powerful representation of the deepest feelings” (Frampton, 1996, p. 4).

These dualities in the concept of tectonics after modernism appear in the form of contradictories between traditional values and modern ideas. It seems that usage of modern structures and materials which emerged in a form of lightness and transparency. Considering the debates around the avoidance of early modern ages from traditions in a quick look, the appearance of modern light tectonics stands in opposition of heavy massive buildings of previous periods.

So, there can be seen movements suggesting avoidance from historical aspects such as Konrad Fiedler in 1878 and August Schmarsow in 1883 who rejected the decorative attributes of the “art of dressing” ignoring the constructive role of ornaments. However, history found its root among these arguments in order to make balance among them. Adolf Loos in 1889 revered tradition and emphasized on the primacy of cladding over all other considerations. Insisting on the authenticity of materials, he argued against the use of stucco to imitate stone (Hartoonian, 1997).

While, Semper has been preoccupied by need to transform traditional paradigms in light of the new productive means, Loos attempted the acrobatic feat of sustaining tradition and simultaneously embracing the inevitable and seemingly liberating thrust of technology. Also, while Morris was seduced by the aesthetical aspects of hand works through his struggle against the alienation of industrial works, 50 years later,

Walter Gropius misrepresent the difference between craft and industrial technology through which he not only mentioned that the nature of the tools employed in each are different but also expressed the subdivision of labors in industry and the undivided control of craftsmanship by a single worker.

Therefore, in the mechanization of products the artifact was detached from its domain of tradition defined as “*destruction of aura*” in Benjamin words and has profound consequence for the authenticity of artifacts (Benjamin, 2008). Also, Wright tried to restate tradition by new means and materials through a metaphoric language. For instance, he used cross axis but not for frontality or even symmetrical orders. He exploits it as an abstract representation of natural existence of the earth, a devise for orientation, settlement, and departure. In other words he tried to interpret the idea of lightness of modern tectonics in a new way. Hartoonian also sees the act of montage as the mediatory agent whereby tradition maybe reinterpreted and hence recollected in face of the operational inroads and transformations wrought by technology (Hartoonian, 1997).

In this way, tectonics can be known as an art of building through which mere concentration on physical aspects such as materials, forces and structures cannot lead us to a comprehensive definition of this word; for instance, considering the influence of each material or structural element which have been associated with other parts and also the quality of the space that they create together is an important issue. However, employing iron, glass, steel and concrete as indicators of modern structural arts generates a new stage in the field of tectonics which seems to be extremely lighter than the previous edifices.

Gevork Hartoonian has expressed that the main difference of modern and traditional architecture is the secularized concept of tectonics in the modern. In his idea, structure is the main aesthetic criteria defining the form of the building whereas; postmodernism has been an attempt for decreasing the role of technology and secularity in meaning of architecture (Hartoonian, 1997).

Invasion of modern light materials and structural systems results in a kind of obsession with the idea of lightness and transparency in architectural field. Some countries tried to use the available technologies to build lighter while some of the others which were at the back tried to employ the poetical aspects of modern light tectonics.

According to Billington, efficiency is the first issue of the structural art as a tendency for usage of minimum material for the sake of less weight, cost and visual mass. He also mentioned that without an expression of thinness there won't be any structural art (Billington, 1985). Therefore, concept of lightness becomes an important issue of modern tectonics, appeared in different ways in terms of structure, material, form, etc.

This is where, Leatherborrow and Mostafavi pointed out to the highly technological buildings but meaningless, versus the ones designed meaningful but without any technological features (Leatherbarrow & Mostafavi, 2005). Therefore, relation of architecture with history, poetics and technology especially through tectonics is an inevitable fact through which creating an equilibrant will result in an authentic architecture. This architecture does not try to put history and technology in opposed to each other but also exploit poetics in order to create architecture which not only is in step with technology of its time but also make relation with people for whom it is built.

Regarding to Hartoonian's words there is no way to think about architecture outside the domain of life-world, through which the thematic of architectural discourse are identified again and again in line with the prevailing technostatics and cultural transformation (Hartoonian, 1997).

Debates around the concept of tectonics formed different approaches based on contradictory of technological issues and presentation. Karl Botticher who was interested in formalistic concept of tectonics mentioned about the confliction of Kernform as mechanical requirements of a form and Kunstform as the outer visible form which become the essence of further dialectic tensions between these two issues during 20<sup>th</sup> century (Botticher, 1852). Gottfried Semper emphasized on the role of joint through four main elements of earthwork, heart, framework and enclosing membrane which implies a transition from stereotomic feature of the building to its tectonic issues (Frampton, 1996).

E. F. Sekler discriminated tectonics from structural terms while Carles Vallhonrat expressed that tectonics is based on three aspects of the physical world as gravity, structure of the materials and the way we put those materials together (Vallonrat, 1988). During late 20<sup>th</sup> century, Kenneth Frampton has defined tectonics from the poetical point of view as an aesthetical issue rather than technological. Afterwards, it has been followed by Rivka Oxman who, talked about digital tectonics as a morphogenetic process introducing a new model of integration between structure, material and form (Oxman, 2009).



Passing through different approaches and ideas towards the concept of tectonics it can be seen that Structure and Material, Form, Context and Space are the common issues of contemporary tectonics in three main periods of this concept as structural efficiency, Modern lightness and dematerialization. Since, light and lightness have the same roots and light plays an important role in dematerialization it has been added as another issue of modern tectonics (Table 2).

Table 1: Different criterion of tectonics

Tectonic	Different Scholars on Tectonics					
	Karl Botticher	Francis D.K. Ching	Gottfried Semper	Carles Vallhonrat	Rivka Oxman	Kenneth Frampton
Different Ideas towards Tectonics	-Mechanical requirements of a form  -The outer visible form	-Context  -Technology  -Form  -Space  -Program  -Enclosure	-Earth work  -Heart  -Framework  -Enclosing Membrane	-Gravity  -Structure of Material  -Ways of putting material together	-Structure  -Form  -Material	-Structure & material  -Climatic issues  -Details  -Topography  -Culture

### 3.1.1 Structure and material

Tectonics intrinsically is a way of negotiating about building's structure, which is obviously related to materialization methods of constructing the building (Hartoonian, 1997, p. 3). Frampton expressed his idea towards the issue of structural art where he states that

“Good architecture starts always with efficient construction... construction embodies material and its use according to its properties, that is to say, stone imposes a different method of construction from iron or concrete... the finite location; the climate, the topography and the

materials available in each area determine the constructional method, the functional disposition and finally the form” (Frampton, 1996, p. 336).

However, he also expressed that the calculated column is just a particular amount of numbers and such a world which is defined by calculations material loses its essence to express the constructive concept (Frampton, 1996, p. 359).

Also Pallasma expressed that natural materials indicate their age and history they passed through while new industrial materials insolently tend to express their existence rather than their essence and time which comes from our fear of death (Pallasma, 1999). According to D. K. Ching structural elements and materials can be used and induce different feelings according to their proportion and size, tension or compression abilities flexibility and weight (Ching, 2007) (Figure 6, Figure 7).

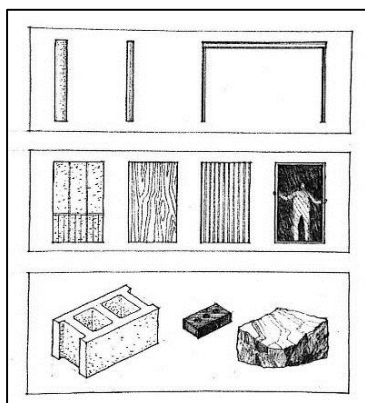


Figure 7: Tectonics in terms of material, (Ching, 2007)

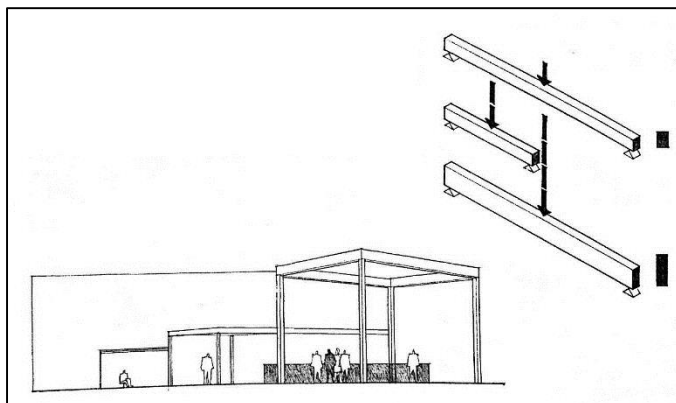


Figure 6: Tectonics in terms of structural techniques, (Ching, 2007)

### 3.1.2 Form

According to Heidegger, source of the constancy of the things and their particular sensuous mode is the matter stands together with form. In other words, thing is the

formed matter (Heidegger, 1978, p. 26). Based on Frampton’s categorization, tectonic has been appeared as a term for expressing different architectural forms, which reflects variety of conditions, and situations they have built through and tried to be sustained. Therefore it can be asserted that different parts of a building can be revealed differently regarding to their various ontological statuses.(Frampton, 1996) He also states that the idea of beauty implies the equal value of the form and reality where the architectural form flows out of the constructed reality (Frampton, 1996).

Although, regular simple forms are more understandable they are generally stable in nature while adding or subtracting from them can result in dynamicity. According to D. K. Ching in the book of “Architecture: Form, Space, Order”, simpler and purer a form is, more perceivable it becomes. Therefore, it makes a direct relation with the observer who feels more familiar with such architectural forms creating the space (Ching, 2007) (Figure 8, Figure 9).

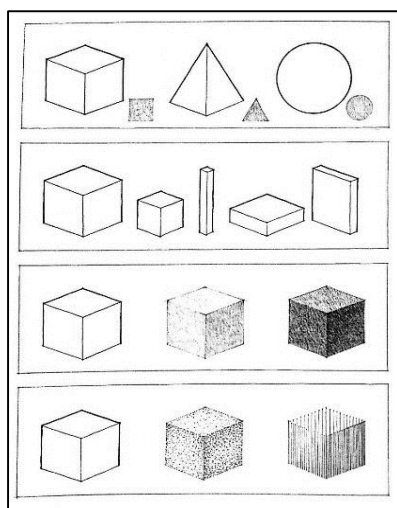


Figure 8: Usage of simple pure forms which are more perceptible, (Ching, 2007)

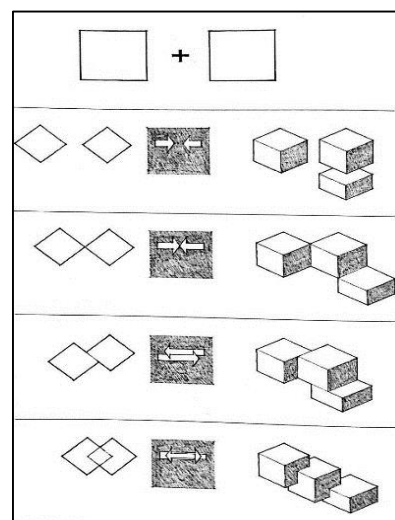


Figure 9: Dynamicity of the forms through combination or subtractions, (Ching, 2007)

Perceptibility could be obtained when everyone can perceive the design, without considering sensory abilities. Therefore, simplicity could be achieved when everyone can understand and use the design, negligent of their experiences, literacy or concentration level (Lidwell, 2003).

### **3.1.3 Context**

Before placing stone on stone and the roof on the walls for creating a shelter mankind placed the stone on the ground in order to recognize the site located in an unknown universe. Frampton states that there are two significant approaches to the issue of context. The tools of assessment of the first one are mimesis, organic imitation and the display of complexity and for the second there are physical relations, formal definition and interiorization of complexity (Frampton, 1996, p. 8).

According to Kenneth Frampton, environment is the essence of architectural entity through “*the concept of site and the principle of settlement*” which propose new methods, which give priority to the sitting in a specific area. He defines this concept as the knowledge of context coming out of its architectural modifications (Frampton, 1996, p. 8).

“No house should ever be on a hill or on anything. It should be of the hill. Belonging to it. Hill and house should live together each the happier for the other” (Wright, 2005, p. 168).

Therefore, it can be acclaimed that settlement of the building on the ground is one of the major issues of relation with context. D. K. Ching examines this issue as an elevation of the building from the ground with either an open space in between or a

platform which creates a specific domain within a larger spatial context (Figure 10, Figure 11).

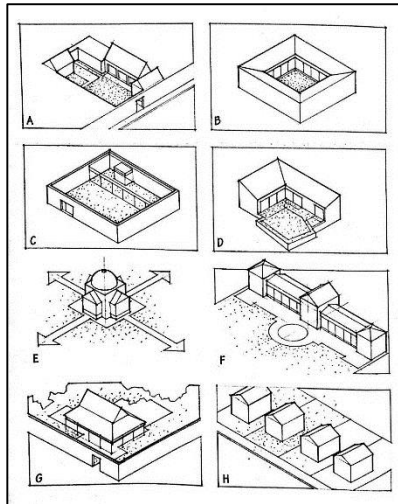


Figure 10: Different ways of integration with surrounding environment, (Ching, 2007)

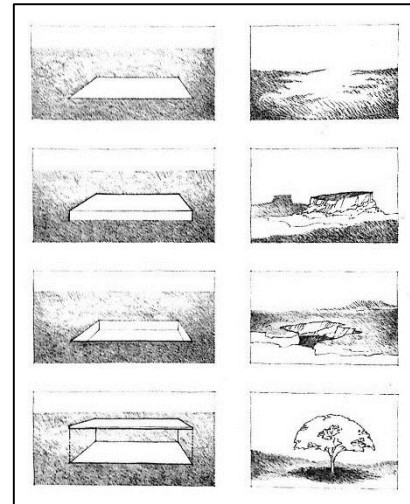


Figure 11: Different ways of buildings settlement on the ground, (Ching, 2007)

“Situating at the interface of culture and nature, building is as much about the ground as it is about built form... Light, water, wind, and weathering, these are the agents by which it is consummated” (Frampton, 1996, p. 27).

Relation of the building with nature is another tectonic characteristic of the building in term of context. This issue has been considered in modern architecture in a new way. For instance Le Corbusier tried to make this relation by eliminating the boundaries between inside and outside in a way that exterior spaces penetrate through inside which results in combination of nature and architecture. Whereas in Robert Venturi’s idea relation between architecture and nature has been achieved via complexity and contrast in a way that interior spaces stands in contrast with outside environment (Raeisi, 2012).

### 3.1.4 Space

According to Kenneth Frampton space has become such an indispensable essence of architecture that it seems impossible to think about it without emphasizing on the spatial displacement of the object in time. He also mentioned that space can be enhanced rather than volumetric character of architectural form by reconsidering structural issues.

“Space is in essence that for which room has been made, that which is let into its bounds. That for which room is made is always granted and hence is joined, that is, granted by virtue of a location...”(Frampton, 1996, p. 2).

He also pointed out that architecture as the art of organizing space expresses itself through construction. The concept of layered transitional space organization indicates the distinctions between symbolic and technical aspects of construction Sempër believes in.(Frampton, 1996) Therefore, hierarchical space organization and functional zonings can results in fluid movement through interior spaces. Also, flexibility of interior spaces provides an opportunity for the users to use the space as they wish.

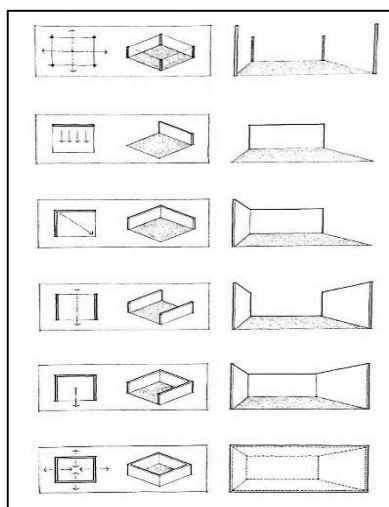


Figure 13: Spatial definition by enclosures, (Ching, 2007)

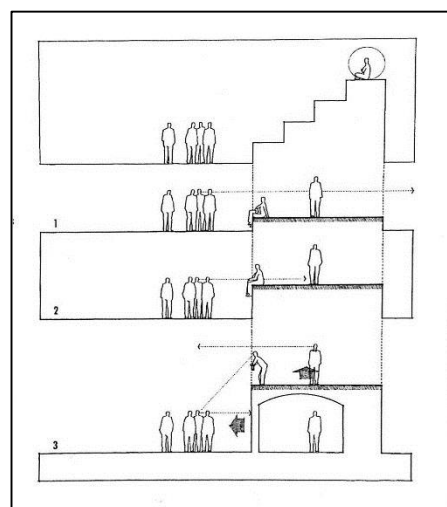


Figure 12: Visual continuity among spaces, (Ching, 2007)

Another quality of space that must be considered is Inside-outside connection. The total transparency or individual openings can create a kind of sequential scene which encourage movement through spaces. This relationship has to be considered in coincidence with privacy. He calls this quality unity of opposites as form and space (Ching, 2007) (Figure 12, Figure 13).

According to Brent Richards glass offers a kind of interlayer between indoor and outdoor spaces, which manifests the architecture of its time. Since, glass can be known as the most dominant cladding material of modern tectonics it has been resulted in reductive approaches for covering the buildings. He also mentioned that the concept of transparency is more about clearly ambiguous than clearness (Richards, 2006).

It seems that usage of glass and steel in architecture implied a new definition about inside-outside relations. Walter Benjamin is one of the scholars fascinated with this new spatial connection between inside and outside where he mentioned that

“The street could be brought inside, and this inside was opened up to the outside. The difference between private and public was thus becoming problematic (Lechte, 2013, p. 228).

### **3.1.5 Light**

Light and the ways it affects architectural spaces is another tectonic issue considered in this research. Tadao Ando pointed out that architectural materials are not limited to wood and concrete but it goes further to light and wind as the essential elements of architecture.

“As we grow less aware of darkness, we forget spatial reverberations and the subtle patterns created by light and shade. When this happens,

everything is uniformly illuminated and object and form are limited to simple relations. The remedy to this situation is a restoration of richness to space” (Ando, 1995, p. 458).

According to D. K. Ching light penetrates to interior spaces and enlivens the color and texture of interior surfaces. Light animates the interior spaces by the shifting patterns of shadow and light which also articulates interior forms. This changeable characteristic of interior spaces by means of sunlight can be predicted on the size, location and orientation of openings (Ching, 2007) (Figure 14, 15).

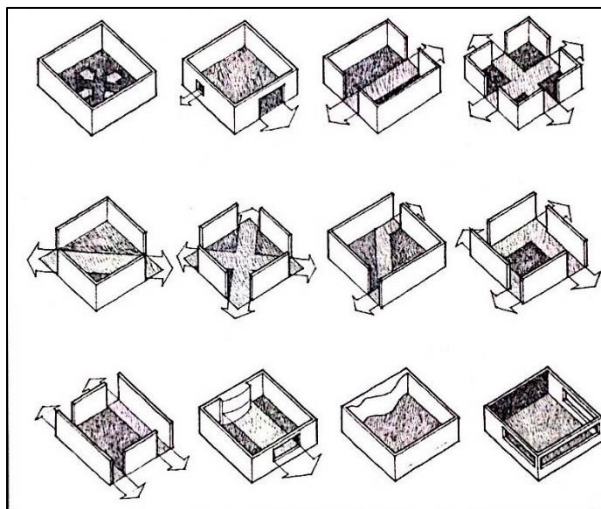


Figure 15: Different size and shape of openings which affects interior spaces, (Ching, 2007)

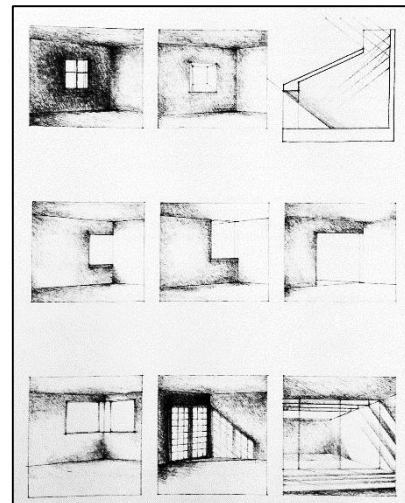


Figure 14: Changeable spaces through light patterns during daytime, (Ching, 2007)

Since, usage of new materials and structural techniques has been the aim of low cost, high speed and efficiency, lightness becomes an important indicator of modern tectonics in recent century, which is the main focus of this research. Now we are living in a world in which these debates are continuing through different discourses and needed to be considered.



## **3.2 Lightness as an Issue of Contemporary Tectonics**

Entrance of iron at first following with glass and steel in modern architecture while it was trying to adopt itself with new lifestyle in which economy says the last word results in a kind of tendency for building faster and cheaper. That is why lightness became one of the solutions of structural art. In the first look it seems to be in confliction with traditional constructions while a deeper survey results in different interpretations of lightness not to be limited in structural efficiency. That's why it is firstly tried to examine different approaches towards presenting the concept of lightness in terms of modern tectonics.

### **3.2.1 Concept of Lightness in Western Architecture**

Architecture, has always sought for the most proper technology. This issue has been true from Gothic through which flying buttresses exploited to the 19th century and usage of glass and steel also to the present time as the age of steel frame towers and post-tensioned flat slabs.

There is no difference whether it is James Watt's spinning mills building of 19th century or Paxton's indication of glass and steel or Roebling's tension structures or even Chicago school's steel frames for reaching the sky, technology always has been used in parallel with architecture (Figure 16, Figure 17, Figure 18). Passing through these examples reveal the fact that the main aim of them all was to cover the longest distances with the least structural elements, which is the essence of technology whether it is traditional or modern. Maillart's bridge over the Arve river become an arena for new challenges by carrying the heaviest loads with the lightest structure which evolved from huge pillars of stone, the domes which compete to be larger, arches, vaults, buttresses, steel frames, and tents to become lighter and lighter (Figure 19).

The visual lightness and the strength displayed by Iron Bridge stimulated the engineers and architects around the turn of the century to think about new materials and forms. It seems that the ever increasing tendency for creating lighter forms which show off their lightness by usage of iron, steel and reinforced concrete is a continuous process of stone in Gothic cathedrals.



Figure 16: Eiffel Tower, (Pop, 2009)



Figure 18: Roebling tension structure, (StudyBlue, 2013)



Figure 19: Maillart's bridge, (Gao, 2013)



Figure 17: Chicago school's steel frames (Cramer, 2010)

Actually, the entrance of iron, glass and steel into the domain of architecture implies more and more scope for the human tendency to create lighter buildings. It seems that technological developments help engineers and architects to save time and energy, through which lightness has become an unavoidable issue insofar as it reaches towards the idea of dematerialization. Therefore transparency and weightlessness has become as two dominant issues of modern lightness. Following is three concepts of modern tectonics through which idea of lightness has emerged in different ways.

### **3.2.1.1 Structural Efficiency**

During the early fifties there have been noticeable improvements in art and economy of the structural design by using better materials and discerning knowledge of structural art. Thus, it has been tried to base it on scientific issues while the need for innovation and optimization arose (Iyengar & Gupta, 1980). Therefore, it is needed to discriminate optimum structures which providing innovative cost effective design solutions with idea of structural efficiency, which conveys the usage of minimum materials for the sake of lightness.

According to Billington, the disciplines of structural art can be named as economy, efficiency and freedom. Considering the great cost of iron during the industrial age of 19th century and the growing desire of building larger and larger structures, engineers tried to find lighter structures, which show their lightness. In this way, economy has been a prerequisite in creativity of structural art that should be considered by engineers in consistent with usefulness. Moreover, if this structural art reflect the mere scientific discourses it will lose the meaning (Billington, 1985).

The recent fascination with architecture of lightness mostly depends on modern technological improvements, which is a persistent term in Western culture. (Riley, 1995)Semper classified the architectural works into two categories in terms of their weight one of which is the tectonics of frame as lightweight elements assembled and the other is the stereotomics of the earthwork as repetitious conjunction of heavy masses (Frampton, 1996, p. 5).

As Billington, mentioned one of the main ideas of structural art is about efficiency, which is mostly related to the least usage of material, weight, cost and visual mass. The second one is defined as the issue of economy, related to simpler construction process and also final integrated forms and the third issue has been determined as engineering elegance (Billington, 1985) (Figure 20, Figure 21, Figure 22).

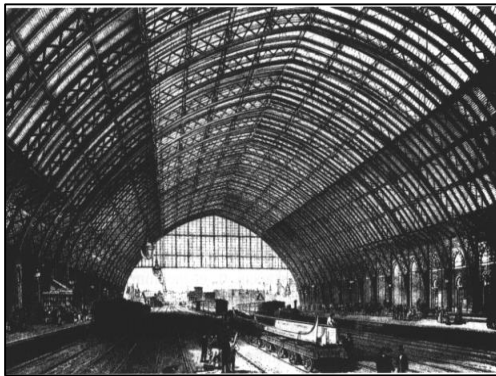


Figure 20: St Pancras station, (Lordan, 2011)



Figure 21: Royal Bridge, (Pittman, 2011)



Figure 22: Brooklyn Bridge, (New York City Wallpapers, 2012)

But is it the whole responsibility of the structure of the space? Can the space, which is going to be created based on these criteria, provide and respond to human needs? Can lightness as one of the evolved aims of the structural art obtain just through economy, efficiency and engineering elegance?

Regarding to Billington's history of structural arts consists of two major periods. The first era starts towards late eighteenth in Britain during which new forms emerged under the influence of new material known as iron for solving the problem of transportation (Billington, 1985). Therefore, economically construction of higher buildings and longer span train stations and bridges become feasible. The second

period starts from 1880s when the price of steel dropped and concrete structures have developed.

### **3.2.1.2 Lightness in Modern Architecture**

Although, lightweight structural systems and materials allow the architects to build more open, transparent and wider, the architects of early modern era tried not overuse these technological improvements. Architecture in early modern period in Europe has been in direct relation with usage of a new construction material named reinforced concrete without which emergence of free surfaces of walls, boldly cantilevers and integrated spatial volumes was impossible. The result was a new architectural language based on three major issues of efficiency;

- According to lack of enough accommodations, costly forms and ornamentations seemed to be unnecessary and useless. (Efficiency because of social issues),
- Usage of iron and reinforced concrete resulted in reduction of load bearing elements insofar as, except the structure, remain was a mere coverage. The main issue of construction as “box” which previously seemed necessary for statics tended to eliminate to achieve the freer spaces, in other words, the issue of forming the space by omitting the traditional issues. (Efficiency in construction)
- Lack of aesthetics in new arts and over-emphasis on mental feelings resulted in reactions for presenting free pure forms without any universal objectivity. Thus, a kind of seriousness without any flexibility in terms of form emerged. (Efficiency for the sake of lightness) (Lampugnani, 1985).

According to Billington in this era technological issues have been mostly considered in terms of architecture rather than structure. He named the best known of this movement the German Bauhaus who tried not to let machines to enslave humankind. Therefore, architect has been defined as a coordinating organizer who has to resolve the whole technical, formal, sociological and commercial issues (Billington, 1985).

Technology generates architectural forms and characters as Walter Gropius through the medium of Bauhaus use new material and technologies in order to create forms for the modern human. Chicago architects studied the behavior of steel frames for creating their towers, which shows the structural quality of steel. Antonio Gaudi studied the flow of forces by hanging string networks upside down and used these natural configurations for creating his projects.

Frank Lloyd Wright exploited the “cantilever” to achieve a sense of freedom and flowing space (Wright, 2005). He also, defined the idea of lightness in integration with natural environment (Figure 24).

“Organic buildings are the strength and lightness of the spiders' spinning, buildings qualified by light, bred by native character to environment, married to the ground” (Barlex, 2007, p. 48).

Le Corbusier tried to use pilotis for providing the structural support which allowed him to elucidate the idea of free facade with non-supporting walls and an open floor plan, with free spaces which could be used as rooms without concern for supporting walls (Figure 23). Pier Luigi Nervi exploited buttresses and shells to create poetic grand spaces.



Figure 24: Idea of lightness through integration with nature in Falling Water House, (Trevrev's Blog, 2010)

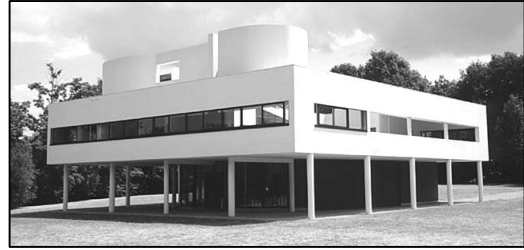


Figure 23: Idea of lightness through free façade, pilotis and open plan idea in Villa Savoy, (Marvelbuilding.com, 2005)

According to Ranaulo whose most concentration through his book of Light architecture: new edge city was on the use of glass:

“The search for lightness can be concentrated in a single concept: the challenge of mass of the weight of architecture, the problem of gravity. The problem of the architectural mass that gravitates toward the ground and leads to the earth- a fundamental theme that has inspired different architects and artists over the years- is resolved with the use of lighter architecture, thin pillars, empty spaces as load bearing structures and the vertical dimension. The result is the series of light, evanescent and poetic constructions that in their essence recall the natural elements: air, water, light” (Ranaulo, 2001, p. 35).

It seems that radical overuse of glass for the sake of dematerialization during the modern ages has been followed with a large number of debates around this issue. Therefore, the enormous obsession with new lightweight and transparent materials and techniques has resulted in a kind of misuse. Gyorgy Kepes is one of the architects criticizing this uncontrollable tendency in the book of Language of vision:

“Transparency implies more than one optical characteristic. It implies a broader spatial order. Transparency means a simultaneous perception of different spatial locations” (Kepes, 1995, p. 77).

He also states the “Lightness of being” in architecture implies a timeless quality indicating a kind of transition from physical to spiritual issues which simultaneously is transient, profound and also transcendental.

### **3.2.1.3 Dematerialization**

Dematerialization indicates a different kind of approach towards the concept of lightness. Although, dematerialization is not lightness, it represents a tendency for inducing the sense of lightness. Therefore, it has been treated from two different points of view, one of which defines a physical approach emerged in its apex as suspended glass systems and the other is a kind of metaphorical approach inducing the sense of lightness.

#### **3.2.1.3.1 Physical Approach towards Dematerialization**

In economics dematerialization is interpreted as more is better for the sake of reduction in materials required to serve the society’s functions. Although, in architecture there are different interpretations about the idea of dematerialization it mostly represents a transformation from “more is more” to “less is more”. Therefore in architecture it means decreasing the quantity of material resources used to meet society’s requirements. It is also mentioned that for improving the building and material performance it is needed to do more with less (Brawn & Lutz-Carillo, 2011).

According to Vidler, in architectural context, association of corporeal and incorporeal emerged through the mental body and its relation with image of being (Vidler, 2006). Therefore, rather than metaphorical interpretation of idea of dematerialization it has been considered as decreasing the amount of material which leads to emergence of glass covered buildings which has been criticized from different points of view (Figure 25, Figure 26, Figure 27).





Figure 27: Interface Flon Railway and Metro Station by Bernard Tschumi, (Blogger, 2013)



Figure 26: George Pompidou Center by Renzo Piano, (The Twenty Ten Theme, 2012)



Figure 25: City Hall by Norman Foster, (Rawz, 2004)

Brent Richards argued about this issue that it is just about 15 years that the real potential of glass as a new language of dematerialization has been realized while this lightweight characteristic of glass has been ignored for a long time after modernism (Richards, 2006). The recent use of suspended glass systems in buildings can be seen as evidence of the 21<sup>st</sup> century lightness in architecture. This tendency is reaching an extreme, where Terence Riley in his book, “Light Construction”, asserts “*Glass is all the fashion today*”. He also mentioned that this approach has been completely restricted to “formal and decorative” aims, through which glass has frequently lost its transparent and light characteristics (Yelavich, 1993).

It seems that so many architects and engineers have criticized new tectonic issues, which have been resulted in destruction of boundaries. They mostly agreed that being obsessed with applying new materials and techniques has been resulted in ignoring other issues. The growing tendency for creating lighter and lighter followed by demolition of spatial boundaries and uncontrollable invasion of light through spaces.

Describing the Cristal Palace, London which for the first time showed the possibilities of iron and glass structures, Hilberseimer writes,

“It obliterated the old opposition of light and shadow, which had formed the proportion of past architecture. It made a space of evenly distrusted brightness; it created a room of shadowless light.” Indeed, recent project point to the possibility that “transparency” can also express the shadows of architecture (Riley, 1995).

According to Leatherbarrow and Mostafavi, transparency as actually or virtually “seeing through” architectural elements has to be reconsidered. The new notion of architecture of fragments is the result of an architecture, which attempts to eliminate the boundaries between inside and outside.

“Dematerialization and transparency resulted in the creation of a spatial quality that was both unlimited and weightless: ferrovitrous construction dissolving itself into infinity, where, “all materiality blends into the atmosphere” (Leatherbarrow & Mostafavi, 2005, p. 128).

Also, idea of dematerialization has been interpreted as virtualization in architecture, which till then has been known as a physical entity.

“Light architecture is an attempt at the synthesis between two worlds still considered incompatible; the real world and the virtual world. The need for this fusion has now become obvious; the fusion that has entered into our imagination. Light architecture proposes unifying virtual space with concrete reality in order to maintain a unity of perception of the real and thus create a single dimension: “stereoreality” where everything is the result of those spaces” (Ranaulo, 2001, p. 19).

In so doing, they have redefined the relationship between the observer and the structure by interposing element that both veil and illuminate. In this architecture of “lightness” buildings become intangible, structure’s shed their weight and facades become unstable, dissolving into and often-luminous evanescence (Riley, 1995).

However, glass and translucent materials are not necessarily used for reviling the space but for the sake of ambiguity and showing the power of coverage surfaces enclosing

the whole building. Focusing on the surfaces, essence of material and conceptualizing it by color, texture and tactile characteristics become an important issue.

“What used to be the boundary of material, its terminus has become an entryway hidden in the mouse imperceptible entity. From here on, the appearance of surface and superficies conceals a secret transparency, a thickness without thickness, a volume without volume, an imperceptible quantity” (Richards, 2006, p. 19).

According to Brent Richards in the book of “New Glass Architecture” glass as an essential modern material pass through a revolutionary process of transcending from aperture to structure, from structure to skin, from skin to transparency and transparency to lightness while the design terms have been sacrificed for the sake of constructional and technical issues (Richards, 2006). Using contemporary tectonics in a proper way can lead us to reinterpret the architectural spaces for the sake of “vistas without and vistas within” (Hoffmann, 1995, p. 42).

#### **3.2.1.3.2 Metaphorical Approach towards Dematerialization**

Architecture is the mean of embodying virtual into physical reality. Since, new lifestyle is based on the virtual world generated in regards to new technological improvements mankind is going to be detached from the real world. Being isolated from materiality of life people are becoming more attracted in it (Figure 23).

Thus, there is needed for a reversion to body but not because of nostalgia but as a source of insight.

“The importance of the present to break the incantation of the virtual and thus bring us back to reality is consistent with the strong tectonic presence and nature of architecture. We are talking of an architecture that provides us with the needed weight to keep us grounded amidst the lightness of today's superficial fleetingness and simulation. Hence the solution to the dilemma that virtuality brings to our zeitgeist is not to be found in fleeing

from but rather re-turning to the body” (Bermudez & Hermenson, 1996, pp. 66,71).

The importance of the present to break the incantation of the virtual and thus bring us back to reality is consistent with the strong tectonic presence and nature of architecture. We are talking of an architecture that provides us with the needed weight to keep us grounded amidst the lightness of today's superficial fleetingness and simulation. Susan Yelavich refers to this in the *Edge of the Millennium*:

“The dematerialization ... as a consequence of electronic digital technologies ... support(s) the idea that our external reality is no longer entirely legible. Perhaps that is why we are more concerned with the fusion of internal and external realities. Increasingly there is a call for the recognition of the presentness of history, and by extension, for the presences of the spiritual dimension of existence” (Yelavich, 1993, p. 14) (Figure 24).

This is where architects and philosophers have reassessed idea of lightness. They tried to reconsider metaphorical aspects of lightness, which transcends this issue beyond the boundaries of physical nakedness. One of the few examples of architects aware of the plight of presence architecture is Juhani Pallasmaa. In his book “*The Eyes of the Skin. Architecture and the Senses*” he very consciously criticizes today’s architecture:

“As buildings lose their plasticity and their connections with the language of the body, they become isolated in the cool and distant realm of vision. The detachment of construction from the realities of matter and craft further turns architecture into stage sets for the eye, into a scenography devoid of authenticity of matter and construction. The sense of ‘aura’, the authority of presence, that Walter Benjamin regards as necessary quality of authentic piece of art, has been lost” (Pallasmaa, 1999, p. 31).

Dematerialization also has been interpreted as a perception, a belief through which an observer may believe that materials have lost their solidity or that light becomes more visible than the physical appearance of the building. Dematerialization induces a kind

of reality in which the familiar rules of the materialistic world such as gravity can be faded.

“The apparently floating dome in a renaissance church is a familiar and readily explicable example of dematerialization. Daylight entering Alberti’s Sant’Andrea through windows below the dome and through an oculus in its center make its underside brighter than the surfaces around it and draw our eyes upward. Since we are used to overhead surfaces appearing darker than their surroundings, Sant’Andrea’s dome appears to defy gravity” (Klopf, 2000).

There are so many examples of the idea of dematerialization through which the massive body of the building seems to be floated according to material transparency, color, texture, and orientation to the light; and the overall arrangement of the space and the viewer’s position in it. This idea has been supported with others as well.

“Lightness deals with many different subjects somehow they all are interrelated by analogies in shape, structure, process or the idea behind them...Making things lighter is not just the matter of choosing lighter materials” (Beukers & Hinte, 2001, pp. 8,9).

Lightness is an ideal that reaches beyond the physical domain of material substance but should also be sought in the foundations of design (Wrightsmann, 2009). Therefore, it is also worth to mention the fact that lightness has not been just the result of using light structures or materials but it comes from the contribution of so many different criteria. Although, using glass, steel or even iron in new generation of bridges can be helpful in creating lighter buildings lightness is also a quality beyond these mere physical terms. The aim of immateriality of modern materials cannot be achieved through the rivalry of engineers and architects for just having light structural elements, which have been calculated by computers.

Lightness is not the word, which has to be allocated to literature of economics otherwise economists, is responsible to associate this concept with fingers or heads but not with the weight of structure or material (Beukers & Hinte, 2001).

However, idea of lightness beside the physical weightlessness of material and structures has always been interpreted as a poetical issue, which can be perceived through different architectural implications.

### **3.2.2 Philosophical Discourses about the Concept of Lightness**

Lightness is a philosophical term which refers to different concepts however, going to depth of its origin lightness come into existence beyond the mere physical issues as Paul Valery stated that “One should be light like a bird, and not like a feather” (Calvino, 1996, p. 16).

Searching for its trace in philosophy, brings us to the novel of “The unbearable lightness of being” written by Milan Kundera, a Czech writer and philosopher of his era, which stands in opposition to Friedrich Nietzsche’s concept of existence. Nietzsche believes in idea of eternal recurrence, which has been posed over the ancient age and has been reused by him. Eternal recurrence is about the cyclical conception of time through which Nietzsche conclude that human history is a predetermined circle without any improvements. Therefore, this concept brings him to this point that existence stands fix in an infinite circle which makes it to be perceived weighty. This is where Kundera stands in a very opposite distance to this idea and talk about life without any return or even weight through which the extreme of lightness become unbearable (Kundera, 1999).

Parmenides as one of the philosophers of the sixth century BC who saw the whole world as a collection of opposite poles through which one is positive like lightness and the other is negative as darkness in contrast Italo Calvino as a writer of 20th century stated that none of these two poles are good or bad but the important fact is the tension or balance among them. According to the book of "Six Memos of the Next Millennium" posed lightness as an important aspect of postmodern society and existence which should be celebrated (Calvino, 1996).

Throughout the centuries this contradiction can be seen in literature as well where Dante tried to materialize even every abstract cognition while, Cavalcanti dissolved this concreteness of language in "lines of measured rhythm". Although, Newton's discovery about the theory of gravitation at first has been interpreted as an inevitable heaviness afterwards it has been known as a balance among forces which enables heavenly bodies to float in space through their weightless characteristic. It seems that during 18<sup>th</sup> century search for lightness appears in the stories with the most weightless characters such as flying carpets, winged horses and genies from the magical lamps and later moon appears as the symbol of suspension in poetry as well. It seems that lightness shows itself as a reaction to the weight of life (Calvino, 1996).

Following the roots of this tendency for being lighter in Western philosophy, it seems necessary to go through Iranian ideology as well. Nonetheless, it seems that different approach has been formed in Iranian philosophy through which it is considered that not only one can find weight of being light but also can enjoy it. Although, in pre-Islamic wisdom of Zoroastrians and Mani & Mazdak as the main ideologies of their period two forces of goodness and badness or lightness and darkness form the whole

world they believe that human beings have to search for the emptiness beyond these two. Man is the only creature who can choose between lightness and darkness and try to reach to emptiness.

Although, during early ages of Islamic period in Iran, radical rationalism showed itself in Iranian philosophy with the passage of time Sufism appeared as an Iranian Islamic ideology. They believe that “form of light and darkness both owe their existence to the abstract light”. Things are not good or bad but their distance to the source of light made them to be seen dark or light. In their ideology unity, which is the essence of existence, does not mean oneness but it shows itself by dropping all relations and attributes. It means that man has to get rid of all mental dependencies and obsessions in order to experience a light life through its heaviness (Iqbal, 2010).

It means that we have to get rid of everything, which our life depends on in order to live freely, and fly as light as possible. In their opinion the material world has real existence, which covers the real being like an exterior shell which is why it is needed for a return to inside for the sake of reality. This is a mental independency which propose them a weightless way of living.

Although, there is great difference between the ideas of lightness in eastern and western philosophy which also affects architectonics as well it is quite clear that there has been always a tendency for achieving lightness of being. However, based on cultural and contextual issues concept of lightness has been appeared in different ways. Materialistic approach of western architecture has always looking for lighter structure and materials while in Iran which its philosophy is based on interpretations and



hermeneutics appearance of this term also presented by usage of spatial, cultural and contextual implications.

## Chapter 4

### **AUTHENTICITY AND MODERNITY IN CONTEMPORARY IRANIAN ARCHITECTURE IN TERMS OF LIGHTNESS**

Considering the general history of modern tectonics and determination of authenticity as major variables of this research, it seems necessary to have a brief but comprehensive look through the history of contemporary Iranian architecture. Since, contemporary architecture of Iran has always been in a challenge between and traditions, it is also tried to explain the impact of new technological improvements on Iranian architecture while it was still dealing with traditional issues. According to implications beyond Iranian architecture ingrained in philosophical and cultural issues of the society, there has been an attempt for describing the attitudes of contemporary Iranian architects towards the issue of lightness as an essential indicator of modern tectonics.

#### **4.1 History of Contemporary Iranian Architecture**

According to the entrance of modern movement in Iran while the whole society was still dealing with traditional attitudes and lifestyles, society witnessed a kind of challenge between modern and tradition. Since, Architecture has also been affected by these conflictions it has been resulted in formation of various periods during recent years which are mostly based on their orientation towards past. Although there are different attitudes about the classification of contemporary Iranian architecture

periods, in this research it is tried to mention the one, which is more comprehensive in order to determine its evolutionary process.

In this way history of contemporary Iranian architecture can be divided into three main periods which starts from the superficial use of ancient forms then it has been shifted to using the patterns which finally has been resulted in finding the meanings beyond the forms of ancient Persian architecture; from 1920-1940 which is simultaneous with the first Pahlavi dynasty and using the forms of ancient Iranian architecture has been the main design principle of this period, from 1940-1970 during the reign of second Pahlavi which has been based on modern architecture but past has been considered in the form of geometries and patterns, from 1970 till 1979 now during the Islamic republic in Iran and a conversion to implications of traditional architecture and from 1979 till now through which it is witnessed a new movement as the result of all these challenges.

From 1920 till 1940 a despotic government of that period with limited investment had enormous influence on constructions in a defined way. The constructions of this period had been limited to the key buildings such as universities, train stations, which have been needed for a central government. Buildings of that period were mostly influenced by neo-classicism and were the combination of classical architecture of Germany (Bani Masoud, 2009). Architecture of this period has neither the form of urban designing nor the public and residential constructions. (Figure 30, Figure 31). The main design principles in this period had been following the forms of Iranian ancient architecture. The place of tradition has been mainly defined in superficial and apparent repetition of the huge buildings of Achaemenid and Sassanid era (Figure 28,

Figure 29). Andre Godar, Maxim Siro, Vartan Hovansian, Pol Abkar, Sarkisian were some of the well-known architects of this period (Bani Masoud, 2009).

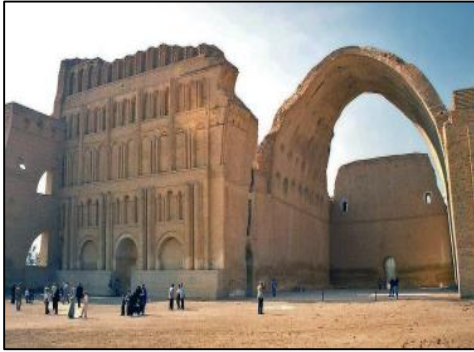


Figure 29: Iwan Madaen from 224 CE in Iraq, (Asagharzadeh & Mehrnazar, 2009)



Figure 28: Kourosh Tomb in Psargad from 600 BC, (Webkaran, 2011)

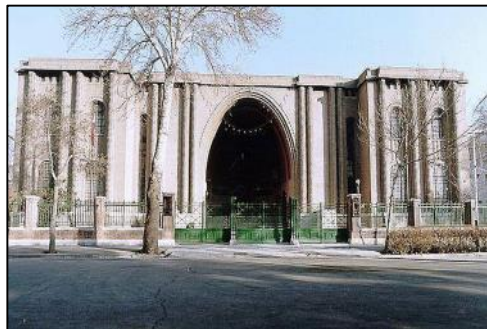


Figure 31: National Iran in Tehran by Andre Godar, (Rahimzadeh, 2007)



Figure 30: Ferdosi Tomb in Khorasan by Karim Taherzadeh, (Dinparast, 2011)

From 1940 to 1970 which was simultaneous with Second Pahlavi era and Iran Oil Nationalization, through which the power of the government decreased and the central despotic government limit its efforts only to survive. Although constructions in this period have been mainly based on the modern architecture, considering the past has been continued but at this time what have been used were mostly the geometries and patterns of Iranian architecture.

“The second group includes works where the use of architectural heritage is not restricted to principles and prototypes of traditional architecture, but addresses Iranian culture on a broader scale with its myths, concepts, cultural contents and memories.” (Mirmiran, 2004, p. 40).

Although, during this period the architects tried to create modern forms they also combined it with geometries and also patterns of Iranian architecture in order to give their buildings an Iranian characteristic. (Figure 32, Figure 33, Figure 34, Figure 35). Mohsen Forooghi, Houshang Seihoun, Abdolaziz Farmanfarmaian, Hossein Amanat have been known as famous architecture of this period (Bani Masoud, 2009)



Figure 32: Imam Mosque from 1611 in Isfahan reinterpreted in Kamal-ol-Molk Tomb, (Veisi, 2008)

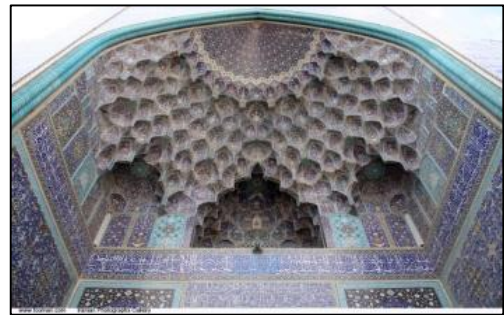


Figure 33: Moqarnas represented in Aazadi Square, (Fouman.com, 2004)



Figure 34: Kamal-ol-Molk Tomb by Houshang Seihoun in Khorasan, (Mansour-K, 2004)



Figure 35: Azadi Square in Tehran by Hossein Amanat, (Eleftheriou, 2011)

From 1970-1979, has been started with the Islamic revolution and then the war between Iran and Iraq, resulted in stagnation of constructions and developments in theory of architecture during the early years of this period. Hadi Miamian, Bahram Shirdel, AliAkbar Saremi are some of the representatives of this period.

The construction process shifted from government to the individual investors. So in this period popular constructions become more prevalent based on the theories. Also, acknowledging the meanings of older Iranian architecture and searching for quality of the space became the central discussion instead of merely thinking about the forms (Bani Masoud, 2009) (Figure 36, Figure 37, Figure 38, Figure 39).



Figure 37: Chehel Sotoon Palace from 1646 in Isfahan represented in Embassy of Iran, (Palmer, 2009)



Figure 36: City Context of Yazd used as an idea in Yazd Project, (Seeiran.ir, 2013)

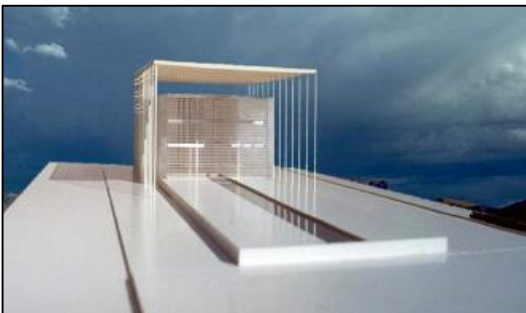


Figure 39: Embassy of Iran in Zimbabwe by Hadi Mirimiran, (Mirmiran, 2003)

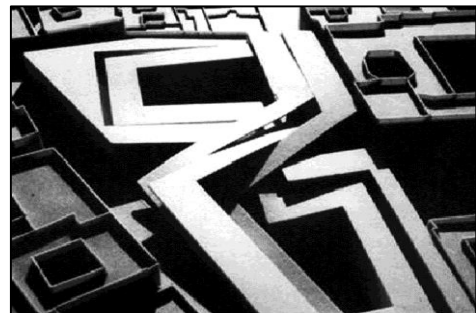


Figure 38: Yazd Project by Bahram Shirdel, (Shirdel, 2009)

“These projects are complying with new global paradigms and to confront the world’s progressive architectural discourse, while at the same time deeply benefiting from traditional architecture” (Mirmiran, 2004, p. 41).

From 1979 until now there has been an attempt to transform the theories of the previous generation into practical forms and go beyond these discussions. Having passed through these viewpoints on the past, this 4th generation is looking for authenticity and modern tectonics simultaneously in their architectural works. They try to move forward while allowing authenticity to show itself intrinsically in the spirit of the spaces. They are trying to balance tradition with the use of new technologies.

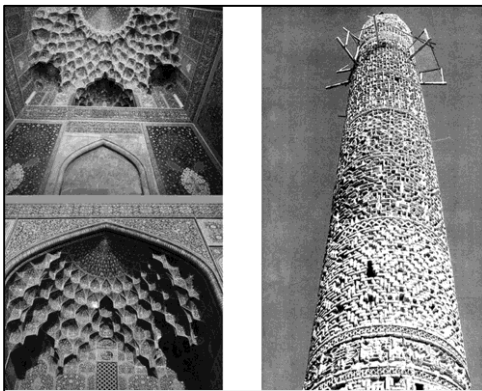


Figure 40: Brick networks and Moqarnas, (Daneshmir, 2010)

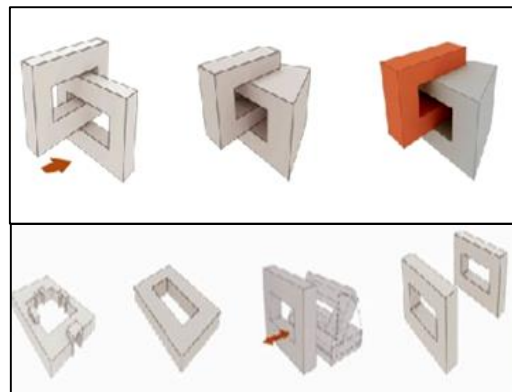


Figure 41: Reuse of traditional courtyards, (Taghaboni, 2010)

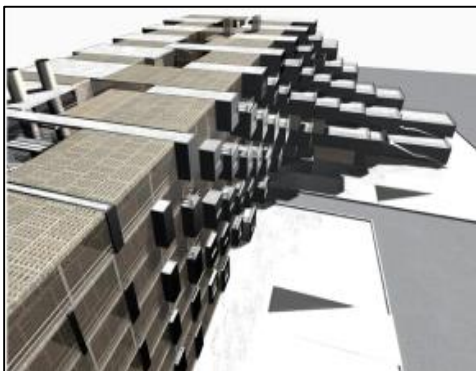


Figure 42: Guesthouse in Mahshad by Reza Daneshmir, (Daneshmir, 2010)



Figure 43: QCEO Building by Alireza Taghaboni, (Taghaboni, 2010)

“The past has gone, and the future has not arrived. What does exist is the present. If a person is careful about his present, he also paves the way to a good future. Persian literature puts constant emphasis on the value and significance of the present. That does not mean that it neglects the future; it just focuses attention on the most valuable, the most truthful period of time – the present. Indeed, if the present is preserved, then the past becomes meaningful and the future secured. The modern age is a period of carelessness about the present and definitely needs to reconsider its values” (Beheshti, 2004, p. 25).

Reza Daneshmir, Mohammad Majidi, Rambod Eilkhani, Arash Mozaffari, Pouya Khazaeli, Ramin Mehdizade, and Alireza Taghaboni are the pioneers of new generation of contemporary architects with the apprehension of authenticity of Iranian architecture (Figure 40, Figure 41, Figure 42, Figure 43).

## **4.2 Challenge of Modern and Tradition in Iran for The Sake of Authenticity**

The challenge between traditional lifestyle and attitudes and entered modern technology and ideology affects the whole society. Criticizers, philosophers and writers started to express this critical situation, which the current conditions seem to be the trace of those experiences.

Ehsan Naraghi as a contemporary Iranian sociologist and writer pointed out that the power of Western civilization is because of its obsession with reality as the knowledge and technological improvements whereas the glory of Eastern history originated from the eternal light of truthfulness as the spiritual philosophy (Naraghi, 1976).

Darioush Shaygan also as one of the other contemporary thinkers and scholars of Iran tried to suggest a kind of balance between eastern and western philosophy which the former is based on inspiration, and faith and the latter is based on intellectualism.



(Boroujerdi, 1996) He also expressed that the only solution for solving this separation seems to be a reversion to cultural spirituality, which is authentic (Shaygan, 1977).

According to Nader Ardalan, Iranian architecture has been a kind of transformation from outside to inside or in other words from materiality such as material, texture and color as physical feature of the building into spirituality as the indicator of cultural and social implications (Bani Masoud, 2009).

During the years of attempting for the sake of cultural identity, Iranian architecture experienced both revitalization and fusion or eclecticism. Presently new approaches are looking for presenting real cultural aspects while it has been tried to communicate with the whole world as well (Diba & Dehbashi, 2004).

It can be acclaimed that there are two main approaches towards tradition one of which is about referring to the principles and idea ingrained in religious, natural and innate aspects and the other which is mostly about the terrestrial and material aspects (Ahadi, 2011: 500). Louis Kahn defined these two approaches as tradition, which is about limitations of the past and traditional which means constancy (Kahn, 1960). Kamran Safamanesh as one of the other contemporary architects of the 3<sup>rd</sup> generation defines tradition as a dynamic stream, which reflects the time (Bani Masoud, 2009).

According to Darab Diba one of the famous architects of the third generation, traditional architecture is based on some principles and ideas which can be used to create an architecture which is adjusted with environmental and cultural issues of the period it belongs to (Diba, 1999). He also mentioned

“Traditional architecture evolved in its patterns and methods leaving its impact on the architecture of the following periods” (Diba & Dehbashi, 2004, pp. 31-37).

Ali Akbar Saremi who is one of the contemporary architects of the 3<sup>rd</sup> generation pointed out to this fact that traditional architecture is timeless while its consistency with time makes it a dynamic movement (Saremi, 2010).

Since, modernism in Iran happened while post-modernism has been formed in the other parts of the world, society of that time was fascinated with some elements and principles of traditional architecture. Therefore, tradition in Iranian architecture has been interpreted as a series of methods, principles and ideas which has passed through different ages and has been affected by various social and cultural factors, mostly in third generation of contemporary architects (Soltanzadeh, 2006). Thus tradition can be defined as a dynamic term, which adopts itself with environmental and effective factors of architecture (Ahadi, 2011).

It was not the taste modifications, which changed the architecture, but it has been about the changes of lifestyle, attitudes and public culture of human beings. Architecture is the expression of what has been transformed from past to present time and it has to carry all those memories and emotions in order to make relation with the people of its society (Bavar, 2008). Therefore, architecture had no way other than going along with these modifications, as it has been its mission through the whole history of mankind.

According to Reza Daneshmir one of the pioneer architects of the 4<sup>th</sup> generation, 500 years ago people excavated the ground in desert cities in order to have a better

accessibility to water in houses and use the cool spaces of basement but another aim of this excavation was to use the soil for construction of a building. However, is it possible to use this process today? Is it correct to dig the ground, throw off the soil and make a structure with concrete and make it up with brick and arches and finally claim that this is architecture with Persian identity? Absolutely not. Architecture of past days depended on the technology of that period. So, in a world with its specific technology repetition of another world with different techniques is useless. This type of architecture is missing the integration of meanings that was the characteristic of Persian architecture during centuries (Daneshmir, 2008).

Therefore, it can be said that the space of present time is the combination of different disciplines and perceptions under a unique intellectual system, which is able to solve its issues. In this way there are two subjects to which architecture should be responsible; functioning in its environment and its relation with world, which can be examined from two aspects of tectonics and meaning.

It is undeniable that today the construction methods in Iran are so limited in comparison with western countries and thinking beyond the mere design and to the performance, will result in dissension into masonry techniques and then it forces the architect to self-censorships and changing the ideas to be adopted with the current technology in this country. In this way, the second way as searching for present time during meanings seems the only way and tectonics is one of the means, which can lead us to find the authenticity of Persian architecture in current days in order to make a negotiation between east and west. The architect of today is responsible to create and

produce in order to add something to the past heritages not to rob from old days (Daneshmir, 2008).

“Today we preserve historical relics, struggle against their destroyers, and conduct research to increase knowledge about our cultural heritage, but forget about the inner sense of this heritage and the message the relics carry from their creators. Hence we do not increase our innate knowledge about our past” (Beheshti, 2004, p. 25).

Unity and contextualism are the most dominant conceptual issues of contemporary Iranian architecture ingrained in traditions. Compatibility with environmental issues, reuse of traditional forms and geometries, and use of light stands in the following position (Mahdavinejad & Bahtoei, 2012).

According to Pirnia, as one of the pioneer of contemporary architecture of Iran who studied on ancient architecture of this country, there are five main criteria as dominant characteristics of being authentic in Iranian architecture; humanism or terroir (considering human controlled elements), avoiding uselessness, tectonics, self-sufficiency, introversion. In the book of Stylization of Iranian Architecture, he examined these factors in Iranian architecture in building scale and in this research it is tried to find them in city scale (Pirnia, 2004).

Ghobadian, who is one of the famous contemporary architects of Iran, mentioned that this authentic quality refers to the adaptation of architecture with climatic conditions (Ghobadian, 2007).

It can be seen that although modern architecture in Iran happens as an imported, rootless process when there was no public preparation or even technological improvements, today it is trying to go forward with a an ever-existing look to the past through meaning which can result in creating an authentic architecture. Then this issue also applies to lightness which through the history of Iranian architecture has been demonstrated not only in relation with past but also it appears in step with technological improvements.

Although, idea of authenticity is a dynamic concept which cannot be defined in a strict frame for being authentic it is needed to learn from past and being adapted with new conditions. It does not neither mean to recreate past in present nor even just to forget about past. Since, traditions are ingrained in their context and culture it has to be improved by the passage of time.

### **4.3 Usage of Modern Technology in Contemporary Iranian Architecture**

Passing through the revolutionary process of contemporary Iranian architecture it can be acclaimed that tectonics as “an artistic use of technology” has been used in past and present architecture of Iran in different ways in order to demonstrate the authentic characteristic of the architectural constructions.

Usage of different type of materials in history of Iranian architecture results in specific styles and forms, which narrate the period, they’ve been built through. Likewise other countries entering the modern era synchronized by new materials resulted in alteration of architectural form and structure in Iran. Therefore, during 1920s needs for urban developments and transportation requirements, train stations and exhibitions mostly

have been considered. Iron seems to be the most dominant material used for architectural constructions. During this period stone also has been used specially in office buildings (Figure 44, Figure 45).



Figure 45: Example of ne transportation facilities, Dezfoul Old Bridge, (Bavar, 2008, p. 52)



Figure 44: Early generation of modern bridges, Suspended Bridge in Ahvaz, (Bavar, 2008, p. 52)

Vartan Hovansian as one of the contemporary architects of the first period believes that modern architecture resembles the event of exploring veil in Iran. Likewise Reza Shah who forced women to get rid of their veils, modern architecture did the same thing with the buildings of Qajar era and replaced the masonry buildings with glass and iron, which has been resulted in extroverted buildings during this period. Modern architecture in Iran originated in first Pahlavi era and it accomplished during the second Pahlavi dynasty (Bani Masoud, 2009) (Figure 46).



Figure 46: West view of Toupkhaneh Square in Tehran, (Bavar, 2008, p. 53)

Experiencing stone-based bridges of Sassanid era and brick-based bridges of Safavid period with arched vaults, the first generation of bridges which have been built with new technological construction methods are from first Pahlavi dynasty. These new features of modern era have been constructed with metal elements assembled with nut and screw based on concrete foundations (Bavar, 2008) (Figure 47, Figure 48).



Figure 48: Bridge from first Pahlavi dynasty, Brick Bridg in Langroud, (Bavar, 2008, p. 52)



Figure 47: Usage of modern tectonics, Suspended Bridge in Ahvaz, (Bavar, 2008, p. 52)

During the first period there have been three main tendencies, which can be named as continuity of Qajarid style, early modern style and European neoclassicism in combination with Iranian patterns. What made Hovansian to be worried about were the increasing tendencies in formalistic approaches. During this period industrial architecture as one of the branches of modern architecture emerged in coincidence with public and residential buildings. Various types of materials such as concrete, iron and glass have been replaced (Figure 49, Figure 50).



Figure 49: The popular residential types during 50's in Iran, (Bavar, 2008, p. 121)



Figure 50: Tehran's spread over modern buildings, (Bavar, 2008, p. 121)

Concrete firstly has been used in governmental buildings but later it has been accepted by modern architects to be used in residential and public buildings as well. On the other hand, emergence of new materials needs to form a new kind of engineering, which considers the building as a technical construction issue beside its minimalist aesthetics (Bavar, 2008) (Figure 51).



Figure 51: Popular residential buildings during 1950's, (Bavar, 2008, p. 119)

Architecture of the second period seems to be a combination of International style with idea of localization. The major development in the field of construction during these years was the transformation of reinforced concrete structures before the Second World War to the steel frame structures covered with brick (Bavar, 2008).



During the third era according to the ever-increasing demands for living spaces, a new movement of high-rise constructions emerged. In this period steel structure with concrete roofs, usage of reinforced concrete and prefabrication techniques became the dominant construction systems. These systems have been adopted with the available facilities in Iran. For instance, steel structure becomes more popular because of its simpler technique and rapid process. Also, lightweight concrete roofs have replaced Arch systems. However, prefabrication systems in Iran are not enough developed. It just seems to be employed as a replacement for stone facades but it doesn't play any roles in the main structure of the building (Bani Masoud, 2009) (Figure 52, Figure 53).



Figure 52: Takhti Stadium with tensile cable structure during 1970 by Jahangir Dervish, (Bavar, 2008, p. 141)



Figure 53: Construction with exposed concrete in Structuralism style by Jahangir Darvish during 50's, (Bavar, 2008, p. 144)

Materials and construction techniques of the period was limited to brick and iron in a way that iron beams lean on the brick walls and in between it has been covered with brick roof which is named Jack Arch. A jack arch is a structural element in masonry construction that provides support at openings in the masonry. Alternate names are "flat arch" and "straight arch". Unlike regular arches, jack arches are not semicircular

in form. Instead, they are flat in profile and are used under the same circumstances as lintels (Bavar, 2008).

Afterwards, brick facades have been replaced by incorrect usage of stone specially Travertine. Also, huge, stretched windows and usage of steel profiles instead of wooden ones have been the common characteristic of the buildings of this period.

Mohammad Amin Mirfendreski as one of the architects of this generation believes that the brick used for building the wall has to form the façade as well. Also, Jahangir Dervish another contemporary architect of the third generation can be known as the founder of post tension cable systems in Iran. Mehdi Alizadeh also tried to expose the iron structural elements of the building and combine it with architectural forms (Bani Masoud, 2009) (Figure 54, Figure 55).



Figure 55: Residential building with minimal interior spaces designed by Mehdi Alizadeh during 1960's, (Bavar, 2008, p. 149)



Figure 54: Residential building based on rural building types designed by Sirous Bavar, (Bavar, 2008, p. 154)

Although, it has been tried to import new materials to the construction field it seems that steel and concrete frame structures are still the most popular methods in Iran. Considering two major issues of architectural arguments in Iran as the low-speed

improvement of construction techniques and the long-term debates on modern and tradition, lightness of modern tectonics has been interpreted in a distinct way. Iranian society has always witnessed two groups of architects one of which are the ones who do not play an important role in architectural productions because they just follows the bazaar the available fashions while the other group with professional responsibilities who have the leadership role. Following is the idea of some of these pioneers of different periods in contemporary architecture of Iran towards this issue.

#### **4.4 Idea of lightness in terms of modern tectonics**

Although, there is not that much emphasis and analysis about the idea of lightness in Iranian architecture there are some architects who tried to touch this subject whose ideas have been discussed in this part.

Hadi Mirmiran, who has been known as one of the famous contemporary Iranian architects from the beginning of the third generation found the authenticity of precedent architectural constructions in their movement from materiality to spirituality. The approach of Mirmiran, whose reflection on the architecture of Iran goes through a metaphysical equilibrium between past and present attaining a remarkable originality and intensity, is new in the Iranian panorama. Mirmiran mentioned the fact that

“If we desist from our originality then where we are going to be? Undoubtedly, we will be wandered in the world architecture where there is no place for us and in this way I prefer not to be an architect” (Mohammadzadeh, 2003, p. 13).

He experience different ways to make continuity between past and present that brings him to the result of taking the meaning beyond Iranian architecture and use it in the

architecture of today, which is adapted to the needs of modern human. Precedent architecture of Iran used techniques, forms such as porches and platforms, spaces such as in between spaces, central courtyards and Chahar Bagh (Iranian gardens), water, and horizon to make the solid volume of the building light and transparent, considering the fact that the nature and authentic character of this architecture is to reduce the material and increase the space.

Space is the essence of architecture, which in Iranian architecture tend to be more transparent and lighter. This architecture was going to reduce the substance and increase the space, in other words, a movement from object to spirit. Using courtyards, porticos and openings, in between spaces and hierarchy dispose the skeleton of the cubic and solid building to the least materiality and most spirituality (Mirmiran, 1999) (Figure 56).

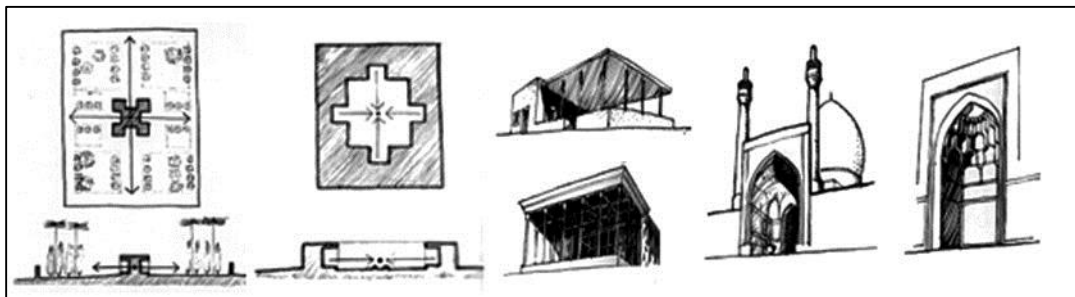


Figure 56: Traditional Iranian Garden Patterns, Introverted traditional buildings, In between spaces such as porches and porticos, (Ardalan & Bakhtiar, 2000)

Moreover, Bahram Shirdel as one of the other contemporary architects of the third generation has experienced a kind of reversion to the precedent architecture of Iran which is an organization of the forms around an emptiness which he believes that has been the source of forming the historical buildings in Iran. But this organization around

an emptiness which is an expression of lightness in Persian architecture has been posed in Shirdel's projects is more complex and carries the meanings of contemporary Iranian architecture. His main idea through his projects is to create emptiness and everything is under the effect of this vacancy. He defines the originality of Iranian architecture in creation of empty spaces and their interaction with solid volume of the building (Raeisi, 2012, p. 56).

Iman Raeisi as one of the other contemporary architects of the 3<sup>rd</sup> generation has written an article about the sculptures of Parviz Tanavoli, one of the famous contemporary sculptors who have a collection named "Nothingness" (Hich). He states that "Nothingness" (Hich) or in other words empty spaces has had a specific place in different periods of Iranian arts (Raeisi, 2012) (Figure 57).



Figure 58: Empty spaces through Hich sculptures of Parviz Tanavoli, (Hamshahri Computer Center, 2003)



Figure 57: Empty spaces through Iranian calligraphy, (Pourhamrang, 2005)

It can be mentioned that since in the ancient world God has been the center of the whole world and Iranians do not imagine any physical aspects for God, this eternal existence has been imagined as an emptiness. Architecture has been one of the important stages for demonstration of this idea in other words traditional cities have been formed by continuous empty spaces. Also in Iranian music silences plays an important role as the main structure of any composed part. The importance of emptiness also can be seen in Iranian Miniature, calligraphy and literature (Raeisi, 2012, p. 36) (Figure 58).

The new generation in Iran believes that

“What is threatened by the sweeping force of Modernism is the body of culture, and not its spirit. However, preserving the body alone will not make possible the protection of the true gem of culture. This gem can be saved only if we consider the body to be a receptacle for the spirit, a particular shape that the culture has taken, only when this body is deemed an incarnation of the immortal spirit and through its preservation the way is paved for the transfer of the spirit of culture can the body itself become eternal” (Beheshti, 2004, p. 24).

Therefore, it can be seen that challenge of modern and traditions resulted in different periods in history of contemporary Iranian architecture. Since, neither the new technological improvements nor traditional background of Iran could not be ignored different approaches for creating balance between these two dominant forces have been formed. Experiencing them all new generation of architects in Iran are trying to reinterpret these values and represent them in a new way.

## Chapter 5

### **MODEL OF MODERN LIGHT TECTONICS AND EVALUATION OF THE CASE STUDY**

In this part it is firstly tried to discuss about the possible methods, which could be employed during this research through which a complex hypothesis has been designated resulted in a multidimensional model. Afterwards, the empirical method based on documentary researches, observations, and interviews has been discussed. Also the evaluation methods as recursive abstraction, model and hypothesis based on the collected data has been followed.

#### **5.1 Model of authentic characteristics of modern tectonics**

Scientific models are mostly used for showing different aspects of a phenomenon more understandable, definable, and visible. Research models are applied to understand particular application domains by means of deploying methods, which have behind them particular theories. Models as inseparable parts of a scientific research can be identified in different types such as conceptual models to better understand, operational models to operationalize, mathematical models to quantify, and graphical models to visualize the subject (Hacking, 1983).

Generating a model needs an abstraction process as a conceptual representation of particular terms of a feature. A model can be evaluated based on the empirical datasets. Simulation seems to be the most relevant term to model. However, a model represents

a system while simulation indicates the operation of a system through the time (Carson, Nelson, & Nicol, 2001).

Since, conceptual model stands object-oriented ones it seems that conceptual model is the most proper model for this research. Conceptual models are mostly based on semantics and perceptions come out of observation of a physical entity (Duan & Cruz, 2011).



Table 2: Total characteristics of using modern tectonics according to project analysis of each architect based on both interviews and observation analysis

Concept of lightness	Architects	Reza Daneshmir	Alireza Taghaboni	Pouya Khazaeli	Rambod Eilkhani	Ramin Mehdizadeh	Mohammad Majidi	Arash Mozaffari
	Characteristic	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved
Form	Perceptibility	<ul style="list-style-type: none"> <li>Pure simple forms</li> <li>Cubic forms seems to be carved</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> <li>Cubic forms seems to be carved</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> <li>Cubic forms seems to be carved</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> <li>Cubic forms seems to be carved</li> </ul>	<ul style="list-style-type: none"> <li>Pure simple forms</li> </ul>
	Dynamicity	<ul style="list-style-type: none"> <li>Play of solid and void</li> <li>Continuous surfaces</li> <li>Sliding volumes</li> <li>Curvilinear surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void</li> <li>Folded Continuous surfaces</li> <li>Sliding volumes</li> <li>Curvilinear surfaces</li> <li>Various type of openings</li> <li>Moveable flexible facades</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void</li> <li>Various type of openings</li> <li>Moveable flexible double skin facades</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Various type of openings</li> <li>Moveable flexible double skin facades</li> </ul>	<ul style="list-style-type: none"> <li>Various type of openings</li> <li>Moveable flexible facades</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void</li> <li>Sliding volumes</li> <li>Various type of openings</li> </ul>
Context	Gentle settlement	<ul style="list-style-type: none"> <li>Ramps and staircases in continuation of landscape</li> <li>Elevation of the building</li> <li>Use of water elements</li> <li>Settlement on a platform</li> </ul>	<ul style="list-style-type: none"> <li>Ramps and staircases in continuation of landscape</li> <li>Elevation of the building</li> <li>Use of water elements</li> <li>Settlement on a platform</li> </ul>	<ul style="list-style-type: none"> <li>Ramps and staircases in continuation of landscape</li> <li>Elevation of the building</li> <li>Use of water elements</li> </ul>	<ul style="list-style-type: none"> <li>Continuity of façade material toward landscape</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building</li> <li>Continuity of façade materials towards landscape and exterior courtyard walls</li> </ul>	<ul style="list-style-type: none"> <li>Ramps and staircases in continuation of landscape</li> <li>Elevation of the building</li> <li>Use of water elements</li> </ul>	<ul style="list-style-type: none"> <li>Ramps and staircases in continuation of landscape</li> <li>Elevation of the building</li> <li>Settlement on a platform</li> </ul>
	Integration with surroundings	<ul style="list-style-type: none"> <li>Activating open spaces</li> <li>Continuity of building material and surfaces toward outside</li> <li>Neutral simple façade connecting other units</li> </ul>	<ul style="list-style-type: none"> <li>Activating open spaces</li> <li>Compatible with typology of surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Activating open spaces</li> <li>Compatible with typology of surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Activating open spaces</li> <li>Neutral simple façade connecting other units</li> </ul>	<ul style="list-style-type: none"> <li>Continuity of building material and surfaces towards outside</li> <li>Neutral simple façade connecting other units</li> </ul>	<ul style="list-style-type: none"> <li>Activating open spaces</li> <li>Continuity of building material and surfaces toward outside</li> <li>Neutral simple façade connecting other units</li> </ul>	
	Compatible with climatic issues	<ul style="list-style-type: none"> <li>Double skin façade</li> <li>Central open space</li> </ul>	<ul style="list-style-type: none"> <li>Double skin façade</li> <li>Central open space</li> <li>Sloppy movements of roof</li> </ul>	<ul style="list-style-type: none"> <li>Central open space</li> <li>Sloppy movements of roof</li> </ul>		<ul style="list-style-type: none"> <li>Double skin façade</li> <li>Gable roof</li> </ul>	<ul style="list-style-type: none"> <li>Double skin façade</li> <li>Central open space</li> </ul>	
	Relation with nature	<ul style="list-style-type: none"> <li>Central open spaces</li> <li>Roof and terrace gardens</li> <li>Curvilinear surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Central open spaces</li> <li>Roof and terrace gardens</li> <li>Curvilinear surfaces</li> <li>Greeneries' continuation towards façade and inside</li> </ul>	<ul style="list-style-type: none"> <li>Central open spaces</li> <li>Roof and terrace gardens</li> </ul>	<ul style="list-style-type: none"> <li>Roof and terrace gardens</li> <li>Greeneries' continuation towards façade and inside</li> </ul>	<ul style="list-style-type: none"> <li>Using natural and local materials such as timber and recycled stone pieces</li> </ul>	<ul style="list-style-type: none"> <li>Central open spaces</li> <li>Roof and terrace gardens</li> <li>Greeneries' continuation towards façade and inside</li> </ul>	
	Conducting dialogue with city	<ul style="list-style-type: none"> <li>Legible façade (variety of openings , cantilevered volumes)</li> <li>Central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade (variety of openings , cantilevered volumes)</li> <li>Central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade (variety of openings , cantilevered volumes)</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade (variety of openings , cantilevered volumes)</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade</li> <li>Central open spaces</li> <li>Volume's detachments</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade</li> <li>Volume's detachments</li> </ul>

Concept of lightness	Architects	Reza Daneshmir	Alireza Taghaboni	Pouya Khazaeli	Rambod Eilkhani	Ramin Mehdizadeh	Mohammad Majidi	Arash Mozaffari
	Characteristic	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved	How it has been achieved
Space	<b>Inside-outside idea</b>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• In between spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• In between spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Framing outdoor vistas</li> <li>• Continuation of landscape through spaces via staircases</li> </ul>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• Framing outdoor vistas</li> <li>• Continuation of landscape and greenery through spaces and facades</li> <li>• Visual and physical integration of public open spaces with project</li> </ul>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• In between spaces</li> <li>• Framing outdoor vistas</li> </ul>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• In between spaces</li> <li>• Framing outdoor vistas</li> </ul>	<ul style="list-style-type: none"> <li>• Double skin façade and transparency providing privacy while keep connection with surroundings</li> <li>• In between spaces</li> <li>• Framing outdoor vistas</li> <li>• Continuation of landscape through spaces via staircases</li> </ul>
	<b>Fluidity</b>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Spatial organization around a central void</li> <li>• Integration of walls with roof and floor</li> <li>• Visual connection among spaces via voids</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Spatial organization around a central void</li> <li>• Integration of walls with roof and floor</li> <li>• Visual connection among spaces via voids and Low-height walls</li> <li>• Play with textures</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Spatial organization around a central void</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Integration of walls with roof and floor with furniture</li> <li>• Visual connection among spaces via voids and Low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Using natural materials to induce the sense of coziness</li> <li>• Spatial organization around a central void</li> <li>• Integration of walls with roof and floor and furniture</li> <li>• Visual connection among spaces via voids and Low-height walls</li> <li>• Play with textures</li> <li>• Interplay of levels, stairs and voids which create highly varied spaces</li> <li>• Different type of space organization in each level with diverse perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• No dead-end spaces</li> <li>• Spatial organization around a central void</li> <li>• Integration of walls with roof and floor and furniture</li> <li>• Visual connection among spaces via voids and Low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchical space organization</li> <li>• Public-private zonings</li> <li>• Integration of walls with roof and floor and furniture</li> <li>• Visual connection among spaces via voids</li> <li>• Interplay of levels, stairs and voids which create highly varied spaces</li> </ul>
	<b>Flexibility</b>			<ul style="list-style-type: none"> <li>• Open plan idea</li> <li>• Foldable walls</li> </ul>	<ul style="list-style-type: none"> <li>• Open plan idea</li> <li>• Moveable, low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>• Open plan idea</li> </ul>		
	<b>Enhancing 3rd dimensional quality of space</b>	<ul style="list-style-type: none"> <li>• Visual and physical continuity through voids among spaces</li> <li>• Cantilevered volumes and bridges with lightweight staircases flying through spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Visual and physical continuity through voids among spaces</li> <li>• Cantilevered volumes and bridges with lightweight staircases flying through spaces</li> </ul>		<ul style="list-style-type: none"> <li>• Visual and physical continuity through voids among spaces</li> <li>• Cantilevered volumes and bridges with lightweight staircases flying through spaces</li> <li>• Interplay of levels, stairs and voids which create highly varied spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Visual and physical continuity through voids among spaces</li> <li>• Cantilevered volumes and bridges with lightweight staircases flying through spaces</li> <li>• Emphasis on vertical movements (lightweight staircases)</li> </ul>		<ul style="list-style-type: none"> <li>• Visual and physical continuity through voids among spaces</li> <li>• Cantilevered volumes and bridges with lightweight staircases flying through spaces</li> <li>• Emphasis on vertical movements (lightweight staircases)</li> </ul>
	<b>Changeable interior spaces</b>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Integration of walls, roof and floor via continuous light pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Integration of walls, roof and floor via continuous light pattern</li> <li>• Double skin façade, Angular openings and surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Integration of walls, roof and floor via continuous light pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Double skin façade</li> <li>• Lightening roof's settlement on the walls</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Double skin façade, Angular openings and surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> <li>• Integration of walls, roof and floor via continuous light pattern</li> <li>• Double skin façade, Angular openings and surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Changeable spaces during daytime</li> <li>• Play of shadow and light on solid-void combinations (giving depth to them and inducing sense of suspension)</li> </ul>

Extracting the main characteristics of modern tectonics, as indicators of lightness in terms of novelty and relation with past, results in a model of authentic features of light contemporary tectonics in Iran. This model with 5 main arms contains the dominant tectonic characteristics which have been discussed in Chapter 3. They can be known as Structure and Material, Form, Context, Space, and Light (Figure 59).

Different ideas towards the idea of lightness through usage of modern tectonics determine the under each tectonic term. These ideas of lightness of modern tectonics have been defined based on the architect's words in interview abstraction from Chapter 5 and literature survey in Chapter 3. Idea of lightness in terms of structure and material has been achieved by usage of lightweight materials and structures, transparency and form resistant structures which all are coming out of literature survey. This idea in terms form has been indicated via perceptibility from documentary research and dynamicity of the forms based on interview abstractions. Lightness in terms of context has been reflected through gentle settlement in the site, integration with surroundings, compatibility with climatic issues, relation with nature, conducting a dialogue with city which are all coming out of interview abstractions. Fluidity and flexibility of interior spaces, enhancing 3dimensional quality of spaces and inside-outside connection are different approaches to the idea of lightness in terms of space supported by architect's words. Changeability of interior spaces is an approach for achieving lightness in terms of light.

Afterwards, it has been tried to analyze the projects in order to find out different ways of achieving these determinations of lightness in terms of modern tectonics. These

various approaches of these architects for reaching the idea of lightness have been reflected in their projects. (Figure 60)

However, some of these characteristics are not only appeared in a new way but also ingrained in traditional architecture of Iran as well. Therefore, the proposed model has been examined in 60 projects of these architects in order to proof the hypothesis that if there is any authentic characteristic in usage of modern tectonics in contemporary architecture of Iran.

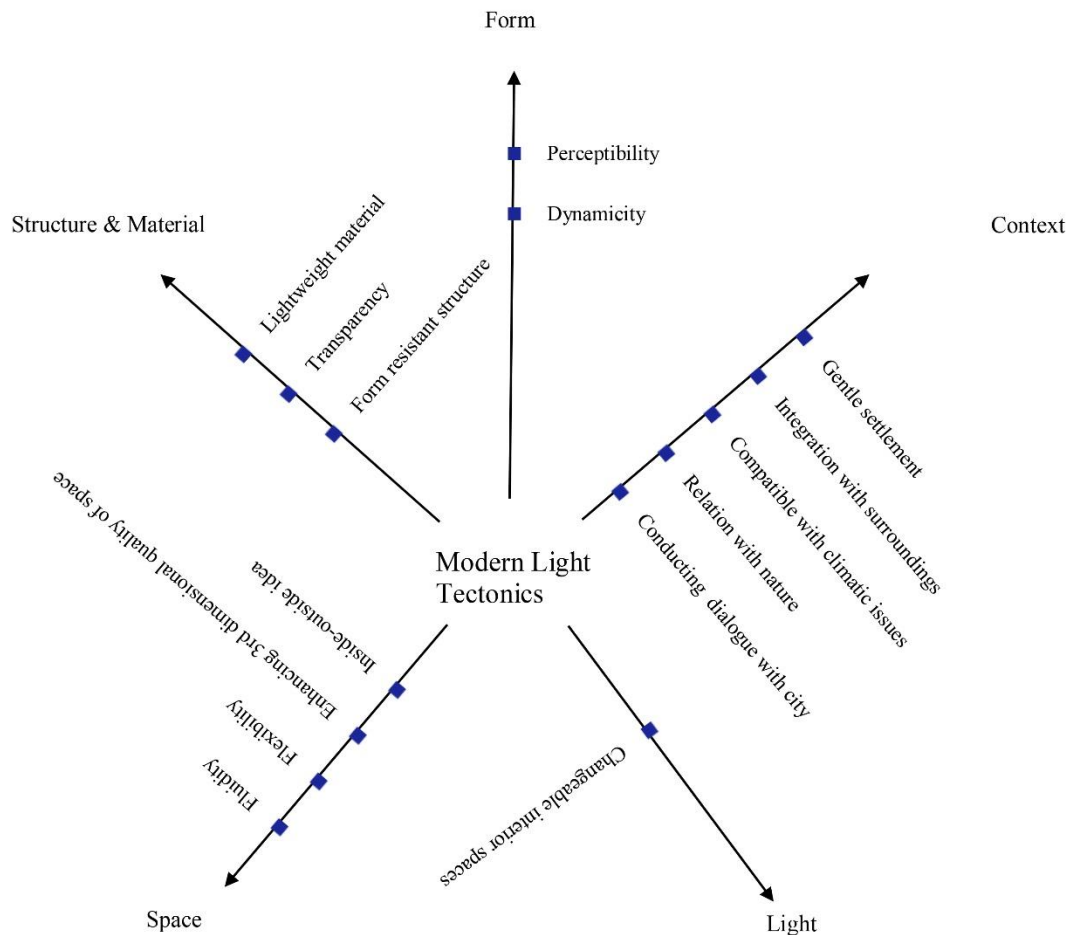


Figure 59: Model of lightness in terms of modern tectonics

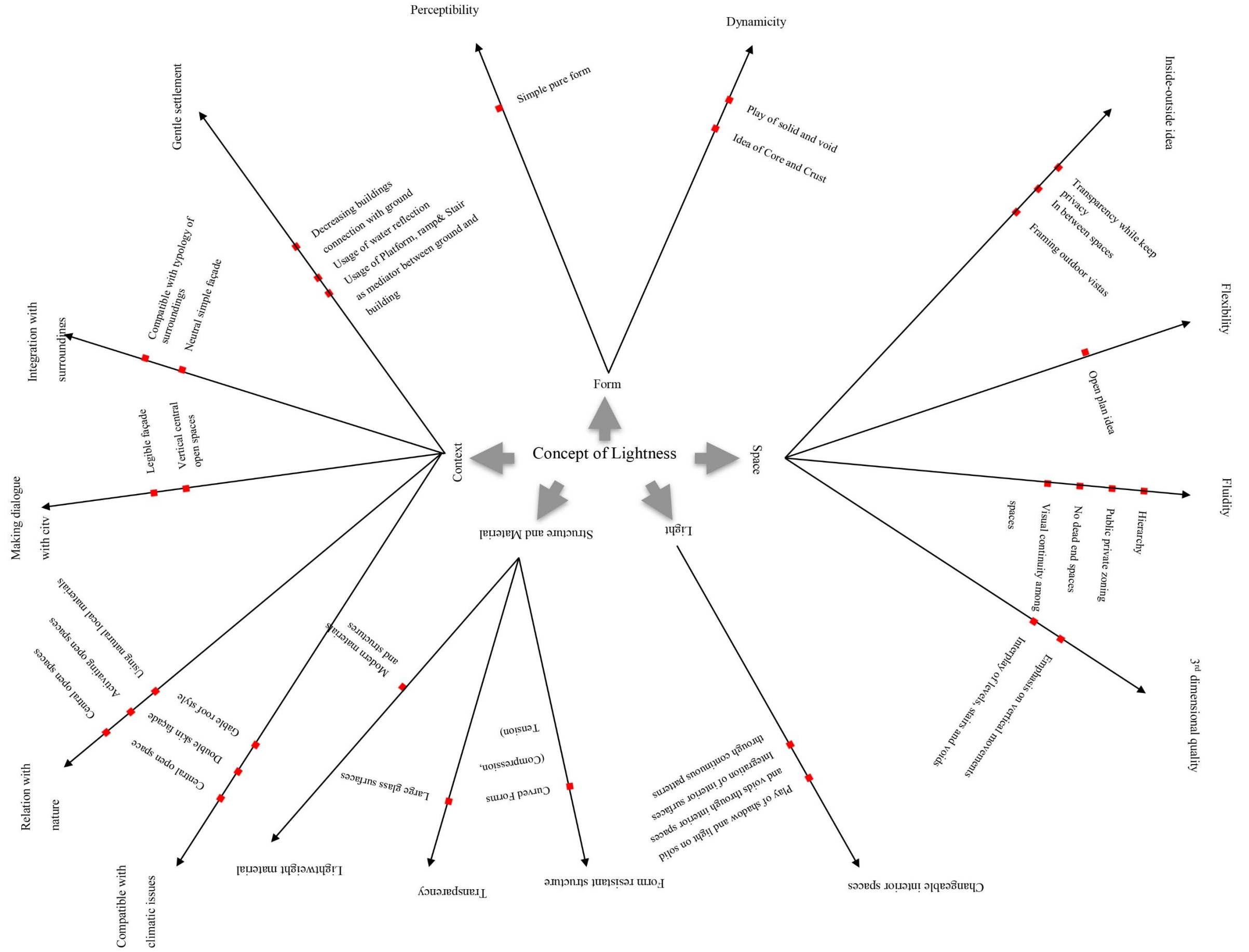


Figure 60: Model of Lightness in terms of modern tectonics in contemporary Iranian architecture

## **5.2 Method of Analysis**

It has been tried to analyze the data collected through Recursive Abstraction method. In this method it is needed to summarize the datasets as much as possible step by step. The end result would be a compact summary, which hardly can be discerned without considering the preceding process. This method can be used for analyzing datasets without coding.

In this research it has been firstly tried to summarize the interview texts as much as possible just to keep the necessary statements implies the idea of each architect for authentic usage of new technological improvements. Afterwards, these compact pages have been summarized more and more in order to achieve some keywords as an indicator of authentic use of modern tectonics as they've concerned. It needs to read the interviews time and times not to miss any idea hidden in their words. Following is the summarized interview of each architect towards the concept of modern light tectonics.

Considering this research as a qualitative assessment, it has been tried to examine that which method is the most proper one during this process. Based on Creswell's classification of five major qualitative research methods were considered in the first step. Since, in this research it has been tried to find out that if there is any authenticity in usage of new technological improvements in contemporary Iranian architecture of recent years, different methodologies have been examined during the research process.

These methodologies have been considered according to different progression levels of research for evaluating data collected. Considering the fact that there are no enough written documents and analysis on contemporary architecture of Iran it has been tried

to arrange interviews with each of the seven selected pioneers of new architectural movements in Iran. Moreover, most of their built projects have been visited and ideas towards the concept of authenticity and usage of new technological improvements have been recorded both visually and textually.

Regarding to observation records and interview documents firstly the main method supposed to be Grounded Theory. The interviews have been summarized through the Recursive Abstraction Method in order to achieve the key points as the codes indicating the idea of each architect towards both authenticity and usage of modern technologies. Also, one page essay has been written for each building considering authentic usage of modern tectonics in them. Afterwards they all have been impressed in one paragraph written for each building.

Grouping the coding, they could be the basis for the creation of a theory, or a reverse engineered hypothesis. Therefore, it has been tried to generalize the issue about the contemporary architecture of the 4th generation in Iran in order to propose a related theory. Afterwards it has been recognized that these characteristics of modern tectonics cannot be generalized to the whole contemporary architecture of Iran and the result cannot be presented as a theory because according to Creswell, a general interpretation needs studying approximately 30 architects. This is in contradiction with traditional research methods through which a theoretical method has been chosen and then just applying the model to the phenomenon has been studied (Allan, 2003).

Grounded Theory is not the method for revealing the truth but it tries to conceptualize what exists through the empirical research process. In other words, Grounded Theory

Method is applied when the researcher formulate a hypothesis based on the data collected. However, applying the grounded theory method, the researcher does not designate the hypotheses in advance since preconceived hypotheses results in a theory that is ungrounded from the data (Glasser & Strauss, 2009). Furthermore, according to Creswell's characteristics of Grounded Theory Method it is needed for interviews with almost 20-30 people to achieve detail in theory.

Examining Grounded Theory as a method which formulate hypotheses based on conceptual ideas leads the research process to proposing a hypothesis while still there have been doubts about converting the method into a phenomenological analysis. It seems that each architect defines authentic usage of new technological improvements as a phenomenon considered in their projects.

Phenomenological research method represents the examined phenomenon from the perspective of the participants through interviews, discussions and observations. This method can be considered as the basis of practical theories according to its interpretive dimensions (Creswell, 2012). Considering the fact that likewise Grounded Theory Method in phenomenological Method also it is needed to summarize the data in order to present the narration of the essence of the experience, this research tends to be a phenomenological study. However, it seems that using the phenomenological research method, there has been no place for individual project analysis based on observations.



Table 3: Comparison of different qualitative research methods based on Creswell's idea, (Creswell, 2012)

<i>Characteristics</i>	<i>Narrative Research</i>	<i>Phenomenology</i>	<i>Grounded Theory</i>	<i>Ethnography</i>	<i>Case Study</i>
Data Collection Forms	Using primarily interviews and documents	Using primarily interviews with individuals, although documents, observations, and art may also be considered	Using primarily interviews with 20-60 individuals	Using primarily observations and interviews, but perhaps collecting other sources during extended time in field	Using multiple sources, such as interviews, observations, documents, artifacts
Data Analysis strategies	Analyzing data for stories "restorying" stories, developing themes, often using a chronology	Analyzing data for significant statements, meaning units, textural and structural description, of the "essence"	Analyzing data through open coding, axial coding, selective coding	Analyzing data through description of the culture-sharing group; themes about the group	Analyzing data through description of the case and themes of the case as well as cross-case themes
Written Report	Developing a narrative about the stories of an individual's life	Describing the "essence" of the experience	Generating a theory illustrated in a figure	Describing how a culture-sharing group works	Developing a detailed analysis of one or more cases
Focus	Exploring the life of an individual	Understanding the essence of the experience	Developing a theory grounded in data from the field	Describing and interpreting a culture-sharing group	Developing an in-depth description and analysis of multiple case
Type of Problem Base Suited for Design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the views of participants	Describing and interpreting the shared patterns of culture of group	Providing an in-depth understanding of a case or cases
Discipline Background	Drawing from the humanities including anthropology, literature, history, psychology	Drawing from philosophy, psychology, and education	Drawing from sociology	Drawing from anthropology and sociology	Drawing from psychology, law, political science, medicine
Unit of Analysis	Studying one or more individuals	Studying several individuals that have shared the experience	Studying a process, action, or interaction involving many individuals	Studying a group that shares the same culture	Studying an event, an activity, more than one individual
What is traditionally studied? (sites or individuals)	Single individual, and distinctive	Multiple individuals who have experienced the phenomenon	Multiple individuals who have responded to an action or participated in a process about a central phenomenon	Members of a culture-sharing group or individuals representative of the group	A bounded system-such as a process, an activity, an event, or multiple individuals
What are typical access and rapport issues? (access and rapport)	Gaining permission from individuals, obtaining access to information in archives	Finding people who have experienced the phenomenon	Locating a homogeneous sample	Gaining access through the gatekeeper, gaining the confidence of informants	Gaining access through the gatekeeper, gaining the confidence of participants
How does one select a site or individuals to study? (strategies)	Several strategies, depending on the person	Finding individuals who have experienced the phenomenon, a "criterion" sample	Finding a homogeneous sample, a "theory-based" sample, a "theoretical" sample	Finding a cultural group to which one is a "stranger", a "representative" sample	Finding "case" or "cases", an "atypical" case, or a "maximum variation" or "extreme" case
What type of information typically is collected? (forms of data)	Documents and archival material, open-ended interviews, subject journaling, casual chatting	Interviews with 5 to 25 people (polkinghorne.1989)	Primarily interviews with 20 to 30 people to achieve detail in the theory	Participant observations, interviews, artifacts, and documents	Extensive forms, such as documents and records, interviews, observation, and physical artifacts
How is information recorded?	Notes, interview protocol	Interviews, often multiple interviews with the same individuals	Interview protocol, memoing	Field notes, interview and observational protocols	Field notes, interview and observational protocols
What are common data collection issues?	Access to materials, authenticity of account and materials	Bracketing one's experiences, logistics of interviewing	Interviewing issues (e.g. logistics, openness)	Field issues	Interviewing and observation issues

According to Creswell's comparison of five different methods for qualitative researches three others as Narrative, Ethnography, and Case study failed in the early stages of studies. Narrative Research method, which is based on chronological information for exploring a narrative about a story of an individual, does not match to this research. Also, Ethnography Research Method, which is about describing the shared pattern of culture of a group, has no relativity with this research. Therefore, formulating a hypothesis considered as the most relevant method in this research according to data collected, analysis of projects and recursive abstraction of interviews. Furthermore, a multidimensional model of modern tectonics has been proposed in order to prove the hypothesis. This model, which has been driven from interviews and projects analysis, shows authentic characteristics of using new technological improvements in projects of these architects (Table 1).

During early stages of this research, it mostly has been tried to start with a documentary research. Since, this research has been based on three main keywords as Modern Light Tectonics, Authenticity, and contemporary Iranian Architecture, after the introductory part first three chapters allocated to define each term and their relativity. Accordingly, comprehensive studies have been done on different approaches through modern tectonics besides considering the origins of the word and the relative terms as technology and poetics. Following the routes formed contemporary tectonics, it seems that lightness emerged as an essential characteristic of this new movement. Therefore, in continuation of the documentary part of the research it has been an attempt for clarifying the idea of lightness through modern tectonics and different ways that it has been employed in architecture. Afterwards, a brief explanation on the concept of lightness as a philosophical term has been provided. These parts together formed the

second chapter of the thesis. Since, the emergence of new materials and techniques results in a kind of challenge with traditional issues, concept of authenticity appeared as an unavoidable reality in history of tectonics.

Accordingly, third chapter can be known as an attempt for clarifying the concept of authenticity. Passing through the dictionaries and thesauruses for exploring the origin of the term and the relevant implications, its place in philosophy has been considered. Afterwards, it has been tried to define the authenticity of an artwork. Accordingly authenticity in terms of architecture as a kind of art has been expressed through which novelty and relation with past as the main indicators of an authentic edifice have been defined.

Forth chapter is based on history of contemporary Iranian architecture through which different periods formed according to the challenge between modern issues and traditions. There has been a brief overview on entrance of new technological improvements in Iran and its influence on construction process in different periods. In this chapter also, there is an attempt to collect different ideas of the contemporary Iranian architects towards the concept of lightness as the most dominant indicator of modern tectonics.

Having a review on literature of the research there has been an attempt for collecting data for examining authentic usage of new technological improvements in the fourth generation of Iranian architecture. Therefore, examining the existing cases seems necessary.

Since, this research is an attempt to examine the authenticity of modern tectonics in contemporary Iranian architecture. 7 architects who were prize winners more than three years in the Memar competition, till 2011 as the most famous architectural event in Iran, were selected to take part in a field study. It means that they are the architects who are constantly following an idea in their designs. Reza Daneshmir, Alireza Taghaboni and Arash Mozaffari have each completed 13 projects, Rambod Eilkhani and Ramin Mehdizadeh have completed 4, Pouya Khazeli has completed 2 and Mohammad Majidi has completed 11 till 2011. They seem to be the established pioneers of the fourth generation. Their work was discussed in recent volumes of the journals “Architectural Digest” and “The Plan”. Therefore, it has been firstly tried to classify their project into three categories of Built projects, Under-construction and Paper projects. The total number of their projects has been 60 while the available built projects of each architect have been visited. Observations, which reflect the first impression of the building according to the concept of lightness and authenticity, have been recorded as written texts while visiting each project.

For evaluating the data collected Recursive Abstraction has been selected in order to achieve a comprehensive result. It seems important to mention the fact that during this analysis and evaluations the paper projects of these seven architects has been considered in a different category as well. In this way it is firstly tried to write one-page essay about each project as a brainstorming through which not only the concept of lightness has been considered but accordingly authentic characteristics of the building also has been mentioned. Considering the open-ended questions in semi-structured format it seems necessary to classify them according to their ideas about both the concept of lightness and authenticity. Translating the interviews, it has been

tried to summarize them into one page essay containing main issues and afterwards some keywords have been extracted in accordance to the concept of lightness and authenticity. These keywords indicate architect's total idea towards these two main fields of lightness and authenticity.

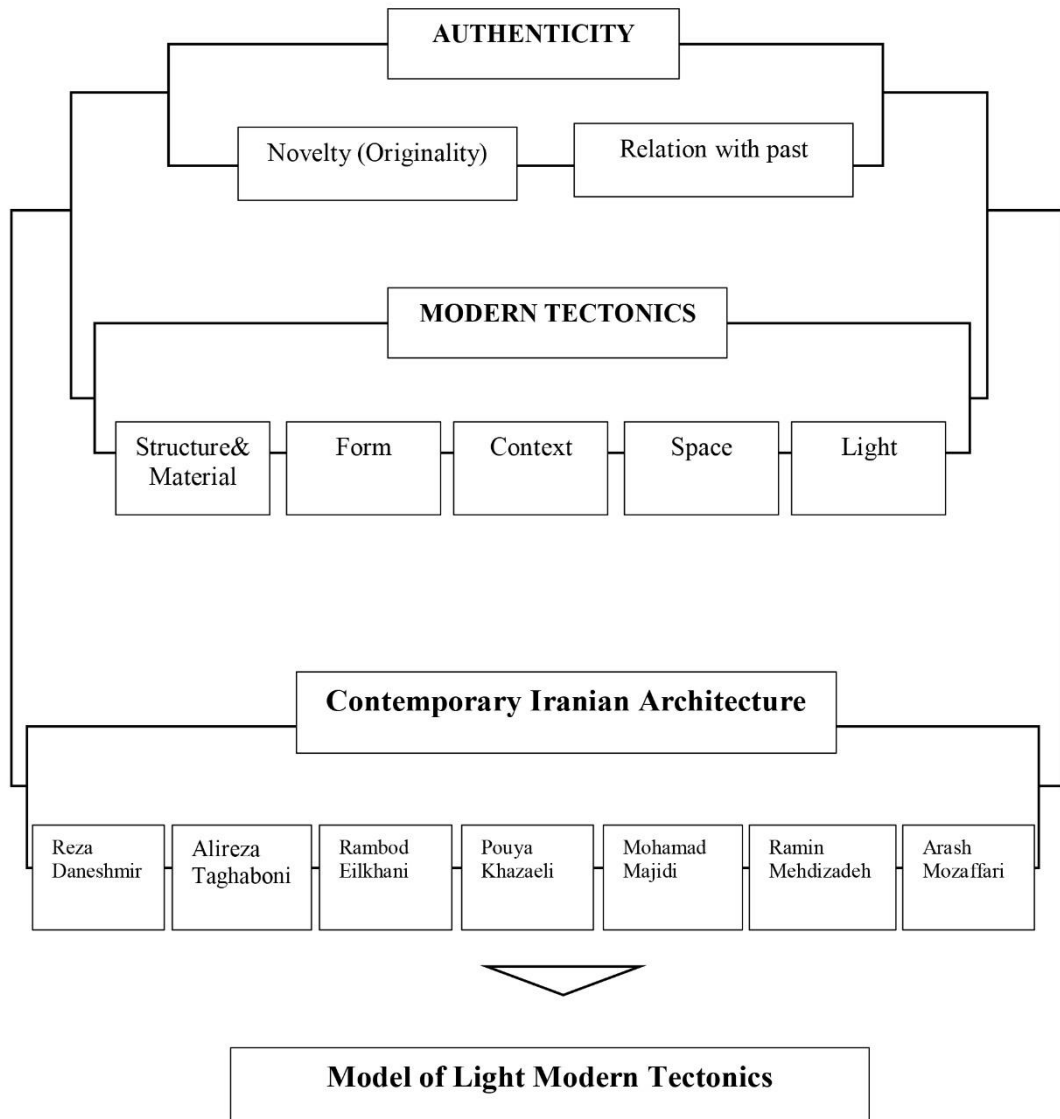


Figure 61: Empirical research method

### **5.2.1 Interview abstraction**

Following is the summarized documents of interviews with each architect including main ideas of the architects about the authentic usage of modern technologies in their projects. These are the results of a distillation process for achieving main idea of the architects through the whole interview discussions. (Table 2) Also, Appendix A is a brief description of each architect's background.

#### **5.2.1.1 Reza Daneshmir**

According to Reza Daneshmir originality relates to an exclusive idea, which can be posed and developed in order to become an architectural project or structure. In this way if there is an idea, which is unique and presents new attitudes actually it can be original. Based on his words, idea is so important because it is the generator of the project. Idea is a thought, which can produce something beyond the program of a project. So, what he meant by original idea is the thought, which can produce something extra, which becomes the main character of the project whereas it works in the frame of the program. What is important for him is creating an idea, which related to the subject, environment and the program and also transferring it to a 3d reality. He does not think that whether it has related to the past or not or how it can relate to the future but the important issue for him is the fact that what can be done in present time, how it can be seen from a new viewpoint. To sum up he is looking for ideas which make changes not the ones which express the existing or even old conditions.

In his projects space has been an important issue; the empty space or void. If empty spaces can be activated in architectural projects, it can help to have an unapparent space or void equivalent to the solid volume and the combination of these two will resulted in creating a light project. The idea of void has been an old idea in Persian

architecture. The central courtyards within the houses, mosques and other buildings of this climate, have been reused in our projects in a new way. According to Reza Daneshmir, the subject of lightness has been more related the relation between void and solid or volume and space than material. For instance you can create a building with light materials such as glass and iron but it is not a light building or vice versa. Therefore, lightness does not relate to the mere material but it mostly relates to the relation of volume and space, which creates the sense of lightness. As it can be seen in our contemporary architecture we just define and design the volume of the buildings, which comes from modernism. In other words we see the volume and the solid parts but we do not consider the space because it has not been defined. Courtyards have been considered as an isolated part, which we do not see or feel them anymore. In most of his projects the intention for combination of building with the surrounding landscape is not to be obtrusive and also not to demolish the environment but it seems that the ground, courtyard and the building have been combined.

#### **5.2.1.2 Alireza Taghaboni**

Alireza Taghaboni, defines originality on the basis of hermeneutic. It means that you present a new interpretation of an older idea. Taghaboni, mentioned that he always tried to read text and produce architecture or see other art works. When an architect reaches to that point that he/she can have a new interpretation of something then the project will be original. It means that he/she will attain a deep attitude through which you can present new interpretations of yourself and others.

Taghaboni, expressed that the used central courtyards in some of his projects but it is not something that he will use continuously in his designs. What he know and use in his projects is space perception and light. What is his favorite in Iranian architecture is

the fact that light penetrates into space in different ways; sometimes it comes from courtyards as a purified light or it enters through openings or from reflection in water, which are from the second part of design. These criteria are considered less in first part, which is about space conception, but in second part, which is about perception, he plays with light in order to have it in different ways. Another thing that he likes in Iranian architecture is its rough texture. He use rough texture in his projects, which is why there cannot be seen any usage of glass and iron in his projects. It means that his projects have the heaviness of Iranian architecture from outside,

One of the ideas originated from traditional architecture and he employed in his projects is the idea of duality, which is sometimes about open and close, or introversion and extroversion; sometimes it is about Euclidian geometry. In fact his architecture is playing on the edge of both; for instance, duality of material, which is dominant in his projects such as using two contradicted materials. Play with texture is important in his projects. Working on typologies is another issue which can be seen in past as well. He has some projects with typology of sloppy roof. These are what have been repeated in his projects.

Taghaboni pay too much attention to site and issue of place. According to him, the projects in which he is looking for a play between solid and void or open and close he has a game between lightness and heaviness. In these projects, view, relation with context and light can be seen as main elements of lightness.

### **5.2.1.3 Rambod Eilkhani**

According to Rambod Eilkhani, lightness of the space relates to the dynamicity which exist in the space and more active and dynamic the spaces is lighter it becomes. It is



about both façade and creating a dynamic lifestyle. It is also important to mention flexibility as one of the important indicators of lightness through which spaces can take different functions. Based on his opinion, a light space is the one, which can respond to different functional, needs to be dynamic and flexible.

Eilkhani also mentioned that authentic work is not the one, which is necessarily new, but it is the one, which is in continuation of the others, but you've added something to it. Most of the projects people may see and criticize have been built according to some rules and regulations but an architect can use blind spots of them where there is nothing written in rules.

One of the important issues in his projects can be known as the relation with open areas surrounded. He is always looking for creating more open spaces especially in small lands. For instance, one of the main issues happened is using urban open spaces instead of its own open spaces. In other words the project uses public open spaces as private ones. Also in his projects interior spaces have been created as light as possible through the relation between inside and outside and also the flexibility provided for the user through which designer can organize transparency between spaces.

Another issue that can be added to those two main ideas is the relation between solid and void. He also expressed that material is a small factor in the issue of lightness and the spatial organization plays an important role for creating the sense of lightness. For instance the idea of inside and outside, the way that building settled on the ground and also its relation with its context are important issues for Eilkhani in his projects through which a building should have impact on its surroundings and take influence from them.

Therefore, it is important that how an architect design this crust as the common point between public and private because when we are outside we can just see this shell and from inside we can interact with outside through this surface. It is a shell through which we can penetrate to exterior space and from outside we can be connected to inside through this threshold which is why in his projects he works on this façade and the connection that it makes with city.

#### **5.2.1.4 Pouya Khazaeli**

Pouya Khazaeli mentioned that designers should not imitate but they have to start from somewhere, which exists before unless they won't create architecture. If a designer starts from that point his/her work won't be like previous ones but it carries the implications and this is what gave it an authentic characteristic. The basis of traditional ideas can be summarized in the fact that an architectural project never has been separated from its surroundings, from people, society and every element around it, it means that from material it has been built with to society which it works with and also politics and economy. What he can see in traditional architecture can be defined in three main criteria; 1. Not to be separated from its surroundings but being in relation with its context 2. Being independent 3. Being new.

He means that in nature when something come to being it will die and then it became alive like seasons but people try to create eternal beings in opposition with nature. The authentic parameter, which has to be preserved from past, is the authenticity of the thought which includes these three items. He reached to this point that modern architecture was dealing with two factors; one of which has to be preserved and the other is disastrous. What he likes is social freedom, the issue of being democratic which has been presented in different ways in architecture such as transparency,

lightness, fluidity of space and free plan idea. This idea of individuality as the disastrous issue has not even starts from modernity but it has historical roots in western culture but it never exists in Japanese or Iranian culture. However, in Iranian culture everything has integrated with each other. So, maybe the idea of social freedom can be transformed into transparency.

If architects are dealing with nature they have to consider forces distributions it means that force axis has their own nature and they shouldn't oppose with them for instance an arch always is compatible with forces. According to Khazaeli, lightness is a part of freedom. He talked about two main issue of association with nature and freedom. This freedom can be seen in three items; lightness, transparency and fluidity. He also mentioned that he is talking about the sense of lightness because maybe you have the sense of lightness but the weight of the building is not light. Daylight is really mysterious maybe because of its changeable characteristic during the day and seasons.

#### **5.2.1.5 Mohammad Majidi**

According to Mohammad Majidi, technology is creating this competition for making lighter. The most important issue is the idea and he think that relation with past is an issue which can be discussed and can be defined as an added value. Frequently, this relation acts as double-edge septum and sometimes has an inverse result such as current buildings of mosques. These buildings wants to prove their connection with past but just because of this are they architecture? Are they even authentic? They are not. So, just being in relation with past not only cannot result in an added value but also will destroy architecture. In his opinion, when architecture doesn't have new idea it is not original and it can have relation with past or not. So, what is the criterion for a valuable architecture? According to Majidi, it is the novel idea of the project. If this

new idea has relation with past it is better but it is not necessary. But when this idea of referring to traditions will be valuable that present a new idea.

Sometimes the visual connectivity through spaces will spiritually make you perceive it light. He also mentioned that lightness relates with the way that building settled on the ground. Being constructed with stone it doesn't necessarily mean that the building is heavy but it is one of the means. It is needed to decrease the connection with ground to have more view at that connection part. He states that the back and forth movement of the volumes in of upper floors in Resitan Research Centre makes it lighter.

Lightness is like a skill. In his opinion, when a building is heavy, less skill and ability has been used. Actually his projects are going to be lighter but it is not the main issue of his design. This sense will be transferred and living in such spaces will be amazing because it come along with the sense of lightness. He thinks that lightness is a celestial quality, which comes with happiness. When we feel happy we jump with the sense of flying but when we are sad we will become pensive which is a terrestrial quality.

Open area should not be dormant and he try to activate this relation. His attitude has been changed from the time he visited Hasht Behesht palace. For instance, in his projects from then on walls never reach the roof, which makes the space lighter while it provides privacy. Short walls block the view but as you see the roof monolith space seems to be both larger and lighter.

#### **5.2.1.6 Ramin Mehdizadeh**

Mehdizadeh firstly asked about the lightness of structure or space? Because maybe there is a glass-made building, which seems heavy or there can be masonry building

which is light. Mehdizadeh mentioned that he never look for lightness but he mostly think about 3dimensional characteristic of spaces. Therefore, the important issue for him has been perception of this 3dimensional essence of spaces while walking through. For instance he tried to create shorter interior walls in order to relate spaces to each other and create movement in 3rd dimension. In interior spaces it has been tried to use natural materials. Lightness has meaning in vertical movements, which is why it can be acclaimed that lightness has no definition in 2dimentinal projects. When modernism starts, architects learn to start architecture from plan, which is a 2dimensional issue, extend it to the top and cover it with a roof. It is right that space is 3dimensional but its architectural design is 2dimensional but in projects, which have been, designed 3dimensionaly section is more important than plan. In 3dimensional design process you design section and manipulate everything in section. When you use 3rd dimension idea of lightness will come after in other words the inseparable result of creating 3dimensional spaces is becoming light. You cannot isolate these implications from each other because ideas such as transparency, openness and 3rd dimension are not separated from lightness.

He has always been interested in heavy materials, which is why consciously or unconsciously he always tried to lighten the space. So, he thinks about 3rd dimension as an antidote for decreasing weight of space in order not to be too much light or heavy. Color and texture are significant issues in creating lightness. Outdoors spaces have to be used as well as inside. Therefore, there are some rules in designer's mind and whenever it pass through the filters in their mind and have your language it can be authentic but it is not where there is no traces of architect's own language but it has been borrowed from others. He also expressed that not directly but undoubtedly his

attitudes have been under the influence of traditional architecture of Iran. In other words, looking at his projects maybe you can guess that an Iranian architect has designed it. In some projects recycling local stones has been the main idea of the project because the city is surrounded with stone factories with too many wastes, which become problematic for the city. Maybe at this point it can be authentic because there was a question, which has been solved, with his architectural project.

#### **5.2.1.7 Arash Mozaffari**

Authenticity is related to climatic and cultural issues of that context. Nowadays he tried to pay more attention to Iranian architecture, to its details, ornamentations that he ignored before. Previously, he was just interested in whole spatial characteristics but now he pay more attention to details. In this issue he consider some criteria one of which is about implications, which can be summarized into some limited points. The other is about icons such as Naghsh-e-Jahan square or Khajoo Bridge, etc. It means that there is a spatial capability and quality, which is that much rich that you can take and reproduce it. In other words you can make it compatible with new lifestyle and context. This is what he calls processed architecture. Also, this is what can be defined as authenticity and he tried to consider it in some of his projects. These are just opinions which can be different for everyone but for instance in his opinion imitation is not bad but simulation is. When you are simulating you are copying something from something else but when you are imitating it can enter to an evolutionary process, which can be resulted in authenticity. It means that you are gradually continuing a movement as all the means that take human beings to this point. When you imitate something unconsciously with no information about it then it will be simulation. Originality for him is not necessarily about creating something new that no one sees

before. When you create the best solution for a project it will be original. It can be technical, formalistic or whatever.

Lightness starts because of technological improvements. It is also related to its context. Therefore, when you are looking lightness is not just about architectural structure and form. Tradition is a fluid movement and we will be a tradition for 100 years later. He wanted people to move through the project and they can be seen and also see people and he wanted the building to be changeable that he heard each of them from somewhere and he tried to transfer them to an idea. Sometimes this shell has to be transparent and sometimes it is needed to be translucent without any reason. Actually, he has two kind of design one of which is core and crust in which core is suspended and crusts can be transparent or not in relation to the project and the other is organization technique. In accordance with topography he frequently use organization technique in order to show that formalistic suspension. He always have been interested in passing through topography, which shows its attraction more.

Based on interviews it has been firstly tried to find out the idea of the architects about the authentic characteristics of modern technology. Therefore, a table has been prepared which indicates the classification of each architect's idea towards the concept of light modern tectonics in terms of structure and material, form, context, space and light. This table shows the original or novel ideas each architect mentioned as the issue of light modern tectonics, which is the outcome of interview abstractions. (Table 4)

Using the recursive abstraction method, table 2 is the indicator of architect's attitudes about the concept of authenticity. Moreover, this table has been an attempt for

highlighting the characteristics of traditional Iranian architecture that these architects employed and interpreted in a new way in their projects. Although, each of them pointed out to different characteristics of traditional architecture employed in their projects, a common attitude could be followed in their words. Going through their discussions, it becomes clear that in their opinion an authentic architecture is the one, which is the result of an authentic idea. They all were agreed that authenticity could be defined as the new interpretation of an older or existing idea.



Table 4: Authentic usage of modern light tectonics base on each architect's idea

Architects ideas	Architects						
	R.Dnaeshmir	A.Taghaboni	R.Eilkhani	P.Khzaeli	R.Mehdizadeh	M.Majidi	A.Mozaffari
Authentic usage of modern light tectonics	<ul style="list-style-type: none"> <li>- Play of solid and voids</li> <li>- Integration with surroundings</li> <li>- New interpretation of central courtyards</li> <li>- Activating open spaces</li> <li>- Connection with city and urban spaces</li> </ul>	<ul style="list-style-type: none"> <li>- Play between solid and void or open and close</li> <li>- Considering outdoor vistas</li> <li>- Relation with context</li> <li>- Usage of light (changeable spaces)</li> <li>- Space perception (flowing movement through spaces)</li> <li>- Harmonious with architectural typologies</li> </ul>	<ul style="list-style-type: none"> <li>- Interaction of open and close</li> <li>- Dynamic and flexible facades (moveable surfaces)</li> <li>- Activating open spaces</li> <li>- Inside-outside relations</li> <li>- Relation with context</li> <li>- Flexible and dynamic interior spaces (Flowing movement)</li> </ul>	<ul style="list-style-type: none"> <li>- Integration with surroundings</li> <li>- Fluidity of interior spaces</li> <li>- Social freedom (fluidity and flexibility of interior spaces)</li> <li>- Relation with nature</li> <li>- Usage of light (changeable spaces)</li> </ul>	<ul style="list-style-type: none"> <li>- Activating open spaces</li> <li>- Fluidity of interior spaces</li> <li>- Flexibility of interior spaces(Free space organization)</li> <li>- 3 dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>- Relation between solid and void</li> <li>- Activating open spaces</li> <li>- Gentle settlement in the site</li> <li>- Visual continuity among spaces</li> </ul>	<ul style="list-style-type: none"> <li>- Idea of core and crust opaque core surrounded with a transparent shell connected with a series of ramps in between) likewise traditional gardens</li> <li>- Space organization (Hierarchical space organization)</li> <li>- Gentle settlement in the site (settlement on platform or water)</li> </ul>
Tectonic characteristics, which are related to above authentic features.	<ul style="list-style-type: none"> <li>- Dynamic forms</li> <li>- Integration with surroundings</li> <li>- Compatibility with climatic issues</li> <li>- Relationship with nature</li> <li>- Conducting a dialogue with the city</li> <li>- Fluid interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>- Dynamic forms</li> <li>- Integration with surroundings</li> <li>- Compatibility with climatic issues</li> <li>- Relation with nature</li> <li>- Conducting a dialogue with the city</li> <li>- Fluid interior spaces</li> <li>- Dynamic interior spaces by light</li> </ul>	<ul style="list-style-type: none"> <li>- Dynamic forms</li> <li>- Integration with surroundings</li> <li>- Relationship with nature</li> <li>- Flexible interior spaces</li> <li>- Fluid interior spaces</li> <li>- Inside-outside relation</li> </ul>	<ul style="list-style-type: none"> <li>- Integration with surroundings</li> <li>- Relation with nature</li> <li>- Fluid interior spaces</li> <li>- Flexible interior spaces</li> <li>- Dynamic façade and interior spaces by light</li> </ul>	<ul style="list-style-type: none"> <li>- Relation with nature</li> <li>- Flexible interior spaces</li> <li>- Fluid interior spaces</li> <li>- 3 dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>- Dynamic forms</li> <li>- Gentle settlement</li> <li>- Relation with nature</li> <li>- Flexible interior spaces</li> <li>- Fluid interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>- Dynamic forms</li> <li>- Gentle settlement</li> <li>- Fluid interior spaces</li> <li>- Inside-outside relation</li> </ul>

### **5.2.2 Observation Abstraction**

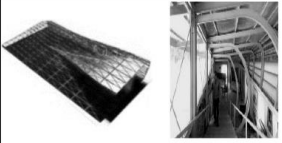
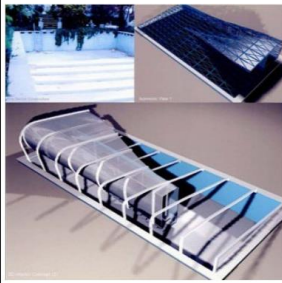

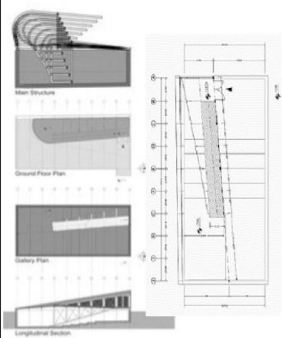

Parallel to this attempt for summarizing the interviews it also has been tried to write one page essay for each project considering authentic characteristics of using new tectonics through them. These essays have mostly been written based on observation notes while paper projects and under construction one have been considered as well. Using Recursive Abstraction Method, it is tried to summarize the essays into a paragraph, which still carries the idea of authentic usage of modern tectonics in each project. So, next step of abstraction results in some keywords and characteristics which show that how the architects tried to achieve authenticity while employing new technological issues.

Achieving the idea of architects towards the concept of light modern tectonics in terms of novelty and relation with past it has been tried to examine them in their projects. In this way, a table has been prepared for each building. The columns of this table present two indicators of authenticity as novelty and relation with past and the rows included the main characteristics of modern lightness in terms of tectonics. This data has been collected during the observations of the author and according to interviews, which clarified architect's attitudes. Although, these characteristics may exist in architecture of other countries and cultures, what make them authentic is their integration not only with traditional architecture but also with the modern technology and lifestyle. Table 3 shows one of the examples of projects analysis in terms of lightness. The result of this observation analysis and interviews about authenticity is shown in Table 4, which indicates the characteristics the architects mentioned as authentic features of modern lightness in their projects.

Ave Gallery:

This project has been a deserted pool of a residential home transformed to a furniture exhibition with 200 square meters area. Restoring space of the pool with new identity in harmony with its surroundings have been main issues through this project while the least cost, simplicity and construction time have been considered. It seems that the concept of lightness has been examined as one of the best solutions through this modification. This project has not been limited to the idea of coverage but space definition totally has been changed in order to achieve a proper quality of space. The light shell structure which starts from the curved roof in harmony with its surrounding continues through the light-weight staircase as the only connection element between inside and outside. Since, precedent architecture of Iran has searched for the lightest space in accordance to the technology of its time always it has been tried to moderate the heaviness of the building where it settled on the ground and also where the roof touch the walls. So, in this project the curved form of the roof where it settled on walls of the pool not only provides a form in harmony with surrounded green areas but also mediates the sense of heaviness through the space while in old days ornamentations have been used for this purpose. This wave shape surface, with a great gap which divides it into two parts, plays an important role in connecting the landscape with exhibition space. Moreover, the light structure staircase which goes along with the light penetrates to space through the huge gap in roof make the stairway to be seen as a suspended element through the interior space. The idea of continuation of surrounding environment in the form of building and their connection has been inherited from traditional Iranian architecture in which from using natural materials or considering climatic issues to making visual continuity, architecture always has searched for connection between outside and inside.


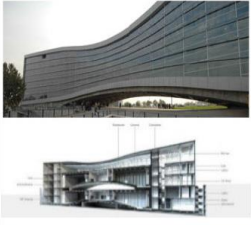




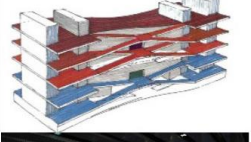



Table 5: Observation abstraction of Ave Gallery

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Grid shell, concrete</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more perceivable for observer</li> <li>continuous surfaces rise and land on the ground, play of open and close</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✦</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Continuous surfaces rise from the ground</li> <li>Continuation of curved form of natural environment surrounded through the building,</li> <li>Respect to natural environment surrounded with its modest curved shell rises from the ground in continuation of the context embrace it, gradual space transition from open to close</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✦</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), lightweight staircase move along with light penetration to the space</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Light penetration from the gap in the coverage shell which lightness the staircase to be seen suspended</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	

### Mellat Park Cineplex:

Located on the southwest side of Mellat Park in Tehran, Iran, this Cineplex has a total site area of 6,000 m<sup>2</sup>. This project has been formed through a reinforced concrete frame which encloses the whole curtain wall façade of the building. This light glass façade with light steel shading elements, along with a wide span underneath the huge mass of the building which forms a central opening through it gives the sense of weightlessness to the construction of the building. Since, the site has been surrounded with green area of the park it is tried to create a building in harmony with the environment around it. This project brings our imagination to a challenge about idea of a cinema which supposes to be a solid, monotonous building without any transparency or openings. It seems that cubic building which purposely has been compressed in the middle not only placed dark, fixed functional spaces such as cinema halls, administration and service areas but also embrace mountains and green areas surrounded within itself. Being squeezed in the middle not only creates a wavy form integrated with surrounding natural environment on top but also produce a dented central space in the bottom which makes an interaction among city, building as a cultural center and the park. This central open space reminds central courtyards in bygone architecture of Iran which has been employed in a new way. Visual continuity and connection of inside and outside while people's privacy was provided has been one of the important characteristics of Iranian architecture which makes it to be perceived as a light architecture. While this building stands there as neutral feature which not only allow the natural environment pass through its transparent façade but also let the city cross it without any interference, it invites people to experience inside spaces as well.







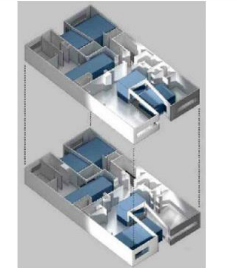

Table 6: Observation abstraction of Mellat Park Cineplex

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>Grid shell</li> <li>Brick, concrete and glass</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight material and structure</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Cubic forms which is more perceivable for making relation with observer</li> <li>Play of solid and void, curved surfaces, A cube which seems to be pressed in the middle</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the open spaces results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building (empty ground level), continuous surface rises from the ground, Use of water, ramps</li> <li>Central open space which let city pass through, Calm and gentle settlement of the building not to block the view but to combine different parts of the site together</li> <li>Central open spaces which force people pass thorough green areas and being in direct relation with nature</li> <li>Central open space let the city pass through</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms... ✨</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✨</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✨</li> <li>Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings ✨</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>Dynamic, and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>3dimential quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Voids among spaces and lightweight vertical circulation elements such as ramps</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>	   
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Integration of floor and roof with walls via light patterns on them, Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	

### Golfam Office Building:

This project is an office building surrounded with two other buildings on both sides and two street on two other sides. The main idea of this building consist of four office units in each floor is creating a dominant central open space for providing suitable access, light and fresh air for all units. This building is not a solid volume like the frequent other buildings of the city which just grow up through the site boundaries without any relation with the city or even people. It is not an erected box ornamented with a façade pasted to it surface without any feeling but it is an original idea of making a dialogue with city and its residences which has been embodied. It is a project which tells its story for the city by its own. This idea of making relation with the city has been an important legacy of the traditional architecture of Iran through which the exterior barriers of the buildings with no openings which indicates their introverted character has been decorated with some rhythmic indentations in accordance to the interior spatial organizations. Therefore, these barriers not only protect the building and its confidentiality but also make a relation with city by creating urban spaces through these indentations. This connection makes a harmonious and integrated context generating a flowing movement and familiar space for the observer which induces the sense of weightlessness in comparison with the buildings putting their back to the city. The solid mass of the building has been divided into two parts via a huge gap in between and push circulation service areas aside and manifest a desirable play of solid volume of the offices through the central emptiness. This is the whole story of the building which can be perceived even without experiencing inside spaces. Among all the other solid concrete buildings stand in a row without any sense this volume creates a breathing space. What makes this idea to be original is its new language for creating central open space which has been transformed from precedent Iranian architecture.

Table 7: Observation abstraction of Golfam Office Building

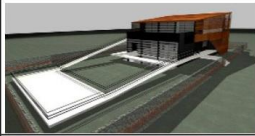
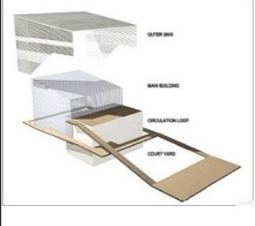




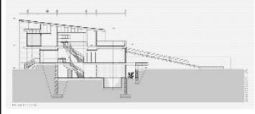

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced concrete frame structure</li> <li>Concrete, Aluminum composite material</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamic form</li> <li>Sense of suspension</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making connection with observer</li> <li>Play of solid and void, a pure cubic form which has been carved like a sculpture</li> <li>Cantilevered boxes from the main volume</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground, central open space</li> <li>Legible façade, back and forth movement of surface of the façade which reflects interior space organizations, central open space</li> <li>Calm and neutral settlement of the building which doesn't add another heterogeneous feature to the city</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms... ✨</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✨</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✨</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>3dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>VOIDS among spaces and lightweight vertical circulation elements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	



### Double Skin House:

This project is one of the first buildings constructed in the region surrounded with natural environment and mountains of Lavasan in Tehran. This building consists of the main building volume, an outer skin covers the whole building, a circulation loop which starts from outside and continues to inside and forms a courtyard in between. While it seems to be a totally transparent building, there is no view from outside toward interior spaces and what makes this important possible is a translucent surface covering the building as a transformation area between inside and outside. This introverted space concept which has been inherited from traditional Iranian architecture through which people have their own privacy has been emerged in a new way while the whole building has been related to the nature and in harmony with other parts of the city. Considering Daneshmir's idea about the concept of lightness as a play between solid and void and construction rules in Iran and also privacy as a cultural issue of the country, this building is an attempt to achieve these all besides using glass facades covered with shading elements. Also, this double skin idea which creates hierarchical space organization and makes the possibility of producing a transparent volume in connection with open areas has ingrained in bygone architecture of Iran especially in structure of domes. In this project, transparency produced while privacy exists, solid volume has been defined while it is in balance with void areas, and different spaces named outside and inside has been created while there is an elegant consistency among them through the continuous surfaces. Obviously, a fluid and consistent movement can be seen through this project through the light structure stairway as part of the project's circulation loop which flies over the building and connects outdoor space to inside. Putting all these ideas beside each other, a new concept of lightness can be defined which also has been ingrained in its background.


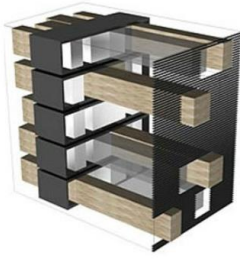

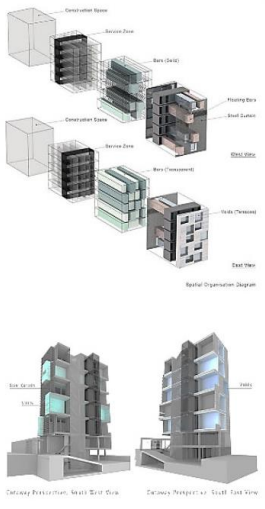

Table 8: Observation abstraction of Double Skin House

Concept of lightness		Authenticity			Images
		Originality		Relation with past	
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Glass and steel, stone</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making relation with observer</li> <li>Play of solid and void, Open spaces in between, staircase which rises with the building</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>New interpretation of building typology of surrounding context</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Use of water, continuous surfaces rises in continuation of landscape, staircases</li> <li>Back and forth movement of forms like mountains</li> <li>A longitude staircase continues from outside towards inside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>likewise mountainous cities of Iran which formed according to the slope of mountains ✨</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close, double skin facade</li> <li>Transparency, double skin façade, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Pol Rumi Office Building:

This project is an office building with seven floors surrounded with two buildings on both southern and northern sides and with the main street at west and a river on east side. It seems that this building not only tries to make a dialogue with city through its facades but also extend it into the interior spaces. Whatever can be seen through facades narrates a definition of interior spaces. This legibility of the building which narrates an ambiguous story of the interior space organization while privacy still exists is a legacy from past. In general, this building has been based on a defined space organization which makes the whole building legible for both passengers and the ones who experience the inside spaces. Although, according to municipally rules that just 60% of the building should be constructed and the rest have to be open space, most of the buildings are in sulk with city, this project is an attempt to reconcile with its environment. This east-west oriented project contains floating cubic bars in both solid and transparent form passing through the whole site from east to west and their extension through the transparent façade tell an apparent story. Although, it is not possible to guess these solid bars' function, people from outside can perceive that something different happens through this depiction. Actually official rooms have been located on east side and public halls on west side of this fluid longitudinal bars. Also, there is a black wooden box located in between official units and public halls which contains all installation and service areas. What makes these bars to be perceived suspended, is their passage through the double skin façade includes a double-glazed skin inside and a layer of steel sunshades as the exterior layer which provides both transparency and privacy.


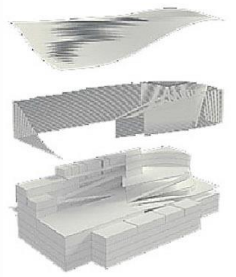
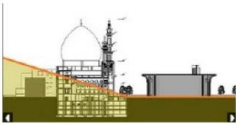


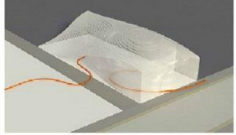
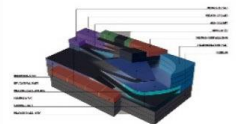

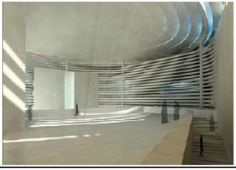
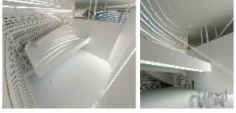
Table 9: Observation abstraction of Pol Rumi Office Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure Material	<ul style="list-style-type: none"> <li>Reinforced concrete frame structure</li> <li>Glass and steel, white Travertine</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making relation with observer</li> <li>Play of solid and void, Open spaces in between, staircase which rises with the building</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✦</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade, Different type of openings, back and forth movement of surface of the façade which reflects interior space organizations</li> <li>Calm and neutral settlement of the building which doesn't add another heterogeneous feature to the city</li> </ul>	<ul style="list-style-type: none"> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), open-plan idea, no dead end spaces, space flows through the building and continues towards the roof</li> <li>transparency while it keeps privacy, Connection between open and close</li> <li>Transparency, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Vali Asr Mosque:

Valiasr Mosque has been designed in city of Tehran, surrounded with Valiasr street as an essential connection route between center of the city and north side, Daneshjoo Park and TalarVahdat one of the important parks and cinema centers of the city and City theater building. Concept of lightness has been appeared in different ways in this project. According to its surroundings in this project it is tried to create a building which provides a unity among all these potentials and environmental forces. This relation with its context and site elements creates a harmony and continuity which induce a sense of lightness to the observer in so far as unity, serenity and compatibility forms the whole building's characteristic. It seems that the mosque has gently settled in the site as it has belonged to its context forever. Since it has been expected from a mosque building to act in the modest manner as a place for creating the most delicate relation between material and spiritual worlds, lightness has been integrated with its concept from the very beginning. Although, the space created through the forms induce the sense of praying as the first mosques did, it is not another imitated form of the common mosques which makes it to be authentic. Its authentic characteristic which has been based on original ideas appears through the new way that the building tried to make relation with its environment inducing the sense of lightness. Regarding its surrounding, the building is designed as a floating extensive surface as continuation of the park and also in harmony with city theatre. In this mosque concept of lightness has been appeared by creating a uniform space in order to decrease the materiality and increasing spirituality through which a flowing movement become possible while from outside it's gently settlement in compatibility and regards to its surroundings supports this slight movement and intimated relationship with the observer.

Table 10: Observation abstraction of Vali Asr Mosque

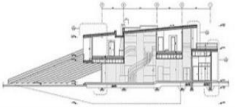
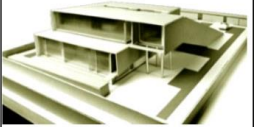

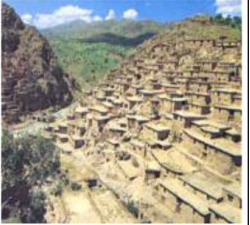
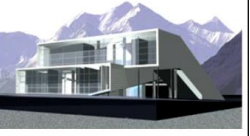
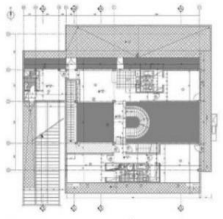
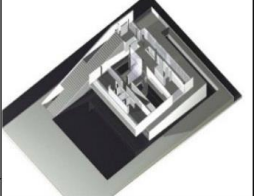


Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Grid shell, concrete</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> <li>Employing traditional patterns</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more perceivable for observer</li> <li>Play of solid and voids, play of open and close, slippage of boxes on each other, Using modular patterns which can be extended through the site</li> <li>Forming the evolution of the traditional Iranian pattern called Shamseh</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> <li>Usage of traditional patterns and giving 3dimensional characteristic to them</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Continuous surfaces rise from the ground</li> <li>Continuation of curved form of natural environment surrounded through the building,</li> <li>Legible façade reflects interior space organization</li> <li>Respect to both natural environment surrounded and the famous building nearby through its modest movement</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	   
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>3dimential quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, visual connection among interior spaces through low-height walls</li> <li>VOIDS among spaces and lightweight vertical circulation elements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement and play of shadow and light through them</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	

### Hakak Villa:

This is a villa project located in Lavasan in Tehran. This project is the result of an elegant play between solid and void spaces. Longitudinal cubic forms locate on each other in a way that creates open spaces in between them. The idea of making relation between volume and space which has been a dominant characteristic of precedent Iranian architecture which has been appeared in different ways becomes the main concept of this project. The proper organization of solid spaces in accordance to empty areas creates a slight and flowing visual and physical movement through spaces which makes the observer to perceive it as light as moving in the air. This is where the solid volumes do not act as obstacles but they become an interconnection between open spaces, they just give characteristic to the space which exists before their being there.

It is also tried to make relation between surface and the core in the volume through these boxes suspended from the upper ceiling. Totally, the special relation between these cubic suspended volumes and the emptiness generated among them become a representation of the concept of lightness. This play of solid and void along with the idea of making relation with nature surrounded goes to extreme where the roof extended to the courtyard for creating a space to have a nice perspective of the natural environment around it. A total glass façade of the building also makes the possibility of experiencing a visual connection with outside through a wide panoramic view.

Table 11: Observation abstraction of Hakak Villa

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Glass and steel, stone</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making relation with observer</li> <li>Play of solid and void, Open spaces in between, staircase which rises with the building</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>New interpretation of building typology of surrounding context</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Use of water, continuous surfaces rises in continuation of landscape, staircases</li> <li>Back and forth movement of forms like mountains</li> <li>A longitude staircase continues from outside towards inside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>likewise mountainous cities of Iran which formed according to the slope of mountains ✨</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof, space organization around central courtyard</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close, double skin facade</li> <li>Transparency, double skin façade, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	



Shahid Araghi complex:

According to building regulations in Iran through which just 60% of one side of the site can be allocated to the built environment and also considering the walnut trees located in that part of the site which has been considered as the construction side, this project has been designed as an abstract scenery among the natural environment surrounded. Therefore the design concept is a continuous and floating line moving through the site and creating conceptual scenery. This line becomes an intersection among various units in this complex which has been designed in 6 different types. It seems that the building tried to settle as calm as possible not to destroy any part of the green areas. In this way, visual, physical and spiritual concept of lightness becomes a necessity through this gently settlement. Moreover a special space organization has been used in this project which supports the idea of lightness. So, the bedrooms become like a closed volume detached and cantilevered from the main part of the building. Also, there is a linear organization of interior spaces provided by a “tool bar” along the whole unit consist of all the installations and service areas and also entrance, kitchen and library. As a result what has been designed is an empty apartment unit stretched from north to south. This open plan idea which gives the residents the opportunity of creating their own private spaces by employing the sliding walls supports the idea of creating lighter spaces. This empty space along the whole unit creates a dynamic spatial organization according to the lifestyle and demands of inhabitants. Since, in the ancient Iranian architecture spaces can be used for different purposes as multifunctional spaces and also the doors located between the rooms can be opened for extending the space this idea has been employed in this project.

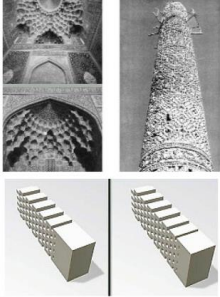
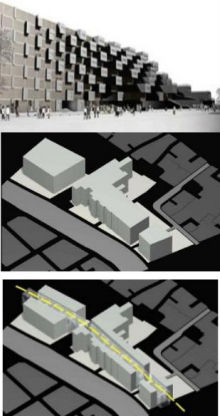


Table 12: Observation abstraction of Shahid Araghi Complex

Concept of lightness		Authenticity			Images
		Originality		Relation with past	
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Brick, concrete and glass</li> </ul>	<ul style="list-style-type: none"> <li>Integration of form and structure</li> <li>Contrast of materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Cubic form which is more perceivable for making relation with observer</li> <li>Play of solid and void, central open space, continuous surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building (empty ground level), continuous surfaces, ramps</li> <li>Central open space which let city pass through, Calm and gentle settlement of the building not to block the view but to combine different parts of the site together</li> <li>Central open spaces force people pass thorough green areas and being in direct relation with nature, building's elevation from the ground</li> <li>Central open space let the city pass through, legible façade through back and forth movement of façade reflecting interior space organization</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms... ✨</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✨</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✨</li> <li>Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings ✨</li> </ul>	 
		Space	<ul style="list-style-type: none"> <li>Dynamicity, and fluidity</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Open plan idea, low-height partitions, Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), spatial organization around a central courtyard</li> <li>Transparency while keeps privacy, Connection between open and close, solid and void, central open space</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> </ul>
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Integration of floor and roof with walls via light patterns on them, Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	

Sarah & Navab Guesthouse:

Regarding its site which is located in a pilgrimage city and its usage for accommodating the pilgrims of Imam Reza cemetery, it is tried to create a deep and familiar sense of Iranian architecture while the direct reference to its symbols and forms has been avoided. Honey combs and special brick networks have been employed as background because of possessing the characteristics of repetition, expansion and variation at the same time. Creating unity while plurality also exists there helps to have a dynamic project. In this project the concept of the central opening as one of the special characteristic of Iranian architecture has been used in an authentic way. The concept of lightness which has been interpreted as a movement from materiality to spirituality emerged through this central emptiness. This open space not only makes a balance between solid and void spaces but also helps the project through the idea of spatial organization. In this way ground and first floor has been allocated to public spaces and private spaces has been placed in two parallel sides of the building through which semipublic spaces has been extended like floating cubes connecting these two parts. Therefore, this specific space organization not only makes the space legible in order to move flowingly through it but also creates an equivalency between emptiness as space and volume which all give hand to have a weightless project. While, this idea of making equilibrium between empty and full which is the main characteristic of Iranian brick patterns transformed to be the concept of the space lightness become an unavoidable part of it. Lightness in this project not only appears through light material and structure which has been used for those floating longitude cubes passing through the huge vacuum inside and extending from the main structure of the building but also defines through spatial quality.

Table 13: Observation abstraction of Sara & Navab Guest House

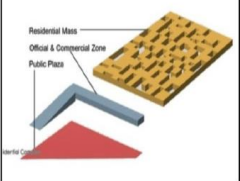




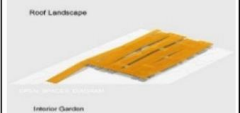

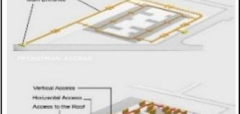
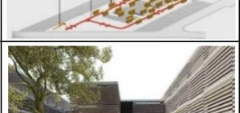

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Glass and steel, stone</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> </ul>	<ul style="list-style-type: none"> <li>Cubic form which is more perceivable for making relation with observer</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> </ul>	
		<ul style="list-style-type: none"> <li>Dynamicity</li> <li>Employing traditional patterns</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void, central open space, continuous surfaces</li> <li>Traditional brick networks and Moqarnas as Islamic ornamentalations</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture individual volumes doesn't seem to be dynamic but the arrangement of solid and voids results in dynamic context. ✨</li> <li>Usage of traditional patterns and giving 3dimensional characteristic to them as a play between solid and void ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building (empty ground level), continuous surfaces, ramps</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms... ✨</li> </ul>	
		<ul style="list-style-type: none"> <li>Integration with surroundings</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Central open space which let city pass through, Calm and gentle settlement of the building not to block the view but to combine different parts of the site together</li> <li>Central open space let the city pass through, legible façade through back and forth movement of façade reflecting interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✨</li> <li>Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings ✨</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, and fluid spaces</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> </ul>	
<ul style="list-style-type: none"> <li>Visual and physical connection between inside and outside</li> <li>3dimential quality of space</li> </ul>		<ul style="list-style-type: none"> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>VOIDS among spaces and lightweight vertical circulation elements</li> </ul>	<ul style="list-style-type: none"> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>		
Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement, fractured light through back and forth movement of volumes</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>		

### Safaiyeh Residential Complex:

This project has been designed in Yazd one of the desert cities of Iran with a well-known architectural background. Therefore, it is tried to create a complex in harmony with its context. According to trapezoid form of the site a specific space organization has been considered which divide the project into a triangle part defining the entrance plaza and more public spaces and a rectangle part as the main mass allocated to the private spaces. Public spaces such as official and commercials have been places in an L-shaped volume in between public plaza and the main building. It seems that the light glass facades of the building have been covered with shading elements because of the hot climatic conditions.

It is also important to mention the fact that a large open area has been designed on ground floor creates the main internal green space of the complex. In a general sight through the project, this central open space reminds the central courtyards of the houses of this desert city while smaller openings from the roof can be seen which has been opened to this garden underneath. Coincidence of unity and plurality which has been inherited from old days narrates harmony among different parts of the project. While each part of the project has its own characteristic in the same framework, their combination through a logical idea creates a compatible composition which tells the same story as the individuals. This idea of keeping the relation among different parts and spaces in order to achieve unity in coincidence with plurality helps to create a building as light as possible. This movement from detail to a wholeness as an authentic characteristic of Iranian architecture which has been an important tectonic issue through structural development of the projects is a dominant feature of this complex.

Table 14: Observation abstraction of Safaiyeh Residential Complex

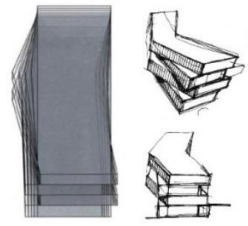
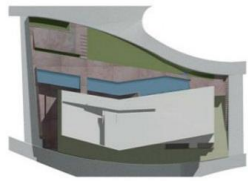

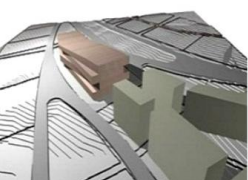

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>concrete frame structure</li> <li>Brick, glass and steel</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making connection with observer</li> <li>Play of solid and void, visual and physical continuity among open spaces and the city</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian individual volumes doesn't seem to be dynamic but the arrangement of solid and voids results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Modeling the pattern of traditional desert cities with central open spaces</li> <li>Elevated building, ramps</li> <li>Central open spaces</li> <li>Central public open spaces</li> <li>Central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✨</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by platforms... ✨</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards, ✨</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✨</li> <li>In spite of being introverted indentations on façade reflects inside space organization while keeps its ambiguity</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>Dynamic, and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>3dimential quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Voids among spaces and lightweight vertical circulation elements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>	    
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Different interior space perception during daytime, light fractured and penetrates through central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	

### Multi-Tenant Complex:

This multi-tenant complex which has been designed as a gathering or endpoint for the building complex exists in the site. Considering its context and different orientations and angles of the buildings surrounded this project has been generated through slippage of level surfaces on each other. In this project concept of lightness appears through this glided surfaces which are the continuation of the other buildings and the longitude ramps slide all over the project for connecting these surfaces to each other. This harmonious characteristic of the project in addition to its floating form gives the sense of being weightlessness to this modest endpoint of the complex. This indentation and projections as the result of movement of the surfaces on each other makes it possible to have light glass façade. Considering the climatic conditions of the city as a hot area wherever the surface appears as projection it has been covered with shading elements but in the opposite condition this indentation creates a terrace which avoid penetrating of the direct light to inside. This glass facade also creates a continuous visual connection with the green area surrounded.

In this project this consideration of the climatic issues and formal integrity with the context in accordance with its light structure beside the connectivity of nature and the building became the indicators of the concept of lightness. This movement of surfaces not only helps the project to be in harmony with its surroundings both buildings and green areas but also creates a balance between solid and void spaces. Furthermore, a water pool has been attached to the mass of building which its reflection to the water mediate the weightiness of this solid structure. Water has been used in Iranian architecture from the very past for inducing the sense of lightness by its reflective characteristic through which the building seems to be suspended.

Table 15: Observation abstraction of Multi-Tenant Complex

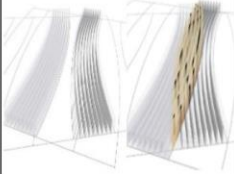
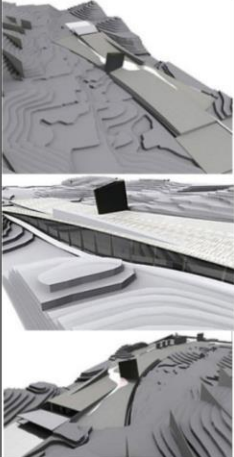
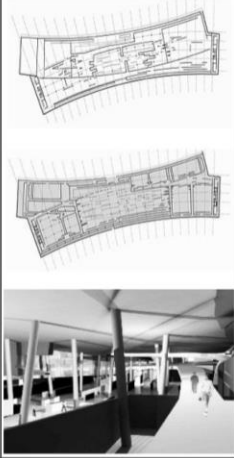

Concept of lightness	Authenticity				
	Originality		Relation with past	Images	
	Characteristic	How it has been achieved			
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>Reinforced concrete structure, truss roof</li> <li>Reinforced Concrete</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Slippage of forms on each other, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void, open and close in traditional Iranian architecture ✦</li> </ul> 	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Integration with surroundings</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Platform, ramps, water</li> <li>Using green roof and terraces</li> <li>Being in continuation of the rows of the buildings surrounded, building's orientation in each level differs according to built environment around it</li> <li>Legible façade, back and forth movement of surface of the façade which reflects interior space organizations,</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards,</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated. ✦</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> </ul>	  
		Space	<ul style="list-style-type: none"> <li>Dynamic and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning, curved surfaces, no dead-end spaces, space flows through the building and continues towards the roof, visual connection among interior spaces via low-height walls a</li> <li>Continuity of landscape through interior spaces,</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	



## War Museum:

In retrospect, Iranian philosophy always narrates the struggle between two forces of good (Ahuramazda) and evil (Ahriman) through which the main purpose of man is to achieve the emptiness beyond these two. This emptiness is the essence of space which in Iranian architecture it has been tried to decrease the materiality in order to obtain spirituality. Therefore, war always has been defined as the clash of two forces of goodness and badness which became the main concept of this project. The main space in this museum has been formed in between these two forces through their intersection point. A water stream defines the entrance and flows over the main part of the project are a symbol of pureness and permanent life. The threshold gallery demonstrates the battle field and its chaotic condition which shows the powers existence by using water and mirror. This process which gradually transmits the observers through the concept of war makes them move flowingly through spaces in order to follow the idea. So, it can be mentioned that here the space itself narrates the story and creates the feeling of the whole war process without any supplements. In this way the characteristic of each space tells its own narrative. The gently settlement of the building which seems to be subsided in the topography of the site makes a special connection between the museum and its surrounding environment. It seems that the building has been generated as a counter line which continues the topography of the land. Unlike the turbulent characteristic of war the museum has been moved modestly through the site and open its eyes through the glass façade covered its front elevation. This slight movement starts from the garden of the museum and continues towards the sloped roof which leads people to have an overall view of the environment.



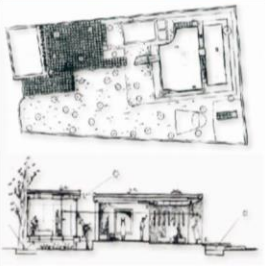


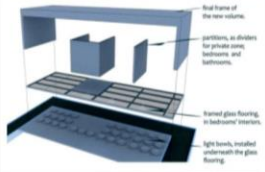
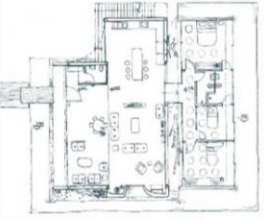

Table 16: Observation abstraction of War Museum

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristics	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced concrete structure, truss roof</li> <li>Reinforced Concrete, glass and steel</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Contiguous curved surfaces come along with topographic characteristic of mountainous area surrounded, activating open spaces and integrate them with solid volumes</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void, open and close in traditional Iranian architecture ✦</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Platform, water</li> <li>Continuous surface in continuation of topographic characteristic of surrounding, using green roof</li> <li>Continuing the sloppy movement of mountainous area surrounded</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards,</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning, curved surfaces, no dead-end spaces, space flows through the building and continues towards the roof, visual connection among interior spaces via low-height walls a</li> <li>Continuity of landscape through interior spaces,</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Amir Villa:

This building has been located in a garden in Mohammad Shahr near Tehran. This building shows a combination of Modern architecture with traditions which shows itself in material's contrast and introverted-extroverted idea. Public-private zoning appeared through two simple cubic forms that the one in the front which is covered with reinforced clay and straw has been allotted to public functions and the one at the back built with concrete has been designed for private usages. This is where the contrast of material and texture can be seen. Hierarchical organization of spaces and their visual and physical connection with surroundings also induce the sense of lightness in addition to open plan idea. All these together create dynamic, flexible and fluid interior spaces integrated with all surrounding environment. Also, using reflective materials for interior spaces generates the sense of suspension through them. Transparent facades which settled back for the sake of semi-open or in between spaces provide privacy while building keeps its relation with outside. The gentle settlement of these two boxes on water pools lightens the heaviness of the building through its reflection and induction of sense of suspension. A glass bridge in between two volumes creates a light connection among them while each has its own privacy. This play of solid and void and their hierarchical relationship generate lighter volumes. A staircase which rises beside the building and goes along with it towards the roof not only connect the ground with roof and activate all spaces which flows through the project but also makes the whole volume lighter. Smooth edged cube of natural materials of clay and straw beside the transparent, sharp edged concrete volume of the project shows concept of lightness in different ways. One is mostly related to nature and spatial lightness and the other mostly has light materials.

Table 17: Observation abstraction of Amir Villa


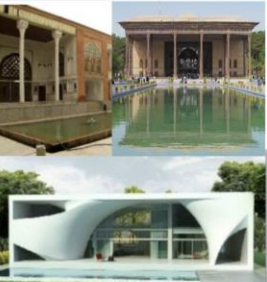

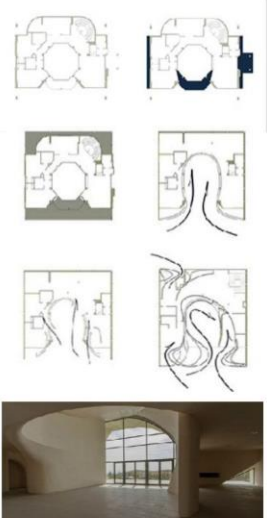

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>• Metal frame structure</li> <li>• Plaster of clay and straw and concrete</li> </ul>	<ul style="list-style-type: none"> <li>• Natural material</li> <li>• Contrast of materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>• Simple pure form</li> <li>• Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>• More perceivable for making relation with observer</li> <li>• Play of solid and void, Open spaces in between, staircase which rises with the building</li> </ul>	<ul style="list-style-type: none"> <li>• Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>• In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>• New interpretation of building typology of surrounding context</li> <li>• Gentle settlement</li> <li>• Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>• Contrast of materials (mud and concrete), introversion and extroversion, open and close, plastic/right angled surfaces and rough/glassy textures</li> <li>• Water reflection, building elevation, staircases going along with building, glass flooring</li> <li>• Continuation of greenery and water through the façade and interior spaces, Natural material, trunks located in between spaces, Roof garden, visual and physical continuity</li> </ul>	<ul style="list-style-type: none"> <li>• Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>• In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>• Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✦</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>• Dynamic, flexible and fluid spaces</li> <li>• Visual and physical connection between inside and outside</li> <li>• Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), open-plan idea, no dead end spaces, space flows through the building and continues towards the roof</li> <li>• Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>• Transparency, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>• In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>• In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>• Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Playing with space according to sunlight movement and play of shadow and light through them</li> </ul>	<ul style="list-style-type: none"> <li>• Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	

Baghshahr Arian:

This villa has been located in an open area far from built environments. A simple cubic form of the building has been perforated like a sculpture. It seems that the exterior sharp edged frame of the building has been gradually transformed to soft curvilinear surface towards inside. It is a building settled gently on a pool of water which lightness the volume of the building with its reflection. It seems that the white box of the building appears as a neutral feature which just framed the view and let the natural environment surrounded to pass through.

The double skin façade of the project beside the transparent surface underneath not only provide privacy for residences but also make connection between inside and outside. This visual continuity in addition to dynamic and flexible interior spaces which provides a flowing movement through spaces induces the sense of lightness as well. Also, hierarchical space organization and public-private zonings lightens interior spaces. In between spaces, formed through double skin idea and hierarchy of spaces reminds traditional Iranian architectures such as Chehel sotoon or Hasht Behesht palace. Also light present an amazing play with space when it clashed with angular surfaces and fractured. What can be seen are changeable spaces during a daytime according to sunlight movements. It seems that the architect tried to present traditional ideas of Iranian architecture in a new way.

Table 18: Observation abstraction of Baghshahr Arian





Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		characteristic	How it has been achieved		
Tectonic terms	Structure Material	<ul style="list-style-type: none"> <li>• Metal frame structure</li> <li>• Concrete, glass and teal</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>• Pure simple form</li> <li>• Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>• More perceivable for making connection with observer</li> <li>• Play of solid and void, a pure cubic form which has been carved like a sculpture</li> </ul>	<ul style="list-style-type: none"> <li>• Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>• In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✨</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>• New interpretation of building typology of surrounding context</li> <li>• Gentle settlement</li> <li>• Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>• Using in between spaces such as porches and porticos</li> <li>• Water reflection, platform</li> <li>• Curvilinear surfaces in continuation of natural environment surrounded</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture in between spaces has been used for hierarchical space organization ✨</li> <li>• In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>• Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✨</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>• Dynamic, flexible and fluid spaces</li> <li>• Physical and visual continuation of inside and outside</li> <li>• Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous curved surfaces with sense of fluidity, Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), open-plan idea</li> <li>• Transparency, curved forms in continuation of nature</li> <li>• Transparency, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>• In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> <li>• In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>• Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Changing the space according to sunlight movement via various angles of the form</li> </ul>	<ul style="list-style-type: none"> <li>• Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✨</li> </ul>	

NO. 93 Tehranpars Building:

This building is located in Tehran surrounded with two other apartment blocks on both sides. Therefore it is tried to create a dynamic façade which make a dialogue with city. Variety of openings with different sizes which can be covered with second skin of mat generates a dynamic façade. These windows can be opened or covered with mat surfaces through which a nice play of solid and void appears. Also, greenery line of landscape surrounded has been continued towards the façade and interior spaces.

The totally brick covered building with greenery continuation on façade create a connection with nature. Building's elevation from the ground generates a gentle settlement which also induces the sense of suspension. Hierarchical space organization, public-private zoning and low-height walls of interior spaces integrated with roof create dynamic spaces which provide a flowing movement through. It seems that the building create a visual and physical connection with surroundings with large openings while it provide privacy for them via the second skin of the façade. Also it makes the possibility of manipulating sunlight penetration according to residence's needs. The angular openings fractured the light and generate changeable spaces in accordance to sunlight movement during the day.

Table 19: Observation abstraction of No. 93 Tehranpars Building








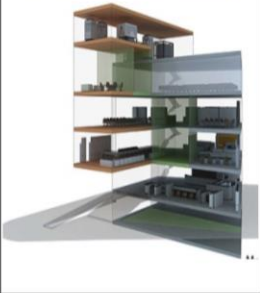

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Metal frame structure</li> <li>Brick</li> </ul>	<ul style="list-style-type: none"> <li>Integration of form and structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Cubic form which are more perceivable for making relation with observer</li> <li>Variety of openings, double skin façade which can be changed according to residences needs</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Building elevation (empty ground level)</li> <li>Continuation of greenery through the façade, natural material and green façade</li> <li>Legible façade through various openings,</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs ✦</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Low-height walls, integration of roof with floor and walls, Hierarchy of spaces (in between spaces), public and private zoning</li> <li>Transparency while keeps privacy, Connection between open and close</li> <li>Transparency, double skin façade</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	



### Q.C.E.O. Building:

This building has been located in an open area in Qazvin one of the desert cities of Iran with hot and arid climatic conditions. The main forming idea of this project lies in the geometrical involvement of two square loops tied to each other. These loops are in fact an abstract version of introverted pattern taken from Qazvin vernacular architecture. Herein, the loops which earlier used to shape central court yards in a horizontal order are tied in a vertical manner reaching different building levels and connecting the interior spaces to its surrounding exterior. The first loop proposed to be made out of brick and with a vertical stretch geometry was allocated to management section of the building while the second, was proposed to be made out of reinforced concrete with a horizontal stretch geometry allotted to official functions. This functional zoning and hierarchical space organizations generate dynamic interior spaces provide a flowing movement. Double skin façade of the building contains a transparent surface covered with brick and concrete perforated shells which reminds brick networks of traditional Iranian architecture. Detachment of the brick loop from the ground level defines the building main entrance as an outstanding veranda for a gentle settlement. Alike the central court yard precursors, the loops have been designed to capture natural sunlight from the open space where the interior receives rays of lights through the perforated exterior wall and create patterns which integrate roof and floor with walls. It also creates changeable spaces during a daytime according to sunlight movement. “The structural system deployed in the project, includes shear walls for the exterior peripheral elements in combination with beam-and-column construction for the main skeleton of the building. The perforated shear walls employed here have been designed where the interest is focused on a mutual process: interior architecture needs and its qualities such as transparency and lightness”


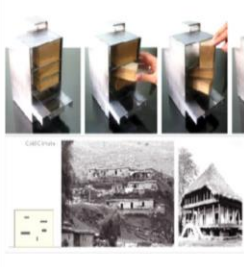



Table 20: Observation abstraction of QCEO Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Brick, concrete and glass</li> </ul>	<ul style="list-style-type: none"> <li>Integration of form and structure</li> <li>Contrast of materials</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Cubic forms which are more perceivable for making relation with observer</li> <li>Vertical central open spaces, introversion versus extroversion, materials, brick network patterns</li> <li>Slippage and integration of two horizontal and vertical volumes, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>New interpretation of vernacular architecture of the region</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building (empty ground level)</li> <li>Legible façade through its form and openings</li> <li>Combination of modern and tradition (Central open space, brick network patterns)</li> <li>Central open spaces, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture in central courtyards and special brick networks has been used.</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>Dynamicity, and fluidity</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Open plan idea, low-height partitions, Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), spatial organization around a central courtyard</li> <li>Transparency while keeps privacy, Connection between open and close</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	 
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Integration of floor and roof with walls via light patterns on them, Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Sharifiha House:

This building is located in Tehran surrounded with two other apartment blocks on both sides. Dynamicity of façade in this project appeared 3dimensionally. In this project some interior spaces have been located in boxes which can rotate and fixed according to residence's desire. These mobile parts of the building which are in relation with static interior spaces, make the whole project as light as possible. This building is a combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces. Contrast of material through which the concrete frame of the main body of the building contains the lightweight steel frame structure of moveable boxes made out of timber. This building is an attempt for making a dialogue with city through its dynamic façade. Idea of introversion-extroversion of traditional Iranian architecture appears in a new way in this project. It is also tried to provide privacy for residences while it keeps relation with surroundings. Also various types of openings in addition to these moveable volumes generate a dynamic and flexible façade. Building's settlement has been gently occurred with its elevation and a staircase which rises in continuation of landscape surrounded and penetrates into interior spaces. Hierarchical space organization around an interior void in addition to public-private zoning of the functions in different volumes generates dynamic and flexible interior spaces which provide a flowing movement through. Providing visual and physical connection among interior spaces provide a kind of continuity, dynamicity and fluidity which are the indicators of the concept of lightness through them. Integration of walls with roof and floor generates continuous surfaces and bridges connecting spaces induces the sense of suspension. These moveable volumes with different type of openings can also manipulate sunlight and change space appearances during the daytime.


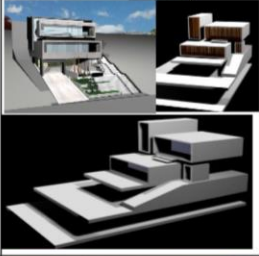



Table 21: Observation abstraction of Sharifiha House

Concept of lightness		Authenticity			Relation with past	Images
		Originality				
		Characteristic	How it has been achieved			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Reinforced Concrete and timber</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Contrast of materials, natural materials</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamic and flexible form</li> </ul>	<ul style="list-style-type: none"> <li>A cubic form which is more perceivable for making connection with observer</li> <li>Moveable boxes which can rotate and settle according to residences needs, play of solid and void, various openings, floating forms</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>		
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Compatible with climatic issues</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Staircase which continues from outside landscape towards interior spaces, empty ground level, water</li> <li>Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces</li> <li>Legible facade through its moveable volumes, various openings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In traditional architecture the whole building tried to be compatible with climatic issues by building orientation, their relation with each other...</li> <li>In spite of being introverted indentations on facade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>		
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection among spaces</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each),</li> <li>Spatial organization around open central space (void), bridges among spaces</li> <li>Transparency, double skin volume</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls.</li> </ul>		
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Generate different patterns according to sunlight movement, changing the space according to moveable second skin of the building</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>		

### Villa for a Friend:

This building has been located in a garden on a mountainous area. The dynamic form of two pure cubic forms which slipped on each other is completely in harmony with slopy area surrounded. The gentle settlement of the building which is elevated from the ground in addition to back and forth movement of boxes on each other induces the sense of suspension. There is a long way staircase which rises along with the building and connects the ground with terraces and roofs. It seems that there are no dead end spaces in this project but space flows inside the building and continues its movement towards roofs and terraces. This integration of open and close emphasizes on the concept of lightness. This building seems to be a combination of modern and tradition. It is not only a composition of simple cubic forms of concrete but also reminds traditional mountainous cities of Iran. Its double skin form and façade generates a building compatible with climatic issues of the area. It gives people the possibility of organizing their view and openness towards outside according to their needs. Hierarchical organization of spaces which generates in between spaces and public-private zonings as well create dynamic, flexible and fluid spaces. Also, visual and physical continuation of inside and outside induces the sense of lightness. Idea of transparency in addition to double skin façade of the building provides privacy for residence while it keeps their connection with outside. Moveable second skin of the building with perforations inside create an amazing play with light through interior spaces which changes the space in different times of the day and according to people's needs. Contrast of materials which induces both warm feeling of natural materials and cool sense of concrete seems to be one of the main ideas of this project.



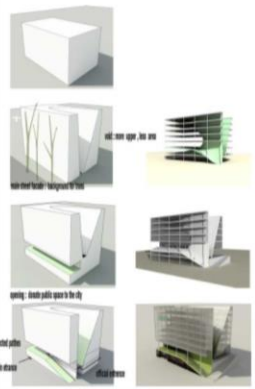


Table 22: Observation abstraction of Villa for A Friend

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Contrast in materials</li> </ul>	<ul style="list-style-type: none"> <li>Integration of form and structure</li> <li>Reinforced Concrete and timber</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Pure simple forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable forms for making connection with observer</li> <li>Slippage of forms on each other, staircase rises with the building</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid and voids results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Back and forth movement of forms like mountains</li> <li>Empty ground level, staircase goes along with building</li> <li>Taking the form of its context, trunks located in between spaces, roof garden, visual continuity between inside and outside, double skin surfaces for climatic issues,</li> <li>Legible facade</li> </ul>	<ul style="list-style-type: none"> <li>likewise mountainous cities of Iran which formed according to the slope of mountains ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards, green roofs...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, and fluidity</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while it keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), short interior walls which never reach the roof</li> <li>Transparency, in between spaces, space flows through the building and continues towards the roof</li> <li>Transparency, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Generate different patterns according to sunlight movement, changing the space according to moveable second skin of the building</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	

### Benetton Building:

This building has been located in Tehran in an open area surrounded with natural environment. It seems that the simple cubic form of the building has been carved and the transparent characteristic of this volume has been transformed into an opaque surface when it comes to the center. Dynamic form of the building through which, the sharp edged exterior form of the project has transformed into curvilinear surfaces towards inside, present an amazing play of solid and void. Slippage of boxes cantilevered from the main body of the building through the central open space induces the sense of suspension. This building has the idea of combination of modern and traditions through which the concept of introversion-extroversion appeared dominantly. The gentle settlement of the building on a platform which connects to the ground through a slight ramp is another issue of lightness in this project. Relation with nature appears through the curved surface which penetrates into the building and creates a cylinder of light and greenery. It seems that natural environment melt the building and pass through. It seems that the building tried to make connection with city and absorb the infinite space of city to inside. It settled as light as possible and let public spaces of surroundings pass through but also make connection among them. Transparent exterior façade of the building create visual connection between inside and outside and lightens the building while spatial organization around the central open space provides privacy and introversion. Hierarchical space organization which creates in between spaces in addition to public-private zonings and low-height partitions generates dynamic and flexible interior spaces as indicators of the concept of lightness. Manipulating sunlight through the central open space and angular surfaces generates changeable spaces.

Table 23: Observation abstraction of Benneton Building


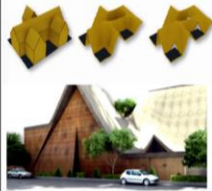








Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure, hyper curved shell</li> <li>Glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> <li>Sense of suspension</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void, central open space, slippage of floating boxes on each other, curved surfaces</li> <li>Cantilevered boxes from the main volume</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Platform, ramps, elevated building</li> <li>Continuation of curved form of natural environment surrounded through the building, continuation of greenery towards interior spaces</li> <li>Central public open spaces which makes connection with infinite space of city</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings ✦</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, visual connection among interior spaces through low-height walls</li> <li>Continuity of landscape through interior spaces, transparency, Connection between open and close</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement and play of shadow and light through them</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	



### Daroos Villa:

This building has been located in Tehran surrounded with two other buildings on both sides. It is tried to combine modern and traditions in this project which is why the sharp edged gable roofs of traditional houses has been transformed into smooth edge surfaces which seems to be spread over the building. This idea not only creates a dynamic form but also generates a form in continuation of natural environment around. It seems that the building rises and then lands to place green areas on its surfaces. So, there are no dead end spaces in this project but space flows through the building and goes towards the roof. This project is an attempt for making a dialogue with city. It is also tried to make connection with infinite space of city and combine it with the building through the voids located among solid volumes. Using natural materials along with concrete, glass and steel make a contrast of texture as it can be seen in traditional Iranian architecture. Gentle settlement of the building appeared through continuous surfaces which seem that the building rises from the ground and tried to be connected to the sky. Water reflection also has been used for lightening the heaviness of the building where it settled on the ground. Hierarchical space organization which generates in between spaces and public-private zoning of interior spaces for providing privacy, while the building keeps its relation with surroundings is an important issue of lightness in this project. Creating visual and physical connection among spaces through the voids generates dynamic and flexible interior spaces with flowing movement through. Idea of double skin façade not only provides privacy for residences but also keep visual connection between inside and outside. This play of solid and void beside the cantilevered surfaces and angular openings manipulate sunlight penetration towards inside and create an amazing play with space during daytime.






Table 24: Observation abstraction of Daroos Villa

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Combination of compressive and tensile shells</li> <li>Glass and steel, concrete, timber</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure, form-resistant structure</li> <li>Natural material, contrast of texture</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Curvilinear, folding surfaces, play of solid and void, various openings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Gable roof, introversion</li> <li>Water, continuous surfaces rises in continuation of landscape</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> </ul>	
		<ul style="list-style-type: none"> <li>Relation with nature</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Roof garden</li> <li>Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces</li> </ul>	<ul style="list-style-type: none"> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards, green roofs...</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Transparency, double skin façade, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	  
Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	 	

Dr. Akashe Villa:

This building has been located in a garden in countryside area of Tehran in Iran. The main concept of the building is combination of two concave and convex forms. The sloppy roof which covered the whole building and connects it with surrounding environment generates a dynamic form in combination with the bowl of pool. This idea of gable roof is compatible with typology of the buildings surrounded. The transparent volume of the building which provides visual connection between inside and outside has been covered with timber hyper curved shell in continuation of natural environment around. Cantilevered surfaces of the building in addition to the pool's elevation from the ground induce the sense of suspension. The building has been settled gently on a platform and the water pool beside reflect the building and lightened its connection with ground. The curved coverage of the building which rises in continuation of natural environment surrounded continues towards the roof. It seems that the building settled as light as possible not to interrupt the green area but frame the environment surrounded and let it pass through. It seems to be an attempt for connecting sky and ground. Open plan idea of the building in addition to hierarchical space organization with no dead end spaces demonstrates the concept of lightness. Low-height walls and lightweight staircase which doesn't block the view generates integrated spaces which provide a flowing movement through. Play of solid and void which appears through the rupture in main coverage surface of the building generates a dynamic form. Although, vast glass surface of the villa permit the rush of light enter the space, this play of solid and void and movement of surfaces manipulate the amount of light entered the space and change it according to sunlight movement.

Table 25: Observation abstraction of Dr. Akashe Villa

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristics	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced concrete structure, timber hyper curved shell</li> <li>Reinforced Concrete, glass and steel, timber</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Sloppy roof as typology of buildings surrounded in a new way, contrast of material and texture, Introversion-extroversion</li> </ul>	<ul style="list-style-type: none"> <li>Play of solid and void, open and close in traditional Iranian architecture</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Gable roof, introversion</li> <li>Platform, water, elevation of the building</li> <li>Roof garden, terrace garden, curved form of natural environment surrounded which continues through the building</li> <li>Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards,</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others... ✦</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning, curved surfaces, no dead-end spaces, space flows through the building and continues towards the roof, visual connection among interior spaces via low-height walls a</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Transparency, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	





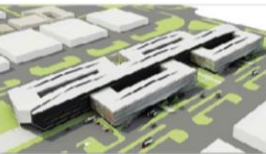


### Grocery Market Place:

This building has been located in an open area surrounded with natural environment. Being a market place it is tried to combine the idea of traditional bazaars with modern ideas. Therefore, what can be seen is a part of a bazaar with its main access and central courtyard volumes goes along with this path.

The dynamic form of the project appears through these solid and void transformations. These buildings with central courtyards settled gently on angular surfaces which make the building to be elevated from the ground and make connection between city and these central open spaces. The natural environment penetrates through the buildings and central public spaces and continues towards the roof.

This complex tried to make a dialogue with the city and combine the infinite space of city with its central open areas. This rhythm of solid and voids create a dynamic form which motivates people to pass through with a flowing movement. In between spaces created through hierarchical spatial organizations in addition to public-private zonings generates dynamic and fluid interior spaces which are in in connection with natural environment surrounded. This play of solid and void manipulate sunlight penetration into interior spaces and change them during daytime.

Table 26: Observation abstraction of Grocery Market Place




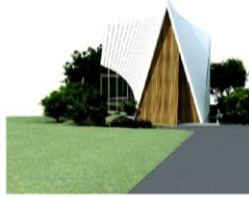


Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Concrete, glass and steel</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Pure simple form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making connection with observer</li> <li>Play of solid and void, visual and physical continuity among open spaces and the city</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✦</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Modeling the pattern of traditional bazaars with central open spaces</li> <li>Elevated building, ramps</li> <li>Continuation of greenery through the building and towards the roof, central open courtyards</li> <li>Central public open spaces</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards, green roofs... ✦</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while it keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning, no dead end spaces, space flows through the building, and continues towards the roof, visual connection among interior spaces through low-height walls</li> <li>Continuity of landscape through interior spaces, transparency, Connection between open and close</li> <li>Central open spaces, building's elevation from the ground, semi transparency</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>Continuity and integration of inside and outside through in between spaces, visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of light and shadow on façade surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on back and forth movements of exterior walls ✦</li> </ul>	

### House for Younger Brother:

This building has been located in North of Iran with humid climatic conditions. It is tried to combine modern and traditions in this project which is why the sharp edge gable roofs of traditional houses has been transformed into smooth edge surfaces which seems to be spread over the building. This idea not only creates a dynamic form but also generates a form in continuation of natural environment around. This up and down movement of the coverage surface which create a play between solid and void in addition to various types of openings makes the building more dynamic. Using natural materials along with concrete, glass and steel make a contrast of texture as it can be seen in traditional Iranian architecture.

Gentle settlement of the building appeared through continuous surfaces which seem that the building rises from the ground and tried to be connected to the sky. Hierarchical space organization which generates in between spaces and public-private zoning of interior spaces for providing privacy, while the building keeps its relation with surroundings is an important issue of lightness in this project. Creating visual and physical connection among spaces through the voids pass through them generates dynamic and flexible interior spaces with flowing movement through. Idea of double skin façade not only provides privacy for residences but also keep visual connection between inside and outside. This play of solid and void beside the cantilevered surfaces and angular openings manipulate sunlight penetration towards inside and create an amazing play with space during daytime.

Table 27: Observation abstraction of Grocery Market Place

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Combination of compressive and tensile shells</li> <li>Glass and steel, concrete, wood</li> </ul>	<ul style="list-style-type: none"> <li>Light structure, form-resistant structure</li> <li>Natural material, contrast of texture and material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Curvilinear, folding surfaces, play of solid and void, various openings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context. ✦</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Gable roof, introversion</li> <li>Water, continuous surfaces rises in continuation of landscape</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> </ul>	
		<ul style="list-style-type: none"> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In traditional architecture the whole building tried to be compatible with climatic issues by building orientation, their relation with each other... ✦</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Transparency, double skin façade, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>Continuity and integration of inside and outside through in between spaces, visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls</li> </ul>	
Light	<ul style="list-style-type: none"> <li>Dynamic spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement, Angular openings and double skin facade which fractured the light</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>		


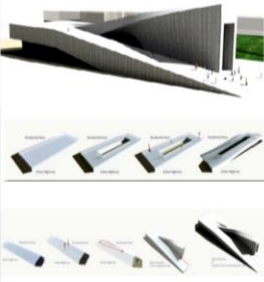
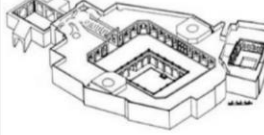


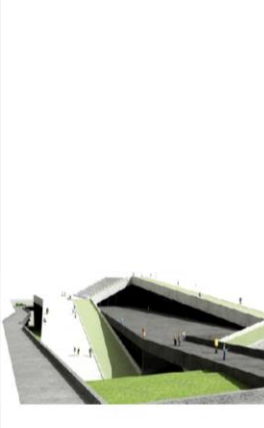



Mehran Campus:

This building has been located in an open area in Iran surrounded with natural environment. The main idea of project comes from central open courtyards of traditional Iranian architecture which has combined with modern ideas. It is tried to absorb the infinite space of the city and combine it with the project. This building is an attempt for making a dialogue with city and surrounded environment. A continuous surface rises from the ground as a ramp, crawls through the site, coils and goes towards the roof for the sake of a dynamic volume. It seems that the building has grown from the ground through which a gentle settlement has been provided. The simple cubic form of traditional buildings with central open space has been rotated, rises and elevated from the ground which induces the sense of suspension.

The water pool in front increased the sense of lightness with its reflective characteristic. The building formed through a play between solid and voids which has been appeared according to ruptured, cantilevered surfaces through the central public space. It seems that the natural environment surrounded has continued through interior spaces, curved form of the building and roofs. Hierarchical space organizations which generates in between spaces in addition to public-private zonings for avoiding functional interruptions create dynamic spaces which provide a flowing movement through. Light's penetration to interior spaces which can be manipulated through the play of solid and voids create changeable and dynamic spaces according to sunlight movements during the daytime.

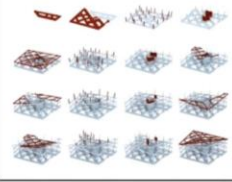






Table 28: Observation abstraction of Mehran Campus

Concept of lightness	Authenticity			Images	
	Originality		Relation with past		
	Characteristic	How it has been achieved			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Combination of compressive and tensile shells</li> <li>Reinforced concrete</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure, form resistant structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Continuous surface which rises from the ground, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Central public open spaces</li> <li>Elevated building, ramps, water</li> <li>Continuation of greenery through the building and towards the roof, central open courtyard, curved form in continuation of natural forms</li> <li>Central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture central courtyards has been used for hierarchical space organization ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>Dynamic, flexible and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning, no dead end spaces, space flows through the building, and continues towards the roof, visual connection among interior spaces through low-height</li> <li>Continuity of landscape through interior spaces, transparency, Connection between open and close</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	

### A House for Sons:

This building has been located in a garden in north of Iran. It is a combination of modern and tradition through which traditional gable roofs and idea of introverted-extroverted has been appeared in a new way. This gable roof which has been presented in a new way reminds the typology of buildings of that region. Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces become the dominant characteristic of this project. It seems that the building rises from the ground coils around and organizes spaces around the interior void. The curvilinear surfaces which have been folded for making connection between inside and outside generates a building in continuation with natural environment surrounded. The continuous surface of the roof which wraps the building as a terrace and gradually lands on the ground like a ramp generates a gentle settlement. Using natural materials in addition to the dynamic form of the building has been resulted in a project compatible with its all surroundings. It seems that the building open its eyes towards the father villa while respectfully bowed in front of it. Hierarchical space organization which generates in between spaces and public-private zoning of interior spaces for providing privacy, while the building keeps its relation with surroundings is an important issue of lightness in this project. Creating visual and physical connection among spaces through the voids pass through them generates dynamic and flexible interior spaces with flowing movement through. Idea of double skin façade not only provides privacy for residences but also keep visual connection between inside and outside. This play of solid and void beside the cantilevered surfaces and angular openings manipulate sunlight penetration towards inside and create an amazing play with space during daytime.

Table 29: Observation abstraction of A House for Sons








Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Reinforced Concrete frame structure</li> <li>Glass and steel, concrete, timber</li> </ul>	<ul style="list-style-type: none"> <li>Natural material, contrast of texture</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>Curvilinear, folding surfaces, play of solid and void, various openings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Gable roof, introversion</li> <li>Use of water, continuous surfaces rises in continuation of landscape</li> <li>Roof garden, central open spaces</li> <li>Combination of extroverted architecture of humid climates with open volumes and vast terraces and introverted architecture of cold climate with closed volumes without terraces</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Relation with nature in traditional architecture has been considered both visually and physically in traditional architecture by designing central courtyards, green roofs... ✦</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others... ✦</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, and fluid spaces</li> <li>Visual and physical connection between inside and outside</li> <li>Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of spaces (in between spaces), public and private zoning (separate forms for each), curved surfaces, no dead end spaces, space flows through the building and continues towards the roof</li> <li>Continuity of landscape through interior spaces, transparency while it keeps privacy, Connection between open and close</li> <li>Transparency, double skin façade, introversion</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> <li>In spite of being introverted traditional architecture tried to keep connection with outside by for instance creating public urban spaces through the indentations in exterior walls ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Playing with space according to sunlight movement</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul>	

Dowlat I:

Dowlat I is a residential apartment with 5 floors located in Tehran. This building has been located in between two other blocks of apartments which has been located in city urban context. Since, the urban façade of most Iranian cities has a chaotic appearance which is the result of various heights, openings and form of buildings this project is tended to settle as a neutral element which makes connection among these isolated units. Therefore, lightness becomes an unavoidable concept in this design. It has a cubic simple form which makes it more perceivable. Also, it is tried to make connection with city through its façade which is built with wooden grids with the sense of nature. Play of solid and void in addition to various types of openings with greenery containers in front create a dynamic façade which make connection with city spaces and create a dialogue with people. It is not a box extended vertically and covered with a mask of ornamented façade but it seems that the whole volume of the building has been designed which is resulted in integration of form, structure and spaces.

This concept of dynamicity penetrates into interior spaces through which open-plan organization allow the residences to use spaces differently and define their function by their own. In this way flexibility also become an important characteristic of these spaces. Low-height walls which never reach the roof create monotonous spaces and provide a visual continuity among them. This idea also reminds the traditional architecture of Iran in which roof's settlement on the walls always has been moderated with ornamentations or light. Integration of walls with roof, ground and furniture makes continuity among them as well. Pure spaces which have been organized in a hierarchical order with public and private zonings generate a flowing movement through them.


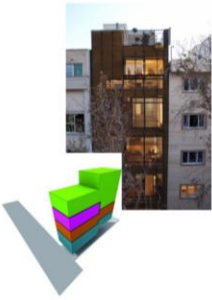








Table 30: Observation abstraction of Dowlat I

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristics	Description		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Wooden grids</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure because of limited width of site</li> <li>Sense of natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple form</li> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making connection with people</li> <li>Integration of structure and form, 3d changeable façade, Dynamic façade which can be changed according to residence needs, Different type of openings</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid volumes beside voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Relation with nature</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using façade as a place for consisting greeneries, Playing with rules and regulations</li> <li>Legible façade, Openings variation</li> <li>Its calm and simple settlement in the site , Playing with rules and regulations, Changing the orientation of built part and using public open areas and also neighbors green spaces</li> </ul>	<ul style="list-style-type: none"> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Flexible spaces (free plan)</li> <li>Dynamic spatial organization</li> <li>Fluidity(flowing movement through spaces)</li> <li>3dimensional quality of space</li> <li>Visual connection and continuity of spaces</li> </ul>	<ul style="list-style-type: none"> <li>Open-plan idea,moveable walls</li> <li>short walls, level differences, suspended walls, integration of furniture with walls</li> <li>hierarchy of space, public and private zoning, no dead-end spaces, city space flows through the building and continues to the roof, Emphasis on lightweight vertical movements</li> <li>lightweight staircases which don't block the view</li> <li>Providing privacy while it keeps connection with city, openings and voids through spaces, low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flawingly. ✦</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Emphasis on lightweight vertical movements</li> </ul>	<ul style="list-style-type: none"> <li>Lightening staircases</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture has been used for inducing the sense of lightness and lightening the junction among space elements such as walls, roofs and floor</li> </ul>	

## Dowlat II:

Dowlat II project is a residential apartment located in urban context of Tehran surrounded with two apartment blocks on both sides and a narrow alley in front which do not allow its façade to have any projections toward this public area. According to the chaotic urban façade of this city which contains buildings with different heights, openings and appearances with no relation with each other this building tried to settle in the site as a neutral unit which connects the existing ones but not for simulation among others. Although, this building appears in a modest way with its pure cubic form and simple façade, it has a dynamic characteristic. Double skin façade of the building with various types of openings has been totally covered with wooden shadings which can be opened as cantilevered horizontal and vertical surfaces used for different purposes. Residences can change their dialogue with city according to their tendencies. Green areas of the city seem to be continued through the façade and interior spaces of this building. It is not a box extended vertically and covered with a mask of ornamented façade but it seems that the whole volume of the building has been designed which is resulted in integration of form, structure and spaces. This dynamicity of the façade penetrates into interior spaces through its open-plan idea. In this way spaces are flexible to be adapted to different functions. Walls never reach the roof for creating more monotonous spaces, lightening this heavy settlement and also generating a visual continuity among spaces. Integration of roof with walls, floor and furniture create a soft and gentle continuity in interior spaces. This double skin façade with different type of openings under the wooden shading coverage not only make a dialogue with city but also provide privacy for people inside. The hierarchical organization of spaces within the open-plan of the units creates a flowing movement through them. There is no dead end spaces in this project and roof has been used as a garden for settlements.

Table 31: Observation abstraction of Dowlat II








Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristics	Description		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>• Metal frame structure</li> <li>• Wooden grids</li> </ul>	<ul style="list-style-type: none"> <li>• Lightweight structure because of limited width of site</li> <li>• Sense of natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>• Simple form</li> <li>• Dynamic form</li> <li>• Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• More perceivable for making connection with people</li> <li>• Integration of structure and form, 3d changeable façade, Dynamic façade which can be changed according to residence needs, Different type of openings</li> <li>• Double skin façade which can be organized according to residence's needs</li> </ul>	<ul style="list-style-type: none"> <li>• Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>• In Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid volumes beside voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>• Relation with nature</li> <li>• Making dialogue with city</li> <li>• Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>• Using façade as a place for consisting greeneries</li> <li>• Legible façade, Openings variation, Playing with rules and regulations</li> <li>• Making connection among various facades with its neutral characteristic, Playing with rules and regulations (Being forbidden for making objections façade has been designed 3d )</li> </ul>	<ul style="list-style-type: none"> <li>• Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>• In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>• Movement from multiplicity into unity has been the essence of Iranian architecture from city scale to details. Although, each unite has its own characteristic from a holistic point of view they have been integrated.</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>• Flexible spaces (free plan)</li> <li>• Dynamic spatial organization</li> <li>• Fluidity (flowing movement through spaces)</li> <li>• 3dimensional quality of space</li> <li>• Visual connection and continuity of spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Open-plan idea, moveable walls</li> <li>• short walls, level differences, suspended walls, integration of furniture with walls</li> <li>• hierarchy of space, public and private zoning, no dead-end spaces,</li> <li>• lightweight staircases which don't block the view</li> <li>• Providing privacy while it keeps connection with city, openings and voids through spaces, low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>• In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces defined in 3dimension</li> <li>• In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	   
	Light	<ul style="list-style-type: none"> <li>• Lightening roof's settlement on the walls</li> <li>• Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>• It gives them the sense of suspension and lightening these junction points</li> <li>• Dynamic interior spaces according to different light patterns, Emphasis on lightweight vertical elements</li> </ul>	<ul style="list-style-type: none"> <li>• Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during</li> <li>• Play of shadow and light on back forth movements of walls</li> </ul>	



## 2 Offices- 2 Brothers:

This building is an office apartment located in chaotic urban context of Tehran attached to two other apartment blocks from both sides. In this project it is tried to play with construction rules and regulations in order to have more built area and making connection with public open areas. Changing the building's orientation make a visual connection with public green spaces and also neighbors courtyards insofar as it seems that all these green areas belong to this project. This modification in building's orientation which is the original idea of the project not only increased the view of the building and light surfaces but also provide privacy for residences. There are also random but wisely-located openings towards neighbors open spaces which makes this building as a connection unit among others. This building has a dynamic façade through its variety of openings which makes a dialogue with city. It is also tried to take greenery through the façade and into interior spaces which makes connection with nature and its context. Dynamicity, flexibility and fluidity become dominant characteristic of interior spaces through its open-plan idea. In this design walls never reach the roof for creating visual continuity and monotonous spaces, and also for lightening the roofs settlement on the walls. Moveable walls which have the ability of changing proportions, appearance and functions generate flexible interior spaces which can be adapted to residence's requirements. There are also opening through spaces which make stronger spatial and visual connection among them. Transparency through different units while preserve people's privacy also helps people to change their lifestyle according to their needs. Lightweight staircases as the main vertical access among spaces which go along with light stream seems to be suspended.

Table 32: Observation abstraction of 2Offices- 2Brothers


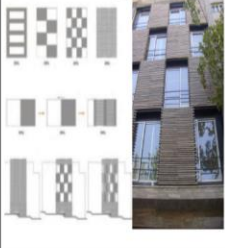



Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristics	Description		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Glass &amp; steel, timber grids</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight and natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple form</li> <li>Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>More perceivable for making connection with people</li> <li>Integration of structure and form, 3d changeable façade, Dynamic façade which can be changed according to residence needs, Different type of openings</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid volumes beside voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Relation with nature</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using façade as a place for consisting greeneries, Playing with rules and regulations</li> <li>Legible façade, Openings variation</li> <li>Its calm and simple settlement in the site, Playing with rules and regulations, Changing the orientation of built part and using public open areas and also neighbors green spaces</li> </ul>	<ul style="list-style-type: none"> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Flexible spaces (free plan)</li> <li>Dynamic spatial organization</li> <li>Fluidity(flowing movement through spaces)</li> <li>3dimensional quality of space</li> <li>Visual connection and continuity of spaces</li> </ul>	<ul style="list-style-type: none"> <li>Open-plan idea, moveable walls</li> <li>short walls, level differences, suspended walls, integration of furniture with walls</li> <li>hierarchy of space, public and private zoning, no dead-end spaces, city space flows through the building and continues to the roof, Emphasis on lightweight vertical movements</li> <li>lightweight staircases which don't block the view</li> <li>Providing privacy while it keeps connection with city, openings and voids through spaces, low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flawingly. ✦</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Lightening roof's settlement on the walls</li> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>It gives them the sense of suspension and lightening these junction points</li> <li>Dynamic interior spaces according to different light patterns, Emphasis on lightweight vertical movements</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> <li>Play of shadow and light on back forth movements of walls</li> </ul>	

### Khorsand Office Building:

Khorsand Office building is an apartment block located in chaotic urban context of Tehran limited with two other apartment blocks on both sides. This building is not another architectural feature with a separate characteristic for simulation among the others but it has been created with the idea of being neutral for connecting these heterogeneous units. Although, it has been settled gently in the site this building is not a boring imitated unit put its back to the city. The double skin façade of the building which contains various types of openings covered with moveable wooden shadings give it flexible and dynamic characteristic. The whole building settled gently on a platform which gradually reaches to the ground through some stairs. Also it seems that green areas of the city have been continued through the building and goes toward the roof which shows association of the building with nature in addition to its natural material. One of the main concepts of this project is integration of form, space and structure, in other words it is not an extended rectangle covered with some ornamentations for simulation. This project tried to make a dialogue with city through its dynamic façade which also provide diversity for residence according to its flexible feature.

Concept of dynamicity and flexibility also has been reflected in interior spaces. Open-plan idea generates monotonous spaces which can contain different functions. Hierarchical arrangement of spaces along with their public and private zoning create a flowing movement through them.


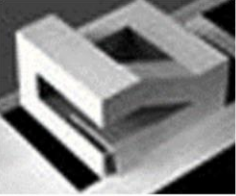





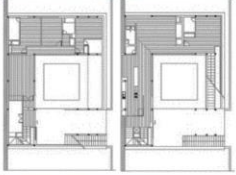

Table 33: Observation abstraction of Khorsand Office Building

Concept of lightness	Authenticity				
	Originality		Relation with past	Images	
	Characteristics	How it has been achieved			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>• Metal frame structure</li> <li>• Wooden grids</li> </ul>	<ul style="list-style-type: none"> <li>• Lightweight structure because of limited width of site</li> <li>• Sense of natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>• Simple form</li> <li>• Dynamic form</li> <li>• Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• More perceivable for making connection with people</li> <li>• Integration of structure and form, Dynamic façade which can be changed according to residence needs, Different type of openings</li> <li>• Double skin façade which can be organized according to residence's needs</li> </ul>	<ul style="list-style-type: none"> <li>• Using pure form &amp; order in Iranian architecture</li> <li>• In Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid volumes beside voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>• Gentle settlement</li> <li>• Relation with nature</li> <li>• Making dialogue with city</li> <li>• Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>• Using façade as a place for consisting greeneries</li> <li>• Legible façade, Openings variation, Playing with rules and regulations</li> <li>• Making connection among various facades with its neutral characteristic, Playing with rules and regulations (Being forbidden for making objections façade has been designed 3d )</li> </ul>	<ul style="list-style-type: none"> <li>• Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>• In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>• Movement from multiplicity into unity has been the essence of Iranian architecture from city scale to details. Although, each unite has its own characteristic from a holistic point of view they have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>• Flexible spaces (free plan)</li> <li>• Dynamic spatial organization</li> <li>• Fluidity (flowing movement through spaces)</li> <li>• 3dimensional quality of space</li> <li>• Visual connection and continuity of spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Open-plan idea, moveable walls</li> <li>• short walls, level differences, suspended walls, integration of furniture with walls</li> <li>• Hierarchy of space, public and private zoning, no dead-end spaces, Emphasis on lightweight vertical movements</li> <li>• lightweight staircases which don't block the view</li> <li>• Providing privacy while it keeps connection with city, openings and voids through spaces, low-height walls</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>• In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>• In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>• Lightening roof's settlement on the walls</li> <li>• Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>• It gives them the sense of suspension and lightening these junction points</li> <li>• Dynamic interior spaces according to different light patterns, Emphasis on lightweight vertical movements</li> </ul>	<ul style="list-style-type: none"> <li>• Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> <li>• Play of shadow &amp; light on back forth movements of walls</li> </ul>	

### Darvish Villa:

This building has been located in north of Iran in an open land. The main idea of project is about combination of local and modern architecture. A simple cubic form which is elevated from the ground through a slight staircase crawls through the site and coils around a central open space. The building continues its flight towards the roof with a staircase which separates first floor. It seems that the building tries to detach itself from the ground while it settled gently on it. This movement creates a building compatible with typology of sloppy-roof buildings surrounded which is why the building not only present itself as a modern entity but also keeps its relation with Iranian architecture through the central courtyard and sloppy form. Association of form and structure in addition to this dynamic form helps the concept of lightness in this project. Also, play of solid and void appears as one the important issues of lightness. It seems that the building hugs the nature through its central open space and brings it to inside and continues this relation till the roof garden. Open plan idea, in addition to hierarchy of spaces and their public-private zonings around a central courtyard create dynamic and flexible interior spaces which generates a flowing movement. It seems that the building not only provides privacy for residences through its inward looking character but also keeps its relation with surroundings. Moreover, light plays an important role in creating lighter spaces as an essential indicator of nature. Light helps creating changeable spaces according to sunlight movement during a day and also generating different spatial characteristics in accordance to their various positions around the central courtyard. This direct relation with nature through the central courtyard and roof garden, in addition to flexible, dynamic and fluid interior spaces all has routes in traditional Iranian architecture which have been presented in a new way in this project.




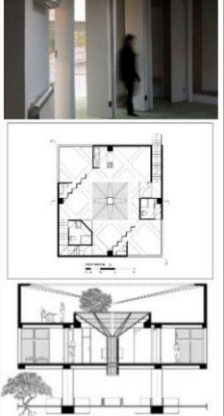

Table 34: Observation abstraction of Darvish Villa

Concept of lightness	Authenticity				
	Originality		Relation with past	Image	
	Total idea	Description			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>• Metal frame structure</li> <li>• Concrete</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of form and structure, lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>• Simple cubic form which has been carved</li> <li>• Dynamic form</li> </ul>	<ul style="list-style-type: none"> <li>• More perceivable</li> <li>• Crawling through the site and coiling around towards the sky, sloppy form, Play of solid and void, Central open space, separation of first floor which seems it tries to fly towards the sky</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional Iranian architecture simple pure forms has always been used.</li> <li>• Central open spaces</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>• New interpretation of building typology of surrounding context</li> <li>• Relation with nature</li> <li>• Gentle settlement in the site</li> <li>• Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>• Sloppy form of the building, Introverted building with central open space and sloppy roof with modern structure and form</li> <li>• Continuation of greenery through central courtyard towards the roof and inside the building, Central courtyard, roof garden</li> <li>• Using a staircase as a part of the building which helps for its modest but splendid landing</li> <li>• Legible façade, Being introverted, the building make a dialogue with surroundings through its form</li> </ul>	<ul style="list-style-type: none"> <li>• Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>• Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✦</li> <li>• In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>• In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>• Dynamicity, flexibility, fluidity</li> <li>• Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>• Hierarchy of spaces, public and private zonings, free-plan idea, various spatial characteristics according to their organization around the central courtyard, Space organization around a central courtyard</li> <li>• Provide privacy while the building keep its relation with surroundings, inward looking to the central emptiness</li> </ul>	<ul style="list-style-type: none"> <li>• In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>• In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of ✦ visual perspectives and vistas</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>• Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Space quality changes according to sunlight movement, spaces have different qualities according to their organization around the courtyard and light penetration from different sides</li> </ul>	<ul style="list-style-type: none"> <li>• Play of shadow and light on back and forth movements of exterior walls</li> </ul>	

### Darvishabad Villa:

This building has been located in north region of Iran in an open area. The main idea of this project is based on combination of traditional Iranian architecture with modernism. It seems that, inward looking characteristic of Iranian architecture meets the extroverted idea of modern architecture in this project. A pure simple cubic form elevated from the ground with an empty central space induces the sense of lightness. It seems that this white cube stands somewhere in between earth and sky. Infinite space exists underneath and the one which can be experienced on the roof flows inside this white suspended cube. Four columns of the building which are not located on edges for inducing the sense of suspension have been settled on water for creating a gentle settlement. A slight stair way which appears in continuation of ground landscape flies gently and penetrates into the building and invites people to have a flowing movement through indoor spaces. Foldable walls which can be organized according to residence's needs create a nice play of light through spaces. In this way dynamicity and flexibility become an important characteristic of interior spaces. The glass funnel in middle of the villa acts as an emptiness which pours light from the sky to interior spaces. It seems that the whole building is carried by this column of light. Wisely- located windows frame the view of outside and create a dialogue with surrounded environment. This connection between inside and outside has been completed with play of light through spaces. This fluidity among spaces continues towards the roof where an elegant sitting area with the view of infinite sky has been designed. It seems that this white cube appears that much light that this emptiness passes through it. Idea of central emptiness in a pure cubic form in addition to dynamic and flexible characteristic of indoor spaces which connect the building to its surrounding and nature reminds the traditional Iranian architecture which has been interpreted from a novel point of view.

Table 35: Observation abstraction of Darvishabad Villa

Concept of lightness	Authenticity			
	Originality		Relation with past	Images
	Total idea	Description		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Concrete</li> </ul>	<ul style="list-style-type: none"> <li>Integration of form and structure</li> </ul>	
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>A pure cubic form which seems to be carved, more perceivable</li> <li>Play of solid and void, Central open space, entrance which settled back, empty ground level</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul> 
	Context	<ul style="list-style-type: none"> <li>New interpretation of building typology of surrounding context</li> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Sloppy form of the building, Introverted building with central open space and sloppy roof with modern structure and form</li> <li>Empty ground floor, columns settlement on water, staircase which connects the building with ground and continues as landscape</li> <li>Generating an open ground level and roof garden in relation with both ground and sky light pours to the level in between</li> <li>Legible façade, Being introverted, the building make a dialogue with surroundings through its form</li> </ul>	<ul style="list-style-type: none"> <li>Introversion idea of desert cities and extroversion and gable roofs of humid areas ✦</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms... ✦</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs... ✦</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity ✦</li> </ul> 
	Space	<ul style="list-style-type: none"> <li>Dynamicity, Flexibility, Fluidity</li> <li>Visual and physical continuity between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchical space organization, open-plan idea, foldable walls, no dead end spaces, flowing movement through spaces from the entrance which seems to be landed for people's flight to inside spaces organized around a central emptiness</li> <li>Transparency, wisely located openings to frame the view of outside, continuation of landscape through inside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul> 
	Light	<ul style="list-style-type: none"> <li>Dynamic spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to light movement and walls direction, A funnel which pour light from the sky to the ground, a connection point between sky and earth, a light sculpture which seems that the whole building stands on, the whole building seems to be suspended</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day. ✦</li> </ul> 



#### House No. 1:

This house has been designed for a single family in Mahallat as a small town in center of Iran. Recycling waste stone pieces of the factories surrounded the city as the main material of this building creates new patterns. Simple cubic form of the building become more dynamic by play of solid and voids on the façade and employing various types of openings in addition to dynamic texture of stone pieces. Elevation of the building from the ground and continuation of façade's main material towards the landscape and exterior walls of the courtyard generates a gentle settlement and integration of solid volume of the building with surrounding environment. Using gable roof and double skin façade makes the building compatible with climatic issues. The building not only provides physical and visual connection between inside and outside but also preserves people's privacy through its double skin façade. These stone pieces have been continued toward interior spaces as well and have been combined with other range of materials such as timber and brick in order to create more coziness and comfort. Emphasis on verticality is dominant characteristic of interior spaces in order to moderate the heaviness of the building by enhancing the movements in opposition of gravity. Low-height interior walls which never touch the roof and the voids among spaces create visual continuity among them. Also, it is tried to enhance this 3dimensional quality of space by creating voids and bridges among interior spaces which also provide diverse perspectives. Hierarchical spatial organization and public-private zonings provide flowing movement through interior spaces. Spatial organization in each floor is different from others. This cantilevered surfaces and play of solids and voids inside the building create an amazing play between light and shadow during daytime. Lightweight staircases as the main vertical access among different levels do not block the view but emphasizes on 3rd ax of the space.

Table 36: Observation abstraction of House No. 1

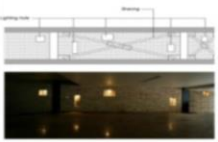




Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Recycled stone, timber</li> </ul>	<ul style="list-style-type: none"> <li>Natural local materials, low cost materials, recycled stone of factories surrounded</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>A cubic form which is more perceivable for observer</li> <li>Play of solid and void, variety of openings, double skin facade</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground, using water, continuation of façade materials on the ground and exterior walls of the courtyard</li> <li>Continuation of greenery through the façade, using natural local materials both inside and outside</li> <li>Typology of gable roof buildings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>3dimentionality of spaces</li> <li>Dynamicity, fluidity,</li> <li>Connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, visual connection among spaces, emphasis on vertical movements (lightweight staircase, voids)</li> <li>Public-private zonings, hierarchy of spaces, Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, flexible double skin, different type of space organization in each floor, providing diverse perspectives,</li> <li>Continuation of the building's material through the exterior walls of the courtyard and also interior spaces, mezzanine floors and bridges</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on back and forth movements of exterior walls</li> </ul>	

Ganj-e-Danesh:

This residential apartment is located in Tehran surrounded with two other blocks on both sides. Small pieces of recycled Travertine stone combined with timber covered the simple cubic form of the building. Play of solid and void in addition to various types of openings generates a dynamic façade which is also legible for observers from outside. It seems that the building create a kind of dialogue with surroundings. Elevation of the building from the ground and continuation of façade's materials towards the ground and exterior walls of the courtyard not only has resulted in a gentle settlement but also integrates the solid volume of the building with open area of the courtyard. Low-height interior walls and integration of walls with furniture in addition to the voids and bridges among spaces not only enhance the 3 dimension of the space but also create visual continuity among them.

It seems that spaces have been integrated to each other for the sake of flowing movement. Lightweight staircases, wooden bridges, and cantilevered surfaces generate dynamic interior spaces which create a unique play of shadow and light during the daytime. Public-private zonings and hierarchical space organizations also provide dynamic and fluid interior spaces. It is also tried to create more coziness and comfort by using different range of materials such as timber and brick in interior spaces.



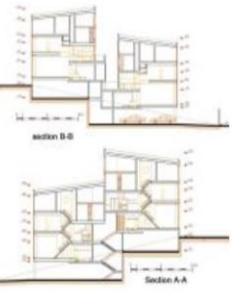

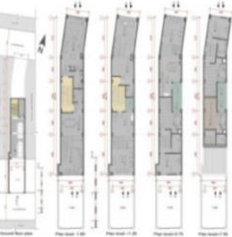



Table 37: Observation abstraction of Ganj-e-Danesh

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Recycled stone, timber</li> </ul>	<ul style="list-style-type: none"> <li>Natural materials, recycled stone of factories, low cost material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>A cubic form which is more perceivable for observer</li> <li>Play of solid and void, variety of openings</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground, using water, continuation of façade materials on the ground and exterior walls of the courtyard</li> <li>Using natural local materials both inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>3dimensionality of spaces</li> <li>Dynamicity, fluidity</li> <li>Connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, visual connection among spaces, emphasis on vertical movements (lightweight staircase, voids)</li> <li>Public-private zonings, hierarchy of spaces, Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, different type of space organization in each floor, providing diverse perspectives,</li> <li>Using natural materials such as mud brick and timber, continuation of the building's material through the exterior walls of the courtyard and also interior spaces, visual continuity, Providing privacy while keeps connection with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside-outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Stair House:

This residential building has been located in north side of Tehran in a dense urban context surrounded by 3-5 story buildings. According to limited dimension of the site lightness become an unavoidable concept in this design. Therefore, steel frame structure in addition to transparent façade of the building tried to increase interior spaces. Entering the space, people's attention moves ascendant because of the lightweight staircase, moves vertically in front and the exaggerated height of living room. The whole concept was envisioned in 3dimensional manner in order to make the building lighter by moving in opposition of gravity. This building consists of two units and one studio. Each unit consists of 5 levels interacted by private staircases and voids which create a dynamic space. This plays of cantilevered surfaces, solid and voids, and staircases as the main vertical access instead of horizontal corridors enhance the 3rd dimension of the space. It also makes interior spaces to be seen larger than they really are. Based on different locations of the observer there are numerous perspectives to discover and explore the interaction of different levels the stairs and the voids are meant to create active varied spaces. Being compatible with climatic conditions of the area the building has a sloppy roof. Hierarchical space organization, public-private zonings and Low-height walls generates visual continuity among spaces which seems to be integrated. These all have been also resulted in a flowing movement through spaces especially in 3rd dimension. Elevation of the building from the ground and continuation of façade's material through landscape and exterior walls of the courtyard generates a gentle settlement on the site. Different types of space organization in each level create various backgrounds for the transparent façade of the building. Light surfaces at night create a dynamic appearance which is different than what can be seen during the day.

Table 38: Observation abstraction of Stair House





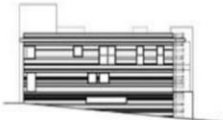


Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel, stone</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Transparent, lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamic façade</li> </ul>	<ul style="list-style-type: none"> <li>A simple cubic form which is more perceivable for making relation with observer</li> <li>Different type of openings, different interior spaces which create different backgrounds, Play of open and close or solid and voids</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form&amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and results in dynamic context</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground</li> <li>Appears as a neutral lightweight box which makes connection with surroundings</li> <li>Sloppy roof</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> <li>In traditional architecture the building, itself has been a respond to environmental conditions by building orientation,</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>3dimential quality of space</li> <li>Dynamic, fluid spaces</li> <li>Connection between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>Emphasis on vertical access instead of horizontal corridors, Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, visual connection among spaces, emphasis on vertical movements</li> <li>Interplay of levels, stairs and voids which create highly varied spaces, hierarchical space organization, public-private zonings, Low-height walls, visual continuity among spaces through openings, integration of walls with roof and furniture, various space organization in each floor,</li> <li>Continuation of the building's material through the exterior walls of the courtyard and also interior spaces, visual continuity</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside-outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among surfaces</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

## Dolatshahi House

This residential building has been located in an open area in Lavasanat region in North of Tehran. It is a redesigned project which is tried to be lighter than the primitive bulky volume. The building consists of simple cubic forms which are more perceivable for the observer to make connection with. Back and forth movement of the volumes and cantilevered boxes create a dynamic composition. Extension of the cubes from the main body of the building through their slippage on each other not only induces the sense of suspension but also generates in between spaces for the sake of hierarchical space organization. This play of solid and voids generates a legible façade which makes relation with city and observer.

Hierarchical space organization and public-private zonings in addition to low height interior walls and voids among spaces create dynamic interior spaces which provide visual continuity and flowing movement through. Framing outdoor views and projection of windows frames create a kind of continuity between inside and outside while it provide privacy for residences. Play of solid and void through interior spaces not only enhances the 3rd dimensional quality of space but also creates an amazing play of shadow and light through spaces and induces the sense of suspension. Also, the game between shadow and light give depth to the exterior volumes and emphasizes on dynamic characteristic of the building.

Table 39: Observation abstraction of Dolatshahi House

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Stone</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Natural material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic form which is more perceivable for observer</li> <li>Slippage of boxes on each other, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Compatible with mountainous environment surrounded</li> <li>Makin dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Back and forth movement of volumes likewise traditional mountainous cities</li> <li>Legible facade, Different types of openings and forms which reflects interior space organization</li> </ul>	<ul style="list-style-type: none"> <li>Back and forth movement of volumes likewise traditional mountainous cities</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, , fluid spaces</li> <li>3dimensional quality of spaces</li> <li>Connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, low-height walls, integration of furniture with walls and roof</li> <li>Visual continuity among spaces through voids, and bridges, emphasize on vertical axes (staircases, voids)</li> <li>Projection of windows frames and backward settlement of glass parts, framing outside views, Continuation of landscape towards interior spaces, visual continuity</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

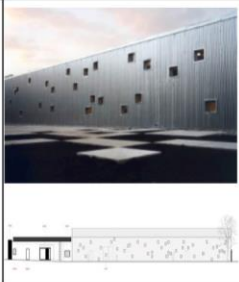
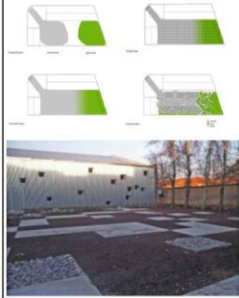
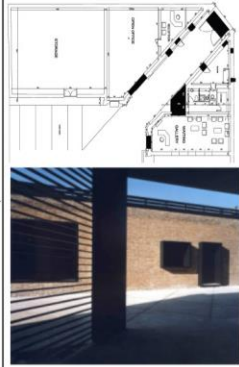



### Furniture Gallery:

This building is the result of rehabilitation of an old cotton warehouse with over 50 years oldness to a furniture show room in Tehran. The simple cubic form of the building has been preserved with a diagonal entrance corridor which leads people to the central open space reminding traditional central courtyards. Segregated frames of the openings create a dialogue with observer and narrates the story of inside while provide dynamic surfaces. Although it is an introverted building it is tried to make connection with central open space located in between the solid volume of the building. It is also tried to revive the memory of interior spaces of the old building by employing light cylinders penetrate into dark interior spaces.

Play of light create dynamic interior spaces which differs during daytime as slanting light cylinders moving towards interior surfaces. Also, randomly located openings on façade generates a dynamic façade at night when just some light spots covered the whole building can be seen rather than the solid volume of the building. It is also tried to continue these triangular light patterns towards landscape as a checkered horizontal surface which moderates building's heavy settlement on the ground through this idea of continuity.

Table 40: Observation abstraction of Furniture Gallery




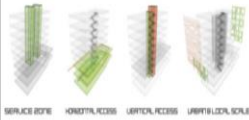



Concept of lightness		Authenticity			Images
		Originality		Relation with past	
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Combination of load-bearing walls and steel roof terraces and columns</li> <li>Brick, concrete and steel, corrugated metal sheets</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>A cubic form as it was before which is more understandable for observer</li> <li>Segregated frames of openings from the main body of building, dynamic façade through the openings located randomly</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of façade patterns on the ground, slanting light patterns which connect the building with ground</li> <li>Legible facade, Framed openings which reflects interior space organizations</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Flexible, dynamic fluid spaces</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Open plan idea, public-private zonings, hierarchy of spaces, passing through the entrance corridor the central open space appears</li> <li>Framing outdoor spaces and create visual and physical continuation while provide privacy through backward settlement of windows in comparison with projected frames, central open space</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to sunlight movement because of angular or projected frames of openings, slanting light cylinders pours to the spaces,</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Mottahari Office Building:

This is an office building located in Tehran surrounded with two other blocks on both sides. It is tried to be a neutral feature not to add another heterogeneous unit among others but make connection among them. The transparent façade of the building has covered with linear steel frames with ruptures in some parts which reflect interior space organization. The legible façade of the building tried to make connection with city while it provides privacy for residences via the second skin of the façade. Horizontal steel lines which have been ruptured in some parts on one façade and various types of openings on the other one generate dynamic façades as well.

The lightweight steel volume has been located on stone covered ground level part with natural material for making connection with ground and moderates its settlement. Hierarchical space organizations and public-private zonings in addition to open plan idea generate dynamic and flexible interior spaces which provide fluid movement for observer. The building provides visual continuity between inside and outside via the transparent surface of the façade while it keeps privacy through second skin covered the first one. Lines of light which has been enlarged in some parts create a dynamic façade different from what can be seen during daytime. Light patterns penetrates into interior spaces not only create dynamic and changeable spaces along with sunlight movement but also generate continuous surfaces.

Table 41: Observation abstraction of Mottahari Office Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Transparency, lightweight</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>A cubic form which is more understandable for observer</li> <li>Variety of openings, horizontal steel frames covered the transparent façade, fractured second skin of façade</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Natural material covering ground floor façade</li> <li>Legible façade, Different type of openings, folded double surface of the façade which reflects interior space organizations and make dialogue with city</li> <li>Calm and neutral settlement of the building which doesn't add another heterogeneous feature to the city</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamicity, flexibility, fluidity</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Open plan idea, hierarchy of spaces, public-private zonings, space organization around the central core</li> <li>Transparent glass façade, continuation of ground level façade's materials towards landscape and exterior walls of the courtyard</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas.</li> </ul>	 
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Creating different patterns and changes the interior spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on back and forth movements of exterior walls</li> </ul>	

Oushan House:

This residential building has been located in an open area in Oushan region in Tehran. According to the mountainous area surrounded the main idea of the building comes from the combination of pure cubic volumes likewise mountainous traditional cities while building volumes have been organized around a central open space which reminds traditional central courtyards. Elevation of some parts of the building from the ground and settlement of others on a platform not only generate a gentle settlement but also make connection among different parts of the site.

Play of solid and void which creates in between spaces and dynamicity induces the sense of lightness. Introversion of the building through its spatial organization around a central open space not only provides privacy for residences but also connect the building with surroundings. Cantilevered surfaces which avoid direct sun penetration to spaces and central open space generates a building compatible with climatic issues. Public-private zonings and hierarchy of spaces in addition to low-height walls and integration of furniture with walls and roof create dynamic and fluid interior spaces. Also, light has been used for lightening heaviness of the roof where it settled on walls and makes interior spaces more dynamic through the play of shadow and light among surfaces. Using natural materials such as timber, brick and stone through façade and interior spaces which continues towards landscape and exterior walls integrate the whole volume of the building with each other and also surroundings.




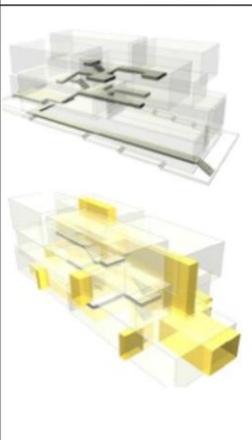

Table 42: Observation abstraction of Oushan House

Concept of lightness	Authenticity				
	Originality		Relation with past	Images	
	Characteristic	How it has been achieved			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Stone</li> </ul>	<ul style="list-style-type: none"> <li>Natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Employing traditional ideas</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic form which is more perceivable for observer</li> <li>Combining introverted traditional buildings and their central courtyards with extroverted buildings of Iranian gardens</li> <li>Back and forth movement of volumes and slippage of boxes on each other, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground, platform</li> <li>Considering slope of the site which fractured the roofs likewise mountainous traditional cities</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, fluid spaces</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, low-height walls, integration of furniture with walls and roof</li> <li>Central open space (introversion), Central open space, visual continuity through hierarchy of spaces, using natural materials, Provide privacy while it keeps connection with surroundings, In between spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> <li>Lightening heaviness of the roof where it settled on walls</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> <li>Light penetration where walls reach the roof</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> <li>In Iranian architecture settlement of the roof on the walls has been lightened by row of openings underneath</li> </ul>	

### Resitan Research Center:

This building is a research center located in an open area in Pardis Technology Park. Steel structure other building has been covered with stone frames embrace brick surfaces. Pure cubic forms slide on each other in addition to play of solid and void create a dynamic combination. Each volume consists different function through which a legible composition appears which tries to make relation with city and observer as well. Light penetrates into spaces through detachments of volumes which lightens cubes attachments. Cantilevered volumes induce the sense of suspension especially when play of shadow and light on their surfaces give depth to them. It is tried to make connection with surroundings by framing outdoor vistas and continuation of building's materials towards landscape. Also integration of walls with roof and floor generates a kind of continuity through folded surfaces rose from the ground. Projected windows frames provide privacy for residences while keep connection between inside and outside. Hierarchical space organization and public-private zoning in addition to low-height walls with mysterious light penetration into spaces generates dynamic spaces with fluid movement through. Light patterns penetrates through variety of openings hidden in between volumes modifies the space in accordance to sunlight movements while at night it creates an amazing play of light lines move through the building.

Table 43: Observation abstraction of Resitan Research Center


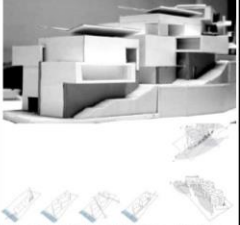

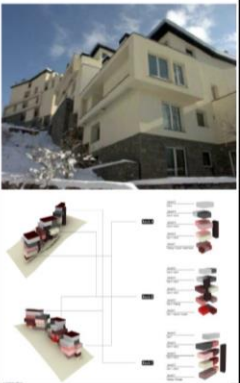

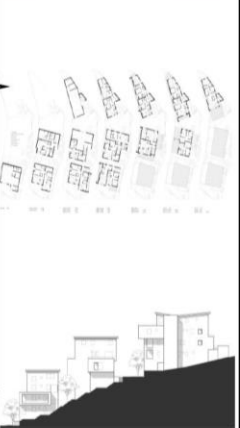

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Fire brick, white Travertine</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple cubic forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Pure cubic forms are more understandable for observer</li> <li>Slippage of boxes on each other, play of solid and voids, play of open and close, different types of openings, cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Making dialogue with city</li> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Legible forms, Back and forth movement of the cubes and variety of openings reflects interior space organization</li> <li>Continuity of walls through the ground, integration of roofs, walls and floor within a frame-shape covered the main volumes</li> </ul>	<ul style="list-style-type: none"> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Making connection with outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchical space organization, public-private zoning, low-height walls</li> <li>Transparency while glass surfaces goes in depth to provide privacy, framing views of outside from inside, continuity of facades materials towards landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Light patterns change the space during daytime, different light patterns according to variety of openings, play of shadow and light, highlight the main access</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	



### Villadasht Housing Complex:

This residential complex has been located in Meigun region near Tehran on a mountainous area. This complex has been divided into three detached units in order to break the linear solid volume of the building. This segregation creates a kind of connection between two sides of the site not to settle heavily as an obstacle. Also, staircases which go along with buildings towards the mountains enhance this idea of continuity. Steel frame structure of the building has combined with spatial concept of lightness while infilling materials and stone are not intrinsically light. Combination of pure cubic forms which flows through the site and slide on each other, create a dynamic complex which reminds traditional mountainous cities. The whole volume of upper levels has been settled on stone covered ground floor in order to be compatible with ground materials for a gentle settlement. These cantilevered volumes which move all along the site in harmony with topography of the land with different orientations according to climatic issues induces the sense of lightness. These modular units can be extended through the site as well. Visual continuity through openings which framed natural environment surrounded and their rotation according to outdoor vistas make connection between indoor and outdoor spaces. Different type of openings in addition to projected volumes which reflects interior space organization is an attempt for making connection with surroundings and observers. Public-private zonings and hierarchy of spaces in addition to low-height walls, integration of furniture with walls and roof and using roofs of lower levels as terraces for upper ones induces the sense of dynamicity and fluidity through spaces. Play of shadow and light among cantilevered surfaces and voids increase the dynamicity of interior spaces and induces the sense of suspension while it give depth to back and forth settled volumes and surfaces of the façade.

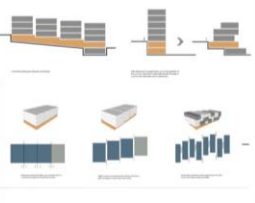
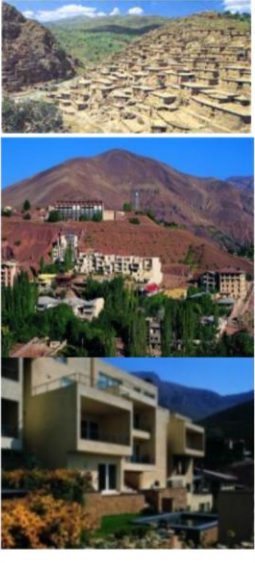


Table 44: Observation abstraction of Villadasht Housing Complex

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Stone, Infilling material</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic forms which are more perceivable for observer</li> <li>Slippage of boxes on each other, play of solid and void, different types of openings, Using modular patterns which can be extended through the site</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristic of Iranian architecture</li> <li>In traditional architecture the arrangement of the solid and void results in dynamic context</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Compatible with climatic issues</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using natural materials for ground floor façade</li> <li>Different types of openings and forms which reflects interior space organization</li> <li>Legible façade ,Building's detachment for air circulation, building's orientation</li> <li>Building's detachments provide visual and physical continuity, staircases which goes along with buildings towards the mountain, Likewise traditional mountainous cities this complex moves in harmony with the slop of the site</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture the building, itself has been a respond to the environmental conditions</li> <li>Movement from multiplicity into unity as the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, fluid spaces</li> <li>3dimensional quality of spaces</li> <li>Connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, low-height walls, integration of furniture with walls and roof, using roofs of lower levels as terraces for upper ones</li> <li>Visual continuity among spaces through voids, and bridges, emphasize on vertical axes (staircases, voids)</li> <li>framing outside views, Visual continuity through openings which framed natural environment surrounded, buildings orientation according to view and sunlight</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture of humid areas, extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces</li> </ul>	 
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Villashahr Residential Complex:

This residential complex has been located in Meygoun region in Tehran in an open land. Three pieces of lands have been split in order to create a kind of connection and continuity between two sides of the site and provides air circulation as well. Staircases rose along with building through these split parts goes up in harmony with mountainous area surrounded and provide visual connection among them. Buildings move gently on the site and flow compatible with slope of the site which reminds traditional mountainous cities. Play of solid and void in addition to using lower floor roofs as terrace for upper ones make connection between inside and outside. The idea of back and forth movement of volumes which create various terraces and vistas also enhance social life while preserve people's privacy. Also projection of windows frames provide privacy while keep connection with outside for residences. Different type of openings in addition to projected volumes which reflects interior space organization is an attempt for making connection with surroundings and observers. Public-private zonings and hierarchy of spaces in addition to low-height walls, integration of furniture with walls and roof and using roofs of lower levels as terraces for upper ones induces the sense of dynamicity and fluidity through spaces. it is also tried to enhance the 3rd dimension of space by creating visual continuity among spaces through voids, and bridges and emphasize on vertical axes. Play of shadow and light among cantilevered surfaces and voids increase the dynamicity of interior spaces and induces the sense of suspension while it give depth to back and forth settled volumes and surfaces of the façade.







Table 45: Observation abstraction of Villashahr Residential Complex

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Stone, concrete</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic forms which are more perceivable for observer</li> <li>Slippage of boxes on each other, play of solid and void, different types of openings ,Using modular patterns which can be extended through the site</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid volumes beside voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> <li>Making dialogue with city</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Using natural materials for ground floor façade</li> <li>Likewise traditional mountainous cities this complex moves in harmony with the slop of the site, Building's detachments which provide visual and physical continuity,</li> <li>Legible façade, Different types of openings and forms which reflects interior space organization</li> <li>Building's detachment for air circulation, building's orientation</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by platforms...</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic they all have been integrated.</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, fluid spaces</li> <li>3dimensional quality of spaces</li> <li>Connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, low-height walls, integration of furniture with walls and roof, using roofs of lower levels as terraces for upper ones</li> <li>Visual continuity among spaces through voids, and bridges, emphasize on vertical axes (staircases, voids)</li> <li>Projection of windows frames and backward settlement of glass parts, framing outside views, Visual continuity through openings which framed natural environment surrounded, buildings</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In traditional architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture ✨ continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Nahid Office Building:

This office building has been located in Tehran surrounded with two other apartment blocks on both sides. It is tried to have a building which settled as calm as possible not to add another heterogeneous unit to the chaotic context of the city but to make connection among them. The lightweight glass covered building with steel structure has been settled on stone covered ground level in order to make connection with ground as a natural material. Also continuation of this stone material towards inside and also through exterior walls of courtyard integrates the solid volume of the building with surroundings. The transparent façade of the building has been covered with second translucent skin with patterns of traditional tribal men's cloths. Since, these people can wear their cloths in both hot and cold climatic conditions and this building needs to be multifunctional and flexible to be used as both residential and office building the idea of second translucent surface has been inspired from those cloths. Therefore, the transparent façade create connection between inside and outside while it preserves people's privacy via the second skin. This translucent façade also gives dynamic characteristic to the whole building with the play of open and close or transparent and translucent especially at night. Open plan idea in addition to hierarchy and public-private zonings of interior spaces generates dynamic spaces which provide flowing movement through. Visual connection among spaces through voids, bridges and cantilevered surfaces and also emphasis on vertical movements enhanced the third dimension of space and increase dynamicity among them. Play of shadow and light among these flying surfaces induces the sense of suspension and dynamicity. Unlike simple appearance of the building indoor spaces are more dynamic.

Table 46: Observation abstraction of Nahid Office Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Transparent, lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> <li>Traditional coverage</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic form which is more perceivable for observer</li> <li>Double glass skin of the façade covered with translucent patterns</li> <li>The patterns of the second skin of the building comes from traditional cloths of tribal men of Bakhtiari</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> <li>Using traditional patterns for creating double skin façade of the building</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Natural material covering ground floor façade</li> <li>Calm and neutral settlement of the building which doesn't add another heterogeneous feature to the city</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic they all have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Inside-outside connection</li> <li>3dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Open plan idea, hierarchy of spaces, public-private zonings</li> <li>Providing privacy while keeps connection with surroundings, Transparent glass façade, continuation of ground level façade's materials towards landscape and exterior walls of the courtyard</li> <li>Visual connection among spaces through voids, bridges and cantilevered surfaces, emphasis on vertical movements (lightweight staircase, voids)</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✨</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among surfaces, creating different patterns and changing the space</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Tehran Business Hotel:

This building is a hotel complex located on hills in Tehran in an open land. It is tried to design a building as light as possible to let the city pass through. Therefore, lightweight steel structure of building in addition to spatial concept of lightness creates a building as light as possible. Play of solid and voids and slippage of pure cubic volumes on each other create a dynamic composition which rose from the ground. Using modular patterns which can be extended through the site makes it more flexible. Space organization around a central core reminds traditional central spaces while play of solid and voids also inspired from traditional Islamic tile patterns. The whole perforated residential volumes have been settled on the transparent ground level as the commercial part. Transparent lower volumes in addition to staircases which continue towards outdoor spaces not only create a kind of visual connection between inside and outside but also connect them. Moreover, roof and terrace gardens make relation between nature and building or voids and solid volumes. It seems that space flows everywhere and there are no dead-end spaces. Cantilevered, perforated boxes induce the sense of suspension while the whole volume of the building has been settled gently on a platform. Public-private zonings and hierarchy of spaces in addition to low-height walls, integration of furniture with walls and roof and using roofs of lower levels as terraces for upper ones generate dynamic, flexible and fluid interior spaces which has been connected to surroundings as well. It is tried to enhance the third dimension of space through the voids among them, bridges and lightweight staircases which emphasize on vertical movements through spaces. An amazing play of shadow and light among cantilevered surfaces and voids can be seen which also changes spaces during the day. Also light spots covered the whole building during night time are more apparent than the solid volume like a suspended honeycomb made out of light.

Table 47: Observation abstraction of Tehran Business Hotel

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Concrete, glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more perceivable for observer</li> <li>Play of solid and voids, play of open and close, slippage of boxes on each other</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Makin dialogue with city</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Settled on platform, transparent ground floor</li> <li>Let city pass through, Legible façade, Back and forth movement of volumes which reflects interior space organizations, play of open and close</li> <li>Continuity of green areas surrounded through the building as roof or terrace gardens</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamic, fluid spaces</li> <li>3dimensional quality of spaces</li> <li>Connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, low-height walls, integration of furniture with walls and roof, using roofs of lower levels as terraces for upper ones</li> <li>Visual continuity among spaces through voids, and bridges, emphasize on vertical axes (staircases, voids)</li> <li>Back and forth movement of volumes, framing outside views, Spatial organization around a central core, Transparency, roof and terrace gardens, continuity of staircases towards outside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives ✨</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	



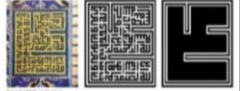








### Eight Gardens of Mashhad:

This is a residential, commercial complex with opportunities for cultural, educational, health and religious promenades located in Mashhad one of the religious cities of Iran contains the shrine of eighth Shiites Imam. Being a large complex play with solid and voids and making connection between inside and outside become an important issue for lightening the huge building. It is also tried to use pure cubic forms which are more understandable for observer. The idea of open and close in this project comes from Islamic tile ornamentations which appear in 3dimensional.

Also, spatial organizations around central open spaces remind traditional courtyards and desert cities' patterns. Elevation of the building from the ground and transparent ground level generate a gentle settlement through the site. It seems that perforated volumes flows through the site and coils around to protect open spaces. This dynamic forms and open spaces in between make a dialogue with city and let it pass through. Transparency, in addition to roof and terrace gardens as in between spaces makes connection between inside and outside. Also, this continuity of green areas surrounded through the building as roof or terrace gardens make relation with nature all over the project. Back and forth movement of volumes which makes it possible to use roofs of lower levels as terraces for upper ones, framing outside views, Spatial organization around central open spaces enhance this connection between inside and outside. Play of shadow and light among cantilevered surfaces and voids, generates dynamic and changeable spaces during the day. Also, it seems that light spots covered the whole complex at night. What can be seen at night are light spots defines the whole complex rather than the solid volumes.


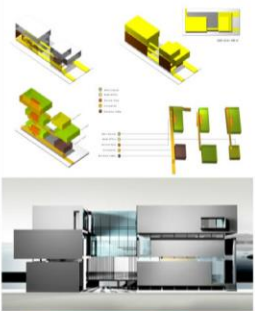



Table 48: Observation abstraction of Eight Gardens of Mashhad

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Concrete, glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> <li>Employing traditional patterns</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more perceivable for observer</li> <li>Play of solid and voids, play of open and close, slippage of boxes on each other, Using modular patterns which can be extended through the site</li> <li>Central open spaces and tile ornamentals which are familiar for the observer</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> <li>Usage of traditional patterns and giving 3dimensional characteristic to them</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Makin dialogue with city</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Settled on platform, transparent ground floor, elevation of the building</li> <li>Let city pass through, Legible façade (Back and forth movement of volumes which reflects interior space organizations, play of open and close)</li> <li>Continuity of green areas surrounded through the building as roof or terrace gardens</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamic, fluid spaces</li> <li>3dimensional quality of spaces</li> <li>Connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchy of spaces, using roofs of lower levels as terraces for upper ones</li> <li>Visual continuity among spaces through voids, and bridges, emphasize on vertical axes (staircases, voids)</li> <li>Back and forth movement of volumes, framing outside views, Spatial organization around central open spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	  
	Light	<ul style="list-style-type: none"> <li>Changeable interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light among cantilevered surfaces and voids, changeable spaces during the day</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Ferroalloy Center:

This building has been located in Pardis Technology Park near Tehran. Concept of lightness in this project not only appears through using steel frame structure as a lightweight structure but also can be seen through spatial means. Using pure cubic forms which are more understandable for observer create a dynamic composition by their make and forth movement on each other. Idea of sliding volume also generates in between spaces in order to have hierarchical space organization. Central open space which reminds traditional Iranian courtyards provides connection between inside and outside. Designing different types of openings, play of solid and void and cantilevered volumes generates a dynamic composition. Elevation of the building in the middle provides continuity between both sides of the site not to block the view and connect it with nature as well. Variety of volumes consist of different functions create a legible form and façade which makes connection with city. It is also tried to change the material of ground level façade to more natural ones in order to connect it with ground and provide a gentle settlement for the building. Hierarchical space organization, public-private zoning and interior low-height walls create dynamic interior spaces which also provide a fluid movement. Voids designed among spaces and bridges connecting them not only make interior spaces more dynamic but also enhance 3rd dimension quality of space and provides visual connection among them. Various types of openings not only frame the outdoor vistas but also provide privacy through projected frames towards outside. Light patterns penetrating the space through variety of openings change the space during daytime while play of shadow and light among cantilevered volumes and voids induces the sense of suspension. Also, play of shadow and light on dynamic surfaces of the building give depth to them.

Table 49: Observation abstraction of Ferroalloy Center




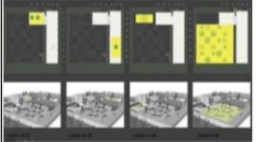

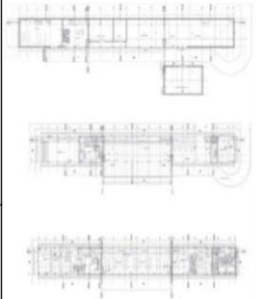
Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Stone, glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple cubic forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Pure forms are more understandable for observer</li> <li>Slippage of boxes on each other, play of solid and voids, play of open and close, different types of openings, cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Relation with nature and surroundings</li> <li>Making dialogue with city</li> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Central open space, connecting both sides of the site by elevating the building</li> <li>Legible façade, Back and forth movement of the cubes and variety of openings reflects interior space organization</li> <li>Using more natural materials for ground floor level where it settled on the ground</li> </ul>	<ul style="list-style-type: none"> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Inside outside connection</li> <li>3dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchical space organization, public-private zoning, low-height walls</li> <li>Transparency while glass surfaces goes in depth to provide privacy, framing views of outside from inside, continuity of facades materials towards landscape</li> <li>Emphasize on vertical movements, Lightweight staircases, voids, Visual continuity among spaces via voids, bridges, cantilevered surfaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Light patterns change the space during daytime, different light patterns according to variety of openings, play of shadow and light</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Arian Sat Co.:

This building has been located in Pardis Technology Park near Tehran in an open area. The main structural system of the building is steel frame. A simple longitude cube formed the whole building through which play of solid and void and rhythm of open and close or transparent and translucent induce the sense of lightness. Perforations throughout this linear volume flowing through the site make it lighter by generating in between spaces.

The whole building's settlement on a platform as a mediator between earth and the project not only lightens this settlement but also creates a flowing transition between inside and outside through the ramps wrapped the building. These ramps and staircases as main circulation elements in addition to play of solid and voids generate a dynamic volume. Elevation of the building in the middle makes connection between both sides of the site and provide visual continuity among them. Transparent surfaces and circulation elements as mediators between inside and outside create a kind of connection between inside and outside. Also, hierarchical space organizations and public-private zonings provide a flowing movement through spaces.

Table 50: Observation abstraction of Arian Sat Co.


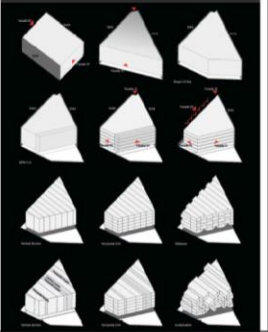



Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel, infilling materials</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure and materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Using pure cubic form which is more perceivable for observers</li> <li>Play of open and close (transparency and translucency), play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Inside-outside relation</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground in some part, gentle settlement on a platform which gradually connects the building with green area through ramps and staircases</li> <li>Transparency, elevation of the building which connects both sides of the site, continuous surfaces of ramps which connect ground with roof and different levels</li> <li>Continuation of garden of dishes through the building as terrace or roof gardens, compatible with topography through playing with levels</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamicity and fluidity</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchical space organization, public-private zonings, in between spaces</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, continuation of the inside ramps through landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light				

### Niavaran Residential Building:

This residential building has been located in Tehran surrounded with other units on both sides. The whole building consists of several longitude boxes sliding on each other. Slippage of these volumes on each other which create an amazing play between solids and voids generates a dynamic combination. These cantilevered volumes which reflect interior space organizations make the building legible for the observer in order to make a dialogue with city.

The back and forth movement of volumes compatible with mountainous areas surrounded also reminds traditional Iranian cities. The whole perforated volume of the building which seems as light as a sponge has been elevated in order to provide a gentle settlement. Play of shadow and light on these cantilevered surfaces give depth to them and make them more 3dimensional. Public-private zonings and hierarchical space organization induces the sense of dynamicity and fluidity among them. Framing outdoor vistas according to opening's rotation make a kind of connection with outside. Changeable spaces according to sunlight movement passing through angular openings with various sizes and locations enhance the idea of dynamicity. It seems that the idea of dynamicity becomes the main indicator of lightness in this project which has been totally covered with bricks.

Table 51: Observation abstraction of Niavaran Residential Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Brick and timber</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Combination of simple forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Slippage of longitude boxes on each other</li> <li>Sliding volumes on each other, play of solid and void, angular surfaces, variety of openings, cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground</li> <li>Legible façade reflecting interior space organization</li> <li>Likewise traditional mountainous cities in which roof of lower levels become a terrace for upper ones</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization</li> <li>Play of solid and void, in between spaces, framing outdoor views, continuation of inside spaces towards outside volumes</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to sunlight movement passing through angular openings with various sizes and locations</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	



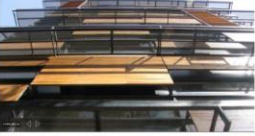


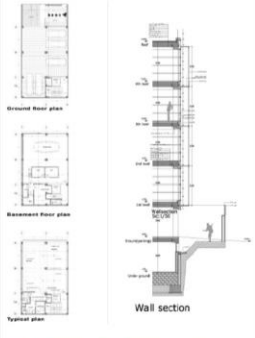




### Vozara Office Building:

This building has been located in Tehran surrounded with two other blocks on both sides. The concrete frame structure of the building has been covered with glass and timber. Play of timber surfaces on building's façade creates a kind of dynamicity which also makes a dialogue with city. The play of transparent and translucent framed outdoor spaces in order to make connection with outside while preserve people's privacy via the second skin covered the façade.

Moreover, elevation of the building provides a gentle settlement. Public private zonings and hierarchical space organizations in addition to open plan idea create dynamic, flexible and fluid interior spaces. Changeable spaces according to sunlight movement passing through cantilevered volumes induce the sense of dynamicity as well. Play of shadow and light on back and forth settled cubes of the façade give depth to them for the sake of dynamicity. The building rose from the ground among chaotic context of the city with a neutral characteristic which makes connection among others not to add another obstacle with any relation with surroundings.

Table 52: Observation abstraction of Vozara Office Building

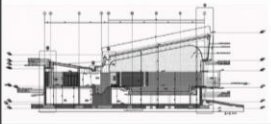


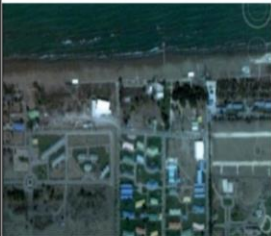
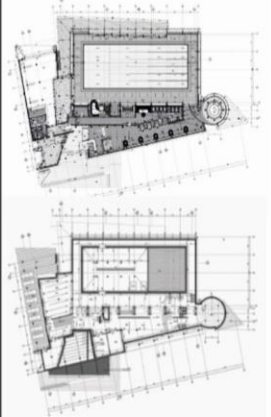

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Glass and steel, timber</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight, transparent and natural materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamic façade</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volume which is more perceivable for observer</li> <li>Play of open and close (transparent and translucent)</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	 
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Integration with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of the building from the ground</li> <li>Legible façade reflecting interior space organization, framing outdoor vistas with openings in different heights</li> <li>Settled as a neutral unit which makes connection among heterogeneous context of the city</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own characteristic from a holistic point of view they all have been integrated.</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamism, fluidity, flexibility</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, open plan idea</li> <li>Transparency, visual connection between inside and outside while provide privacy through second skin of the facade</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	 
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to sunlight movement passing through second skin of the facade</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Khazarabad Pool Recreation Complex:

This complex has been located in an open area in front of Caspian Sea in North of Iran. Despite of its concrete frame structure and sandwich panels and cement as the main materials formed the building it doesn't appear as a solid and massive existence in the site. Two main cubes rotated on each other via the axis of a cylindrical volume located on their intersection part create a legible building which makes dialogue with its surroundings. Building's settlement on a platform as a mediator between earth and the whole volume generates a gentle landing for a building modestly crawls in front of the sea. Also, backward settlement of ground level and its landing on a series of columns moderates this connection.

Culmination of the building's roof towards the sea not only creates a building compatible with humid climate of the region but also makes it more dynamic. This rotation of volumes makes it possible to frame outside vistas and enhance inside-outside connections. Public-private zonings and hierarchical space organization provide dynamic and fluid interior spaces without any functional interruptions. Angular openings and projected window frames not only make connection between indoor spaces and outdoor environment but also provide a kind of privacy for people. Also, it has been resulted in creating dynamic interior spaces. Play of solid and voids resulted in forming in between spaces also create a light spatial transition.

Table 53: Observation abstraction of Khazarabad Pool Recreation Complex



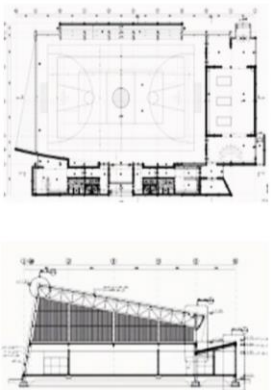

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Concrete, sandwich panels, cement, timber</li> </ul>	<ul style="list-style-type: none"> <li>Light and resistant materials compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Rotation of two cubes which have been connected via a cylinder</li> <li>Two boxes rotated on each other based on the axis of a cylinder, play of solid and void, sloppy roof</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with surroundings</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Settling on a platform as a mediator between building and the ground, partial elevation of the building</li> <li>Building's orientation towards the sea, legible façade which reflects interior space organization, elevation of the roof and more perforations for lightening the building in front of the sea</li> <li>Gable roofs, angular openings with shading elements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Inside-outside relation</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization,</li> <li>Framing outside views, in between spaces, transparency while provide privacy, in between spaces,</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces during daytime according to different light patterns, angular openings with projected window frames which fractured sunlight</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Khazarabad Sport Hall:

This building has been located in an open area in front of Caspian Sea in North of Iran. Despite of its concrete frame structure and solid materials it seems that concept of lightness appears through other means. Two cubic volumes with different proportions combined create a legible composition one of which seems to contain main spaces and the other allocated for the secondary ones.

This idea of legibility in addition to its orientation towards sea and framing outdoor vistas is an attempt for making dialogue with surroundings. Play of solid and voids between these two volumes not only induce the sense of dynamicity but also creates in between spaces for a flowing spatial transition. The whole building has been settled on a platform as a mediator between earth and the volume for a gentle landing. Sloppy roof of the building not only makes it compatible with climatic issues but also makes it more dynamic. Public-private zonings and hierarchical space organization which avoid functional interruptions generates a flowing spatial transition. Large openings which frame outside vistas creates connection between inside and outside while provide privacy through in between spaces and projected frame of openings. Angular openings with projected frames which acts as shadings not only avoid direct sunlight penetration through spaces but also change interior spaces during daytime.

Table 54: Observation abstraction of Khazarabad Sport Hall



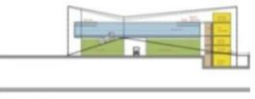
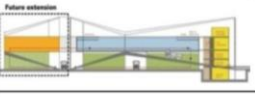
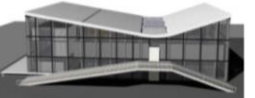
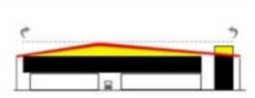
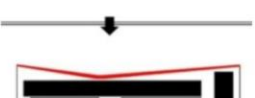
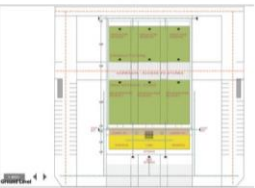
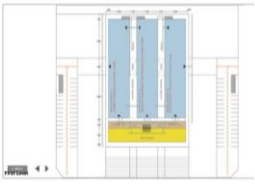


Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Concrete, sandwich panels, cement, timber</li> </ul>	<ul style="list-style-type: none"> <li>Light and resistant materials compatible with climatic issues</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>combination of two cubes which contains main space and secondary ones</li> <li>Two boxes slides and combined with each other, play of solid and void, sloppy roof</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with surroundings</li> <li>Compatible with climatic issues</li> </ul>	<ul style="list-style-type: none"> <li>Settling on a platform as a mediator between building and the ground</li> <li>Building's orientation towards the sea, legible façade which reflects interior space organization</li> <li>Gable roofs, angular openings with shading elements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture they didn't construct the building and later trying to solve climatic issues but the building, itself has been a respond to the environmental conditions by building orientation, its relation with others...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Inside-outside relation</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization</li> <li>Framing outside views, in between spaces, transparency while provide privacy, in between spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✦</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✦</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces during daytime according to different light patterns, angular openings with projected window frames which fractured sunlight</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Moj Nikan Factory:

This building has been located in Qazvin in Iran in an open area. Although, steel frame system and glass are the main structure and material forming the project concept of lightness has been achieved through other means as well. Simple cubic form of the building compressed in the middle generates a dynamic volume with sloppy roof. Idea of core and crust seems to be the main indicator of lightness in this project. The opaque volume contains main spaces has been wrapped with a series of circulation loops which all have been covered with a glass surface. These slanting surfaces of vertical circulation act as mediators between inside and outside which continues towards outdoor spaces and connect them. It seems that the main body of the building has been located in an aquarium connected with surroundings through ramps and staircases. The modular structural system and form of the building make it possible to be extended through the site. Building has been gently settled on a platform which reach the ground via the ramps extended from inside.

Public-private zonings, hierarchical space organization in addition to suspended core spaces of the building sliding on each other create dynamic interior spaces which provide flowing movements through. Also, visual continuity among spaces through the voids and lightweight vertical circulation elements enhance the 3rd dimensional characteristic of spaces. Play of shadow and light on cantilevered surfaces which integrates surfaces of walls, roofs and floor resulted in dynamic interior spaces. Also the central core of the building seems to be suspended among slanting surfaces of circulation elements which all have been covered with light surfaces.

Table 55: Observation abstraction of Moj Nikan Factory

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure Material	<ul style="list-style-type: none"> <li>Steel frame structure, tensile one-way grid shell</li> <li>Glass and steel</li> <li>Modular structure</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Lightweight structure</li> <li>Modules of structure and space organization makes it possible to be extended</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple form</li> <li>Dynamicity</li> <li>Idea of core and crust</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic form which has been compressed in the middle</li> <li>Sloppy roof, slanting surfaces wrapped the volume, continuous surfaces, play of solid and void (central open space)</li> <li>Suspended opaque core in center and transparent crust cover it</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of solid and voids and open spaces results in dynamic context.</li> <li>This idea reminds traditional Iranian gardens which contains a central building called Kooshk surrounded with green areas</li> </ul>	  
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Building settled on a platform and ramps rose from the ground, central open space</li> <li>Central open space which let city pass through, connecting both sides of the site through ramps as circulation elements</li> <li>Continuous surfaces come up from the ground and connect different levels, curved surfaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	  
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>3dimensional quality of space</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, suspended core spaces of the building, sliding core spaces on each other</li> <li>Visual continuity through voids, lightweight ramps and staircases which enhance vertical movements</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, continuation of the inside ramps through landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	 
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls,</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	 




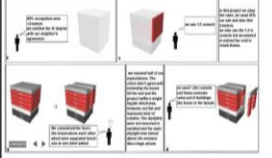
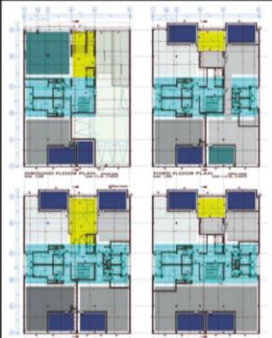



### Nikan Office Building:

This building has been located in Tehran surrounded with two other blocks on both sides. Therefore, it is tried to consider the project as a volume not just a box covered with an ornamented façade. The steel frame structure of the building covered with glass and Aluminum composite materials has been gently landed on backward settled ground level. Back and forth movement of volumes on the façade reflects interior space organizations while give a dynamic characteristic to the outward appearance of the building.

This play between solid and voids on the façade and volumetric approach resulted in a legible façade which creates a dialogue with city. Public private zonings and hierarchical space organizations in addition to open plan idea create dynamic, flexible and fluid interior spaces. Changeable spaces according to sunlight movement passing through cantilevered volumes induce the sense of dynamicity as well. Play of shadow and light on back and forth settled cubes of the façade give depth to them for the sake of dynamicity.


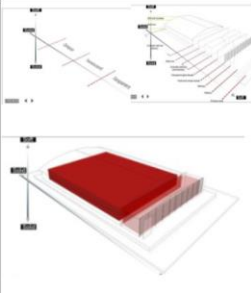
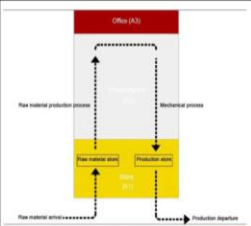



Table 56: Observation abstraction of Nikan Office Building

Concept of lightness		Authenticity			Images
		Originality		Relation with past	
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Aluminum composite material, glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Reflective, transparent, lightweight materials</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Pure cubic form which is more conceivable for observer</li> <li>Cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Making dialogue with city</li> <li>Gentle settlement</li> </ul>	<ul style="list-style-type: none"> <li>Legible façade reflecting interior space organization, transparency</li> <li>Transparent and backward settled ground level</li> </ul>	<ul style="list-style-type: none"> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity, flexibility</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, open plan idea</li> <li>Transparency, visual connection between inside and outside while provide privacy</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas ✨</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to sunlight movement passing through cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Nipco Factory:

This building has been located in an open land in Eshtehard Industrial city of Iran. A simple cubic volume with steel frame structure covered with glass surfaces formed the main body of the building which makes its appearance as light as possible. Play of open and close or transparent and translucent throughout the façade in addition to the curvilinear roof of the building induces the sense of lightness. Building's settlement on a platform as a mediator between earth and the project creates a gentle landing. Legible façade of the building which reflects interior space organization is an attempt for making dialogue with surroundings. Also transparent surfaces covered the building generates a kind of connection between inside and outside while it provides privacy through a partial second skin. Public-private zonings in addition to hierarchical space organization make interior spaces more fluid and dynamic as well. Play of shadow and light on cantilevered interior surfaces makes them more dynamic while light patterns through interior surfaces

Table 57: Observation abstraction of Nipco Factory


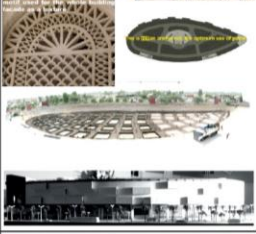

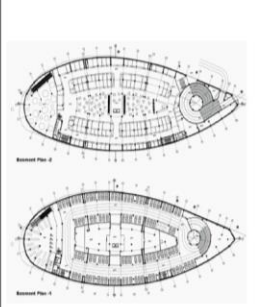

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure, compression one-way frame</li> <li>Glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight, form resistant structure</li> <li>Lightweight and transparent material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volume which is more perceivable for observer</li> <li>Play of open and close (transparency and translucency), curved surface</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using a platform as a mediator between ground and the building</li> <li>Legible façade reflecting interior space organization, transparency while provide privacy via the second skin</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	 
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization,</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, continuation of the inside circulation elements through landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls,</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Pearl of South:

This building has been located in an open area in south part of Iran. The idea of building's form comes from animal's cells with a semi-open space in between and commercial cores are placed like islands in each floor and the negative spaces in between create amorphous and fluid corridors. The crust covered these suspended spaces inspired from traditional Iranian window motifs which have been resulted in an amazing play between solid and voids. the back and forth movements of façade surfaces in addition to its curved form induces dynamicity while these cantilevered volumes reflecting interior space organizations make a dialogue with city.

Backward settlement of the ground level in combination with its transparent characteristic provides a gentle settlement in the site. Public-private zonings and hierarchical space organization induces the sense of dynamicity and fluidity. Visual continuity among interior spaces through the central void and series of vertical circulation elements passing through spaces enhance the 3rd dimension of space. Changeable spaces according to sunlight movement passing through angular openings with various sizes and locations make interior spaces more dynamic. Also, Play of shadow and light on back and forth settled cubes giving depth to them.


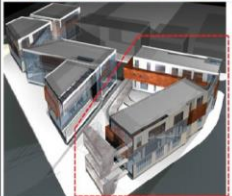
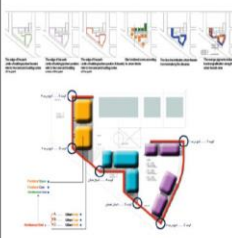


Table 58: Observation abstraction of Pearl of South

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structur	<ul style="list-style-type: none"> <li>Concrete frame structure</li> <li>Reinforced concrete</li> </ul>			
	Form	<ul style="list-style-type: none"> <li>Organic form</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Form of a cell with an emptiness in center</li> <li>Curvilinear volume like a cell, play of solid and void, cantilevered volumes</li> </ul>	<ul style="list-style-type: none"> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>New interpretation of vernacular architecture of the region</li> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Window motifs (play of solid and void), central open spaces which are familiar for the observer</li> <li>Transparent and backward settled ground level</li> <li>Legible façade reflecting interior space organization, transparent ground level which let city pass through</li> <li>Curved form</li> </ul>	<ul style="list-style-type: none"> <li>Using patterns of traditional Iranian architecture</li> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards, using the roofs...</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity</li> <li>Inside-outside connection</li> <li>3dimensional quality of space</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization</li> <li>Play of solid and void, in between spaces, framing outdoor views, continuation of inside spaces towards outside volumes</li> <li>Visual continuity through the central void, lightweight ramps and staircases which enhance vertical movements</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives and vistas</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Changeable spaces according to sunlight movement passing through angular openings with various sizes and locations</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### RD Office Building:

This complex has been located in an open area in Pardis Technology Park near Tehran. Steel frame structure of the building covered with glass surfaces helps creating a lighter project. The simple cubic volumes defining the urban edge of the area have been connected through lightweight and transparent bridges in between. Idea of core and crust can be followed among these combined volumes crawling all over the site. The opaque suspended core containing main spaces has been connected to the transparent crust via slanting surfaces of vertical circulation elements. Visual connection among spaces through the voids and emphasis on vertical circulation elements enhance the 3rd dimensional quality of space. Public-private zonings and hierarchy of spaces in addition to suspended cores sliding on each other generates dynamic interior spaces which provide flowing movement. Play of shadow and light on cantilevered interior surfaces, integrated surfaces of walls, roof and ground through continuous patterns of light on them and controlling light penetration via the second skin facade makes interior spaces more dynamic and make connection between inside and outside while provide privacy as well. The whole building has been settled on a platform as a mediator between earth and the project for lightening the transition between inside and outside. Play of solid and voids and open and close generates in between spaces which not only induce the sense of dynamicity but also has been resulted in legible facades in order to make dialogue with surroundings. Detachment of different volumes connected via bridges makes connection among various parts of the site not to block the view and accessibilities. During night time the building appears as a suspended central volume wrapped with vertical circulation elements culminates gradually and surrounded with a skin of light.

Table 59: Observation abstraction of RD Office Building


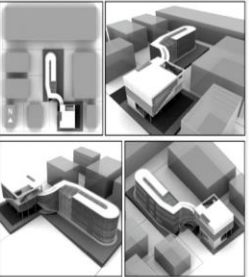

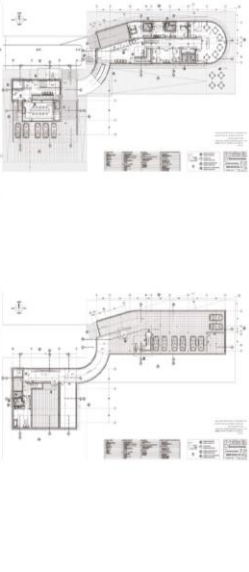

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonics	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Transparent, lightweight material</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure forms</li> <li>Dynamicity</li> <li>Idea of core and crust</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more perceivable for observer</li> <li>Play of solid and void, play of open and close (transparent and translucent)</li> <li>Suspended opaque core in center and semi-transparent crust cover it</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> <li>This idea reminds traditional Iranian gardens which contains a central building called Kooshk surrounded with green areas</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Integration of the building with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using a platform as a mediator between the building and ground</li> <li>Legible façade reflecting interior space organization, defining urban edges, voids in between volumes let the city pass through</li> <li>Detachment of volumes for making connection among two sides of site, transparency</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own they all have been integrated.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>3dimensional quality of space</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, suspended core spaces of the building, sliding core spaces on each other</li> <li>Visual continuity through voids, lightweight ramps and staircases which enhance vertical movements</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, in between spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. ✨</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives ✨</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls, roof and ground through continuous patterns on them, controlling light penetration via second skin</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	



### Sepanta Residential and Office Building:

This project has been located in Pardis technology Park near Tehran. Lightweight and form resistant steel structure of the building covered with glass and aluminum composite surfaces are not the only terms of lightness in this project. Combination of a simple cube with a curvilinear volume crawls through the site generates a legible combination reflecting diverse interior spaces and functions. Idea of core and crust become the dominant indicator of lightness in this project in which the suspended opaque core of the building wrapped with vertical circulation elements has been covered with transparent glass surfaces. These slanting circulation elements in between inside and outside not only generates dynamicity but also make connection between inside and outside. The whole volume of the building has been settled gently on a platform as a mediator between the ground and the project. Detachment of volumes and open spaces among them resulted in visual and physical connection between two sides of the site not to block it but integrate them. Visual connection among spaces through the voids and emphasis on vertical circulation elements enhance the 3rd dimensional quality of space. Public-private zonings and hierarchy of spaces in addition to suspended cores sliding on each other generates dynamic interior spaces which provide flowing movement. Play of shadow and light on cantilevered interior surfaces, integrated surfaces of walls, roof and ground through continuous patterns of light on them and controlling light penetration via the second skin facade makes interior spaces more dynamic and make connection between inside and outside while provide privacy as well. During night time the building appears as a suspended central volume wrapped with vertical circulation elements culminates gradually and surrounded with a skin of light.



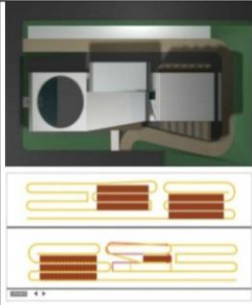
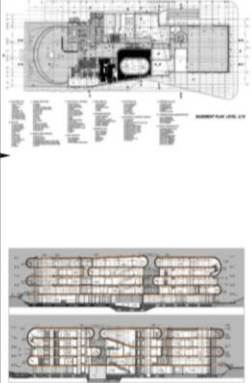

Table 60: Observation abstraction of Sepanta Residential and Office Building

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		Characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel, Aluminum composite material</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight, form resistant structure</li> <li>Lightweight reflective and transparent materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple and organic forms</li> <li>Dynamicity</li> <li>Idea of core and crust</li> </ul>	<ul style="list-style-type: none"> <li>Combination of a cube with curvilinear volume which are more perceivable and in relation with nature</li> <li>Play of open and close (transparent and translucent)</li> <li>Suspended opaque core in center and semi-transparent crust cover it</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> <li>This idea reminds traditional Iranian gardens which contains a central building called Kooshk surrounded with green areas</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> <li>Integration of the building with surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Using a platform as a mediator between the building and ground</li> <li>Legible façade reflecting interior space organization, defining urban edges, voids in between volumes let the city pass through</li> <li>Detachment of volumes for making connection among two sides of site, transparency</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details.</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>3dimensional quality of space</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, suspended core spaces of the building, sliding core spaces on each other</li> <li>Visual continuity through voids, lightweight ramps and staircases which enhance vertical movements</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, in between spaces</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls, roof and ground through continuous patterns on them</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

Asre Daneshafzar Residential and Office Building:

This building has been located in Pardis Technology Park in an open area near Tehran. Combination of two simple cubes with a cylinder formed the main body of the building. Steel frame structure of the building has been covered with Aluminum composite materials and glass as lightweight, reflective and form resistant structure and materials. The main idea of the project as Suspended opaque core in center and semi-transparent crust cover it become an important indicator of the concept of lightness. The whole building has been sunk into a moat through which the building has been connected to the earth via ramps and staircases reach to cantilevered surfaces which seems to be suspended. It seems that the building rose from the ground through the continuous surfaces folded and come up with a dynamic movement. Building's settlement in a moat and its distance from the earth in addition to these continuous surfaces generates a gentle settlement. Play of solid and void among these sliding volumes and cantilevered surfaces makes the whole project more dynamic. Legible façade of the building reflecting interior space organizations in addition to transparent surfaces which provide privacy as well through cantilevered continuous surfaces have been an attempt for making dialogue with surrounded environment. Visual continuity through voids and lightweight ramps and staircases which enhance vertical movements emphasize on 3dimensional quality of interior spaces. Play of shadow and light on cantilevered surfaces, integrating surfaces of walls, roof and ground through continuous patterns on them in addition to controlling light penetration via the second skin of the façade generates more dynamic interior spaces. Also, at night it seems that suspended core of the building has been surrounded with light.

Table 61: Observation abstraction of Asre Daneshafzar Residential and Office Building


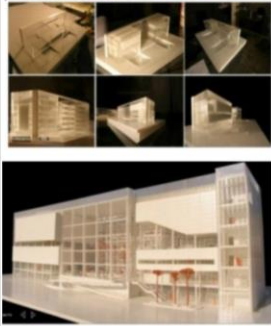
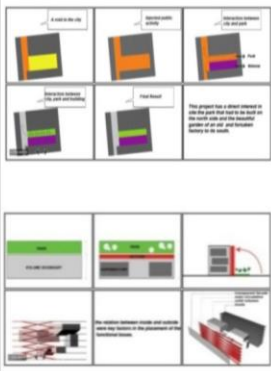
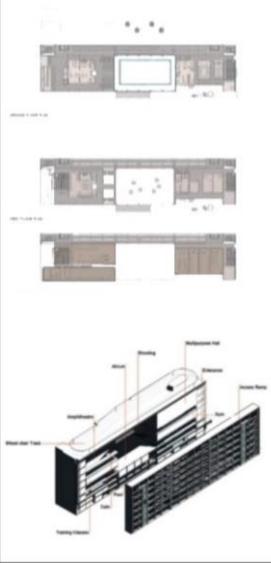

Concept of lightness	Authenticity				
	Originality		Relation with past	Images	
	Characteristic	How it has been achieved			
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Aluminum composite panels</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Reflective, flexible and lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple forms</li> <li>Dynamicity</li> <li>Idea of core and crust</li> </ul>	<ul style="list-style-type: none"> <li>Simple cubic volumes which are more understandable for observer</li> <li>Sliding volumes, continuous surfaces, play of open and close (transparency and translucency), cantilevered volumes extended from the transparent façade</li> <li>Suspended opaque core in center and semi-transparent crust cover it</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristic of Iranian architecture</li> <li>In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in dynamic context.</li> <li>This idea reminds traditional Iranian gardens which contains a central building called Kooshk surrounded with green areas</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Making dialogue with city</li> </ul>	<ul style="list-style-type: none"> <li>Building's settlement in a moat surrounded and connecting to the zero level via staircases extended from cantilevered surfaces</li> <li>Legible façade reflects interior space organization, transparency while it provide privacy by a crust wrapped the building, connecting both sides of the site through ramps as circulation</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always has been tried to lighten settlement of the building on the ground by water reflection, platforms...</li> <li>In spite of being introverted indentations on façade appearance reflects the inside space organization while keeps its ambiguity</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>3dimensional quality of space</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, suspended core spaces of the building, sliding core spaces on each other</li> <li>Visual continuity through voids, lightweight ramps and staircases which enhance vertical movements</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, continuation of the inside ramps through landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional Iranian architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls, roof and ground through continuous patterns on them, controlling light penetration via second skin</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### Disabled Rehabilitation Complex:

This building has been located in an open area in Tehran surrounded with a park at one side and an old building of a useless factory. Therefore the whole building settled as light as possible in order to make connection between these two sides. The main idea of the project is core and crust through which the suspended core of the building with opaque or translucent characteristic has been wrapped with a series of ramps and staircases and a transparent crust covered the whole volume of the building. This relation between open and close or transparent and translucent generates hierarchical space organization which generates dynamicity and fluidity among spaces.

The slanting surfaces of ramps which seem to hold the central core located in a glass box. This idea of transition from open to semi open and close becomes an important indicator of lightness in this project which makes visual and physical continuity between inside and outside while provide privacy for observers. Continuation of ramps and staircases from inside towards outside in order to gradually connect the building with the ground provide a gentle settlement. The play between transparency and translucency creates a legible dynamic façade which tries to make dialogue with city and let it pass through its transparent existence. It seems that this simple glass box which protect inside spaces makes connection between both sides of the site. Rhythm and play of shadow and light among solid and void combination formed interior spaces generates dynamic and integrated surfaces. During night time the building appears as a suspended central volume wrapped with vertical circulation elements culminates gradually and surrounded with a skin of light.

Table 62: Observation abstraction of Disabled Rehabilitation Center

Concept of lightness		Authenticity			
		Originality		Relation with past	Images
		characteristic	How it has been achieved		
Tectonic terms	Structure	<ul style="list-style-type: none"> <li>Steel frame structure</li> <li>Glass and steel, concrete</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight structure</li> <li>Transparent lightweight materials</li> </ul>		
	Form	<ul style="list-style-type: none"> <li>Simple pure form</li> <li>Idea of core and crust</li> <li>Dynamicity</li> </ul>	<ul style="list-style-type: none"> <li>Pure cubic form which is more perceivable for observer</li> <li>Suspended opaque core in center and semi-transparent crust cover it</li> <li>Slanting surfaces moves all around the project as ramps connecting different levels to each other, play of solid and void</li> </ul>	<ul style="list-style-type: none"> <li>Using pure form &amp; order is one of the important characteristics of Iranian architecture</li> <li>This idea reminds traditional Iranian gardens which contains a central building called Kooshk surrounded with green areas</li> <li>In Iranian architecture individual volumes doesn't seem to be dynamic, arrangement of solid volumes beside voids &amp; open spaces results in dynamic context</li> </ul>	
	Context	<ul style="list-style-type: none"> <li>Gentle settlement</li> <li>Integration with surroundings</li> <li>Relation with nature</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of ramps and staircases from inside in order to gradually connect the building with the ground</li> <li>Lightweight transparent construction which let the city pass through, connecting both sides of the site through ramps as circulation, legible façade via transparent-translucent façade, elements in between core and crust</li> <li>Continuation of greeneries towards central space inside</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture it always tried to lighten building's settlement on the ground by platforms...</li> <li>Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unite has its own they all have been integrated.</li> <li>Making relation with nature both visually and physically in traditional architecture by designing central courtyards,</li> </ul>	
	Space	<ul style="list-style-type: none"> <li>Dynamicity, fluidity</li> <li>3dimensional quality of space</li> <li>Inside-outside connection</li> </ul>	<ul style="list-style-type: none"> <li>Public-private zonings, hierarchical space organization, suspended core spaces of the building, sliding core spaces on each other</li> <li>Visual continuity through voids, lightweight ramps and staircases which enhance vertical movements</li> <li>Transparency, visual connection between inside and outside while provide privacy through the second skin of the façade, continuation of the inside ramps through landscape</li> </ul>	<ul style="list-style-type: none"> <li>In traditional architecture each space, besides its dependent function, has the potential to combine with other spaces and they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly.</li> <li>In traditional architecture of humid areas with extroverted buildings surrounded with green lands and in introverted buildings of desert cities for the sake of privacy spaces have been defined in 3dimension.</li> <li>In Iranian architecture continuity and integration of inside and outside appears through in between spaces and transparency towards private open spaces for the sake of visual perspectives</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>Dynamic interior spaces</li> </ul>	<ul style="list-style-type: none"> <li>Play of shadow and light on cantilevered surfaces, integrating surfaces of walls, roof and ground through continuous patterns on them</li> </ul>	<ul style="list-style-type: none"> <li>Light in Iranian architecture plays with space and changes it according to its movement through which space can be experienced variously during different times of the day.</li> </ul>	

### 5.2.3 Examining the Model

These characteristics of modern tectonics in contemporary architecture of Iran are explained in the following part. These are the characteristics, which the architects mentioned them as authentic features of new technological issues in their projects, which is why it has been tried to point out to the ones, which ingrained in traditional architecture as well.

#### 5.2.3.1 Structure and Material

The first tectonic term, which has been considered in project's analysis, has been the issue of material and structure. In traditional architecture of Iran, techniques have been used to make the solid volume of the building light and transparent, considering the fact that the nature of structure and technology is to reduce the material of the building as much as possible (Figure 62, Figure 63, Figure 64).



Figure 63: Steel structure in Asr Danesh Afzar Building by Arash Mozaffari, (Mozaffari, 2005)



Figure 64: Concrete structure Golfam Building by Daneshmir, (Daneshmir, 2010)



Figure 62: Steel structure in Moj Nikan Factory by Arash Mozaffari, (Mozaffari, 2005)

Therefore, it can be acclaimed that although, none of these architects use traditional structural methods or materials their buildings are not that much structurally light in comparison with Western buildings in which suspended glass systems are used. So, they are trying to employ the available constructional technology of present time

although it has not been improved as it has been in the world. The most dominant structural system in their projects is reinforced concrete frame structure and glass and steel frame structure while brick and concrete are mostly employed as coverage materials.

Although, they all used modern structural materials and systems large glass surfaces do not seem to be dominant in their projects but among these seven architects Reza Daneshmir and Arash Mozaffari are the ones who used glass and steel curved forms more than the others.

### **5.2.3.2 Form**

In terms of form, perceptibility of form, and dynamicity are the main characteristics of lightness, which have been achieved through analysis. Form as the physical appearance of a building which comes into existence through structural bases is in direct relation with contextual issues and interior spaces.

#### **5.2.3.2.1 Perceptibility**

Although, construction rules and regulations imposes defined forms and volumes according to the shape of the land these seven architects employed simple pure forms to embrace interior spaces intentionally. It has to be mentioned that this issue has not been directly mentioned by any of the architects themselves. However, pure simple forms create direct relation with the observer because of being more understandable. Although the general form of the buildings have been changed through perforation or projections, still the primitive pure shapes can be recognized (Figure 65, Figure 66, Figure 67).



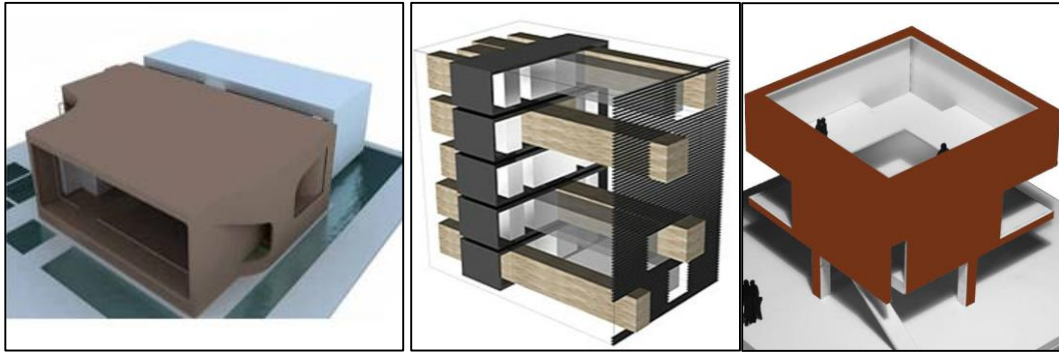


Figure 67: Two simple cubes combined together through an open space in between in Villa Pol Rumi Office Building by Alireza Taghaboni, (Taghaboni, 2010)

Figure 66: Combination of simple cubic forms in Villa Pol Rumi Office Building by Reza Daneshmir, (Daneshmir, 2010)

Figure 65: Combination of simple forms in Villa Pol Rumi Office Building by Reza Daneshmir, (Daneshmir, 2010)

In traditional architecture of Iran, usage of simple pure forms and geometries can be seen as one of the dominant characteristics of the buildings (Ardalan, 2000). According to Mirmiran using pure orders is one of the important characteristics of Iranian architecture, which can be seen in Chahar Bagh, as an Iranian garden and in between spaces, which is used in both urban and building scale (Mirmiran, 1999) (Figure 68).

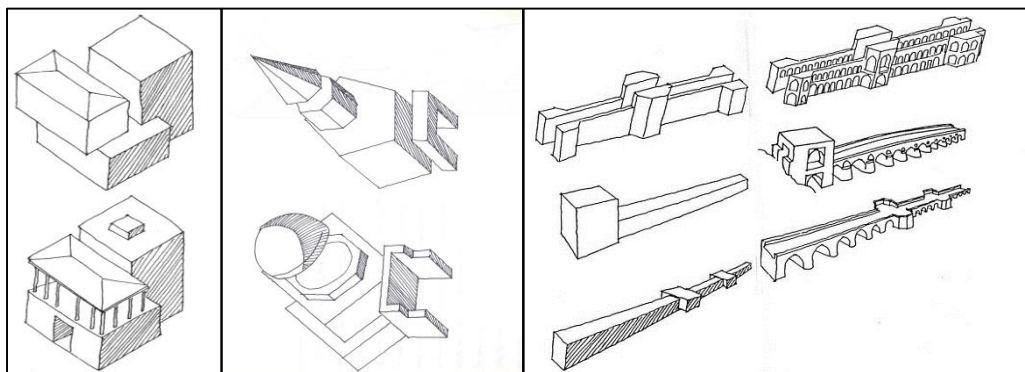


Figure 68: Usage of pure simple forms in traditional Iranian architecture, (Omoumi, 2008, pp. 75,86)

### 5.2.3.2.2 Dynamicity

It can be claimed that creating dynamic forms can induce the sense of lightness. In traditional Iranian architecture individual volumes doesn't seem to be dynamic but the arrangement of the solid volumes beside the voids and open spaces results in a holistic dynamic context. It seems that space penetrates through the masses and perforate them in order to create unity appears through multiplicity.

Accordingly, in contemporary Iranian architecture of 4th generation dynamicity in terms of form emerged in a different way. Technological construction developments make it possible to have more dynamic individual architectural edifices. Authenticity of this characteristic of lightness has been supported by all of the architects except Pouya Khazaeli and Ramin Mehdizadeh. Reza Daneshmir mentioned that open spaces are as essential as solid parts. Activating open spaces and connecting the solid masses to the infinite space of the city moderates the heaviness of the building. Therefore, new interpretation of traditional central courtyards is an authentic emergence of dynamicity in almost all of his projects (Figure 69, Figure 70, Figure 71).

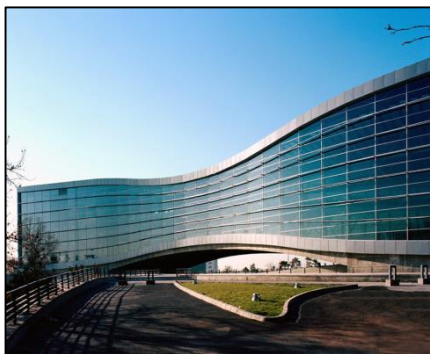


Figure 70: Vertical central open space in Mellat Park Cineplex by Reza Daneshmir, (Daneshmir, 2010)

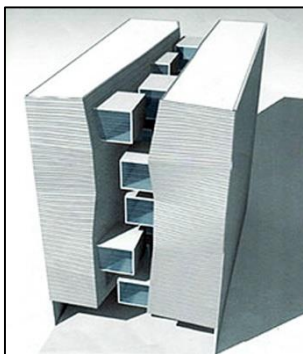


Figure 71: Central open space in Golfam Building by Reza Daneshmir, (Daneshmir, 2010)

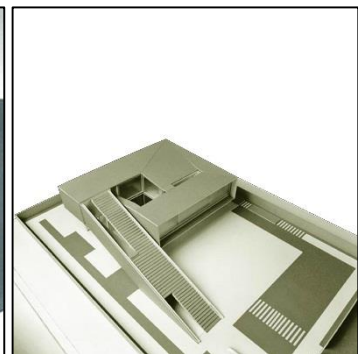


Figure 69: Central courtyard in between solid masses in Vila No. 3 by Reza Daneshmir, (Daneshmir, 2010)

Also, Alireza Taghaboni expressed the idea of lightness as a kind of duality between open and close or solid and void in almost his all projects. He employed the idea of duality besides activating open spaces such as roofs and porches for generating a balance between lightness and heaviness (Figure 72, Figure 73, Figure 74).

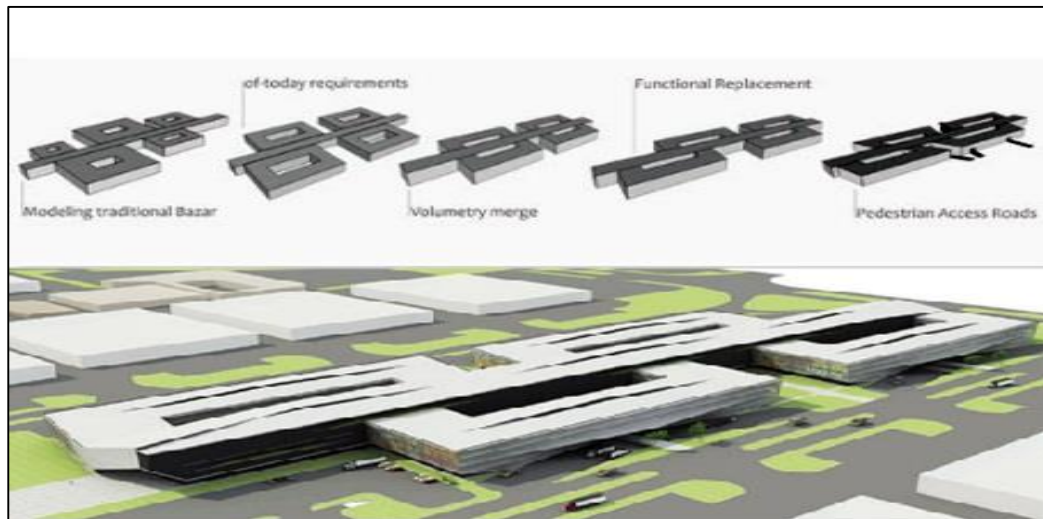


Figure 72: Modern Central Courtyards in Mehran Campus by Alireza Taghaboni, (Taghaboni, 2010)



Figure 73: New interpretation of traditional courtyards in QCEO Office Building by Alireza Taghaboni, (Taghaboni, 2010)

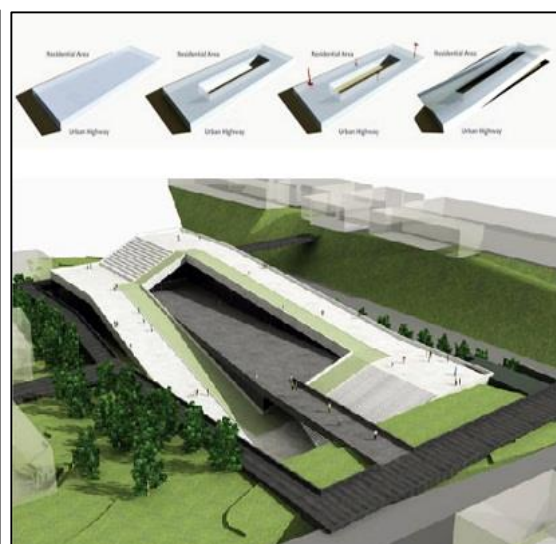


Figure 74: Representation of Central Courtyards in Grocery Market by Alireza Taghaboni, (Taghaboni, 2010)

Mohammad Majidi is the other architect who supports the idea of dynamicity through the play of solid and voids and activating open areas (Figure 81). Arash Mozaffari mentioned about the idea of core and crust inspired by traditional Iranian gardens. The opaque main volume of the building covered with a transparent shell with series of stairs and ramps flowing in between them. Therefore, dynamicity of the form in 4 out of 13 of his projects achieved through the idea of core and crust. According to Mozaffari, traditional gardens consists of a central building named koushk looks towards the whole open space around which has been reinterpreted in his projects as the idea of core and crust (Figure 75, Figure 76, Figure 77, Figure 78).

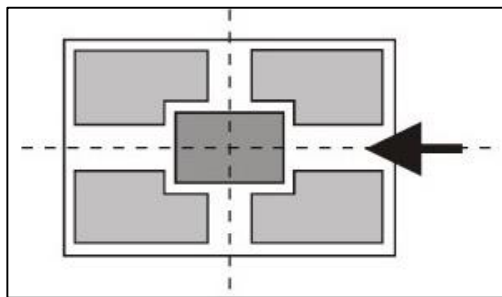


Figure 75: Pattern of traditional Iranian Gardens (Mossafai, 2012)



Figure 76: The central building in Shazdeh Garden, (Bultannews, 2011)



Figure 78: Idea of core and crust inspired by Iranian gardens in Maloolin Building by Arash Mozaffari, (Mozaffari, 2005)



Figure 77: Idea of an opaque center covered with a transparent shell in NIP Co. by Arash Mozaffari, (Mozaffari, 2005)

Rambod Eilkhani, directly points to dynamicity as an authentic representation of lightness. He employed dynamic moveable surfaces on façade which reminds huge windows covering the whole façade of traditional buildings named Orsi. Whenever, these glass surface of the façade in traditional buildings were open there has been a total transparent relation between inside and outside while closing these surfaces consisted of stain colored glass parts results in discontinuation of visual and physical relation with outside (Figure 79, Figure 80, Figure 81, Figure 82).



Figure 80: Moveable surface of the façade in traditional Iranian houses, (Shahr Majazi, 2013)

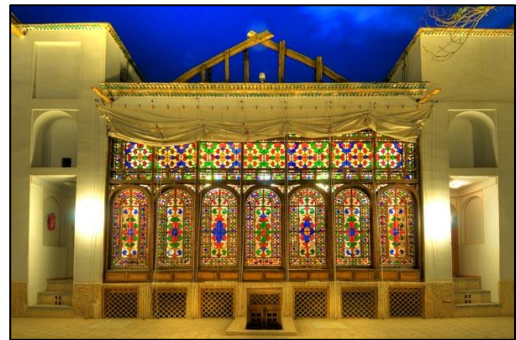


Figure 79: Orsi as a kind of flexible surface of the façade in traditional architecture, (Shape5.com, 2013)

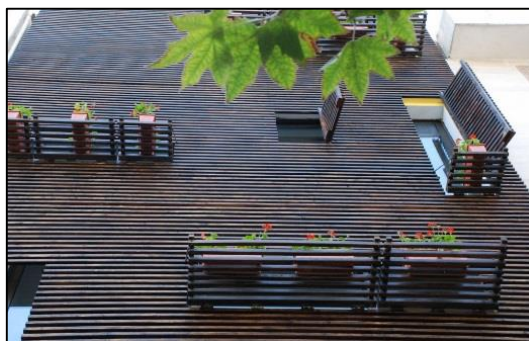


Figure 82: Flexible, dynamic façade in Dollat II by Rambod Eilkhani, (Eilkhani, 2012)



Figure 81: Flexible, dynamic surface of the façade in Khorana Office Building by Rambod Eilkhani, (Eilkhani, 2012)

According to Ardalan, a contemporary architect of 3<sup>rd</sup> generation in Iran, with the passage of time the central shape of every unit as a point moves through the space and

create the linear organization of traditional bazaars. Traditional architecture forms the space through geometrical shapes and creates a dynamic architecture by symmetrical repetition of shapes, which can be interpreted as a piece of music. It has been tried to combine movement, time and place as unite which can spread over the space (Ardalan & Bakhtiar, 2000).

### **5.2.3.3 Context**

Traditional Iranian architecture has been known as a contextual architecture that not only takes influences from its surroundings but also had an enormous impact on it. Therefore, form of the buildings in addition to their natural materials seems to be posed with their environment (Ghobadian, 2007). Actually, topography and culture are the main factors of context considered in Frampton's categorization. Therefore, the concept of lightness in terms of context has been appeared mostly in the idea of gentle settlement in the site, integration with surroundings, compatibility with climatic issues, Relation with nature, making dialogue with city.

#### **5.2.3.3.1 Gentle Settlement in the Site**

One of the important issues of relation with context, which can induce the sense of lightness, is the way that building settled on the ground. It is important that how the solid mass of the building makes connection with the land embrace it. Does it flow through the site along with topographical behavior of the ground or it is settled harshly to ignore the surroundings and prove itself? Sometimes the building spread its dress on the ground, which seems to be gradually faded in the soil. This characteristic has been considered in contemporary Iranian architecture of the 4th generation in which the way that the building settled on the ground Arash Mozaffari in 10 out of 13 and Mohammad Majidi in 6 out of 13 of their projects examined the building's settlement

on a platform wrapped with a ramp or staircase as a mediator between the building and earth, which ingrained in traditional Iranian architecture (Figure 83, Figure 84).

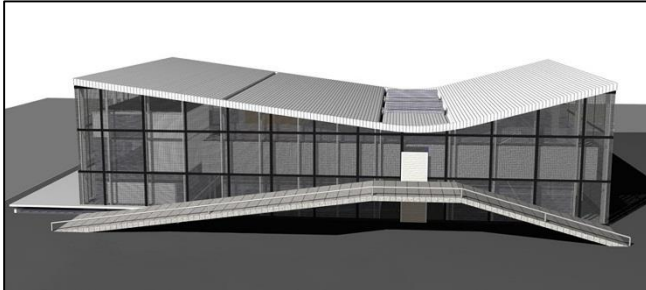


Figure 83: Building's settlement on a platform connected to the ground through a ramp in Moj Nikan Factory by Mozaffari, (Mehdizadeh, 2013)

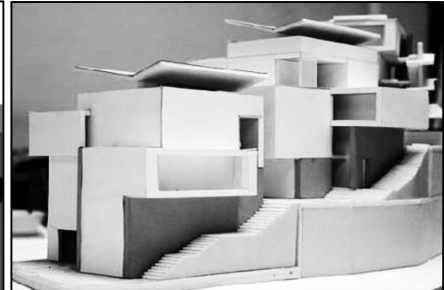


Figure 84: Building settlement on staircases go along with site in Villashahr by Majidi, (Majidi, 2010)

According to Mirmiran, one of the other contemporary architects of the 3<sup>rd</sup> generation, horizon is where the earth and sky join each other, in other words it is the junction realm of the finite world and spirituality which should have a specific place in traditional architecture of Iran that is founded on Gnosticism conceptions. The dominance and accentuation of horizontal lines and surfaces in traditional architecture of Iran firstly can be seen in the surfaces that form the basis of the building like porticos or courtyards, and secondly as the edge of the facades of building which is the headstock for the vertical elements. Horizontal lines in Iranian architecture are used to make the vertical elements, balance and regular and also control its excitement (Mirmiran, 1999).

Miamian also mentioned water as an architectural element, which has been used for lightening building's settlement on the ground. Water is one of the elements employed to get rid of the boundaries between reality and metaphor by unifying the object and its reflection in water (Mirmiran, 1999) (Figure 85, Figure 86).

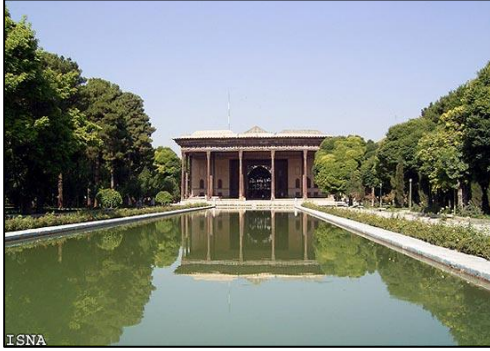


Figure 85: Usage of water reflection for the sake of gentle settlement in Chehel sotoon form Safavid era, (Azadi, 2013)



Figure 86: Gentle settlement on platform connected to the ground through series of staircases as a mediator between the buildings and ground in Persepolis, (Vihand, 2011)

The ancient Iranian Achaemenid architecture has based on repetition of modular squares as simple pure forms, which raised the building towards the sky but in Greek architecture of the same time it can be seen that buildings grow from the ground without any mediator where they settled (Pirnia, 2004) (Figure 94).

#### **5.2.3.3.2 Integration with surroundings**

In traditional Iranian architecture open spaces such as courtyards, roofs and porticos have been activated in order to combine solid and voids but in contemporary Iranian architecture this idea of central open spaces has been employed for connecting different sides of the site and integrate the building with surroundings. Following the same typology of surroundings is one of the major solutions for generating unity among individual building units.

Reza Daneshmir in 7 projects out of 13, Alireza Taghaboni, Pouya Khazaeli and Rambod Eilkhani in almost their all projects has mostly supported this characteristic of lightness in terms of context as an authentic issue. Pouya Khazaeli and Alireza Taghaboni and Reza Daneshmir are the ones who tried to create their buildings in continuation of typology of the context surrounded. New representation of traditional



courtyard houses, mountainous stair houses and gable roof typologies are dominant in their designs.

They have new interpretation of gable roofs and central courtyards in their projects. Also, Pouya Khazeli expressed this idea where he states that one of the important issues can be extracted from traditional architecture is its integration with surrounding environment (Figure 87, Figure 92). Reza Daneshmir supports this idea as an authentic characteristic ingrained in past by saying that “The idea of void has been an old idea in Iran. The central courtyards within the houses, mosques and other buildings of this climate, has been reused in our projects in a new way” (Figure 89, Figure 91).



Figure 88: Urban pattern of the old city of Yazd, (Daneshmir, 2010)

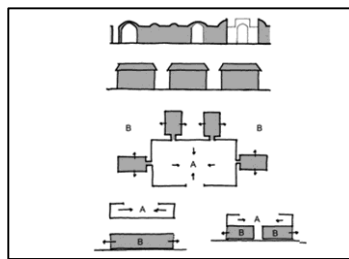


Figure 89: Combination of interverted traditional architecture with extroverted modern ones, (Khazaeli, 2010)

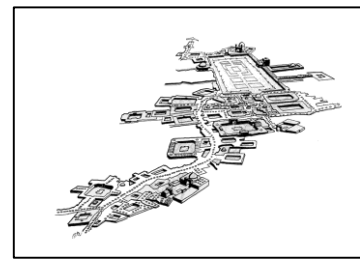


Figure 87: Pattern of traditional Iranian bazaars, (Taghaboni, 2010)



Figure 91: Safaiyeh Residential Complex inspired by old city of Yazd by Reza Daneshmir, (Daneshmir, 2010)



Figure 92: DarvishAbad Villa designed based on introversion typology of Iranian architecture by Pouya Khazaeli, (Khazaeli, 2010)

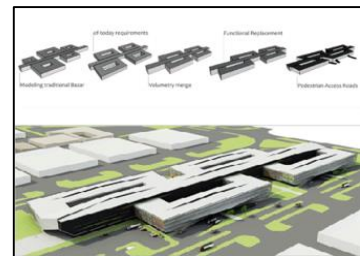


Figure 90: Grocery Market inspired by typology of traditional Iranian bazaars by Alireza Taghaboni, (Taghaboni, 2010)

Alireza Taghaboni mentioned that “Working on typologies is another issue which can be seen in past and you can see some of my projects with typology of sloppy roof and central courtyards” (Figure 88, Figure 90, Figure 93, Figure 94, Figure 95). Moreover, Rambod Eilkhani tried to create neutral simple facades not to show off itself among all other chaotic urban facades but to act as an integrative element.



Figure 93: Villa for a friend designed by Alireza Taghaboni in compatibility with typology of the mountainous environment surrounded, (Taghaboni, 2010)

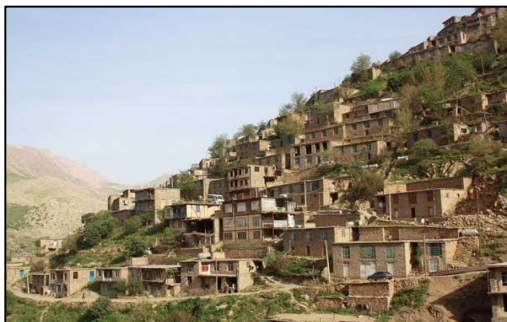


Figure 94: Traditional mountainous cities formed according to the slope of the ground, (Kashkouli, 2012)



Figure 95: Villa for a friend designed in harmony with mountainous area settled on, (Taghaboni, 2010)

Considering the chaos and eclectic feature of new urban context in Iran Rambod Eilkhani attempted to create neutral simple facades which connects these heterogeneous urban units not to add another strange feature of them (Figure 96). This idea has been supported by other contemporary architects of earlier generations as well. Movement from multiplicity into unity has been the essence of Iranian architecture from city scale into details. Although, each unit has its own characteristic

from a holistic point of view they all have been integrated. This idea of association with surroundings has been one of the dominant characteristics of traditional Iranian architecture in every scale (Ardalan & Bakhtiar, 2000).

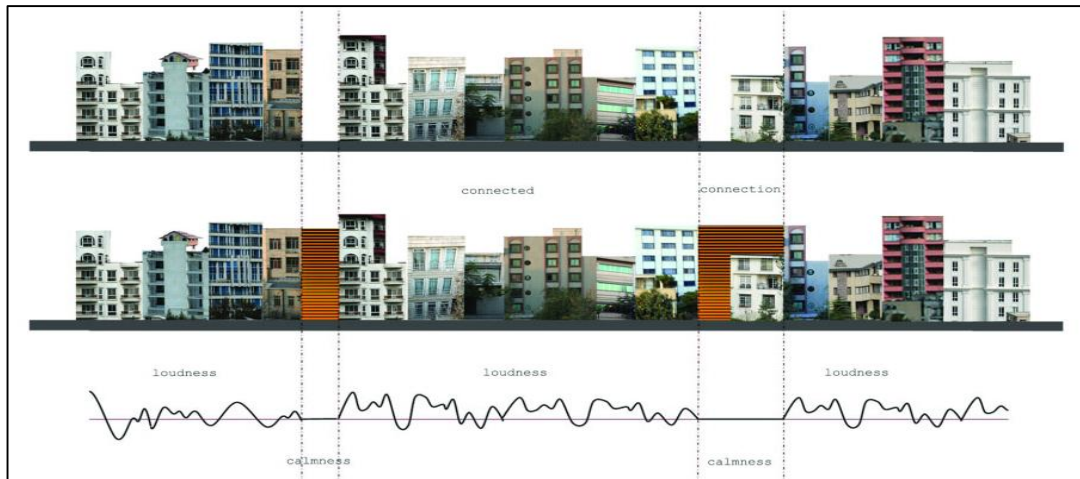


Figure 96: Dollat I, II Designed by Rambod Eilkhani as neutral simple features among other heterogeneous urban units, (Eilkhani, 2012)

### 5.2.3.3.3 Compatibility with Climatic Issues

One of the other issues of lightness in terms of context is the compatibility of the building with climatic condition of surrounding environments, which makes the building allocate to its context, and induces the sense of lightness to the observer.

Reza Daneshmir used central open spaces in 4 out of 13 of his projects considering climatic issues in an authentic way (Figure 98, Figure 100). Also, Alireza Taghaboni is one of the other architects of 4<sup>th</sup> generation who employs this idea in 5 projects out of 13 by using the typology of traditional building's surrounded (Figure 97, Figure 99).

According to Ghobadian one of the contemporary Iranian architects in the book of “Analysis of the Traditional Iranian Buildings” traditional Iranian architecture has been compatible with climatic issues in its essence. It means that they didn’t construct the building and then tried to solve climatic issues of interior spaces but the building itself has been a respond to these environmental conditions (Ghobadian, 2007).



Figure 97: Traditional houses with gable roof in humid areas, (Abela & Aguilar , 2007)



Figure 98: Traditional introverted buildings of hot and arid areas, (Daneshmir, 2010)



Figure 99: New emergence of traditional gabled roof building, (Taghaboni, 2010)



Figure 100: New emergence of introverted buildings of traditional desert cities, (Daneshmir, 2010)

#### 5.2.3.3.4 Relation with Nature

Integrated with surrounded built environment traditional Iranian architecture always has been in a direct relation with nature, which induces the sense of lightness. Regarding to the industrial urban divisions and vertical movement of the buildings

there is no more direct contact with natural environment for people inside the buildings. Nevertheless, Reza Daneshmir in 10 out of 13, Alireza Taghaboni in 4 out of 13 and Mohammad Majidi in 6 out of 11 of their projects and Pouta Khazaeli, Ramin Mehdizadeh, and Rambod Eilkhani in almost their all projects employed this characteristic authentically (Figure 101, Figure 102, Figure 103).

Reza Daneshmir supports this idea where he mentioned in contemporary architecture we just define and design the volume of the buildings which comes from modernism. Courtyards have been considered as an isolated part, which cannot be seen or felt anymore. What we consider is the mere volume which really seems heavy but when you combine it with open space not only it has been defined but also help us to create a lighter building.

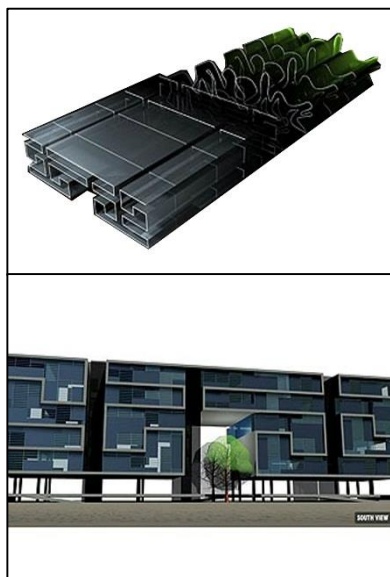


Figure 103: Central open space in Shahid Araghi Residential Building not to demolish the existing greeneries, (Daneshmir, 2010)

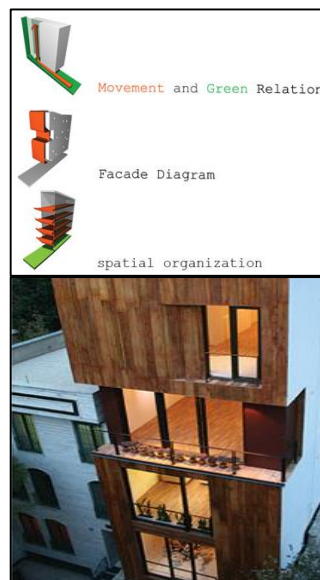


Figure 102: Continuity of greeneries towards the façade s in Dollat I by Rambod Eilkhani, (Eilkhani, 2012)



Figure 101: Usage of local material in Apt. No. 1 by Ramin Mehdizadeh, (Mehdizadeh, 2013)

Also Pouya Khazaeli considered this issue by designing central open spaces in both of his projects. He also mentioned that architecture has to go along with nature and obey the natural rules (Figure 105, 106). The movement of greeneries can be seen Rambod Eilkhani's projects through the façade and interior spaces (Figure 104).



Figure 104: Changing building's orientation and framing green areas surrounded in 2Offices, 2Brothers by Rambod Eilkhani, (Eilkhani, 2012)



Figure 106: Central courtyards in traditional houses



Figure 105: Central open space for direct relation with nature in Darvishabad Villa by Pouya Khazaeli, (Khazaeli, 2010)

According to Ardalan, moral human always surveys in the nature for the sake of God because natural forms and spaces as the symbols of God are more comprehensive and eternal. That's why traditional people used these signs for creating their environment.

“The traditional Iranian house is the combination of several different open and closed spaces that were designed to articulately mingle the nature and life space together. This combination, by concentrating on the spatial figures and the ability of movement and circulation, tried to create a useful space for dwellers” (Shabani, et al., 2010) (Figure 115, 116, 117).



Figure 109: Usage of roof in traditional houses, (Fotoohi, 2009)

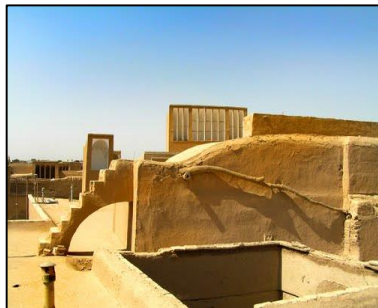


Figure 108: Usage of roofs to avoid dead-end spaces in desert cities, (Fotoohi, 2009)



Figure 107: Activating open spaces in traditional mountainous contexts, (Rafikhah, 2010)

The courtyard plan, which generates a centripetal force, is a more feasible urban form, capable of providing the basic contact with nature so essential to Iranian life which indicates the attention to inward both physically and spiritually. This space dominates the architectural activity of “place making” which becomes the model of “makan” during Islamic period, unifying house with mosque, caravanserai with collage and the individual parts with whole. This unity is achieved through the visual interaction of

space, shape, and surface, complemented by their qualitative correspondences (Ardalan & Bakhtiar, 2000).

#### **5.2.3.3.5 Conducting Dialogue with the City**

Making dialogue with city, which has been defined as one of the issues, which make people feel the building lighter, in terms of context has ingrained in traditional architecture as well.

Reza Daneshmir in 5 out of 13 and Alireza Taghaboni in 4 out of 13 of their projects employed this characteristic of lightness. They tried to design legible facades through playing with volumes, which reflects interior space organization while it still preserves privacy for residences. Furthermore, Reza Daneshmir tried to use the idea of central open courtyards of traditional architecture and interpret them in a new way. Although central courtyards have been used in traditional architecture for the sake of introversion Reza Daneshmir and Alireza Tahaboni convert the idea to vertical open spaces which besides its traditional feature creates connection between the building and the city (Figure 110, Figure 111, Figure 112, Figure 113).

Although, introversion has been known as one of the dominant features of Iranian architecture buildings always keep their connection with surroundings (Memarian, 2012). This relationship has not been just about physical integration but also it has been attempted to make dialogue with observers from outside. Chaharbagh Mosque is one of the best examples of this issue in which although the whole building is introverted and has faced to the central courtyard deep indentations in exterior walls generates a kind of public urban space which has been used for gathering or a short rest. It seems that the building provides privacy for residences while keep relation with people outside.





Figure 111: Urban façade of ChaharBagh School in Isfahan from 17<sup>th</sup> century, (Author, 2007)

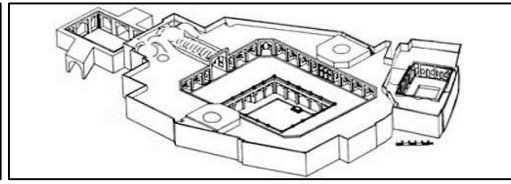


Figure 110: Traditional central courtyards for compatibility with cultural and climatic issues

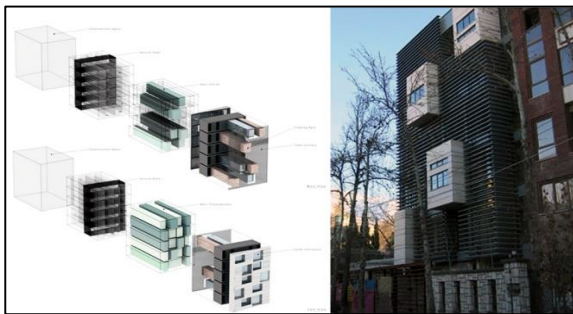


Figure 113: Legible forms reflecting interior space organization in Pol Rumi Office Building in Tehran by Reza Daneshmir, (Daneshmir, 2010)

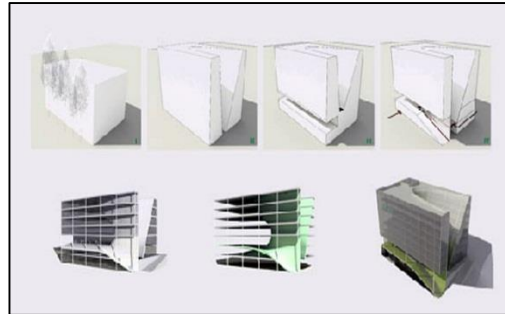


Figure 112: Vertical open space for conducting a dialogue with city in No. 93 Building in Tehran by Alireza Taghaboni, (Taghaboni, 2010)

In some cities of Iran what can be seen is the combination of introversion of desert cities and extroversion of humid areas in which although courtyards have been considered, other elements such as Taromeh (a kind of porch) and Shanashil (a kind of balkoni) on exterior facades face to the open urban spaces have been designed as well (Memarian, 2012).

#### 5.2.3.4 Space

Space is the essence of architecture, which in Iranian architecture tend to be more transparent and lighter. Idea of lightness in terms of space has been examined on basis of fluidity, flexibility, inside-outside relation and 3dimensional quality of space. Usage of new technological improvements results in new emergence of spatial quality while still attempted to preserve its authenticity.

### 5.2.3.4.1 Fluidity

Hierarchical space organization and public-private zonings as the terms of fluidity have been expressed as an authentic characteristic of lightness in almost 100% of Rambod Eilkhani, Ramin Mehdizadeh and Arash Mozaffari's projects. Moving fluently through interior spaces, which are organized based on hierarchical spatial arrangements, avoids functional interruptions and increases the sense of coziness. Accordingly, feeling convenient in a space can incline the weight and induces the sense of lightness while the opposite situation also can result in sense of heaviness.

Also visual and physical continuity among spaces both vertically and horizontally via low-height walls and voids among them is the common characteristic of dynamicity of interior spaces in projects of Mohammad Majidi, Rambod Eilkhani and Ramin Mehdizadeh (Figure 114, Figure 115).

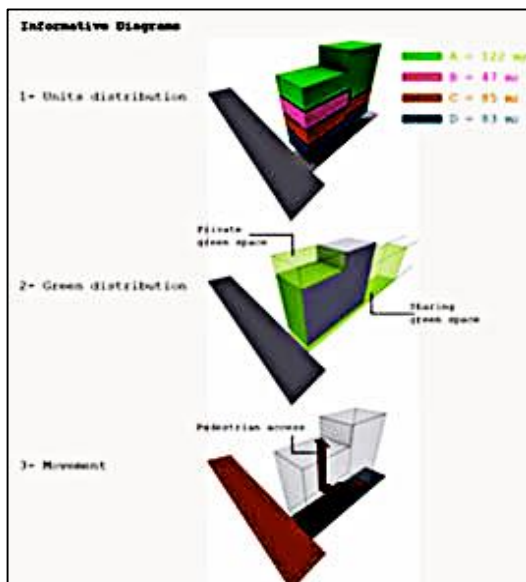


Figure 115: Hierarchical space organization with functional zonings in Khorana Office Building by Rambod Eilkhani, (Eilkhani, 2012)

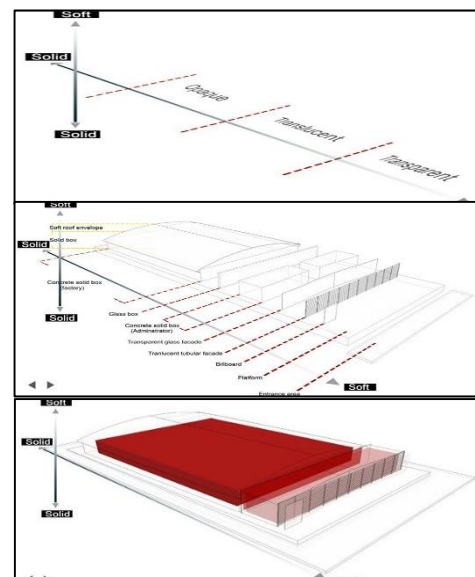


Figure 114: Hierarchical space organization in NIP Co Factory by Arash Mozaffari, (Mozaffari, 2005)

Also, Reza Daneshmir and Rambod Eilkhani in almost their whole projects and Mohammad Majidi in 5 projects out of 11 attempted to activate open spaces such as roofs and terraces not to create any dead end spaces for the sake of fluid motion. Since, mostly the roofs and balconies have been converted into dead parts of modern buildings, these architects employ these areas and combine them with interior spaces. Therefore moving through interior spaces, every parts are integrated in a continuous loop without any end points (Figure 116, Figure 117, Figure 118).

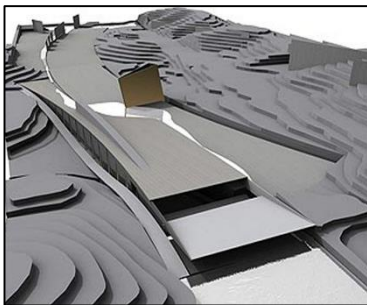


Figure 117: Activating open spaces of roof in War Museum by Reza Daneshmir, (Daneshmir, 2010)

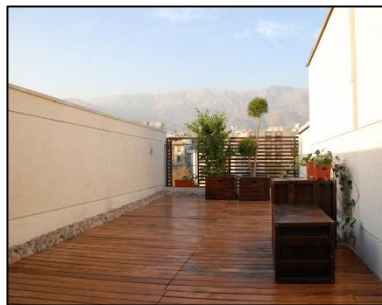


Figure 118: Usage of roof and terraces in Dollat II by Rambod Eilkhani, (Eilkhani, 2012)



Figure 116: Activating open spaces in Villadasht Residential by Mohammad Majidi, (Majidi, 2010)

This characteristic which is known as an authentic emergence of lightness in Iranian architecture inherited from past. A hierarchy of spatial linkages provides an orderly system that allows for both constancy and change. In between spaces indicates the process, which is needed to move from outside or *zahir* to inside or *batin* (Mirmiran, 2006). The result is an internal architecture inseparable from the fabric of the cityscape, an architecture indicating the creative act which is less concerned with objects in space than with the preservation of space itself. Just as the spirit defines the

universe in which the soul moves, so sedentary man creates shaped which enclose spaces within which his essential soul can breathe (Ardalan & Bakhtiar, 2000).

“The majorities of traditional houses are introverted, or look inwards. All the spaces were arranged around an open, rectangular courtyard that formed the link between different areas of the house. The arrangement follows certain geometrical rules. According to Haji-Qassemi, this geometry not only defines the general body of ensemble and gives shape to its every single detail, but also imposes a hierarchy to its different areas, which determine their locations and relationships in accordance with their character and importance. While harmoniously connected to each other in the design, the areas of the house enjoy complete independence and are always separated from the others by intermediary areas” (Mirmoghtadaee, 2009, p. 71).

#### 5.2.3.4.2 Flexibility

Flexibility of interior spaces provides the opportunity for residences to arrange the space according to their desires. Spatial flexibility, which creates dynamic changeable spaces, is in direct relation with lightness. Open plan idea of modern architecture in projects of these architects in combination with this idea in traditional Iranian architecture appeared in an authentic way (Figure 119, Figure 120, Figure 121).



Figure 120: Foldable partitions create flexible spaces in Dervish Villa by Pouya Khazaeli, (Khazaeli, 2010)



Figure 121: Moveable wall separating spaces in 2 Offices, 2 Brothers by Rambod Eilkhani, (Eilkhani, 2012)



Figure 119: Flexible open plan spaces in Oushan House by Mohammad Majidi, (Majidi, 2010)

Although, architects are mostly trying to dedicate specific spaces for defined functions, this approach is limiting the activities taking place in each space. It is also the same in public spaces where separation of functions and activities for the sake of privacy is not logical and if we separate public spaces from each other they will lose their flexibility (Bentley, 1985). Spaces have to provide this ability for people to change it according to their needs, which in psychology have been named as adaptation. According to Jon Lang if space cannot be adapted to people's requirements it won't be used and it will be abandoned (Raeisi, 2012, p. 281).

According to Shabani flexibility of interior spaces is not just the issue of modern architecture but also the spatial arrangement in traditional architecture of Iran was flexible toward requirements and living ways (Figure 122, Figure 123, Figure 124).



Figure 123:  
Flexible interior  
space separation  
through doors,  
(Soltani, 2012)

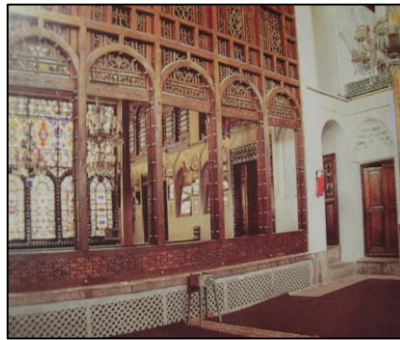


Figure 122: Doors between  
interior spaces through which  
spaces can be integrates or  
separated, (Elorza, 2013)



Figure 124: Doors between  
interior spaces and in between  
spaces, (Abdolrashidi, 2010)

“There is no obstructed space in these houses. Each space, besides its dependent function, has the potential to combine with other spaces. Two free spaces such as three-door rooms and back rooms could create a bigger room for gatherings and ceremonies or other spaces like two-door rooms and the shah-neshin, (the biggest room of the house), court yard, and pool house, have the ability to get combined and create a bigger area and show

the maximum capacity of the house. This means that all public space could combine with private spaces. The spaces that are helpful for expanding the spaces are middle doors among public and private domains, relevant spaces, hanged curtains, opened windows, and Orsis are all spaces that have the potential to be combined. In architectural culture and literature, this type of dependence and independence of spaces shows the flexibility of the space” (Shabani, et al., 2010).

Most houses accommodate varied functions, not limited to residential activities. In some cases, the house was also the workplace. House spaces were adapted for these varied activities. Therefore, an Iranian house was a multifunctional unit designed for residential, economic, and service functions (Mirmoghtadaee, 2009, p. 74).

#### 5.2.3.4.3 3Dimentional Quality of Space

Ramin Mehdizadeh, is the only architect who tried to emphasize on 3rd dimension of space by creating interplay among levels, stairs and voids, which create highly, varied spaces as an authentic characteristic. He also tried to emphasize on vertical elements as the third dimension of the space such as visual continuity through the voids.



Figure 125: Enhancing 3<sup>rd</sup> dimensional quality of space through the interplay of levels and bridges in House No. 1 by Ramin Mehdizadeh



Figure 126: Emphasis on vertical elements, visual continuity through the voids, and play of textures in Stair House designed by Ramin Mehdizadeh

In traditional Iranian architecture, visual privacy in interior parts of house has been created by raising the level of rooms and living spaces from the level of the courtyard, which breaks the view direction from the courtyard to the rooms (Mirmoghtadaee, 2009, p. 74).

#### 5.2.3.4.4 Inside-outside Connection

It seems that double skin façade for the sake of both privacy and providing connection with outdoor spaces is the new way of inside-outside relation, which is common among these architects. However, designing in between spaces and framing outdoor vistas are the ones, which exist in traditional architecture and have been employed.



Figure 127: Framing outdoor vistas in 2Offices-2Brothers by Rambod Eilkhani, (Eilkhani, 2012)

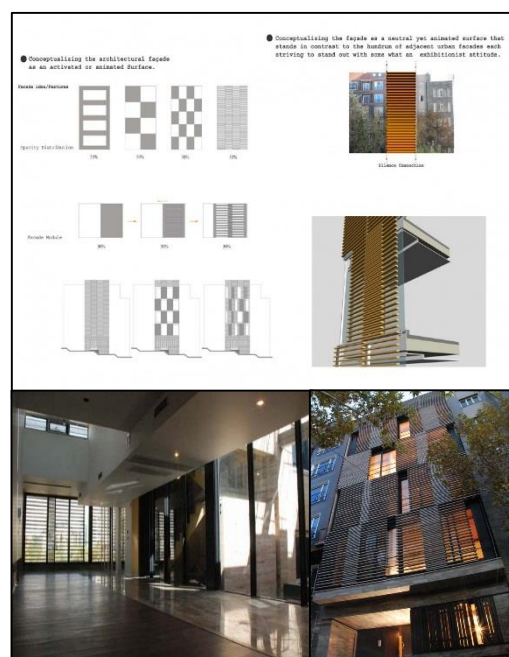


Figure 128: Double skin façade framed outdoor vistas in Khorana Office Building by Rambod Eilkhani, (Eilkhani, 2012)

Rambod Eilkhani is the only architect among seven who has supported authenticity of this characteristic of lightness. Transparency of the façade and developing the

surrounding landscape in response to interior spaces are the issues used mostly by Rambod Eilkhani for the sake of inside-outside connection. He also tried to design his projects in a way that the public green spaces seems to be a part of his building by framing outdoor vistas and manipulating building's orientation (Figure 127, Figure 128).

Although, transparency has become an important indicator of modernism, which decreased the boundaries between inside, and outside to the least in Iranian architecture it has been combined with cultural issue of privacy. Both visual and physical continuity between outdoor and indoor spaces have ingrained in traditional architecture.

Since, concept of lightness is related to the sense of weightlessness it is obvious that spaces which provide convenient situation for residents according to their socio-cultural needs induce the sense of lightness which has been one of the famous principles in Iranian traditional architecture (Vakili-Ardebili & Boussabaine, 2010). Providing privacy while people still can communicate has been an essential factor in Iranian culture (Memarian, 2012). That is why sometimes people experience totally glass-covered spaces which induces the sense of heaviness and vice versa.

Traditional Iranian houses and somehow the modern ones as well have been based on a completely Iranian pattern of hierarchical space organization which separates public and private zones. Whereas in western architecture specially after the 2<sup>nd</sup> world war a kind of tendency for integrating public and private areas can be seen. Therefore, people do not tend to hide their personal feelings and thoughts and being in a house people would enter to the private area of the others. It has been resulted in disappearing of in-



between spaces between inside and outside while the fragmentations of individual members of a family inside the house have been increased. In this way the social area become a stage for individual demonstrations (Bani Masoud, 2009).

This architecture was going to reduce the substance and increase the space, in other words a movement from object to spirit. Using courtyards, porticos and openings, dispose the skeleton of the cubic and solid building to the least materiality and most spirituality. Although each space has its own characteristic, they are organized in a union composition in which human can move in the hierarchy of spaces of a building flowingly. For instant, in Chehel Sotoon using a portico or Iwan provides the unity among spaces, which join the interior and exterior and omit the boundaries between them (Mirmiran, 1999).

#### **5.2.3.5 Light**

Since, light and lightness comes from the same roots there seems to be a direct relation among them in architecture as well. Based on different ways of light penetration towards interior spaces it can affects space perception. In Iranian architecture light always play with space and change it according to sun movement during the day.

It is also important to mention the fact that light penetration in Iranian architecture always has been in an indirect and mysterious way. Therefore, this play of light results in changeable and dynamic spaces. Moreover, sunlight, which passes through, cut stain glasses create colorful ornamentations on walls floor and roofs and create continuous surfaces in inside. Through this game space can be experienced variously during different times of the day. In this way space in Iranian architecture never become boring but it appears with different features in accordance with sunlight movement.

Accordingly, these characteristics of light for creating more dynamic interior spaces and facades have been employed in projects of Alireza Taghaboni and Pouya Khazaeli. They are common in using the play of shadow and light both inside and outside the buildings in different ways such as play of solid and voids (Figure 131, Figure 132).



Figure 130: Changeable light patterns in traditional houses, ( Debelkova, 2009)

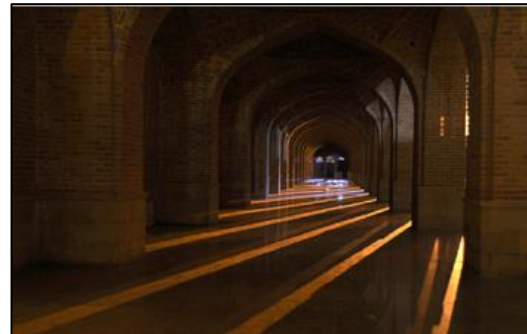


Figure 129: Strings of light and shadow play with space, (Khodadad, 2010)



Figure 132: Play of light through interior spaces in Dervish Villa by Pouya Khazaeli, (Khazaeli, 2010)

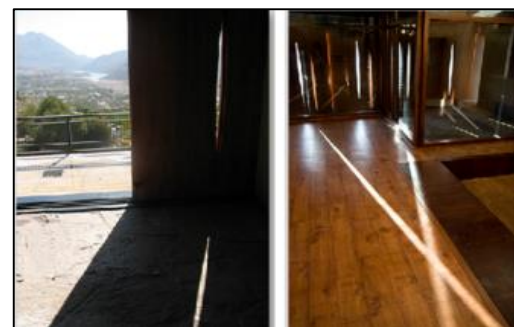


Figure 131: Rhythm of light creates changeable spaces in Villa for a friend by Alireza Taghaboni, (Taghaboni, 2010)

The quiescence and static building become alive when light changes through the space. The rooms face to north, south, east or west even in similar geometrical conditions seems different in various times of the day, which is the intrinsic ability of natural light. Cut glasses window is one of the luxurious decorations beginning to be used from Safavid era in Iran. These colored glasses are not only used for avoiding direct light but also for aesthetic aims. Reflection of light on these windows creates different

shapes and colors on enclosures of space as ornamentations, which alter during different times of the day. It also has been known as demonstration of the movement from unity (sunlight) to multiplicity (variety of forms and colors) and vice versa in Iranian philosophy. This play of light and color can be seen in buildings with various functions. The reflected colored lights create a playground of light within the spaces (Figure 129, Figure 130).

According to Hadi Mirmiran one of the famous contemporary architects of Iran the essence of Iranian architecture is its movement from materiality to spirituality through which it is tried to decrease the material and increase the space. In this way, light has been employed for this mission in different ways. For instance, in many of Iranian buildings huge domes are settled on a ring of arch windows through which light penetrates to the space and create an illusion of almost flying light structure. This is where light comes to help architecture for decreasing the sense of heaviness and to create an alive and joyful space (Mirmiran, 1999).

### **5.3 Proof of Hypothesis**

Considering traditional approach, which leads to quantitative method results in hypothesis-testing research while qualitative method results in hypothesis-generating research.

“Hypothesis is a tentative explanation that accounts for a set affects and can be tested by further investigation”(Muijs, 2010, p. 17).

A hypothesis may be precisely defined as a tentative proposition suggested as a solution to a problem or as an explanation of some phenomenon. Hypothesis relates

theory to observation and observation to theory (Ary, Jacobs, Razavieh, & Sorensen, 2009).

Kerlinger defines hypothesis as a conjectural statement of the relation between two or more variables. Hypotheses are relational propositions (Kerlinger & Lee, 1999, p. 26). According to Creswell, hypothesis is a formal statement that presents the expected relationship between an independent and dependent variable (Creswell, 2003).

Therefore, when there is no actual relationship between these variables it is called as Null Hypothesis while achieving the expected result can be called as Alternative Hypothesis. So, there are two types of Alternative hypothesis known as Directional and Non-Directional according to the fact that if there is any definite direction for the specific finding or not (Gravetter & Wallnau, 2007).

There are also two types of derivations of hypothesis named as inductive and deductive. Through the inductive research it is needed to record the observation notes, thinking about the problem and turning back to the literature for clues, additional observations and then probable relationship can be driven. Afterwards the hypothesis can be explained and hypothesis is then tested. However, in deductive method, it is needed to select a theory and then derive a hypothesis, leading to deductions derived through symbolic logic which can be presented in the form of statements going along with an argument or rationale for a specific preposition (Gravetter & Wallnau, 2007).

Formulating a hypothesis for a qualitative research it is needed for a main question. In this research the main question can be stated in this way; is there any authentic characteristic in usage of new technological improvements in contemporary Iranian

architecture of the 4<sup>th</sup> generation? The research question can be used to compare, relate or describe the variables. There are also sub-questions supporting the main one; What are the authentic characteristics of modern light tectonics in projects of the 4<sup>th</sup> generation of Iranian architects? How these characteristics of modern tectonics can be known as authentic features of Iranian architecture?

This research can be known as an Alternative, Non-Directional Hypothesis through which the researcher didn't know what can be predicted from the past literature. In this research, Modern tectonics, Authenticity and Contemporary Iranian Architecture are three variables, which their relation has been examined through the proposed hypothesis driven from model. Modern tectonics and concept of authenticity have been considered as independent variables while contemporary Iranian architecture supposed to be dependent criteria of the hypothesis. In the first look new technological improvements and authenticity seems to be contradictory terms. However, a deeper study will show the coexistence of them. Authenticity is based on two main characteristics of novelty and relation with past. Accordingly, this research contains a hypothesis, which has attempted to be proven through analysis of the projects and interviews of seven pioneers of the 4<sup>th</sup> generation of contemporary architecture in Iran. This complex hypothesis statement has been put as the following:

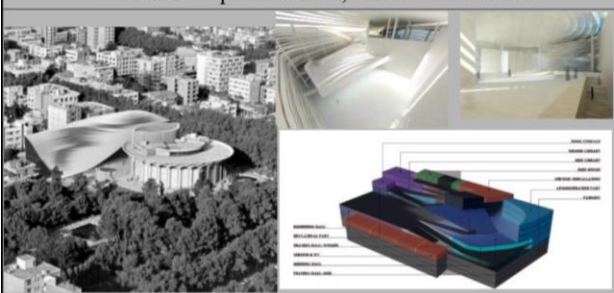
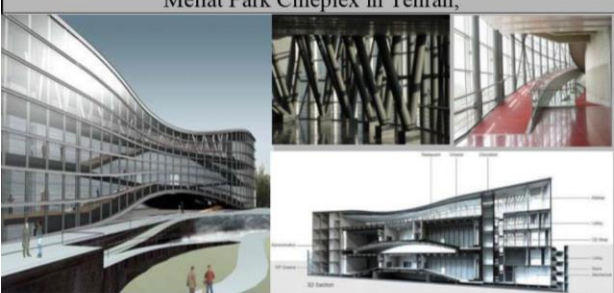

Usage of new technological improvements within the 4<sup>th</sup> generation of architects in Iran has authentic characteristics if;


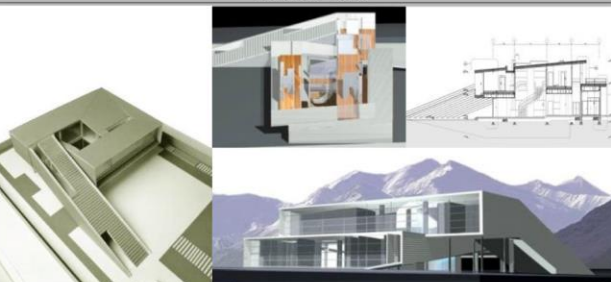
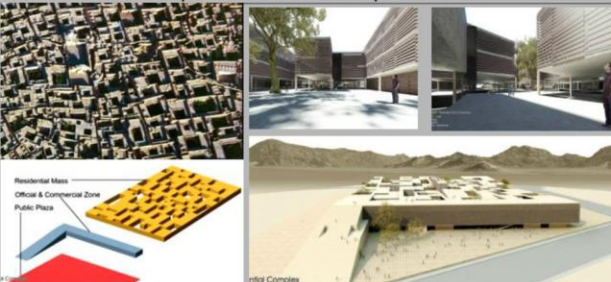

- In all included buildings designed by each architect modern technological improvements have been considered.
- At least one of the main characteristics of modern tectonics in most of the projects is ingrained in the past, according to the author's analysis.

- Each architect has supported the above statement for each building.

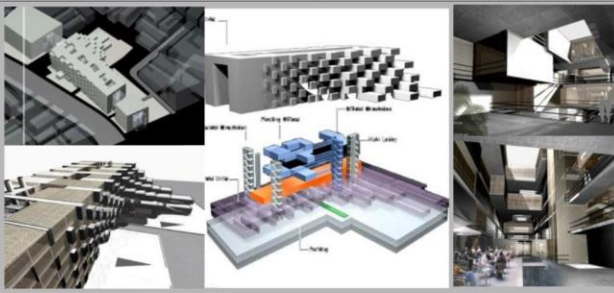
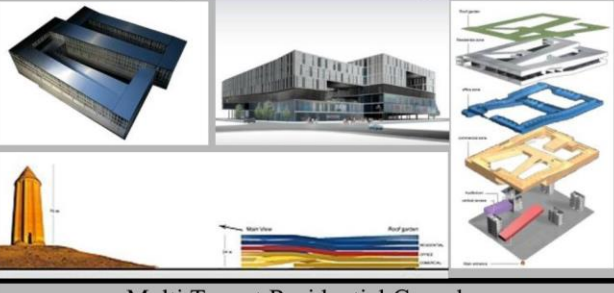
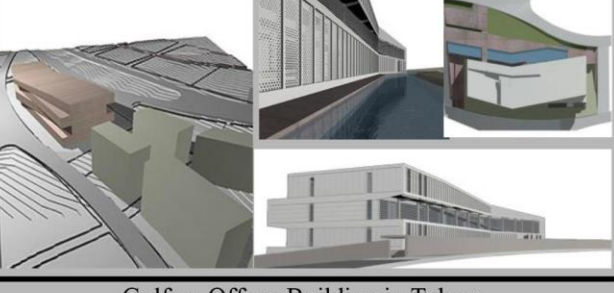
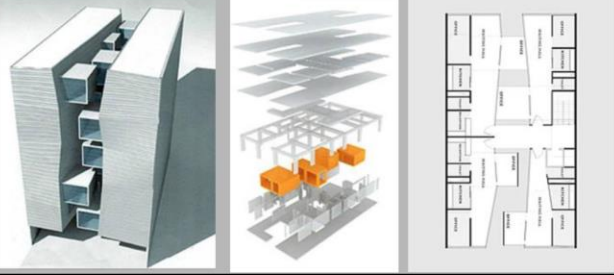
Following tables shows the total characteristics of modern tectonics in projects of each architect separately. It is also tried to highlight the ones which the architects themselves confirm their authenticity. In these tables the Characteristics of Modern Light Tectonics in each projects supported by the author are signed by \* while the Authentic Characteristics of Modern Light Tectonics supported by architects have been highlighted by X.

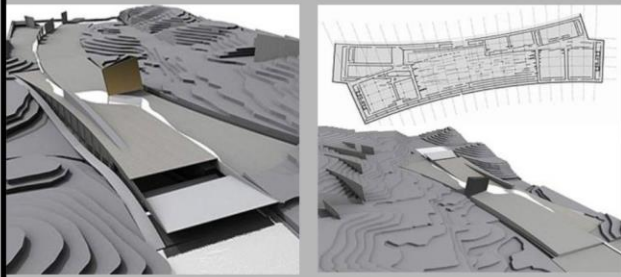
Table 63: Authentic characteristics of modern tectonics in Reza Daneshmir projects

Tectonic Terms	Structure & Material			Form		Context										Space							Light	#									
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicality	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamicality	Flexibility	3dimensional Quality Of	Inside-Outside Connection	Changeable Interior Spaces	Total																	
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
<p>Vali Asr Mosque in Tehran, Under Construction</p> 				*	X										X		*			*	*		X		*	*				*			X
<p>Mellat Park Cineplex in Tehran,</p> 				*	X			*				X		X					*	*		X		*	*	*	*			*			X
<p>House with Two Skins in Tehran,</p> 				*	X			*							X		*		*	*		X			*		*				*		X
<p>Pol Rumi Office Building in Tehran,</p> 				*	X												*		*	*								*	*				X

Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site	Integration With Surrounding Typologies	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamicity	Flexibility	3dimentional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Total																	
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
<p>Ave Gallery in Tehran,</p> 				*	X										X					*	*	X		*						*			X
<p>Hakkak Villa</p> 				*	X			X		X		X	X							*	*	X			*			*	*				X
<p>Safaiyeh Residential Complex in Yazd</p> 				*	X			X		X		X	X					X		*	*	X		*	*			*	*				X
<p>ahid Araghi Residential Complex in Tehran</p> 				*	X			X		X		X	X					X		*	*	X			*			*	*				X



Tectonic Terms	Structure & Material			Form		Context											Space							Light	#								
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamics	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamics	Flexibility	3dimentional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Light Weight																	
Indicators of Light Tectonics	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
Sara& Navab Complex in Mashhad, 				*	X					X									X						*	*	*	*	*	*	*	*	X
Zeytoon Commercial Complex 				*	X					X		X			X				X	*	*		X		*	*	*	*	*	*	*	*	X
Multi Tenant Residential Complex 				*	X			*	X										*	*		X								*	*	*	X
Golfam Offoce Building in Tehran, 				*	X				X						X				X	*	*		X		*	*			*	*	*	*	X



Indicators of Light Tectonics	Structure & Material			Form		Context										Space						Light	#										
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site		Integration With Surrounding		Compatibility With Climatic Issues		Relation With Nature		Conducting Dialogue With City		Fluidity & Dynamicity		Flexibility	3dimensional Quality Of Space		Inside-Outside Connection		Changeable Interior Spaces	Total									
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	Total
<b>War Museum</b> 				*	X		*	*							X				*	*	*	X								*		X	
<b>Total Number of Characteristics</b>					13				7			4			5	10		5					12										
<b>Number of Projects with Authentic Characteristics</b>					13				7			4			10		5						12										

\* Characteristics of Modern Light Tectonics in each projects supported by the author.


XAuthentic Characteristics of Modern Light Tectonics supported by architects

Table 64: Authentic characteristics of modern tectonics in Alireza Taghaboni projects

Tectonic Terms	Structure & Material			Form		Context										Space						Light	#									
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation with Nature	Conducting Dialogue With City	Fluidity & Dynamicity	Flexibility	3dimentional Quality Of Space	Inside-Outside Connection	v Changeable Interior Spaces	Total																
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Façade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Façade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity
Amir Villa in Karaj				*	X		*	*	X						*	*			X			*	*					*	X		X	
No.3 Tehran Pars Building in Tehran				*	X				X							*	*		X				*	*				*	X		X	
QCEO Building				*	X				X		X	X	*		*	*	X	X				*	*			*	*					X
Bagh Shahr Arian				*	X			*	X														*	*		*	*	X		X		

Tectonic Terms	Structure & Material			Form		Context										Space						Light	#								
	Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity& Dynamicity	Flexibility	3dimensional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Light Weight														
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity
Amir Villa in Karaj				*	X					X	*					*		X	*				*	*			*	X			X
House for the Younger Brother				*	X			*		X		X						*	*		*		*	*		*	*	X			X
House for Son				*	X			*		X		X						*	*		*		*	*	*	*	*	X			X
Villa for A Friend				*	X					X				*				X	*		*				*	*	*	X			X


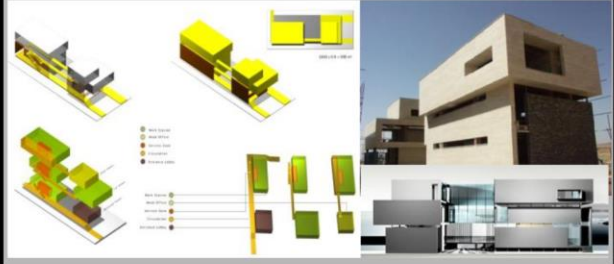






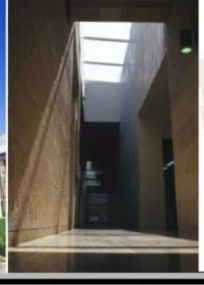
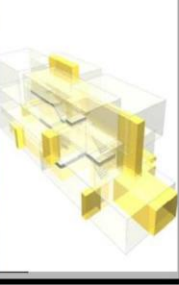





Tectonic Terms	Structure & Material			Form		Context										Space					Light	#										
Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site			Integration With Surrounding		Compatibility With Climatic Issues		Relation With Nature		Conducting Dialogue With City		Fluidity & Dynamicity		Flexibility	3dimensional Quality Of Space		Inside-Outside Connection		Changeable Interior Spaces	Total							
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Open Plan Idea	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity
Beneton Building				*	X			*				X		X	*		*	X	X	*		*				*				X		X
																																
<b>Total Number of Characteristics</b>					13				13		5	4		4			4	4	8											13		
<b>Number of Projects with Authentic Characteristics</b>					13				13		5			4			4		8										13			

\* Characteristics of Modern Light Tectonics in each projects supported by the author.




XAuthentic Characteristics of Modern Light Tectonics supported by architects

Table 65: Authentic characteristics of modern tectonics in Mohammad Majidi projects

Tectonic Terms	Structure & Material			Form		Context										Space					Light		#										
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamism	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamism	Flexibility	3dimensional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Light Weight																	
Indicators of Light Tectonics	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
Determinants																																	
Dolatshahi House				*	X		X	X									*			*	*					*				*			X
Ferroalloy Center				*	X										*		*		*	*						*	*			*			X
Furniture Gallery				*						*					X				*	*			X			*			*	*			X
Mottahari Office Building in Tehran				*						*		*					*		*	*			X			*			*	*			X

Tectonic Terms	Structure & Material			Form		Context										Space						Light	#										
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicty	Gentle Settlement in	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamicty	Flexibility	3dimentional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Light Weight																	
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
Oushan House				*	X			X				*			X				*	*	X	X				*	*		*			X	
Resitan Research Center				*	X												*		*	*	X					*							X
VillaDasht Housing Complex				*	X			X	*						X		*		*	*	X	X				*	*		*				X
VillaShahr Housing Complex				*	X			X	*						X		*		*	*	X	X				*	*		*				X

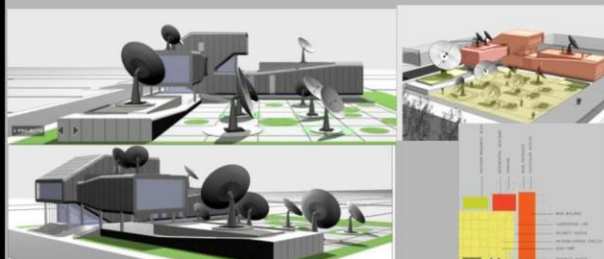
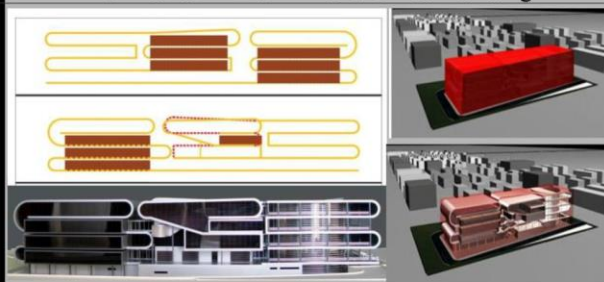




Tectonic Terms	Structure & Material			Form		Context										Space						Light		#								
Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity		Gentle Settlement in The Site		Integration With Surrounding		Compatibility With Climatic Issues		Relation With Nature		Conducting Dialogue With City		Fluidity & Dynamicity		Flexibility	3dimensional Quality Of Space		Inside-Outside Connection		Changeable Interior Spaces		Total						
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity
<b>Tehran Business Hotel</b>				*	X			X							X		*		*	*	X	X		*	*	*	*	*	*	*	*	X
																																
<b>Eight Gardens of Mashhad</b>				*	X			X	*					*	X		*	*	*	*	X	X		*	*	*		*	*	*	*	X
																																
<b>Nahid Office Building</b>				*						*									*	*	X		X	*	*			*	*		X	
																																
<b>Total Number of Characteristics</b>					8		1	6							6						7	5	3									
<b>Number of Projects with Authentic Characteristics</b>					8		6													7												

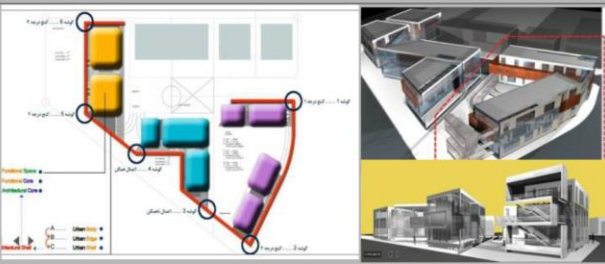
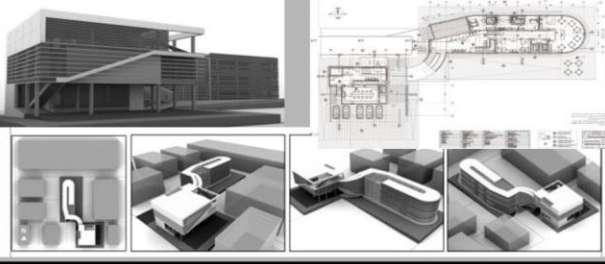

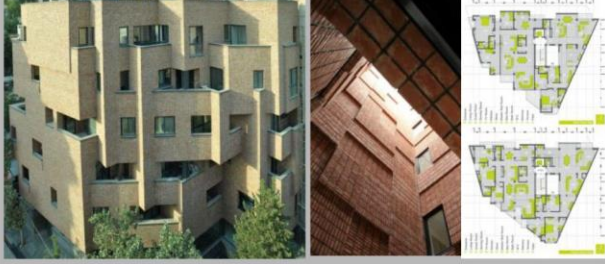
\* Characteristics of Modern Light Tectonics in each projects supported by the author.

XAuthentic Characteristics of Modern Light Tectonics supported by architects

Table 66: Authentic characteristics of modern tectonics in Arash Mozaffari projects

Tectonic Terms	Structure & Material			Form		Context										Space						Light		#									
	Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicality	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamicality	Flexibility	3dimensional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Total																
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids in spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
Arian Sat Co.				*				X												*						X	*						X
Asr Danesh Afzar RD and Office Building				*	*	X		X												X	X				*				*				X
KhazarAbad Pool				*	*			X			*						*			X	X					X	*						X
KhazarAbad Sport Hall in Sari				*				X			*						*			X	X					X	*						X

Tectonic Terms	Structure & Material			Form		Context											Space						Light		#								
																										Indicators of Light Tectonics	Determinants	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamics	Gentle Settlement in The Site
		Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs & Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Authenticity	Total
Moj Nikan Office Building					*	X		*	X										*	X	X			*	*	X						X	
Nikan Office Building in Tehran					*													*		X	X							*					X
Nipco Factory					*	X				X										X	X			*				*					X
Pearl of South						X				X										X	X			*			*		*				X

Tectonic Terms	Structure & Material			Form		Context										Space						Light	#										
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicality	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	Relation With Nature	Conducting Dialogue With City	Fluidity & Dynamicality	Flexibility	3dimensional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Total																	
Indicators of Light Tectonics	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	
RD Office Building				*	*	X			X								*		X	X				*	*	X		*				X	
Sepanta Office Building						X			X								*		X	X				*	*	X		*					X
Vozara Office Building				*	*					*							*		X	X			*				*	*	*				X
Niavaran Residential Building				*	*										*				X	X		*					*		*				X

Tectonic Terms		Structure & Material		Form		Context										Space						Light		#										
Indicators of Light Tectonics		Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site		Integration With Surrounding		Compatibility With Climatic Issues		Relation With Nature		Conducting Dialogue With City		Fluidity & Dynamicity		Flexibility		3-dimensional Quality Of Space		Inside-Outside Connection		Changeable Interior Spaces		Total							
Determinants		Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	Total
RD Office Building					*		X			X										X	X				*	*			*	*	*	*	X	
Total Number of Characteristics							7			10										13	13						6							
Number of Projects with Authentic Characteristics						7				10										13						6								



\* Characteristics of Modern Light Tectonics in each projects supported by the author.

XAuthentic Characteristics of Modern Light Tectonics supported by architects

Table 67: Authentic characteristics of modern tectonics in Rambod Eilkhani projects






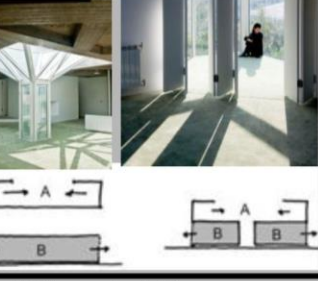
Tectonic Terms	Structure & Material			Form		Context										Space						Light	#									
	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamics	Gentle Settlement in The Site	Integration With Surrounding	Compatibility With Climatic Issues	'Relation With Nature	Conducting Dialogue With City	Fluidity& Dynamics	Flexibility	3dimensional Quality Of Space	Inside-Outside Connection	Changeable Interior Spaces	Total																
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through	Integrating Interior Surfaces through Continuous Patterns	Authenticity
Dolat I 				*	*						X				X	*	*		X	X	X	X	X	*	*		X	X		*	X	
Dolat II 				*	*	X					X				X	*	*		X	X	X	X	X	*	*		X	X		*	X	
Khorana Office Building 				*	*	X					X				X	*	*		X	X	X	X	X	*	*		X	X		*	X	
2Offices 2 Brothers 				*		X					X				X	*			X	X	X	X	X	*	*		X	X		*	X	
<b>Total Number of Characteristics</b>						3									4				4	4	4	4	4				4	4				
<b>Number of Projects with Authentic Characteristics</b>					3										4						4		4				4					



Table 69: Authentic characteristics of modern tectonics in Pouya Khazaeli projects

Tectonic Terms	Structure & Material			Form		Context										Space						Light		#									
	Indicators of Light Tectonics	Light Weight	Transparent	Form Resistant	Perceptibility	Dynamicity	Gentle Settlement in The Site		Integration With Surrounding		Compatibility With Climatic Issues		Relation With Nature		Conducting Dialogue With City		Fluidity& Dynamicity		Flexibility		3dimentional Quality Of Space		Inside-Outside Connection		Changeable Interior Spaces	Total							
Determinants	Modern Materials and structure	Large Glass Surfaces	Curved forms (Compression, Tension)	Simple Pure Forms	Play of Solid and Void	Idea of Core and Crust	Decreasing buildings connection with ground	Usage of Water Reflection	Using stairs, ramps and platform as a mediator between g	Compatible with Surrounding Typologies	Neutral Simple Facades	Gable Roof Style	Central Open Spaces	Double Skin Facade	Central Open Spaces	Activating Open Spaces	Using Natural Local Materials	Legible Facade	Vertical Open Spaces	Hierarchy of Spaces	Public-Private Zoning	Visual Continuity among spaces	No Dead-End Spaces	Free Space Organization	Interplay of Levels, Stairs& Voids	Emphasis on Vertical Elements	In Between Spaces	Framing Outdoor Vistas	Transparency while keep privacy	Play of shadow and light on solid and voids through interior spaces	Integrating Interior Surfaces through Continuous Patterns	Authenticity	Total
<b>Dervish Villa</b>				*	*			*	X		*	*		X	X			*	*	*		*	X		*	*	*	X	X	X	X	X	
<b>DarvishAbad Villa</b>				*	*		*		X		*			X	X			*	*	*		*	X		*	*	*	X	X	X	X	X	
<b>Total Number of Characteristics</b>									2					2	2								2						2	2			
<b>Number of Projects with Authentic Characteristics</b>									2						2								2						2				

\* Characteristics of Modern Light Tectonics in each projects supported by the author.

X Authentic Characteristics of Modern Light Tectonics supported by architects



Analyzing these projects, it becomes clear that although, technological construction issues in Iran has not been improved as it has been in Western countries, these buildings have been built with new accessible technologies. So, the buildings seem to be new and architectural characteristic of them shows an attempt for being along with technological improvements of the present time. In other words, these projects do not look like archaic entities while they completely represent themselves as modern features.

## **Chapter 5**

### **CONCLUSION**

According to the document analysis about the concept of authenticity as one of the major themes of modernism in Chapter 2, Novelty and Relation with past have been extracted as its main indicators. Also, based on literature survey in Chapter 3, lightness can be known as the main characteristic of new technological improvements. Moreover, the main issues of modern tectonics can be classified to Structure and Material, Form, Space, Context and light. Also, Accordingly, Chapter 4 has based on a review about different approaches towards two main concepts of this research known as lightness and authenticity. It is also attempted to introduce the new generation of architects in Iran who lead a new movement based on authentic usage of modern tectonics.

Since, seven pioneers of recent architectural movements in Iran have been selected for this research Chapter 5 has been an attempt for analyzing authenticity of using new technological improvements in their projects. These analyses have based on the proposed model of authentic usage of modern tectonics in the 4<sup>th</sup> generation of contemporary Iranian architecture. The model is formed according to the idea of the selected architects extracted from their interviews and observation notes of the author through visiting the projects.

Based on the model of authentic usage of modern tectonics, a hypothesis has been proposed. This hypothesis proved that concept of lightness in projects of the several contemporary architects in Iran consists of authentic characteristics in terms of form, space, Context and usage of light.

Although, each architect point to different characteristics of traditional architecture employed in their designs, considerably they all had a common definition about the idea of authenticity. Passing through the history of contemporary Iranian architecture based on authenticity, which starts by experiencing traditional forms, then patterns and geometries and afterwards implications a different attempt can be seen in recent generation of architects through this revolutionary process.

According to these architects authenticity is a new interpretation of an older idea. For creating an authentic work it is needed to start from somewhere; have a look to back and move forward. An authentic work is the one, which comes in continuation of previous attempts. It goes along with time and carries the implications and characteristics of its origin. There are no concrete characteristics for defining the authenticity of an entity but it comes through design process. An authentic artwork is the one, which passed through the designer's filter of thoughts and propose something new. Therefore, although their projects reflect the period they have been built in they still carry the characteristics of Iranian architecture. The buildings are totally new and modern according to form and spatial organizations, which are based on new lifestyles while, consist of Iranian authentic features by passing through an Iranian architect's mind.

Although each of these seven architects expressed the idea of lightness and authenticity differently, emergence of these characteristics statically in their projects brings about new results. The following chart shows percentage of each authentic characteristic of lightness in projects of these architects in comparison with each other (Figure 133).

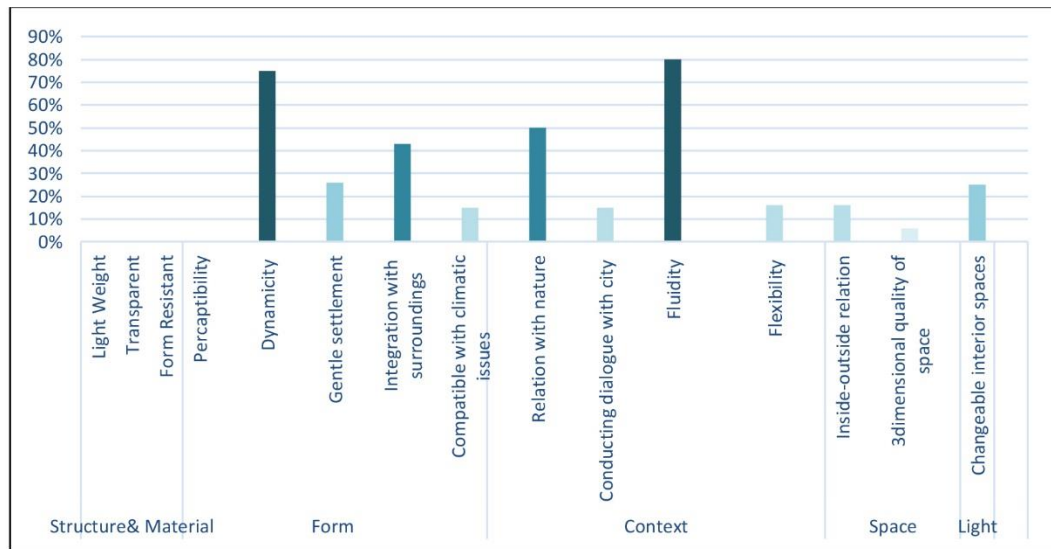


Figure 133: Comparing the authentic usage of modern tectonics in projects of contemporary Iranian architects

Based on interviews play of solid and void or open and close for the sake of dynamicity has been an idea supported by Reza Daneshmir, Alireza Taghboni, Rambod Eilkhani and Mohammad Majidi. Also, fluidity of hierarchical space organization has been mentioned as one of the authentic representation of Iranian architecture by all of the architects. According to the analysis dynamicity of the form, which affects interior spaces as well, are ranked in the highest attention of these seven architects. Form and space have emerged as integrated issues through which hierarchical space organization and fluidity of interior spaces seems to be the result of a play between solid and voids. New interpretation of traditional central courtyards and flexible surfaces of the façade which is mostly called as play of solid and voids or open and close is the most authentic

demonstration of lightness in projects of these architects. The quantitative analysis and results can be seen in Appendix B.

Considering the typology of traditional central open spaces, gabled roof buildings or mountainous contexts for the sake of integration with surrounding environment and usage of central open spaces and activating roofs and terraces for direct relation with natural environment, placed in the second stage of architect's attention.

Alireza Taghaboni and Pouya Khazaeli in almost their whole projects and Reza Daneshmir in half of his designs tried to consider typology of the surrounding built environment which ingrained in traditional city contexts as central courtyard, gabled roof and mountainous typologies. Whereas, Rambod Eilkhani integrate his designed projects with neighboring units by creating neutral simple facades as a junction feature among all those heterogeneous buildings.

The proposed model of lightness can be adapted in other countries. Since it is a conceptual model which is flexible, based on various criterion in different countries it is possible to add some new factors of the idea of light modern tectonics to it or remove the incompatible ones. Also, the ways of achieving the lightest modern tectonics can be changed and varied in different regions. This thesis can be used by the people who want to become familiar with different approaches to the idea of authenticity in art and architecture, concept of lightness and history of contemporary Iranian architecture. Also, it can be helpful for the ones who are looking for different approaches to the idea of lightness as the main characteristic of modern tectonics. The proposed model can be used in other regions by being adapted not only to contextual and cultural issues but to the technological construction methods.

Based on literature reviews idea of lightness through modern tectonics has always been emerged in two distinct ways; the physical lightness which is mostly related to transparency and weight of structural materials and techniques and poetical lightness which is mostly related to sense of lightness. That is why, people experience glass-covered buildings, which induces the sense of heaviness while there are also buildings constructed with solid materials, which can be perceived weightlessness. So, form and space are directly related in these projects while one reflects the characteristics of another. Idea of play between solid and voids not only results in dynamic form combination, which integrate the building with surroundings through open spaces but also creates flowing spatial organization.

Therefore, it could be concluded that hierarchical fluid space organization, dynamic forms through play of solid and void and integration with surrounding environment are the authentic indicators of using modern tectonics in projects of seven pioneers of recent attempt in Iranian architecture.

This research clarifies that since, contemporary architecture of Iran in general is not structurally comparable with lightweight structures in western countries, it has been mostly tried to achieve the idea of lightness through spatial, cultural and contextual issues. Although, these architects mentioned this issue in their interviews analyzing their projects approved that their ideas have been reflected in their projects as well.

Thus, it can be claimed that idea of lightness in architecture as well as philosophy, emerged based on two distinctive approaches as poetical and physical ideas. Idea of physical lightness which is mostly related to lightweight structures as the sign of novelty in association with poetical idea of lightness which is based on contextual and

spatial implications which ingrained in traditional architecture and still can improved according to new lifestyles, can result in authentic architecture.

It can be asserted that formal issues and spatial implications can be authentic when they are considered according to the context and cultural terms. Since, sense of lightness can be induced through integration of the form and space with contextual variables, authenticity and lightness can be known as related concepts, which affect each other. Therefore, when the idea of lightness is not just restricted to physical issues it could be emerged authentic.

Undoubtedly, architecture has to go along with technological improvements of its time but it still deals with other terms, which have always flowed in soul of architecture. Likewise any other physical issues, construction methods in architecture have improved through the time by experiencing previous ways while the older techniques become useless but spatial and contextual implications needed to be improved through a continuous process. Since, architecture has always dealt with human on one hand and environment on the other hand, it worth considering sense of lightness, which is mostly based on form, spaces and context whether it is structurally light or not.

Iranian architecture is not name of a style but it is about an architecture, which is bounded to its context. What makes it an authentic architecture is its relation with environmental issues of the context embracing it and the culture of the people who experiencing those spaces.

“Just as lightness offers a way to understand much of contemporary architecture in terms other than formal ones, cultural concerns with light and the environment are not limited to glass structure” (Riley, 1995).

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## **APPENDICES**

## **Appendix A: Background of seven selected contemporary architects of Iran**

### **Reza Daneshmir**

Reza Daneshmir has born 1968 in Tehran. He graduated from Elm-o-Sanaat University in Tehran with master degree. He is a member of NOA Consortium with Arash Mozaffari and Sam Tehranchi. His Ave Gallery project won the forth place in Memar award in 2001 and afterwards in 2004 Araghi Residential Complex as one of his other projects won the second price. At the same time the project of double skin house won the fifth place. He established Fluid Motion Architect's Office with Katerine Spridanof in 2004. Teaching in different Architecture Departments, he also published various papers in professional architectural journals.

### **Alireza Taghaboni**

Alireza Taghaboni has born in 1977 in Tehran. He graduated from Gilan University in 2002 with master degree and afterwards being accepted in University of Science and Research with the first degree for PhD he has been graduated in 2007. Experiencing 8 years of working in different architectural offices he started working for his in 2004. Establishing Razan Office in 2008, and keeping the privileges of previous office he founded Next Office in 2009. Results of these 8-year architectural works are designing more than 40 projects and architectural awards. In 2008 and 2011 the project of Villa for A Friend and Amir Villa respectively each won the first price and Kouhsar Villa in 2012 won the second place. Also the QCEO Building has become the finalist in Barcelona Festival in 2012. He is also teaching in different Departments of Architecture from 2002.

**Pouya Khazaeli**

Pouya Khazaeli has born in 1975 in Tehran. He graduated from Tehran Azad University in 2000 with master degree. He experienced working with famous international architectural offices in the world such as Shiegro Ban Architects in Japan, Shirdel and Partners and NJP Studio in Hong Kong. Pouya Khazaeli found Rai Studio in June 2007, with the aim of reviving what he considers to be the lost spirit of architecture; beyond utility and conceptual design towards the extension of organic settings with reverence to the cultural heritage of the region. Khazaeli Parsa is one of Iran's foremost architects and has been recognized as such in numerous architectural competitions and art biennials, most notably; A world Pavilion Competition-2004, The 4th Tehran sculpture biennial-2005 (Kamalledin Behzad Prize), Memar Award-2006 ("Best Residential Building"), Memar Award-2009 ("First Prize"). As an international firm, Rai Studio has worldwide partners in Tokyo, Rio de Janeiro, Sydney and Milan. Designing the Mud Structure prototype dwelling consists of a bamboo structure, he has become the representative of Architecture for Humanity in Iran from 2011. As a result of the project in Kermanshah, the team has been invited to participate in the festival Grains D'Isère 2012 in France.

**Rambod Eilkhani**

Rambod Eilkhani has born in 1972 in Tehran. He graduated from Shahid Beheshti University in 1999 in Tehran with master degree. He has taught in Islamic Azad University of Tehran from 2011. From 2003 to 2012, he was partner at Arsh Design Studio, a Tehran-based architecture office both nationally and internationally recognized for its projects: Dollat II, a residential apartment by Arsh Design Studio, has been short-listed for the 2010 cycle of the Agha Khan Architecture award, while 2 Offices/2 Brothers, an office building by Arsh Design Studio, was short-listed for 2011

WAF and memar magazine award. Also, in 2009, they won memar magazine award for Khorsand Office Building and first prize, best Tehran urban facades, Tehran municipality award for excellence in architecture for Dollat II residential building and second prize of Memar Award in 2008. Moreover, in 2006, first prize, they won the first prize of Memar Award for Dollat I residential building. In 2012 after Arsh Design Studio was divided to two separate offices she co-founded [Shift] Process Practice with Nashid Nabian.

### **Ramin Mehdizadeh**

Ramin Mehdizadeh has born in 1976 in Tehran. He graduated from Shahid Beheshti University in Tehran in 2002 with master of architecture. He also finished his Msc in Columbia University - Graduate School of Architecture, Planning and Preservation in 2007 and also another MA from Columbia University in the City of New York in 2011. He worked as a designer in Skidmore Owings & Merrill LLP (SOM) from 2008-2009 and afterwards became one of the Co-owners of Architecture by Collective Terrain (AbCT). He has won the first and second place in Memar Award respectively in 2004 and 2006 for Stair House and Ganje Danesh Residential. He also won the first Memar Award for Apt. No. 1 in 2010. Stair House and Apt. No.1 have been nominated for Agha Khan Award as well in 2007 and 2013.

### **Mohammad Majidi**

Mohammad Majidi, born in 1976, after taking the architectural technician degree from Elm-O-Sanaat (Science & Industry) University, started his cooperation with Artiman Consulting Engineers. He mentions his acquaintance with Farmarz Sharifi as a turning-point in his career, and believes that he has acquired most of his sensations about residential architecture, managing projects and details in that period. He has cooperated

with Artiman Consulting Engineers in many projects, namely Saadabad Residential Complex in north of Tehran.

In 1994, while educating in Shahid Beheshti University, Majidi set up Bonsar Company. His projects in this period are regarded as practices to find new connections, material specifics and possibilities for desirable project. His projects of Furniture Gallery and VillaShahr Residential Complex have been nominated for Agha Khan Award respectively in 2007 and 2012. He won the first prize in Memar Award for Furniture Gallery in 2011.

### **Arash Mozaffari**

Arash Mozafari has born in 1971 in Tehran. He graduated from Islamic Azad University of Tehran in 1998 with master degree. He has founded EBA Experimental Branch of Architecture in 1998. EBA considered itself as an experimental branch of architecture, which based on experimentation in the field of architectural culture and knowledge endeavors to play a role in the development of cities and living environments. The studio, which began its work in Toronto, Canada, in 2007, has as its goal a better understanding of what is shared between science and culture or basic technical sciences and art and architecture. His projects of NIPCO Factory as the third prize-winner of Memar award in 2001 and Pool and Recreation Centre as the fifth prize winner of Memar Award in 2005 have been also nominated for Agha Khan Award respectively in 2004 and 2007.

## **Appendix B: Quantitate Analysis of the Authentic Characteristic of Modern Light Tectonics in Contemporary Architecture of Iran**

The table below indicates percentages of the buildings, which contains characteristics of modern lightness as authentic. It can be seen that concept of lightness has been mostly appeared through dynamicity and fluidity of interior spaces with 80% in addition to inside-outside connection with 75% of the projects. Integration with surroundings and usage of light for creating more dynamic spatial quality with more than 40% are the secondary ones. Afterwards, dynamic form, usage of light for creating dynamic facades and making dialogue with city, enhancing 3dimensional quality of space, relation with nature and flexible interior spaces with more than 20% allocate to the third place while gentle settlement in the site and making compatibility with climatic issues can be classified into the fourth place.

Percentages of the buildings, which contains characteristics of modern lightness as authentic according to the ways they have been achieved

	Architects		R. D.	A. T.	P. K.	R. E.	R. M.	M. M.	A. M.	Total
	Characteristic	How it achieved								
Structure & Material	Light Weight	Modern materials & structures								
	Transparent	Large glass surfaces								
	Form Resistant	Curved forms (compression,								
Form	Perceptibility	Simple pure forms								
	Dynamicity	Play of solid and void	13/13 100%	13/13 100%		4/4 100%		8/11 72%		38/60 63%
		Idea of core and crust							7/13 53%	7/60 11%
Context	Gentle settlement	Decreasing building's connection with								
		Usage of water reflection						1/11 1.5%		1/60 1.5%
		Using ramp, stair or platform as mediator						6/11 54%	10/13 76%	16/60 26%
	Integration with surroundings	Compatibility with surrounding typology	7/13 53%	13/13 100%	2/2 100%					22/60 36%
		Neutral simple facade				4/4 100%				4/60 6%
	Compatible with climatic issues	Gable roof	4/13 30%	5/13 38%						9/60 15%
		Central open space		4/13 30%						4/60 6%
		Double skin facade								
	Relation with nature	Central open space	5/13 38%	4/13 30%	2/2 100%					11/60 18%
		Activating open spaces	10/13 76%		2/2 100%	4/4 100%		6/11 54%		22/60 36%
		Using natural local materials					4/4 100%			4/60 6%
	Making dialogue with city	Legible facade								
Vertical open spaces		5/13 38%	4/13 30%						9/60 15%	
Space	Fluidity	Hierarchy of spaces		8/13 61%		4/4 100%	4/4 100%		13/13 100%	29/60 48%
		Public-private zoning				4/4 100%	4/4 100%		13/13 100%	21/60 35%
		Visual continuity among spaces				4/4 100%	4/4 100%	7/11 63%		15/60 25%
		No dead-end spaces	12/13 92%			4/4 100%		5/11 45%		21/60 35%
	Flexibility	Open plan idea			2/2 100%	4/4 100%		4/11 27%		10/60 15%
	3dimensional quality of space	Interplay of levels, stairs and voids					4/4 100%			4/60 6%
		Emphasis on vertical elements					4/4 100%			4/60 6%
	Inside-outside relation	In between spaces							6/13 46%	6/60 10%
		Framing outdoor vistas					4/4 100%			4/60 6%
		Transparency while keep privacy					4/4 100%			4/60 6%
Light	Dynamic interior spaces	Play of shadow and light on solid-voids		13/13 100%	2/2 100%					15/60 25%
		Integration of interior surfaces via light			2/2 100%					2/60 3%



The hypothesis has been proven with this research and shows that there are authentic characteristics of using new technological improvements in the 4th generation of contemporary Iranian architecture. These characteristics, which more or less exist in traditional Iranian architecture, have been transformed into modern tectonic features. As a result, it can be stated that the concept of modern tectonics in contemporary Iranian architecture seems to be more related to spatial perceptions. According to table below, it can be claimed that fluid interior spaces in addition to inside-outside connections, are the most authentic characteristics of new technological improvements in the 4th generation of Iranian architects' works.

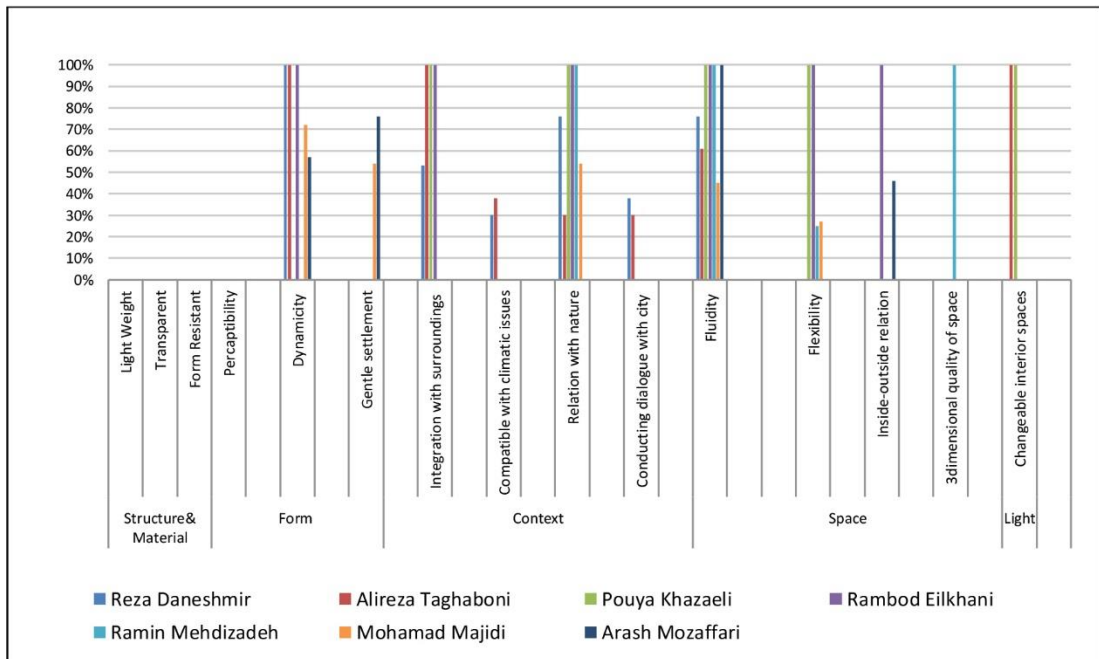
Total percentage of each authentic characteristic of using modern tectonics in projects of each architect

	Architects	Reza Daneshmir	Alireza Taghaboni	Pouya Khazaeli	Rambod Eilkhani	Ramin Mehdizadeh	Mohamad Majidi	Arash Mozaffari	Total
	Characteristic	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
Structure & Material	Light Weight								
	Transparent								
	Form Resistant								
Form	Understandability								
	Dynamicity	13/13 100%	13/13 100%		4/4 100%		8/11 72%	7/3 53%	45/60 75%
Context	Gentle settlement						6/11 54%	10/13 76%	16/60 26%
	Integration with surroundings	7/13 53%	13/13 100%	2/2 100%	4/4 100%				26/60 43%
	Compatible with climatic issues	4/13 30%	5/13 38%						9/60 15%
	Relation with nature	10/13 76%	4/13 30%	2/2 100%	4/4 100%	4/4 100%	6/11 54%		30/60 50%
	Making dialogue with city	5/13 38%	4/13 30%						9/60 15%
Space	Fluidity	12/13 92%	8/13 61%	2/2 100%	4/4 100%	4/4 100%	7/11 63%	13/13 100%	50/60 80%
	Flexibility			2/2 100%	4/4 100%	1/4 25%	3/11 27%		10/60 16%
	Inside-outside relation				4/4 100%			6/13 46%	10/60 16%
	3dimensional quality of space					4/4 100%			4/60 6%
Light	Dynamic interior spaces		13/13 100%	2/2 100%					15/60 25%

Since, in Iranian architecture, space, open areas or emptiness has always been an important issue it has been attempted to activate open spaces as well as solid parts. Therefore, it has been tried to activate open spaces such as roofs and terraces and central courtyards to avoid creating dead-end spaces. Regarding to industrial urban divisions for high-rise buildings, which push open spaces or courtyards aside without any connection with solid volumes, people do not experience natural environments. However, in traditional buildings with central courtyards or green roofs and terraces residences were obliged to pass through nature times and times during a day. This is the idea that these architects tried to revive for the sake of lightness.

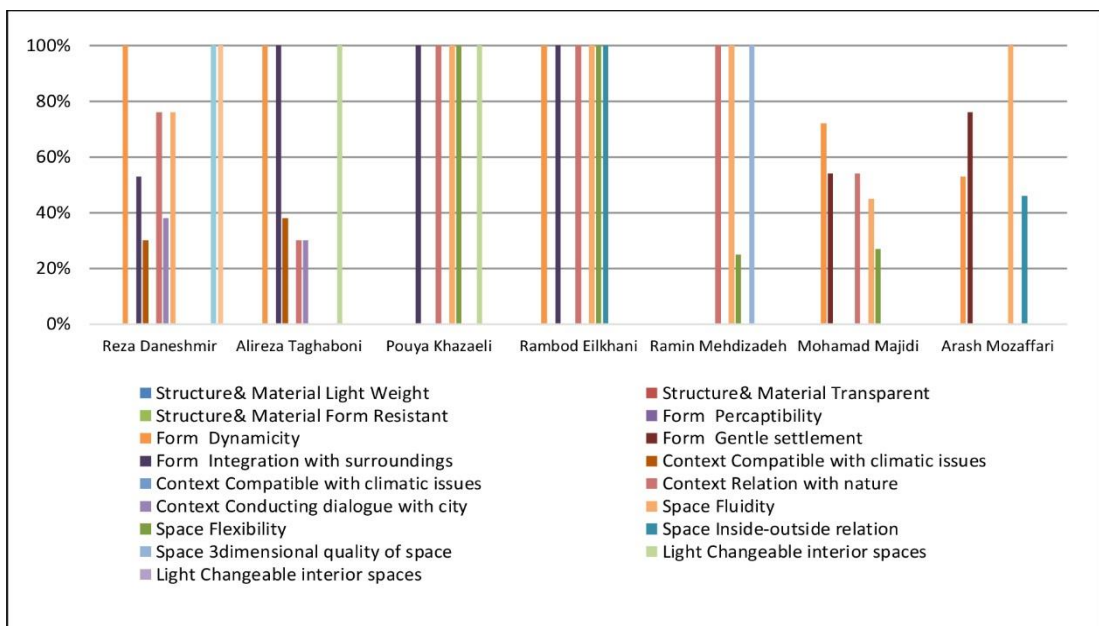
Reza Daneshmir, Alireza Taghboni in 1/3 of their projects and Pouya Khazaeli in almost his whole designs employed the idea of central open spaces for creating direct relation with nature. Also, Reza Daneshmir, Rambod Eilkhani, Pouya Khazaeli and Mohammad Majidi supports the idea by activating open spaces such as roofs and terraces to avoid creating dead-end areas. Ramin Mehdizadeh tried to use natural local materials through interior and exteriors for inducing the sense of lightness through attachment with nature. Accordingly, compatibility with climatic issues, conducting a dialogue with city, flexibility of interior spaces, inside-outside relation and 3dimensional quality of space placed in the fourth level of consideration by these seven architects.

### Comparison of authentic usage of each characteristic of modern tectonics in projects of each architect



Except Pouya Khazaeli and Ramin Mehdizadeh the other architects were common in supporting the idea of fluid interior spaces and dynamic forms. Whereas, Reza Daneshmir, Alireza Taghaboni, and Rambod Eilkhani are the ones who commonly used the idea of dynamic form, fluid interior spaces, relation with nature and integration with surrounding environment.

### Authentic usage of each tectonic character in terms of lightness



Space, has always a dominant issue in Iranian architecture, which according to Mirmiran tends to be lighter and more transparent. Accordingly, it can be claimed that authentic characteristic of modern light tectonics in projects of these seven architects mostly appeared in terms of spatial issues. Although, their buildings are not transparent and lightweight, moving through interior spaces induces the sense of lightness. Also, from outside the way that the building settled in the site and integrates with surroundings implies the sense of lightness.