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The Theme:
The Islamic Symbolism in The Elements of Exterior Envelope

The project:
Islamic Cultural Center

Jury

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بسم الله الرحمن الرحيم

Dedication

I dedicate the fruit of these years to those who supported me in my life, dear mother and My affectionate father, to my brothers Mohammed Lamin and Mohammad Nadir, to all the members of my family.

A special dedicate to my master who stood with me in this work, Professor Abdo Yamina.

I do not forget to give this humble work to all my friends: Nadjib, Achraf, Ramzi, Khaled, Faissal and Tedjani.

A special dedicate to my brothers in the university residence who helped me and stood with me in the sweet and bitter, Habib, Mokhtar, Said, Bilal, Yassin, Zino, Mamer and Toha.

To all the students of architecture in the 2019 batch and to everyone who teach me throughout my academic career.

Degaa Fouad

Thanks, And Gratitude

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I extend my sincere thanks to all the teachers, intervening and all the people who, through their words, their writings, their advice and their critics, guided my reflections and agreed to meet me and answer my questions during my research.

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I thank my dear mother and my father, who have always been there for me, "who sacrificed for your children, sparing neither health nor effort. You gave me a wonderful model of hard work and perseverance. I am indebted to you for educating me, I am proud for being your son ".

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To all these intervening in, I offer my thanks, my respect and my gratitude.

Degaa Fouad

SUMMARY

LIST OF TABLES

LIST OF FIGURES


Introductive Chapter

General Introduction

In the past , Mosques played an important role in the publishing of the Islamic culture and preserving its identity , which was existed in the first appearance of mosques in Islam (Qibaa) by the profit of Allah Mohammed , where it had many activities like prayer , meeting and reading (Quran) ; This is what made it the basic nucleus of Islam in Medina. By the time , and with the development of the western world in many specialties ; the Muslims affected by this new culture , forgetting their culture , traditions and religion , that has led to the emergence of new facilities in our Islamic world ,"the Islamic cultural centers" Which came in order to get back the real identity of Islam and introducing a good image about the Islamic culture to the whole world.

Muslim architecture is considered as a special art for its unique and creative designs so The Islamic architects pegged their creativity on evoking their inner beliefs through the use of abstract forms that produced magnificent works of art. They progressively developed alternate architectural styles that used Islamic art to create unique works. For these artists and architects, the main aim of the art works was to transmit Islamic messages and not to offer aesthetic satisfaction to the eye, where they expressed their ideas and beliefs through the formation of many symbols and elements that served as a formative translation to give their work a specific meaning and identity.

All these symbols and architectural elements, especially external ones, which leave an impression on the human mind through the first look on the building, this look is what makes us able to read those symbols and understand its meanings.

There is no doubt that the development and the progress of nations is reflected in the architectural form of their buildings ; also this latter is embodied mainly from the shape or the external envelope of the buildings , in here it is clear that there is a close relation between the development of architecture and the exterior envelope of its buildings.
So, the exterior envelope is a fundamental part of buildings where it has a key part on the overall appearance of the building and on the way, it performs in providing comfort conditions for the occupants. Building envelopes—and mainly façades—have to communicate emotions and the value of buildings, and therefore in there it is embedded approximately 25 % of the overall cost of projects. **(Giovanni Zemella, 2014)**

Problematic

The climate problems that characterized the city of Biskra, such as exposure to the sun and the southern wind loaded with sand is considered as one of the most obstacles which stands against the sustainable development of urban equipments in the city, That's what requires us to find some solutions including the use of exterior envelope as protection against this climatic barriers , Although there are many equipments in Biskra, but few of them use the exterior envelope as a solution to these obstacles .

In addition, the city of Biskra is considered one of the most important cities in Algeria, which has an Islamic architecture rich in elements and symbols (Meshrabiya, arches, vaulted. Muqarnas …) that reflects the richness and diversity at the level of solutions, where it can be included as an element to achieve sustainability in urban equipments on one hand, these symbols and elements can be used in the exterior envelope as an expression and translation of the Islamic architecture in Biskra on the other hand.

All of this leads us to ask the following questions:

What is the Symbolism in Islamic architecture? What is the exterior envelope? and How to create a sustainable Islamic cultural center with attractive characteristics by combining the effectiveness and High performance of the exterior envelope with the aesthetics symbols of the Islamic architecture in Biskra?

The objectives and the intentions:

1- **The definition of the Symbolism in Islamic architecture and the exterior envelope**

2- **The creating of new Islamic cultural center with attractive characteristics.**

- ❖ By creating a new type of envelope conception.
- ❖ playing with the Islamic decorations and Arabic calligraphy in the pattern.

3- **the integration between the site and the project.**

- ❖ by combining between the Modernity of envelopes and the traditional elements of Islamic architecture.
- ❖ exploiting the site throw its view points and make the project as a communication point.

4- **Achieve the sustainability in the project.**

- ❖ with the using of the Islamic architectural techniques and elements.
- ❖ by using the vegetation inside the building to reduce the heat.

The Motivations of Project Choosing:

- Through what we observe in the city of Biskra, we find the need to new urban equipment (Islamic cultural center) with modern specifications and designs combines between traditions and modernity.
- The city has one small Islamic cultural center that does not meet its needs.
- An attempt to restore the true identity of the Muslims in their country after their influence on Western civilizations; forgetting their cultural heritage by establishing a new Islamic cultural center that meets this need.
- Encouraging cultural and scientific exchange, and facilitating communication between Muslims, in addition to introducing Islamic culture to the other civilizations.

Structuring of the Memorandum

The introductive chapter:

The general introduction and comprehensive introduction to the subject of the study followed by identification of the incentives that led to the identification of the project. This phase of the study is considered the first phase of the methodology followed.

Chapter One: (Theoretical):

In this chapter, we discuss concepts and theories related to symbolism in Islamic architecture, and all that relates to the external architectural envelope and its types, characters , etc. and we look at the detection of all the meanings and symbols of Islamic hidden behind the architectural and construction elements involved in the installation of the external envelope .

Chapter Two : (Analytical):

This chapter contains an analysis of local and international examples of Islamic cultural centers where the architects relied on explaining the Islamic symbolism on the external envelope of the building, extracting its design principles and various ideas in addition to presenting different data for the city. In the design phase.

Chapter three: (Application):

After the research study, which was to identify the most important elements affecting the design of the Islamic cultural centers and how to embody the Islamic symbolism in the external envelope of the building, which was taken into consideration during the design process, a design model was proposed for an Islamic cultural center in Biskra, which is characterized by a series of cultural projects.


1
Chapter One

Introduction:

Although the Islamic architecture grow up in different countries, it was not only inspired by its first culture, but influenced by every country. The essence of the Islamic faith was based on the idea of uniting the Creator.

The doctrine represented by the Muslim designer symbolically and intellectually represented through the architectural forms that expressed the unity of the Creator in the form of the minaret and the centrality of the domes. The Islamic doctrine was also associated with the prohibition of stereotypical art. The result is the expression of the concept of Islamic thought and through experimental simulation, Its elements, lines, composition, texture and repetition of harmonious rhythm of plant formations and experiential geometry of nature and the surrounding environment. The experimental decorative simulation, which symbolizes the greatness of the Creator in flowing lines, the geometric balance and color harmony, this is evident in the interest in studying the inner space and the internal surfaces of religious buildings, especially the Iwan and Qibla.

I-1- The Appearance of the Islamic Architecture History:

Humanity has been able to unleash itself in expression during different historical periods, through The cultural activities practiced in the arts, literature and science of all kinds, where the architecture became a sign of the richness of the people and progress, with the advent of Islam, man tried so much to create aesthetic value for the buildings surrounding it, especially places of prayer .

With the advent of the Umayyad period, interest in this specialty began to grow , the effect of this appeared in the Umayyad Mosque and the Dome of the Rock; it was the first architectural success in the early days of Islam, Not only that, but the achievements of the Umayyads in the architecture such as the palace of Amra In the Jordan and the Mashta, as the Abbasid Covenant to complete the march of the Umayyads in the mosque of Samarra which is one of the most evidence of the distinctive buildings in Islamic architecture, Abbasids also keen on planning cities, mosques and palaces. **(Michell, 1979)**

I-2- The Symbolism in the Islamic Architecture:

I-2-1 The Definition of The Symbolism in the Islamic Architecture:

A- Linguistic Definition: The symbol in the language means "gesture" or "mark" – is a form of verbal and nonverbal expression. (larousse, 2012)

B- Conventional Definition: is a philosophical literary doctrine that expresses the various literary and philosophical experiences by means of the symbol, the sign and the gesture ».

it means the indirect implication or expression of the hidden psychological aspects that language can't express directly. **(Akhtar, S.M, 2011)**

Figure 1 Bathroom Signe
source: www.amazon.ae

Figure 3 the Symbolism of Cross
source: https://akhbarelyom.com

Figure 2 the Symbolism of Crescent
source: http://moheinet.com

I-2-2- The Types of Symbolism:

I-2-2- 1 The Direct symbolism:

The level of expression in direct symbolism is the simplest level of expression. In this case, the architect uses a mark or a sign that explains what the object is, so that it can reach the recipient's mind easily.

for example, the Islamic religion took a direct symbol of the crescent; Christian religion chose the cross for the same reason, sometimes the architect may be incapable of expressing the truth of some space; thus, forcing him to use symbolism in expression, On the internal level of the building it may be difficult to explicitly express service places such as water courses and others as a result, the architect may resort to the use of common symbols to indicate what these spaces are. (Tharwat, Okasha, 1994)

I-2-2- 2 Symbolism by meanings (Indirect):

The architect may need to clarify specific concepts or ideas that the building will deliver. This symbol may pass through some viewers without realizing the desired hidden message because it requires a great degree of knowledge to enable them to understand beyond the lines in architectural work, for example, the balconies, express in their content unity and

equality of the of Muslim's ranks; it also reflects the connection between the materialism of the earth and the spirituality of the sky. (Tharwat, Okasha, 1994)

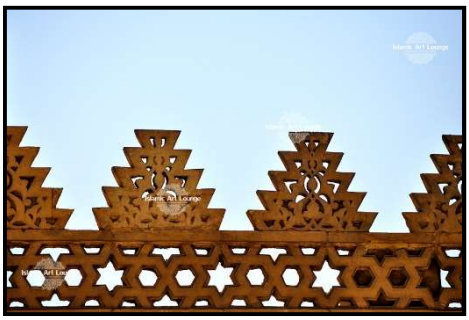


Figure 4 the symbolism of Balconies Okmor mosque
source: http://islamicartlounge.com

Figure 5 the symbolism of Balconies Alazhar mosque
source: http://islamicartlounge.com

I-2-3- The Islamic Symbolism in the colors and forms:

I-2-3-1 The Islamic Symbolism in the colors:

A/ The White Color: The use of white as a symbol of purity and purity so we find it in the color of Ihram, as it was mentioned in the Quran as the color of the faces of believers in Paradise; this color is symbol of the owners of paradise, hence was emerged the importance of the white color of the artist and the Muslim architect.

Figure 6 The symbolism of the white color in the dress of Ihraam
source: www.masrawy.com

Figure 7 The symbol of white color in the dove of peace
source: www.youm7.com

B/ The Black Color: Black is a color that has deep meanings and concepts; some scientists suggest that the black color symbolizes and refers to right and justice, also symbolizes to the sovereignty, glory and honor, and it is the color of Kaaba envelope. **(Akhtar, S.M, 2011)**

Figure 8 Symbolism of the black dress of the judges source: https://ilhyh.com

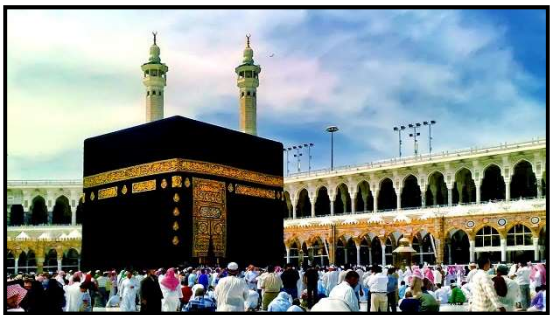


Figure 9 Black color in the Kaaba source: https://bawabetelmadar.com

C/ The Green Color: It is one of the favorite colors of Muslims, it has a special status in them, because it is the color that Allah chose him to be the dress of the people of Paradise. Therefore, that color has been taken as a symbol of the Commission and a symbol of greenness, development and security. **(Akhtar, S.M, 2011)**

Figure 10 Symbolism of green color in the expression of nature source: https://mawdoo3.com

Figure 11 Dome of the Prophet's Mosque source: https://www.hafryat.com

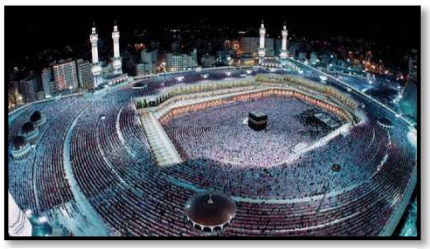
D/The Blue Color :Is the color that expresses life in all its meanings is the color of water and the sky where it also expresses the link between these two elements. **(Akhtar, S.M, 2011)**

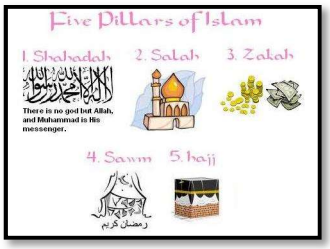
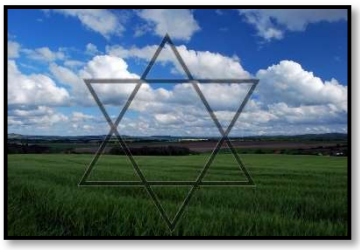
Figure 12 Symbolisme of the blue color in the source: connection between water and sky

I-2-3-2 The Islamic Symbolism in the Forms:

There are many shapes and abstract elements that carry symbols from the source of the unification of Allah, some scientists have agreed on the following points where:

(Abd el Nasser Yassin, 2006)

Forms	Islamic Symbolism and meaning	Pictures
Cube	the center of the four quarters and the *Kaaba*, a symbol of the center of the universe	 **Figure 13 Kaaba the center of the universe source: www.sy-24.com**
Dome	a symbol of the cover of sky and the next spiritual world.	 **Figure 14 The Dome of the Rock to the sky www.islamiclandmarks.com**
The square	expresses or the four natural elements, it also symbolizes stability.	 **Figure 15 a Compass showing the four directions source: https://mwthoq.com**
The circle, the point	a symbol that expresses the universe. It includes the stars as well as the thought. the law is the ocean and the way are the diameter and the truth are the center and point represent the Creator.	 **Figure 16 The galaxy represents the center point source: https://phys.org**

The pentacle	symbol refers to nature, and the five pillars of Islam.	 **Figure 17 the five pillars of Islam source: http://theislamicnews.com**
The Six points Star	We will find it composed of two triangles with the base down to represent the earth and me the ascending to the highest represents the Sky.	 **Figure 18 the six star refer to the sky and the earth conection source: google Image**
The Eight points Star	We will find it composed of two squares first slant on the angle of 45 degrees, which represents the four sides and the other with the horizontal line, which represents the four elements as the four sides are (North, South, East and West). The four elements are elements of life (Earth, Sky, Water and Light).	 **Figure 19 The Eight points Star source: https://en.wikipedia.org**

I-2-4- The Islamic Symbolism in the Architectural Elements :

I-2-4-1- The Entrances:

A- Definition: It is a rectangular deep holes in the horizontal projection, the depth of which equals half of its width as it reached the walls of the facade and perhaps exceeded the height and ends with a special vaulted. **(Yahya. Waziri, 1999)**

B- Types of Entrances:

Types of Entrances		
Direct or simple Entrance	The monumental entrance Prominent abroad	The apostate entrance retreats to the inside
 Figure 20 Dome of the Rock -Palastine- source: https://www.123rf.com	 Figure 21 Badshahi Masjid- Pakistan- source: https://no.wikipedia.org	 Figure 22 Sheikh Lotfollah Mosque-Iran- source: https://www.romeartlover.it

C- The Islamic Entrances in Biskra City:

Through our observation of the existing religious buildings in Biskra we noticed that most of them have a direct and simple entrance.

This is because most of them were built after the colonial period and were characterized by this type of entrances

Figure 23 Al-Rahma mosque -Biskra- source : www.vitaminedz.com

D- Symbolic thoughts and hidden meanings behind the Entrances:

The entrances generally have a symbolic meaning as it is the boundary between the inside and the outside, which is considered the dividing line ; It moves us from what is not sacred to what is holy, since the element of the entrance is considered the center of the mosque's facade and its focal point.

There are also other symbolic ideas with the entrance element where is filled with Quranic verses or famous phrases It suggests peace and tranquility for everyone who wants to enter that holy place. It is a call, assurance, appeal and welcome to the expatriates.

(Omer. S, 2009)

Figure 24 the entrance of Blue Mosque source: -https://previews.agefotostock.com

I-2-4-2-The Mashrabiya:

A- Definition : Is a prominent balcony from the wall of the building, play the role of the window on the upper floors, where the person can see outside without being seen, through the narrow openings in the Mashrabiya are either made of small pieces of wood interlocking and assembled inside the tires make it a small room rectangular or polygonal, This is the dominant form of Islamic architecture. The origin of the word Mashrabiya came from drinking. It is a way to make round or octagonal roundabouts as a place to put chicks and pitchers in order to cool the drinking water inside. **(Michell, 1979)**

Figure 25 Islamic Mashrabya source: https://middle-east-online.com

B- The Islamic Mashrabiya in Biskra City: The Mashrabiya has appeared in Biskra since its first appearance, and this is because of the civilizations that have been rolled on it. They were built on large houses, lodges and other important buildings, especially during the colonial period.

At present we notice the disappearance of Mashrabiya from the architectural elements from the city of Biskra, even the old ones ceased to exist and just a little remained.

Figure 26 Mashrabiya in Biskra City source: www.shothotspot.com

Figure 27 National Bank of Algeria-Biskra source: www.facebook.com/madein

Figure 28 Mashrabiya in Biskra in the colonial period /source: By Dr. Fouad Felichi www.facebook.com/madeinbiskra

C- Symbolic thoughts and hidden meanings behind the Meshrabiya:

There are many symbolic ideas and hidden meanings behind the Mashrabiya. One of the most important of these ideas is the transformation of everything that is not precious to precious. This is what has been applied on Mashrabiya, where the worthless remains of wood have been turned into a puzzle placed on windows with multiple values. Is the ideal form to block the vision as it symbolizes and refers to the (Hijab) that hides behind it is like a veil (Hijab) on the face of women and therefore has emerged Mashrabiya to refer to

the protection , privacy , cover and trust the woman (mother, wife, daughter) so as not expose to the eyes of strangers, The Mashrabiya is a symbol to preserve the thing which is precious behind him and preserve the privacy of the people of the house. **(Omer. S, 2009)**

Figure 28 The symbolism of Mashrabia - source: (Kamal ALJiblawi , 2009)

I-2-4-4- The Islamic Decorations:

The decorations appeared in various forms on the walls, ceilings and floors of buildings across the ages from ancient times until now where the various decorative units, and took different forms as a result of ideas and beliefs ,the Muslim architect was interested in studying the geometric motifs of the lines and formations , where he took full care of the colors, especially white, blue and silver, and the decorations used in most buildings derived from the spirit of Islam and its disappearance and shows this by refraining from the work of statues , images and decorations of living things. **(Akhtar, S.M, 2011)**

A- The Forms and the Types of Islamic Decorations: There were many decorative forms that appeared in the Islamic architecture; they were used to meet various requirements such as beauty, adornment and inspiration for some things by hinting to God through the shapes and colors used as we shall see later the forms of decorative elements can be classified into: **(Akel Kahera, 2013)**

Figure 29 Islamic Botanical Decoration source: http://religionscomparative7.blogspot.com

Figure 30 Decoration of Arabic calligraphy source: https://mawdoo3.com

A-1 geometrical decorative elements: It is made up of linear relationships, geometrical shapes, regular polygons, circles and other forms. The geometric motifs have become very important in Islamic civilization and have often become the main element covering large areas of different buildings. The most prominent types of geometric decoration are stellar shapes Polygonal (star dishes) has spread in the Mamluk era. It symbolizes and refers to the sky and its various stars that illuminate the darkness of the night.

Figure 31 The golden star dishes
source: http://cairohistoric.blogspot.com

Figure 32 geometrical decorative (star dishes)
source: http://religionscomparative7.blogspot.com

A-2 Arabesque (islimi) decorative elements:

Muslims are interested in abstract vegetal motifs, so that the stem and leaves remain only curved lines, which have been widely used in arabesque forms, since they are curved, round and adjoining lines that are connected to each other and form curved borders. Other plant drawings consist of plant branches, flowers, the decorations that appeared in the Islamic architecture were characterized by the appearance of some natural forms such as branches, leaves, fruits and flowers, especially lily, cloves, roses and other such plants. We note the use of olive as a decorative element, which carries a great symbolic meaning, it is the symbol of peace until today. **(NECIPOGLU, G., 1995)**

Figure 33 Ornamental decorations of different plant leaves- source: http://4eco.e-monsite.com

Figure 34 A group of interlocking, intertwined and symmetrical plant elements- source: http://www.adast-alfn.com

A-3 The Arabic Calligraphy decorative elements: The Islamic architecture is different from the rest of the civilizations with a decorative element that is the Arabic calligraphy. It has been taken care of since the inception of Islam. The Arabic calligraphy was used in the architectural decoration of the portals, mihrabs, domes, the minaret and other elements of the architectural elements.

The Kufic line has been used since the Islamic conquest until the end of the Fatimid period. It is also common to use the line of transcription in historical texts and the Kufic script in the Quranic verses of the Ayyubid era. **(Akel Kahera, 2013)**

Figure 35 the Arabic calligraphy in the Qatar Faculty of,Islamic Studies source: Archdaily.com

Figure 36 the Arabic calligraphy in the Mosque of Mahrouk Iran source: - calligraphy-arab.blogspot.com

B- Symbolic thoughts and hidden meanings behind the Islamic Decorations:

The element of decoration appeared in the Islamic architecture with many symbolic ideas and meanings Hidden behind the many shapes that were used at the time. It is the most forms the decorative form used is the shape of the jug, which appears in many places and is symbolized by the purifying water and ablutions before prayer; there are also many symbols and meanings in other decorations, including:

1-Radiation decoration: which symbolizes the idea of the universe and the unification of the Creator and the center, which indicates worship (circling the Kaaba) .

2-The use of undulating decoration: where the top domes are used, and the use of low-glazed -glass terraces symbolizes the waves of the sea that go up to the sky and symbolize the glorification of Allah.

3-The use of stellar decoration to cover the outer surfaces of the domes: first used on the flat surfaces and then used upon the domes is a symbol and reference to the stars that exist in the sky and this is shown clearly through the shapes of stars carved on the domes. **(Abd el Nasser Yassin, 2006)**

Figure 37 a dome with Radiation decoration – source: www.pinterest.com

Figure 38 a dome with undulating decoration - source: www.pinterest.com

Figure 39 a dome with stellar decoration - source: www.pinterest.com

I-2-5- The Islamic Symbolism in the Structure Elements and Others :

I-2-5-1- The Dome:

Figure 40 the Dome of the Rock in Jerusalem - source: https://twitter.com

It is one of the models of geometric configurations associated with Islamic architecture; and the dome is a circular construction of a curved projection of the interior domed of the outside in the form of a hemisphere, it is one of the special forms used in covering the roofs of many buildings throughout the ages, It is also possible to cover the religious and funerary buildings. the earliest examples that emerged in the Islamic era is the Dome of the Rock in Jerusalem. **(Akhtar, S.M, 2011)**

A- the Origin and The Functions of The Dome:

The dome was used in Islamic architecture to refer to the sky, especially in the religious architecture. The Muslim architect took the domes of the Copts and the Byzantines, and he used them in the **shrines** until the word Dome became the name of the entire shrine.
The dome appeared small in the beginning, where its use was limited to covering the holy places such as those located in front of the mihrab and over the imam, then placed over the Fountain which located in the center of the mosque to indicate the importance of water.

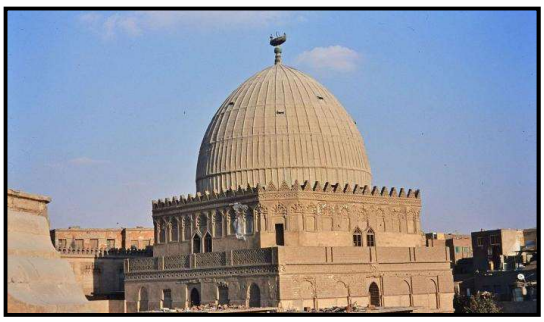


Figure 41 The Shrine of Imam Shafei - Egypt - source: https://al-ain.com

Figure 42 Use the dome above the fountain to highlight the importance of water-Sultan Hassan Mosque - source: identity-mag.com

B- The Forms and the Types of The Dome:

The shapes of the domes and their decorations were varied, including the spherical, oval, Bulbous, pyramid, and polygon shapes. Several structural methods were used to move from the square projection to the octagonal projection and then to the ring above which the dome was used. the most important types of domes that emerged in Islamic architecture can be summarized as follows: **(Kamal ALJiblawi , 2009)**

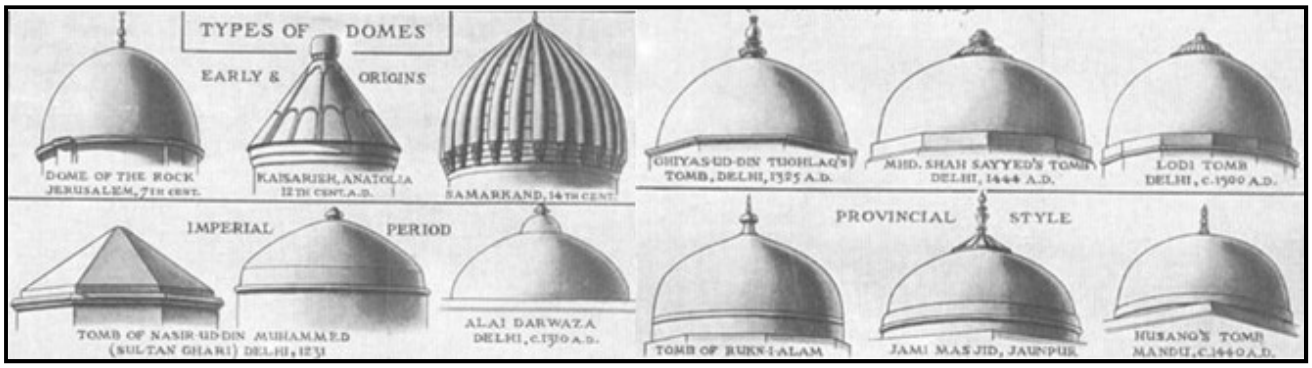


Figure 43 types of domes in some islamic periods- source: www.pinterest.com

C- The Islamic Dome in Biskra City:

Through our observation of the types of domes in Biskra we find that most of them have a hemispherical shape and through its impact on the civilizations that have passed, in addition to the difficult climate that made the population there use this type, which is found even in the modern buildings in Biskra .

Figure 44 the using of dome in the city center - source: mawdoo3.com

Figure 45 the using of dome in the musium of Modjahid in Biskra - source: www.tomohna.net

Figure 46 the using of dome in the shrine of Sidi Zerzour- source: http://www.ech-chaab.com

D- Symbolic thoughts and hidden meanings behind The Dome:

The use of domes was a special vision in Islam. It was not only a climatic, structural and functional solution, but also a symbol of spirituality symbolizing the sky. It is a miniature picture of what the Arab in the desert saw from the breadth of the horizon and the turning of the sky. It is unique to the various domes of different civilizations, where the symbolic ideas and hidden meanings that emerged behind that element throughout the ages and

different generations were largely symbolic of the idea of containment. It was built above the Imam in the mosques and above the Sheikh in the shrines. **(Kamal ALJiblawi , 2009)**

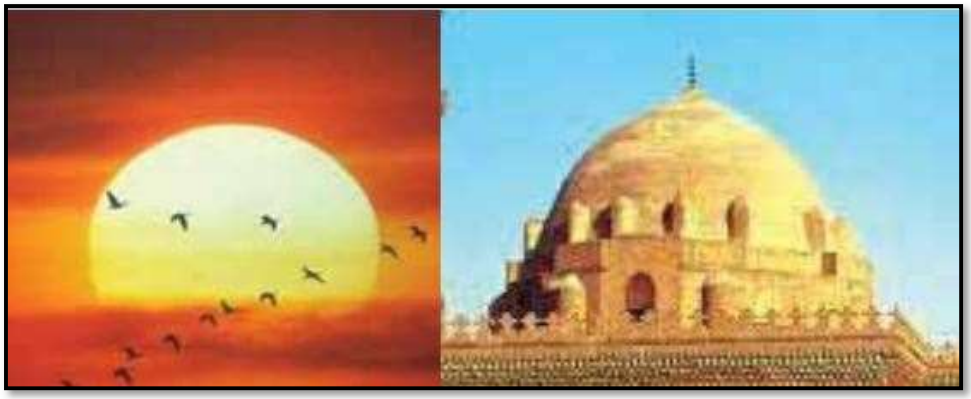


Figure 47 Using the dome to indicate the rotation of the horizon over the tomb of Imam Hassan Mosque- source: www.marefa.org

I-2-5-2- The Islamic Arcades:

Arcades have played an important role in the history of Islamic architecture since its early eras and still have a value in attempts to develop in forms consistent with the development of architecture, arcades are essential and structural elements in Islamic architecture.

An arcade is an **arched** architectural element that depends on one or more fulcrums, usually it's openings in the building, it consists a several stones, each called a Fakara or a Sandja. **(Yahya. Waziri, 1999)**

Figure 48 the using of arcades in the Sultan Suleyman mosque - source: https://smarthistory.org

Figure 49 the using of horseshoe arcades on Cordoba Mosque façade - source: http://muslimheritage.com

A- The Forms and the Types of The Islamic Arches:

Arcade were used in the Islamic architecture in different forms, where the decade arcade was very prominent in the Mamluk era where it used in the windows, doors, columns and moles**,** of the Arcades used in that period in general, we mention the following**:**

- The Horseshoe Arcade, its center rises on the two legs of the knot and consists of a circular strip.
- The wavy Arcade, consisting of an arc and two circles and it is tapered shape.

- The Arcade with lobes. Used extensively in the Maghreb and consists of a series of small Arcade.
- Arcade decorated with Muqarnas from inside: used in Andalusia, especially in Alhambra palace and Morocco.
- The high pointed Arcade: used extensively in Iran and we find examples in the Mosque of the Levant and the mosques of Egypt. **(Akhtar, S.M, 2011)**

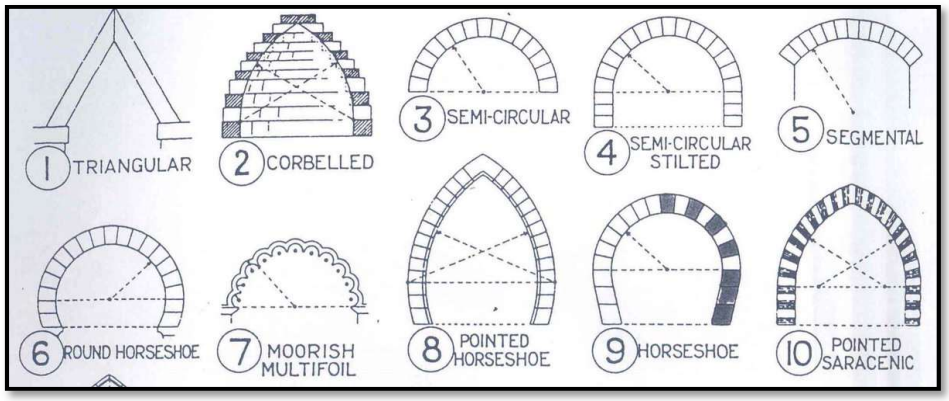


Figure 50 Some types of arcades in Islamic architecture- source: www.pinterest.com

B- The Islamic Arcades in Biskra City:

Noteworthy in the city of Biskra is the using of one type of Arcades is the semi-circular Arcades and this is due to the ease of construction on the one hand and to affect the architecture here in the civilizations that passed.

Figure 51 semi-circular Arcades in Biskra city Haret El Oued - source: Photography of the student

Figure 52 semi-circular Arcades in Biskra court - source: https://courdebiskra.mjustice.dz

Figure 53 the using of semi-circular Arcades in Biskra city - source: http://ar.univ-biskra.dz

C- Symbolic thoughts and hidden meanings behind The Islamic Arcades:

The architect Hassan Fathi mentions the Arcades of Islamic thought that each Arcade has a symbolic meaning as all geometric shapes.

The pointed Arcade of most buildings that have emerged in Islamic architecture are found to follow the same curve as the Arcade. The pointed form of the Arcade symbolizes the rise up to heaven or return to Allah.

This is in contrast to the Arcades used in most of the buildings of the Ottoman era inherited from the Coptic era, where the use of the semi-circular Arcades that goes down, so it symbolizes quietness or calm and also symbolizes return to earth or death.

(Kamal ALJiblawi , 2009)

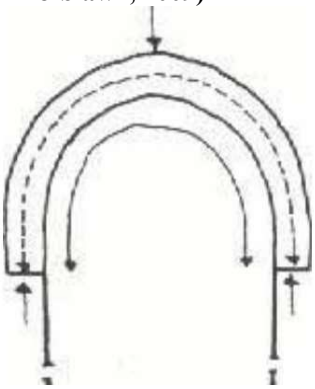


Figure 54 A semi-circular arcade analysis that expresses the idea of stillness and separation from the outside- source: (Kamal ALJiblawi , 2009)

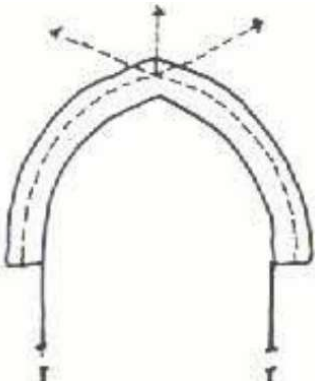


Figure 55 The pointed arcade analysis that expresses the idea of the rise up to heaven or return to Allah- source: (Kamal ALJiblawi , 2009)

I-2-5-3- The Minaret:

A- the Origin and The Functions of The Minaret: There were no Minarets in the Prophet's Mosque during the period of the Prophet (PBUH) and -his four Caliphs. K. A. C. Creswell, the leading British scholar of Muslim architecture, has observed that "in the time of Muhammad no such thing as a minaret was known." He dates the first minarets found at Damascus, from 673 A.D., 41 years after the death of Prophet Muhammad (PBUH).

It should be noted that the call to prayer can be carried in the streets or from the roof of the Mosque, today the Minarets are distinctive architectural features of any Mosque, they are generally tall, graceful spires, with rod-shaped or concave crown affixed to the roof of the Minaret, usually either free standing or much taller than any surrounding support structure - it's almost hard to find new developed Mosque today that won't include a Minaret.

(Tharwat, Okasha, 1994).

Figure 56 Minaret of the Bride Umayyad Mosque in Damascus- source: http://islamicartlounge.com

Figure 57 The First Minaret in Islam- Umayyad Mosque in Damascus - source: http://islamicart.museumwnf.org

B-The Forms and the Types of The Minaret: The forms of the ear have evolved and varied in different Islamic ages in terms of form and number of pieces used where:

-The first method: The minaret is composed of three floors - the lower part of which is a square, the upper one is cylindrical.

- The second method: The minaret consists of a base located above the mass of the entrance in the form of a cylinder and this body holds two balconies on the muqarnas at It ends with a bulbous dome.

– The third Method: It spread strongly in the Islamic architecture of the Mamluk era. It starts with a square base topped by an octagonal section and then a cylindrical circle with a head or two heads.

– The fourth Method: The minarets, which appeared in the Islamic architecture of the Ottoman era, were characterized by elegance and integrity, and its conical end in the shape of the pen, the circular was a circular shape full height and ends cylindrical. **(Akhtar, S.M, 2011)**

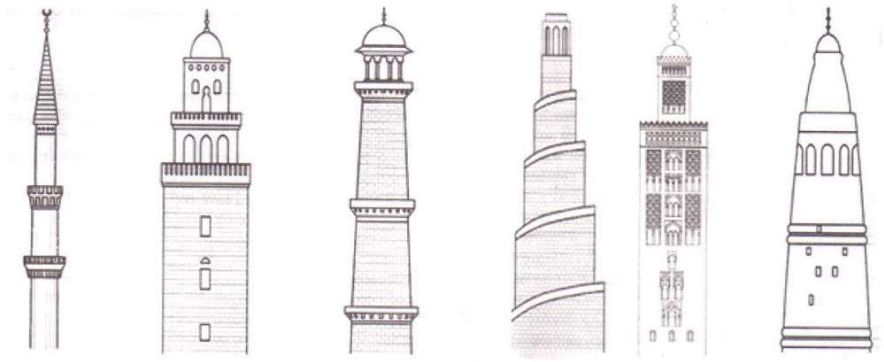


Figure 58 Some types of Islamic minarets that mentioned above - source: (Akhtar, S.M, 2011)

C- Symbolic thoughts and hidden meanings behind The Minaret: The minarets have given special and distinctive characteristics to religious buildings, especially those that contain two similar minarets. They suggest the beauty of form, which rises to the sky as arms extended to Allah asking for more mercy and forgiveness, which symbolizes the Muslim worshiper who raises his hands to Allah.

The minaret is made up of a bottom part of a square shape, which is the base where the square symbolizes the earth, the four sides symbolizing the four original bodies, then an octagonal part of the center, symbolizing and pointing to the eight angels bearing the throne of the Rahman; and then a circular upper part symbolizing the universe or the throne The divine, It ends with the dome or the cross-section with the upper point that symbolizes and refers to the end.

The symbolic thought used in the design of that order is logical in terms of order, it begins with the earth the symbol of stability for the people and then the eight angels carrying the

divine throne and then the mobile thing is the universe or the throne of Rahman. **(Kamal ALJiblawi , 2009)**

Figure 59 two similar minarets symbolize two arms rise to the sky extended to Allah asking for more mercy and forgiveness- source: (Kamal ALJiblawi , 2009)

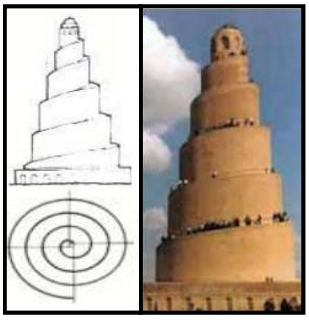


Figure 60 The spiral minaret of the Samarra Mosque in Iraq symbolizes the elevation to Allah- source: (Kamal ALJiblawi , 2009)

I-3-The Exterior Envelope:

Introduction:

The external climate has a direct impact on the human condition and its sense of comfort or narrowness, and human adaptation with the outside climate is not flexible enough to make him always comfortable but when he exposed to any inappropriate conditions such as high temperature or extreme cold, the human body tries to adapt to those external circumstances, such as sweat secretion attempt to alleviate the intense heat or shiver to the human body to benefit from Generate heat in the cells of the body when he exposed to severe cold. but his adapting to surrounding climatic conditions does not protect him from feeling uncomfortable; due to his exposure to these inappropriate climatic conditions.

The climate of urban spaces is only part of the external climate, but there have been some changes from the conditions of the external climate as a result of the existence of an environment in which the exterior envelope moved into the space, and this environment is only the exterior envelope of this space man's unique or used for this space.

The exterior envelope of any building or urban space is merely a direct expression of the functional component behind its Cover. as well as the structural element used in the building, whether from the reinforced concrete, iron, glass or other building materials.

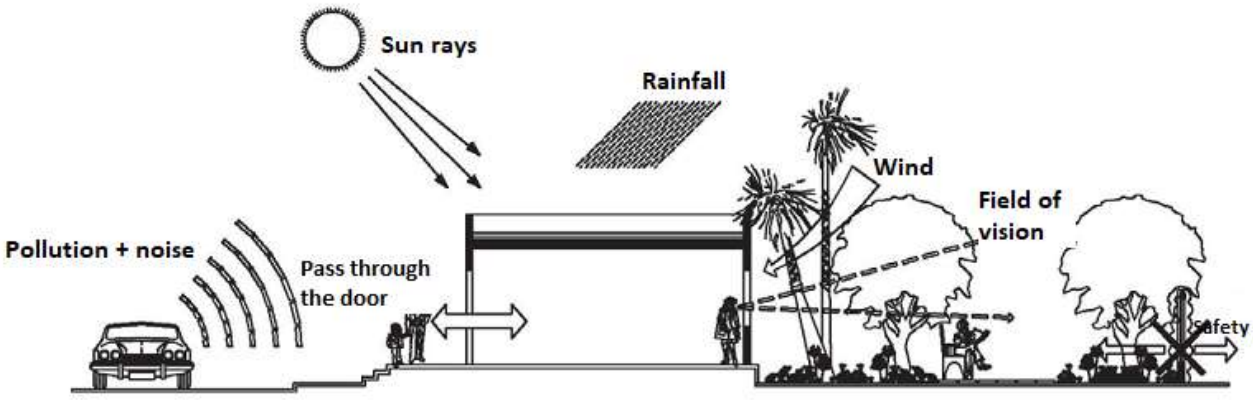


Figure 61 The most important influences inside and outside the building through its exterior envelope source: - (Bader Eddin Elkhouli, 1975)

I -3-1-The Exterior Envelope Definition:

I -3-1-1- Linguistic Definition:

-"Covering completely surround tissue, paper of any material ..." **(Larousse, 1989, p.387-Merzougi Wafia, 2008)**

I -3-1-2- Conventional Definition:

" The envelope of a building, like the skin on our bodies, is called upon to perform a multitude of simultaneous functions in a relatively thin dimension. These functions can be energy related (e.g. to control heat loss from the interior of the building) or no energy related e.g. to present an aesthetic position "

(Prowler. D & Kelbaugh. D-Toraa Chaker, 2016, p 09).

Figure 62 Polar bear fur represents the cover that protects it from the cold -source: google Image

Figure 63 the envelope of Bird's Nest Stadium - China- source: www.Archdaily.com

I -3-2-The Elements of The Exterior Envelope:

In order to achieve a good climatic environment within the architectural spaces that he designs, we should be more interested in analyzing climate characteristics as well as studying the different architectural elements of the building are made of walls, roofs and external openings and the mutual influence between the climatic factors and the elements of the exterior envelope of the space, as it is considered the main tool for the transfer of the heat inside the building and thus the state of the climate space.

The exterior envelope of the building consists of three-3- main elements:

1-The ceiling (roof). **2-**the vertical exterior walls. **3-** the external openings (doors and windows).

Each of the above elements has a role in the thermal transfer between the outside and the inside of the building, and can be considered its Design to reduce the heat transfer to and from the space, thus helping to create a comfortable environment for humans.

(Asif Syed , 2012)

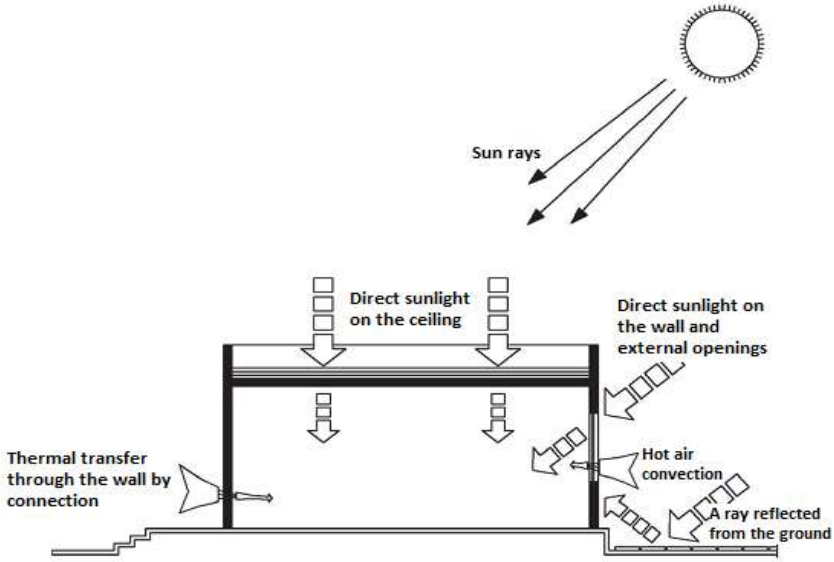


Figure 64Thermal transfer across the exterior envelope of the building-Advanced Building Technologies source: -Asif Syed 2012

I -3-2-1 The Ceilings (Roofs):

The main source of the heat transfer between the inside and the outside of the building will be through the roof, where it is more susceptible to direct sunlight throughout the day as opposed to the walls which be exposed to the sunlight at certain times in the day.

The rate of thermal transfer of the building through the roof is varies according to the construction material. the more construction materials have the ability to gain heat quickly, the greater the amount of heat available to the space than the amount of heat through other construction materials have the property of acquisition and loss of heat slowly.

The best materials for the construction of the roof are the materials with the property of the acquisition and loss of heat slowly. and from these materials we mention the concrete and buildings with bricks of large thickness, unlike metal materials with the acquisition and transfer of heat quickly.

When we use the roofing materials with low heat gain, the maximum temperature during the afternoon, which causes thermal pressure on the ceiling, which leads to heat gain and penetration into the interior of the building has been taken into shortfall, and these materials become a source of heat radiation inside the space because of the inherent heat inside, which protects the inhabitants of the house from the extreme cold at night, especially in winter. (Bader Eddin Elkhouli, 1975)

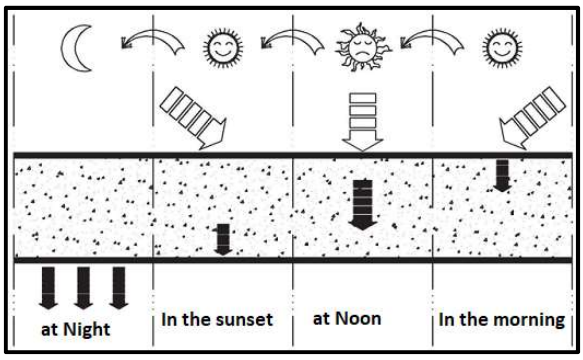


Figure 65Thermal transfer during the day building with materials in slow thermal penetration- source: https://platform.almanhal.com

I -3-2-1-1-Climatic treatments for ceilings:

The good choice of construction materials to cover the roof does not mean the complete removal of heat from the ceiling, and the Architects must choose the helping tools to reduce the heat in transit to the inside of the space, when the roof is constructed, and there are several different needs to achieve this goal can be summarized as follows:

A- The Using of insulating heat materials: One of the materials that have thermal inertia can be used in the roof finishing components. The most famous of these is the foam material which has the possibility of heat penetration inside, which protects the internal space from excess thermal loads. The thermal insulation layer shall consist of foams or other similar materials in fish starting from 2 cm. The higher the thickness, the more efficient it will be in the required thermal insulation. Figure (66).

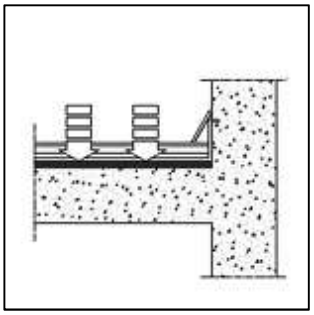


Figure 66The Using of insulating heat materials- source: (Bader Eddin

B- The Using of reflective heat materials: By covering the top surface of the roof with a reflective material to get rid of the sun and its thermal energy. Examples of reflective materials for the sun and heat are metal sheets or materials in white reflective heat. Form (67).

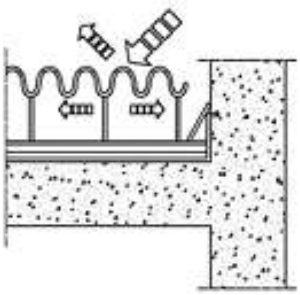


Figure67The Using of reflective heat materials- source: (Bader Eddin

C- Leaving a vacuum insulation: Of the characteristics of the air that it is considered a relative heat insulation, so it is used as an air vacuum to isolate the heat as shown by Figure 68; this is achieved by several means, for example:

- Using hollow blocks above the roof.
- Construction of the roof of two concrete layers with a confined air space.

However, over time, unless the air is renewed, the heat of the air will certainly be affected

by fluctuations and therefore, the need for continuous renovation of the air and hence the idea of creating the roof of two separate tiles allow the passage of air between them.

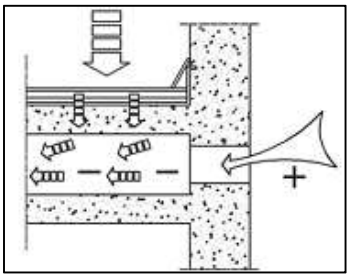


Figure 69 Construction of the roof of two concrete layers- source: (Bader Eddin Elkhouli,

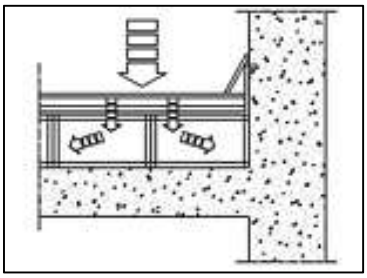


Figure 70 Leaving a vacuum insulation - source: (Bader Eddin Elkhouli, 1975)

D- The using of curved roof forms: It is known in the study of the sun angles, that the curved roof not exposed completely to the sun; there is a shaded part of them, and thus reduce heat pressure on the ceiling, and the most famous examples of curved roofs is the dome, which are widely used in the desert areas, the most prominent example the Architecture of Hassan Fathi.

These roofs also help to generate a high-pressure zone in the exposed area of the sun and a low-pressure zone in the shaded area of the ceiling, which helps the movement of air between the two zones, also helps to reduce the heat overload on the ceiling.

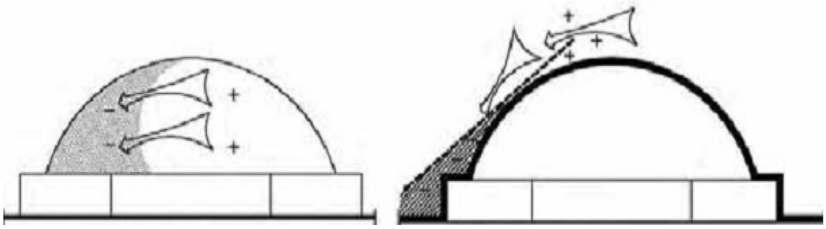


Figure 71 The using of curved roof forms - source: (Bader Eddin Elkhouli, 1975)

Figure 72 the using of dome in Biskra - source: www.tomohna.net

I -3-2-2-The Exterior Walls:

The exterior walls are exposed to thermal radiation and the heat penetration within the space. The wall material also affects the amount of thermal penetration between outside and inside the space. The best materials used in Biskra are burnt bricks and have a slow property in the acquisition and penetration of heat between the inside and outside.

But the walls are not exposed to the sun, such as the exposure of the ceiling because any facade is not exposed to the sun all the day, such as the roof, in addition to the difference angle of the sun's tilt on ceilings as on walls, which leads to reduce the intensity of sunlight on it , but the walls exposed to another source of heat, is the reflected radiation from the surface of the earth, especially in areas with the earth of the property of the reflective

surface thermally, in addition to another source is the hot air which is close to the surface of the earth, figure (73) shows the thermal loads on the ceiling and the wall for the same angle of the sun and the same time as the ratio between the amount of solar radiation on the ceiling and the wall is shown. **(Peter Warren, 2003)**

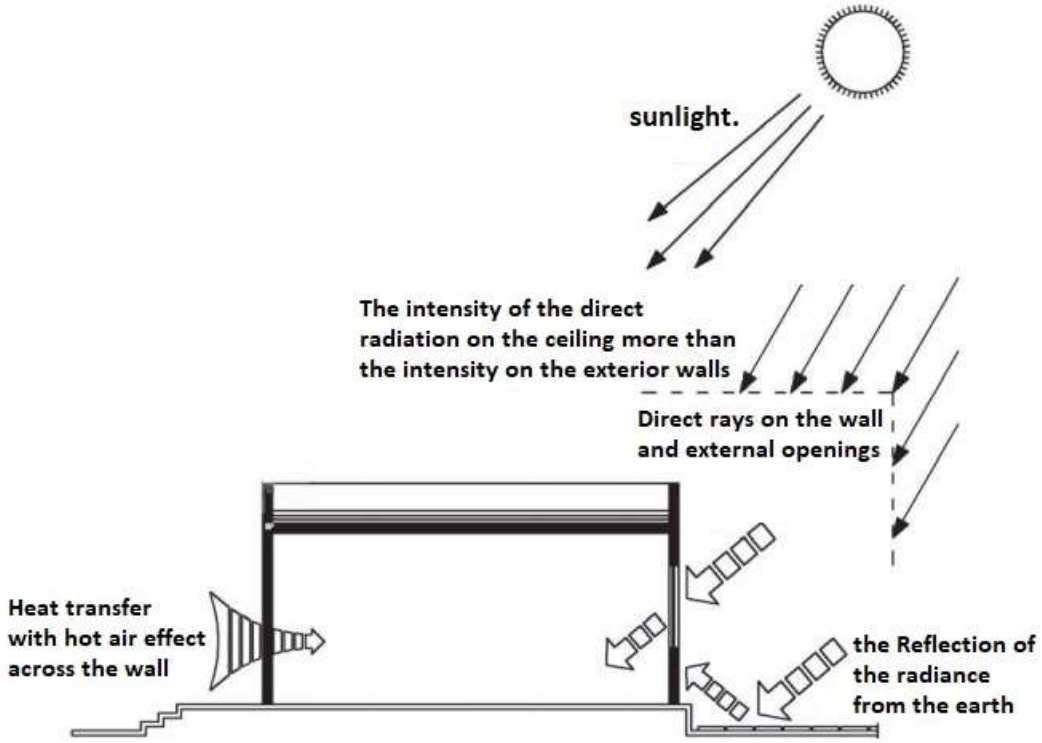


Figure 73Comparison between the intensity of sun radiation on the ceiling and the wall- source: (Peter Warren, 2003)

I -3-2-2-1-Thermal sources exposed to the exterior walls:

- Direct sunlight.
- Sunlight reflected from the ground.
- convection resulting from hot air near the surface of the earth.

At night, the surface of the earth is a source of cold radiation on the outer walls.

I -3-2-2-2-Climatic treatments for Walls:

Walls treatments are very similar to roof treatments. Examples of such treatments include:

1 –Using of insulating materials in the walls, figure (1).

2 - Construction of walls from slow acquisition and thermal transfer materials. figure (2).

3 - Construction of double walls to make a vacuum insulation. Figure (3).

4 - Construction of walls of crowded allow the air between them and identify and reduce the load to heat Inside the space. Figure (4).

5 - Coating walls with reflective materials for heat. Figure (5).

6 - shading the parts of the exterior walls with nuts. Figure (6). **(Peter Warren, 2003)**

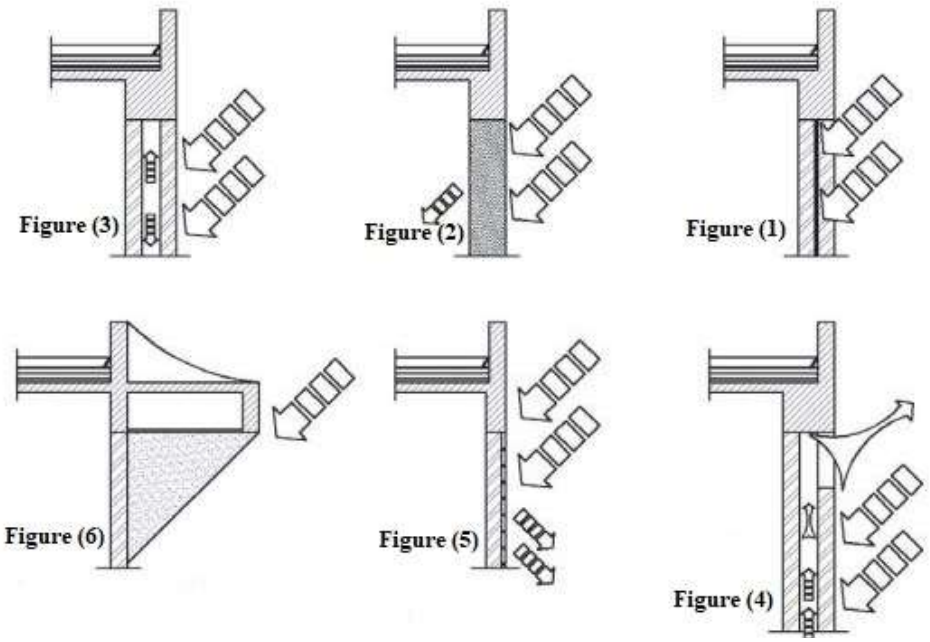


Figure 74 the Walls treatments to reduce overload heat- source: (Peter Warren, 2003)

I -3-2- 3-The the external openings:

The openings play a dual role as they are used to show / hide, to open / lock and to protect / capture, This role also varies according to the nature or function of practice in the space and tradition followed ,The openings are characterized by a set of characteristics:

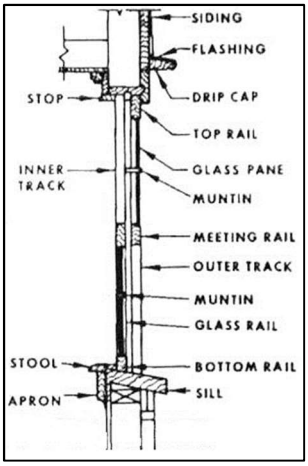


Figure 75window section components names- source: http://businessdirect.com

A- The Dimensions: They are determined according to the physical needs of the space users :solarization, lighting: ventilation ... depending on the nature of the space: reading areas; sleeping area, reception area, bedroom, ... and vary according to local construction traditions.

B- The Position: It take a several positions either at the bottom or at the top or in the middle and this is according to the nature of the space (its function, its dimensions, etc.).

C- The Accessories: such as sun breakers, railing, and Mashrabiya as these accessories vary according to climatic data; local traditions and nature of the space. **(Marzougi Wafia, 2008, p. 22)**

I -3-2-3-1-Climatic treatments for external openings:

The architect processes all the openings of the building for its primary role in reducing the thermal load inside the building.

Some of the most famous examples of exterior openings are:

A- the Using of sun breakers:

By calculating the angle of inclination to the sun, the architect prevents the sun from reaching the space through the windows at noon and the heat surge.

This is done by using vertical and horizontal sun screens. **(Asif Syed , 2012)**

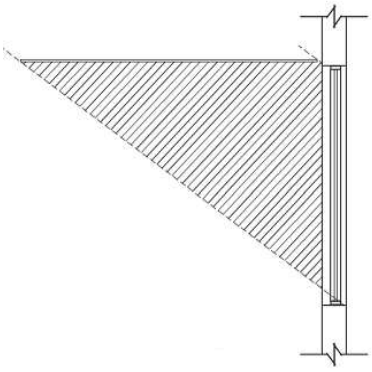


Figure 75 window section with sun breakers - source: http://businessdirect.com

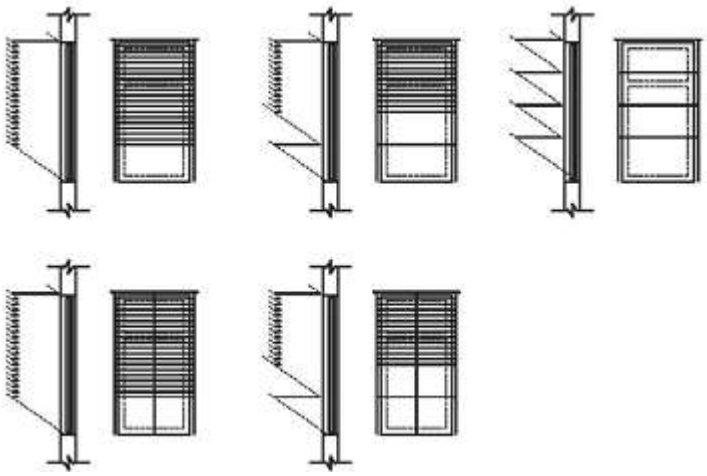


Figure 76 a model for using the sunbreaker with a window in the south façade - source: http://businessdirect.com

B- the Using of Arcades: Where arcades considered as a model for protecting the walls and external openings from the sun during the day through the nuts which work like sun-breakers.

Figure 77 the Using of Arcades to protect the openings in Egypt - source: (Bader Eddin Elkhouli, 1975)

I -3-2-4-Other Climatic treatments for external envelope:

A-Growing green spaces around the building: These areas help absorb the largest amount of radiation and do not reflect on the surface of the earth, also helps to moisturize the air in this region as well.

The green spaces inside the building in the inner courtyards reduce the reflection of the sun's rays to the inside of the yard, thereby reducing the excessive convection.

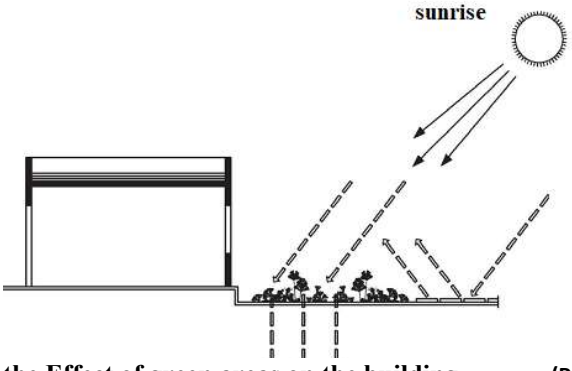


Figure 78 the Effect of green areas on the building- source: (Peter Warren, 2003)

B- Use of trees:

Helps surround the building with trees and shrubs to cast shadows on the building and thus protect it from direct sunlight.

Trees also help to purify the air of wind loaded with sand and soil, where the green press acts as a filter for sand and dust.

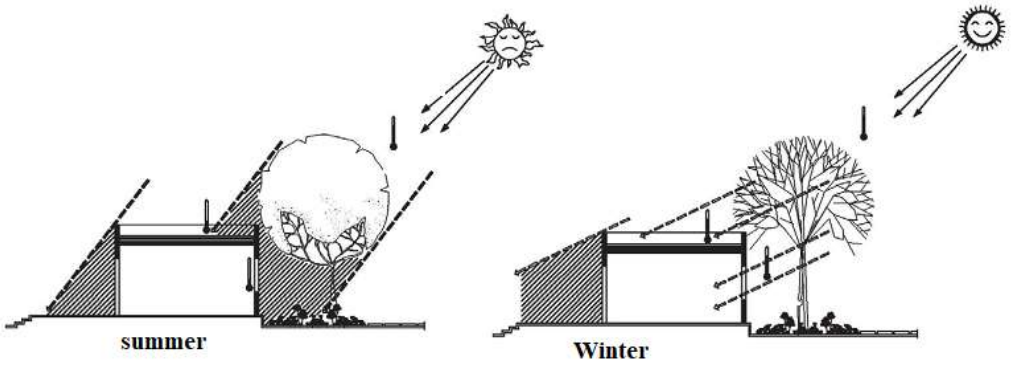


Figure 79 The role of tree planting around the building in reducing the convection on the building- source: (Peter Warren, 2003)

C-The Using of water Surfaces :

The water surfaces next to the buildings help to break the sun's rays and scatter them ,Thus reducing the heat load resulting from it, so as not to be the surface of water as a reflector surface of the heat on the building must be undulating water, which lead to the dispersion and refraction of the sun, such as the use of fountains (Ali Raafat, 1997)

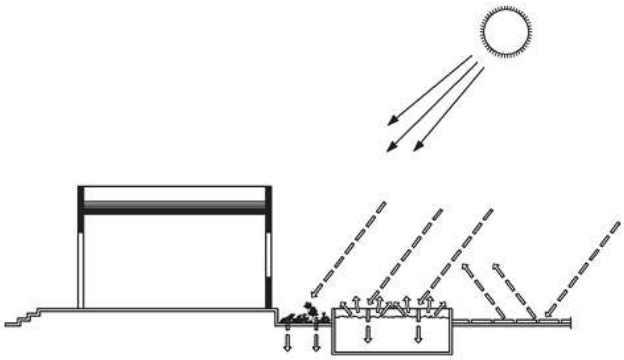


Figure 80 The using of water spaces to disperse sunlight- source: (Ali Raafat, 1997)

Figure 81 The role of water areas in the user's sense of comfort- source: google image

General Conclusion:

Architecture is among the greatest forms of Islamic art. Islamic signs, symbols and signification are recognized and appreciated by both Muslim and Non-Muslims all over the world. The Islamic style of architecture is not only used in mosques, but also in other Islamic buildings and even in gardens.

The symbols and signs used in Islamic buildings did not always carry a religious message or meaning, some of the forms were unclear and unspecific in meaning. the only design that contained a clear message was calligraphy.

Islamic architecture is an art that uses decorative techniques in a unique manner to produce magnificent structures. The fact that buildings to be decorated are not limited to any single form of decorative style means that artists can explore their creativity to the fullest. Islamic architecture shows the high degree of complexity in architecture that Muslims achieved over the years. Whether it is in the construction of a palace, mosque or house, Islamic architects designed their buildings in accordance to the teachings of Islam. Some of the signs and symbols used today in the secular world are borrowed from Islamic architecture.

These symbolic elements are highly visible on the exterior envelope of the building, they are considered as an effective treatment for the building against external factors such as thermal transfer.

the Roof, the Exterior walls and the Exterior openings (doors and windows).

Each of the previous elements has a role in the thermal transfer between the inside and outside, so the designer should consider these elements to be a source of thermal comfort within the space.

From the above and with a brief study of the components of the building's exterior envelope, the architects must design and pay attention to these elements, especially in the field of environmental studies, where one of its most important roles is to reduce the thermal load inside and outside the space.

It must be familiar with how these elements are handled and the most appropriate treatments are selected in terms of achieving thermal insulation more efficiently than other treatments as well as economic cost.

I-4-The Project concepts (Islamic Cultural Center):

Introduction:

Given the importance of culture in human life, which has a direct impact on his behavior and the way he performs his work ,it also has a great role in feeding the lives of nations and peoples, that culture to the general public where nations and governments have mobilized a large part of their resources and plans, to deploy such facilities within its borders. any nation that depends on the culture and awareness of its people to his future responsibilities as well as to know his heritage and use it to build a future that is consistent with, building materials for our modern society.

I -4-1-The Definition of Culture

I -4-1-1-Linguistic Definition:" Mastery of science, arts and literature " **(larousse, 2012)**

I -4-1-2-Conventional Definition: it is a set of qualitative Knowledge which creates the person ethically and intellectually " **(ENCARTA, 2003)**

I -4-1-3-Famous Definitions:

"Culture is the result of the interaction of human intelligence with the natural environment"**- Hassan Fathi -**

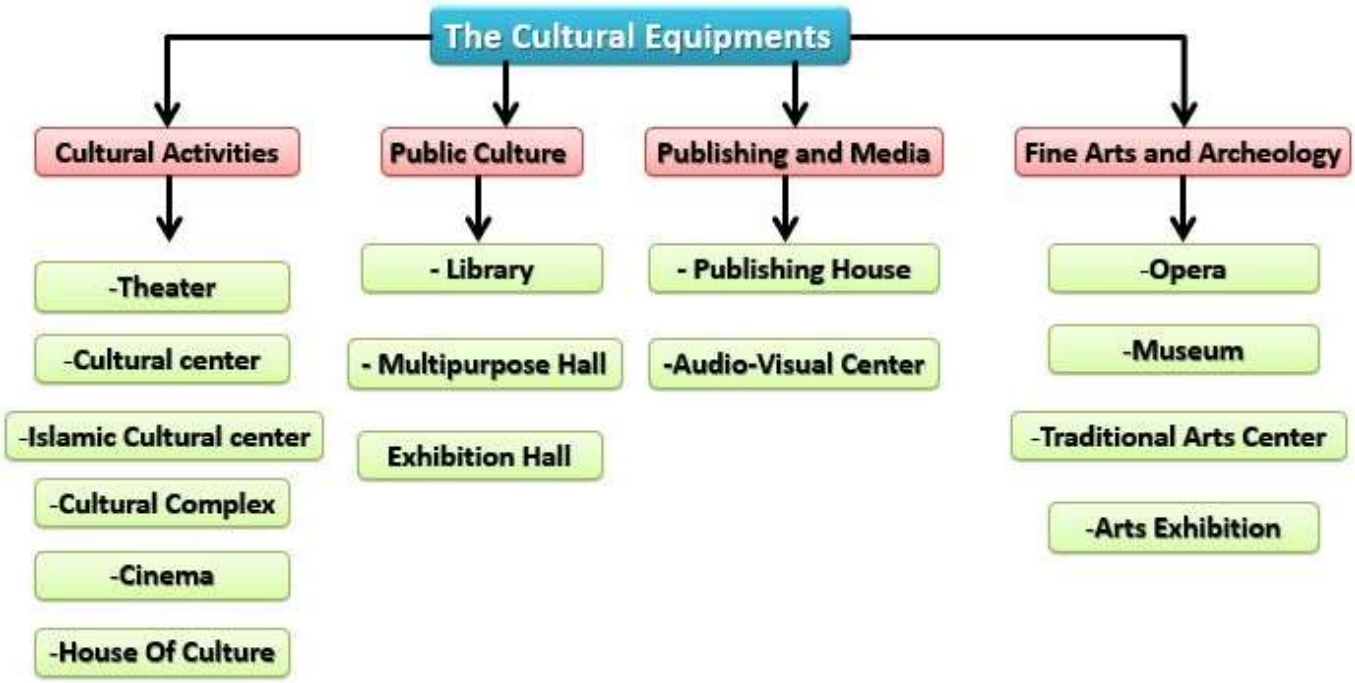
" Culture is the seed that directs the humans to what is good**-(Abou Hamed ELGhazali , 2011)**

"Culture is the spiritual and material production of society at specific time. **(UNESCO, 2017)**

Malik bin Nabi said: "Culture is a doctrine of the general content of the people in their differences and social behaviors, which are the bearing of customs, talents, traditions and the content of feelings that represent the face of civilization.

I -4-2-The Cultural Equipment:

Cultural buildings are classified into four categories. This classification depends on the type of activity practiced in each facility in addition to the cultural field under which this building is located:



I -4-3- The Islamic Cultural Center

I -4-3-1-Definition:

It is a facility for meeting and practicing Islamic cultural activity of various kinds in the goal of introducing Islamic culture and developing the principles of cultural exchange.
(Cousin, Jean, 1980)

I -4-3-2-The Islamic Cultural Center in Algeria:

It is a public institution of an administrative nature classified within the facilities of the Ministry of Religious Affairs and Endowments. It is a building or complex that includes many bodies that carry out various cultural activities aimed at preserving Islamic values.
(Directorate of Culture - Algeria, 2001)

Figure 82 Setif Islamic cultural cente -
Source : https://twitter.com

Figure 83 Ouargla Islamic cultural cente
-Source : Student Photography

I -4-3-3-The History of Islamic Cultural Centers:

The first appearance of the Islamic Cultural Center was in Europe where it was created to meet the needs of the Muslim community in Europe because of the difficulties and challenges they faced in adhering to the values and principles of the Islamic religion on the one hand and raising their children on these values on the other.

I -4-3-4-The Evolution of Islamic Cultural Center Through the History:

Since the beginning of Islamic history, the mosque has been considered the center of all Islamic and cultural activities such as reading, writing, etc. After that, the Koranic schools emerged as a building whose first objective is to educate the Muslim community and with the passing of Time and the development of construction technology The Islamic Cultural Center has become an independent building in itself. It has included many cultural activities that are concerned with developing the mentality of the Muslim community and spreading Islam.

Figure 84 The Evolution of Islamic Cultural Center Through the History -Source : Student work.

Chapter Tow

II-1-Analysis of Examples:

Introduction:

This chapter aims to analyze the examples. It is an analysis of Islamic cultural centers under the theme of the symbolism of Islamic architecture on the exterior envelope and the principles used in these examples, the way architects treat the project, its floor and the exterior envelope of the building, which is very important element in the study of the symbolism of Islamic elements , also to know the architectural ideas used at the level of the Islamic cultural centers and how to deal with the envelope of the building and the symbolism of Islamic elements and integration between them in order to give a final image homogeneous and try to take advantage of the ideas at the level of these examples for better understanding of the subject and how architects deal with the field, and trying to apply these ideas in the final design of the project.

II-1-1-The First Example: Qatar Faculty of Islamic Studies

II-1-1-1-Project Technical Card:

Project	Qatar Faculty of Islamic Studies
Location	Education City Campus, Doha, Qatar
Opning Year	2015
Duration	4 Years (2011)
The Owner	Qatar Fondation
The Architectes	Mangera Yvars Architectes (Omar Salim)
Surface	35.000 m²

Figure 1Qatar Faculty of Islamic Studiesc
Source: www.astad.qa

II-1-1-2-External study:

II-1-1-2-1-Urban integration:

The Key :

Main road

Secondary roads

The parcel

Adjacent parcels

- the Subjection of parcel's form to the other parcels are in parallel.

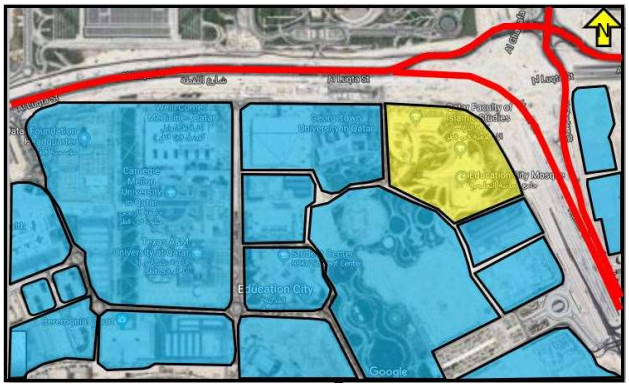


Figure 2 Site plan- Source: google earthe+ Student work

***the Subjection of parcel's form to the main roads are in parallel**

Figure 3 Master plan-source :google earthe+ Student work

II-1-1-2-2-The Accessibility:

the placement of the project is in secondary roads but it is so close to the main road so the Access from the city to the project or vice versa is directly.

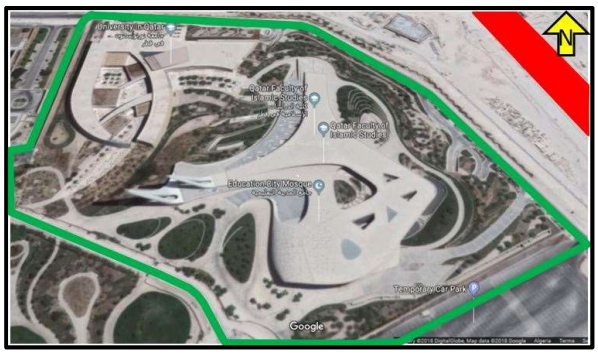


Figure 4QFIS Master plan-source: google earthe+ Student work

Main road

Secondary roads

The parcel

The Closest monument

❖ **Paths Determination**

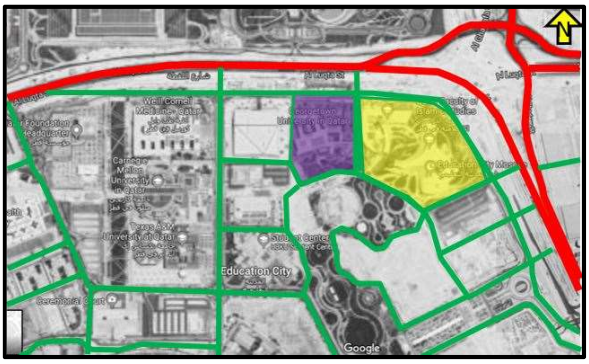


Figure 6 Site plan the paths- source :google earthe+ Student work

Cars Main entrance

users's Main entrance

Figure 5QFIS Master plan the entrences -source : google earthe+ Student work

the placement of the project is in the center of the parcel

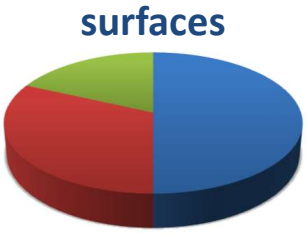
There is a separation between the ground entrances (occupation mode with separation)

II-1-1-2-3-The Ground Entrances:

It is easy to access into the project through the Closest monument (**Georgetown university)** so the Paths destined towards the parcel it's an **organized path**.

II-1-1-2-4-The Flow:

Project's Main entrance
Pedestrian Path
Mechanical Path (cars)
Green Space
The Building
Parking



The Building 50% green spaces 30% paths 20%

Figure 7QFIS Master plan the entrences -source google earthe+ Student work

Preliminary space: treatment with plaza /It is easy to see it

II-1-1-2-5-The Volumetry:

- In this project, the principle of volumetric structure is central geometric structure.
- There is no separation of the volume compounds (One block).

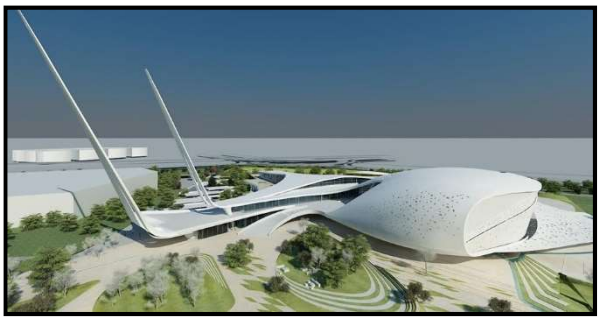


Figure 8 QFIS 3d animation -source: www.artscapemanagement.com

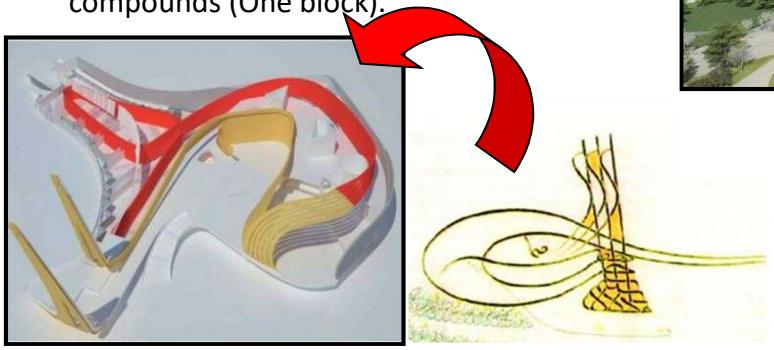


Figure 9QFIS 3d animation and Caligraphy idea-source: https://algeriansinqatar.wordpress.com

Proportionality: there is no Proportionality appears in the project volume

The project takes its volume idea from the Arabic calligraphy: The concept is drawn from the understanding of the Islamic principles, which are enshrined in the holy Quran and described in hadith and considered in the context of traditional mosques and Islamic learning institutions.

Functional translation: In the project there is a functional translation on the external volume.

Figure 10QFIS faced Calligraphy-source: http://www.myaa.eu

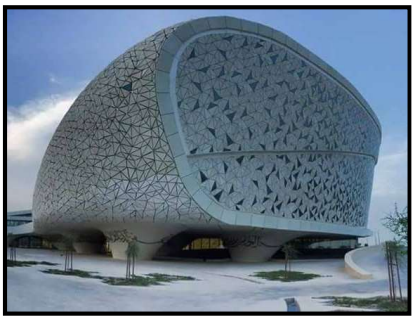


Figure 11 QFIS Project- source http://www.myaa.eu

Figure 12 QFIS Minarets- source www.astad.qa

Figure 13 faced Calligraphy- source http://www.myaa.eu

II-1-1-2-6-The Facades:

A. Harmony: there is homogeneity in the elements of the main facade by the changing of the scale

B- Percentage between Empty and filled:

Empty 25%

Filled 75%

The Facade is relatively heavy by the difference between The Percentage of empty and filled

Figure 14 QFIS Western Faced - source: www.pinterest.com

C- The Treatment of The Entrance: The Entrance doesn't appear in the facades.

D- Construction materials: Glass + plaster + **cement** + metal.

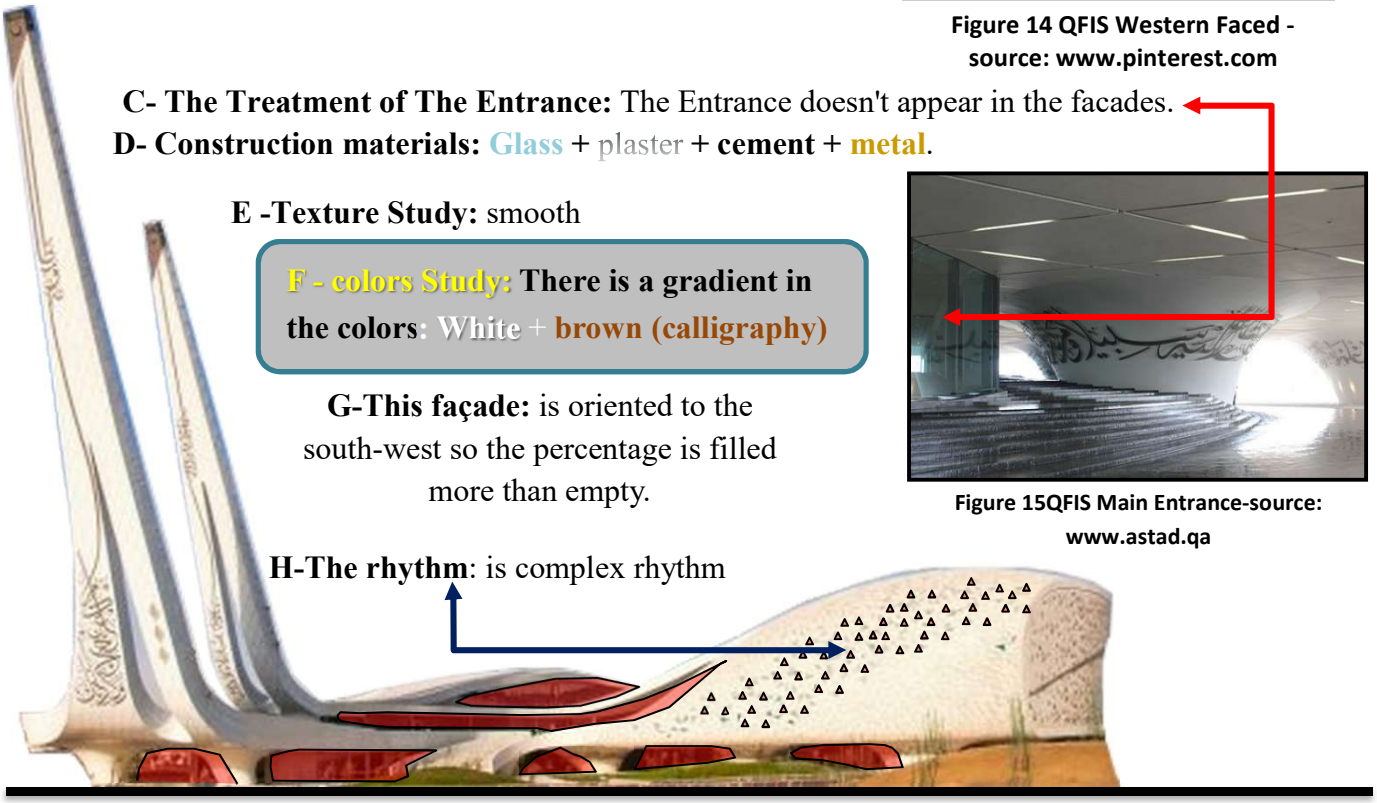
E -Texture Study: smooth

F - colors Study: There is a gradient in the colors: White + brown (calligraphy)

G-This façade: is oriented to the south-west so the percentage is filled more than empty.

Figure 15QFIS Main Entrance-source: www.astad.qa

H-The rhythm: is complex rhythm



II-1-1-2-7-The Exterior Envelope:

A- the interior lighting ambience: There is a manipulation in the design of the exterior envelope between the empty and the filled where this manipulation left a significant impact of light in the interior of the building.

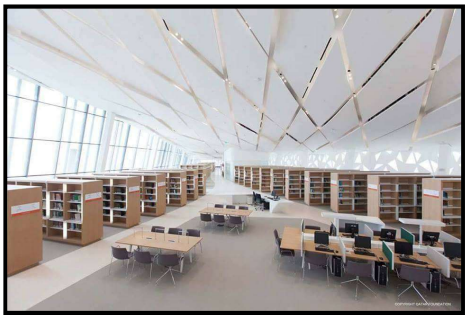


Figure 16 QFIS Library – source: www.astad.qa

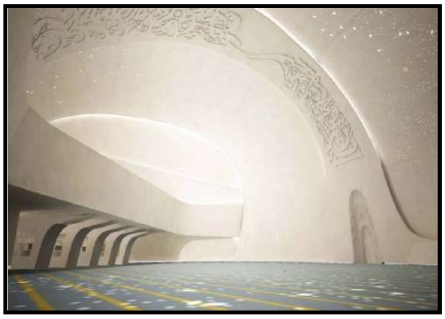


Figure 18 QFIS Main Prayer Hall–– source: https://architectureprize.com

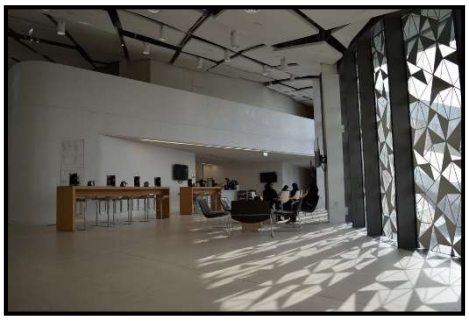


Figure 17 QFIS Female Rest area https://architectureprize.com

B-The type: The external envelope contains an Islamic decoration with alternating vents.

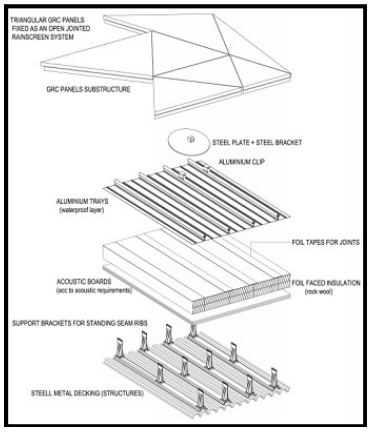


Figure 20QFIS envelope detail- source : www.pinterest.com

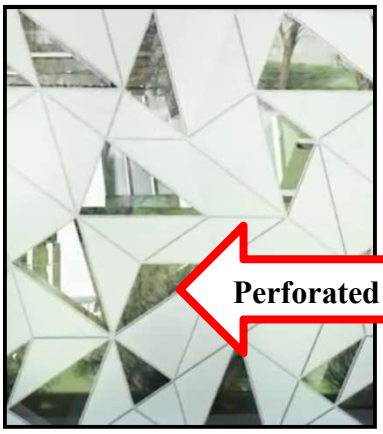


Figure 19QFIS Perforted envelope zoom – source www.artscapemanagement.com

Figure 21QFIS envelope facede- source : www.astad.qa

II-1-1-3-Internal study:

II-1-1-3-1-The Presentation of floors:

A-Number of floors:

The project consists of four floors: under-ground, ground, first and second

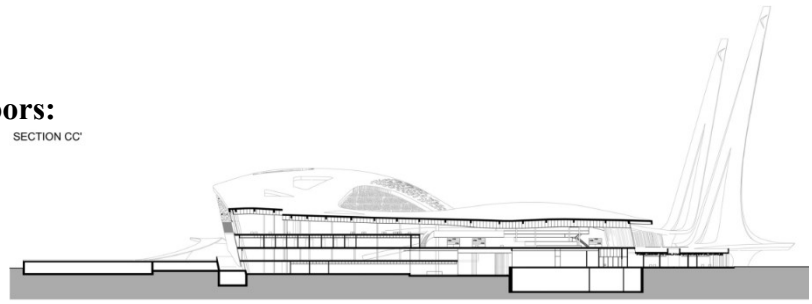


Figure 22QFIS Section C-C - source http://alfozanaward.org

B-The Entrances:

- North Entrance.
- West Entrance.

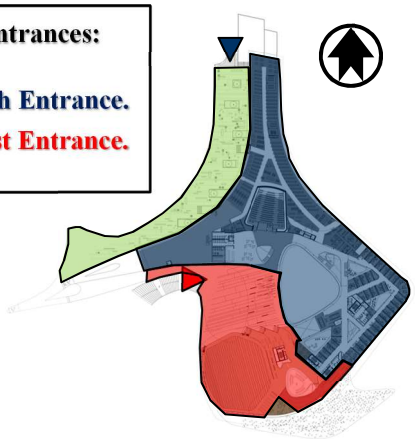


Figure 25QFIS Ground Floor Plan-http://alfozanaward.org

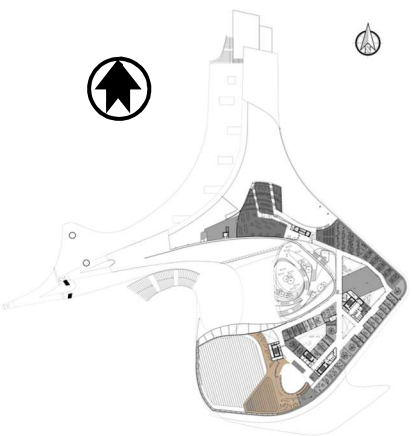


Figure 23QFIS First Floor Plan-http://alfozanaward.org

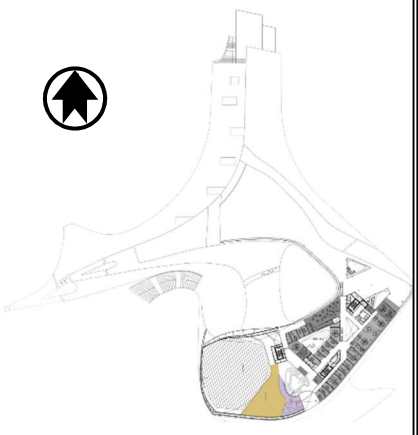


Figure 24QFIS Second Floor Plan-http://alfozanaward.org

C -The Most Important Spaces:

Ground Floor:

- Library.
- exhibition.
- Auditorium.
- Main prayer hall.

1st Floor:

- Female prayer hall.
- Office
- Classrooms .

2nd Floor:

- Female prayer hall.
- Ablution.
- cafeteria

D- Important Departments:

- Light zone (mosque)
- knowledge zone (culture)
- plaza

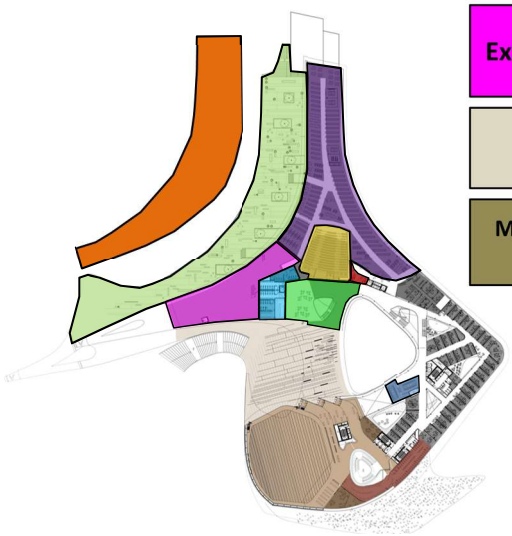
II-1-1-3-2-The Spatial organization:

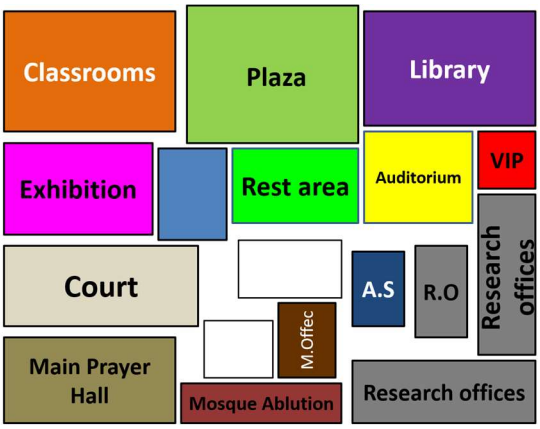
Surfaces of ground floor spaces

Library	1780m²
Auditorium	440m²
VIP Lounge	30m²
Plaza	2470m²
Academy Ablution	230m²
Exhibition	385m²
Classrooms	1850m²

Research offices	1010m²
Rest area	470m²
Academy seminar	80m²
Court	1540m²
Main Prayer Hall	1770m²
Mosque Ablution	235m²
Mosque office	130m²

Spatial organization plan





The plan organisation:
* Circular plan organisation

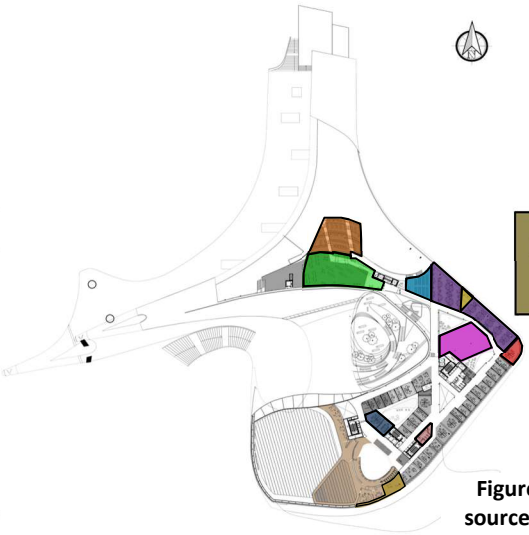
Figure 26QFIS Ground Floor Plan-source http://alfozanaward.org

Surfaces of first floor spaces:

Projection room	95m²
Faculty Deanship	360m²
VIP Lounge	45m²
Female Prayer Hall	550m²
Academy Ablution	230m²
Academy seminar	67m²

multipurpose room	235m²
Research offices	1850m²
Faculty Dean's office	20m²
computer room	280m²
Rest area	385m²
Female Rest area	64m²

Spatial organization plan



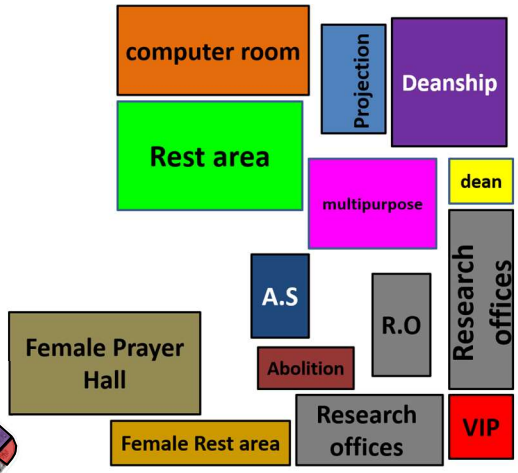
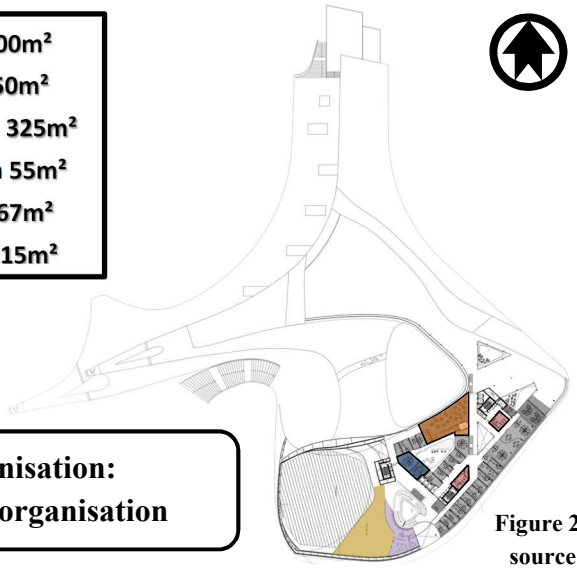


Figure 27QFIS First Floor Plan-source: http://alfozanaward.org

❖ **Surfaces of second floor spaces:**

Restaurant	200m²
Research offices	650m²
Female Prayer Hall	325m²
Academy Abolition	55m²
Academy seminar	67m²
Female Abolition	115m²



The plan organisation:
Circular plan organisation

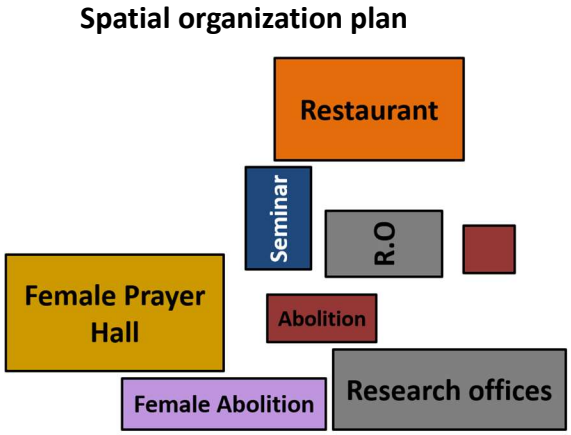
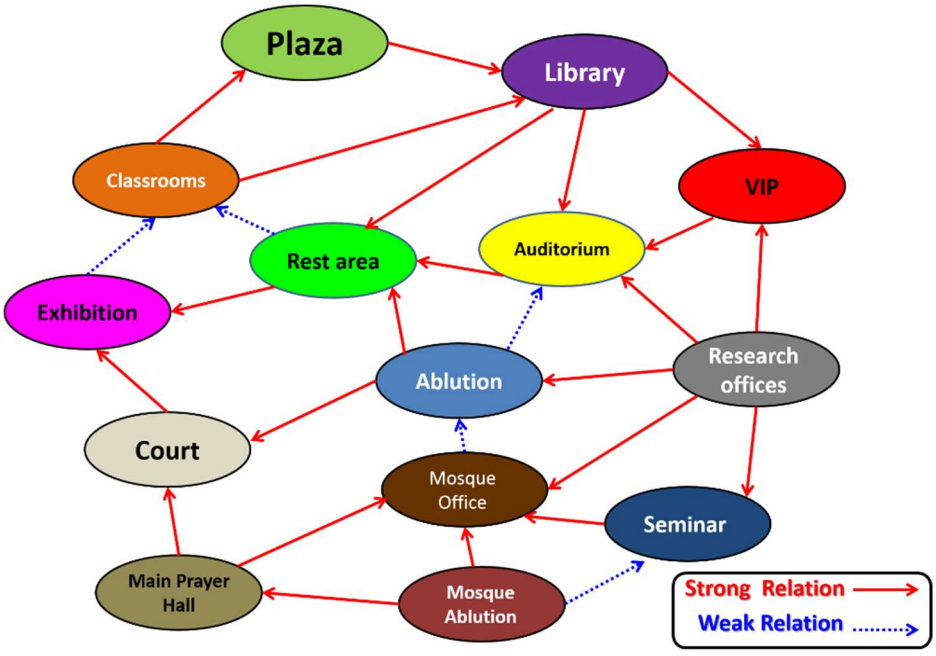


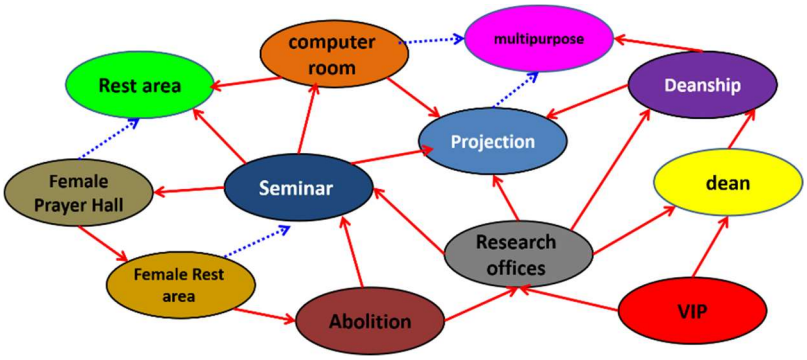
Figure 28QFIS Second Floor Plan-source: http://alfozanaward.org

II-1-1-3-3-The Functional organization:

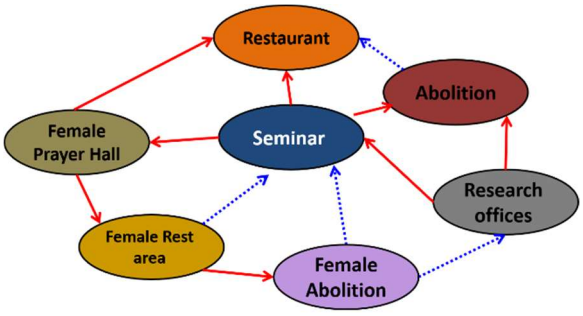
Ground Floor Plan



First Floor Plan



Second Floor Plan



II-1-1-3-4-Movement study:

A-Horizontal movement:

Floor Plan	Integration / separation
Ground Floor	There is an allowed Integration in horizontal movement between workers and students .
First Floor	There is an allowed Integration in horizontal movement between workers and students .
Second Floor	There is an allowed Integration in horizontal movement between workers and students .

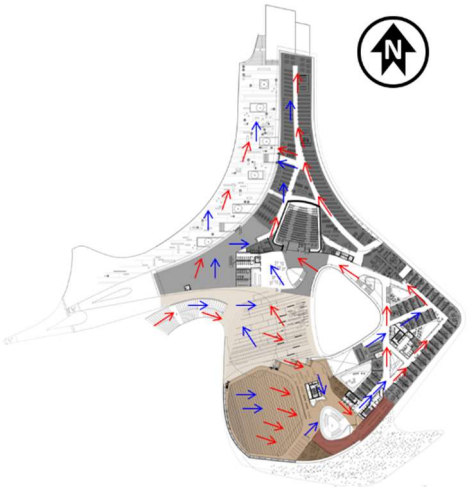


Figure 30QFIS Ground Floor Plan- source: http://alfozanaward.org

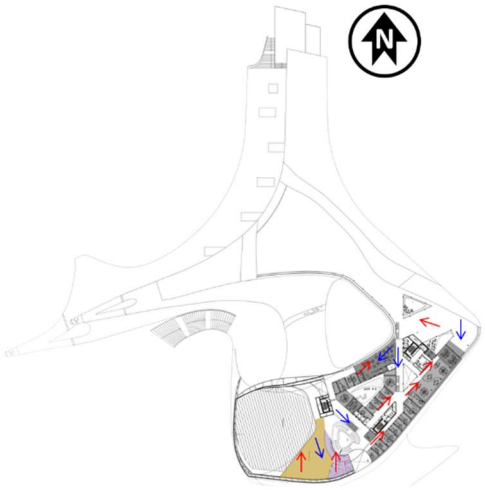


Figure 31QFIS First Floor Plan- source: http://alfozanaward.org

Figure 29QFIS second Floor Plan- source: http://alfozanaward.org

Key:
Students movement ←
Workers movement ←

B-Vertical movement:

	Homogeneous / heterogeneous placement	Services
All the Floor Plans	•stairs and escalator distribution in the space is homogeneous	• students mobility (general) • workers mobility (special) • emergency stairs

Key :
- The Stairs
-The Escalator
- The elevator

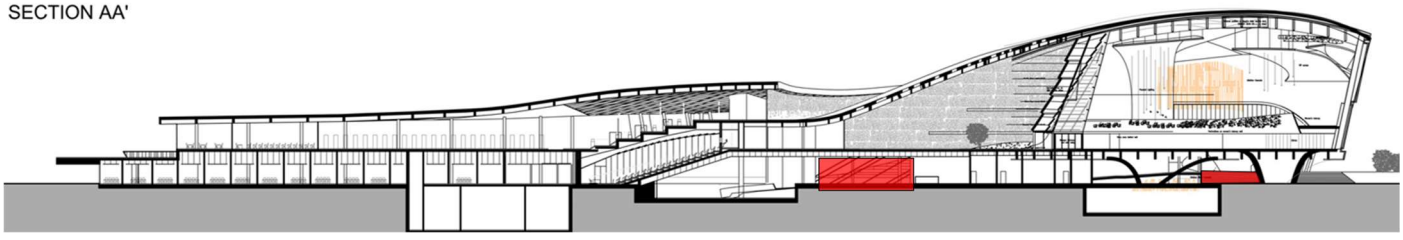


Figure 32QFIS Section A-A - source: http://alfozanaward.org

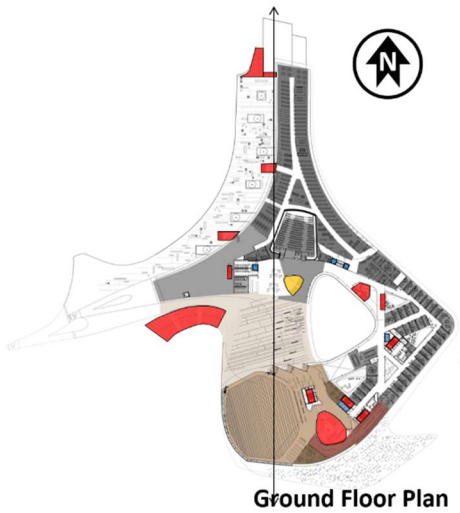


Figure 33QFIS Ground Floor Plan-source:http://alfozanaward.org

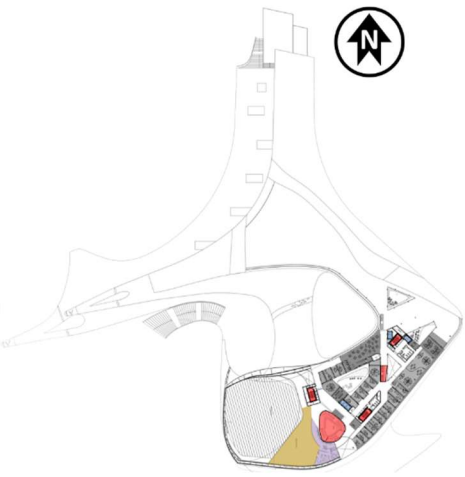


Figure 34QFIS First Floor Plan-source:http://alfozanaward.org

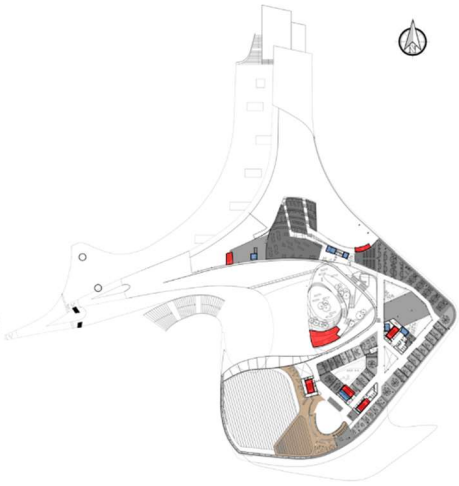
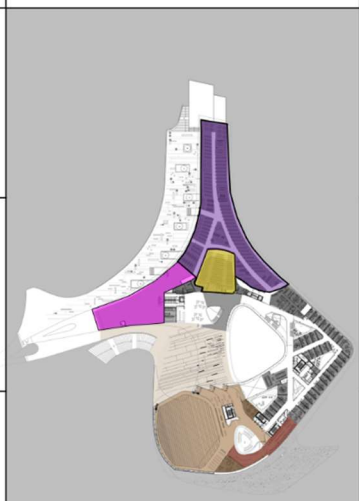
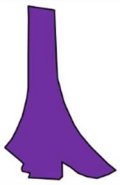
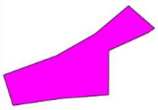
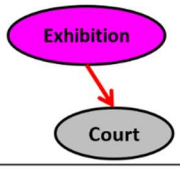
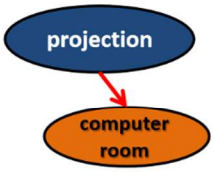
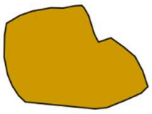


Figure 35QFIS Second Floor Plan-source :http://alfozanaward.org

II-1-1-4-interior spaces study:

Space nam	Position	Shape	Surface	space relations	Lighting	Activity	EX .T
Library			1780 m²		Natural concentrate + Artificial Normal	Learning + reading	
Auditorium			440 m²		Natural Normal + Artificial concentrate	Lecturing Conferenc es	
Exhibition			385 m²		Natural concentrate + Artificial Normal	Exhibition	
computer room			280 m²		Natural Normal + Artificial concentrate	Learning + research	
Prayer Hall			4980 m²		Natural concentrate + Artificial Normal	Reading + Prayer	

II-1-1-5- The Structure:

A- Definition of the structural system:

- **Structural system column – beam**
- **metallic structure**

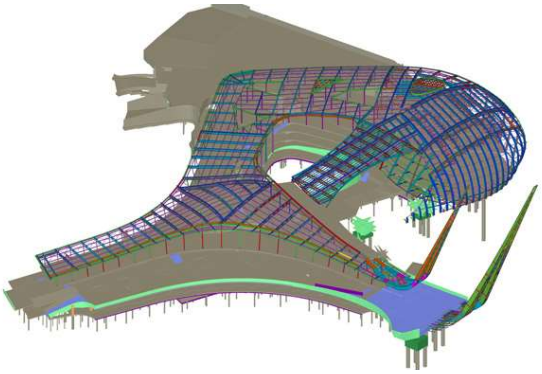


Figure 37 QFIS Overall view of the Structural System - source: Constantine Emmanouil Migiakis P1

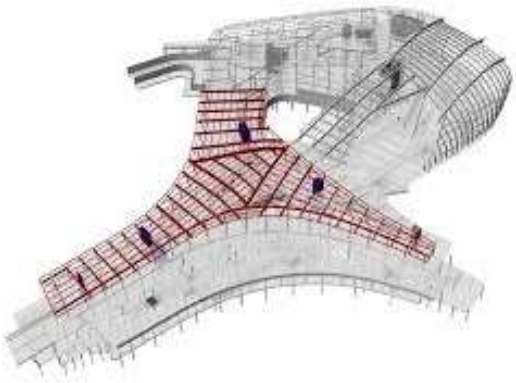


Figure 36 QFIS Structural system Roof Steelwork – Library Area -source: Constantine Emmanouil Migiakis P3

B- Structural unit:

- The researcher office represents 1/2 structural unit of the basic structure unit

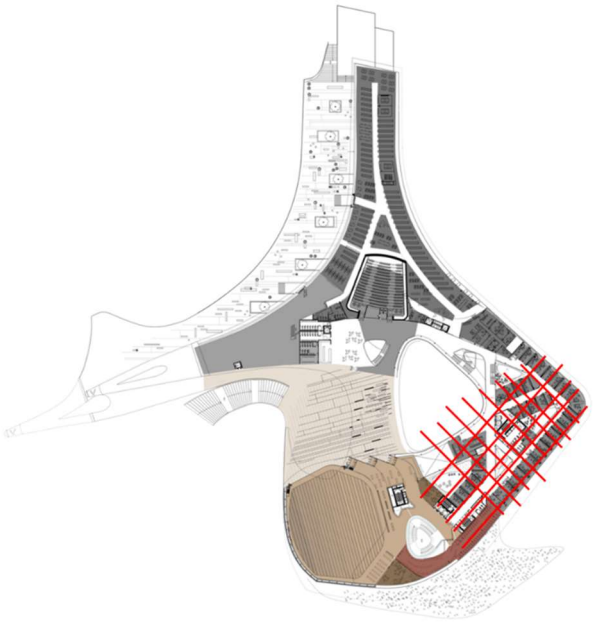


Figure 39QFIS The Gride of Structural System- source: http://alfozanaward.org +student work

Figure 38 QFIS Structural system Roof Steelwork- source: www.constructionweekonline.com

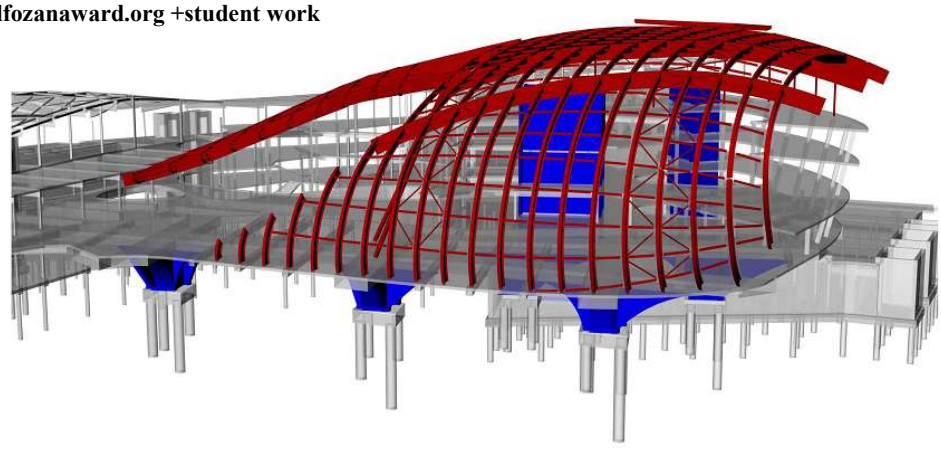


Figure 40 QFIS Roof Steelwork – Mosque Area- source: Constantine Emmanouil Migiakis P3

I-1-2-The Second Example: Da Chang Muslim Cultural Center

II-1-2-1-Project Technical Card:

1-Project Technical Card	
Project	Da Chang Muslim Cultural Center
Location	Dachang County, Hebei Province, China
Opening year	2015
Duration	Year and a half
The owner	the local government (Dachang County)
The Architects	Architectural Design & Research Institute of SCUT (He Jingtang)
Surface	35000 m2

Figure 41Da Chang Muslim Cultural Center- source: www.archdaily.com

Figure 42Da Chang Muslim Cultural Center top view - source: www.archdaily.com

II-1-2-2-External study:

II-1-2-2-1-Urban integration:

Main road

Secondary roads

The parcel

Adjacent parcels

the Subjection of parcel's form to the main roads is in parallel

Figure 43Site plan source :-google earthe+ Student work

the Subjection of parcel's form to the other parcels is in parallel

Figure 44Master plan-source :google earthe+ Student work

I-1-2-2-2-The Accessibility:

- the placement of the project is in secondary roads so the Access from the city to the project or vice versa is indirectly.
- **Paths Determination:**

Main road
Secondary roads
The parcel
The Closest monument

the placement of the project is in the center of the parcel

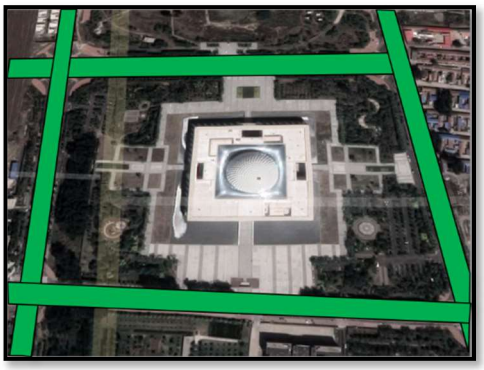


Figure 45Top view -source :google earthe+ Student work

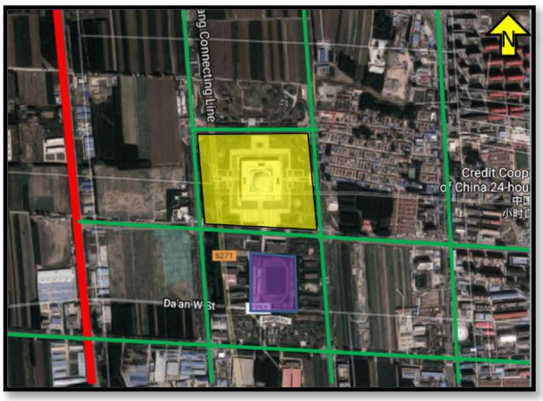


Figure 46 site plan-source: google earthe+ Student work

*-It is easy to access into the project through the Closest monument **(stadium)** so the Paths destined towards the parcel it's an **organized paths.**

II-1-2-2-3-The Ground Entrances:

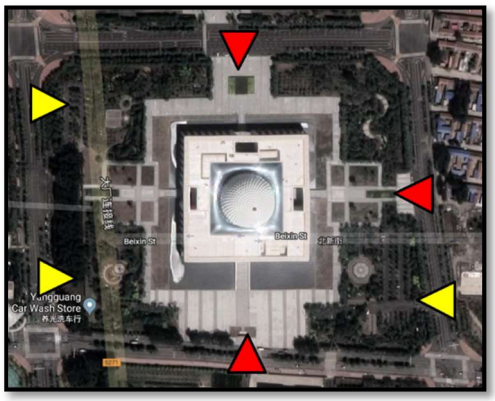


Figure 47Master plansource: -google earthe+ Student work

Cars Main entrance

users's Main entrance

• There is a separation between the ground entrances (occupation mode with separation)

II-1-2-2-4-The Flow:

Project's Main entrance
Pedestrian Path
Mechanical Path (cars)
Green Space
2 The Building
Parking
Water Space
3 North Plaza
4 West Plaza
5 East Plaza

surfaces
Green Space 60%
Paths 10%
Water Space05%
2 The Building 25%
Not built 75%

Preliminary space:
*** treatment with plaza**
*** It is easy to see**

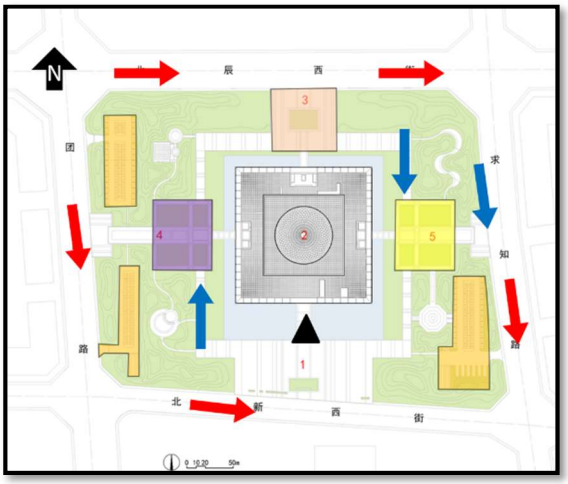
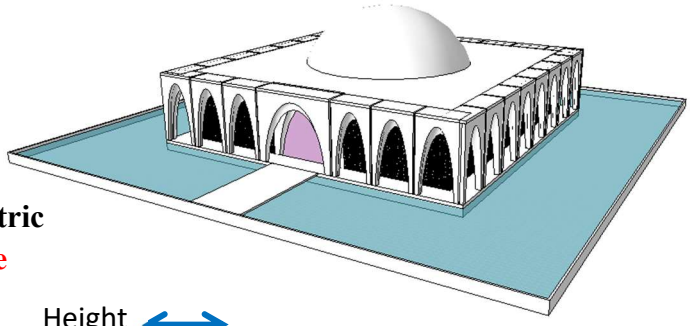


Figure 48Master plan - source: www.archdaily.com + Student work

II-1-2-2-5-The Volumetry:

- There is no separation of the volume compounds (One block)



- **In this project, the principle of volumetric structure is central geometric structure**

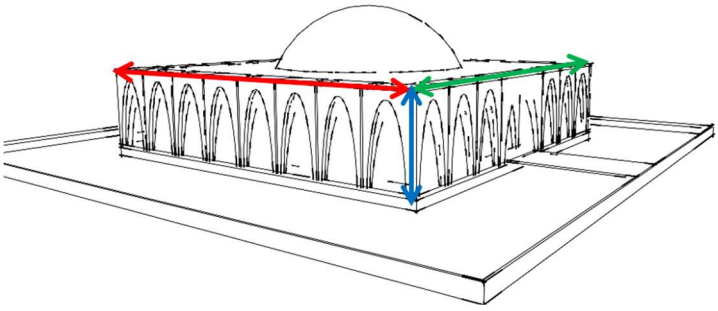


Figure 50perspectiv of the project - www.3dwarehouse.com+student work

Figure 49 perspectiv of the project - source: www.3dwarehouse.com

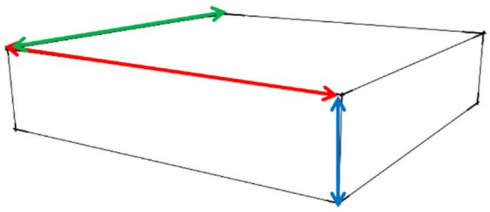


Figure 51 project voulume -source :student work with Sketchup 17 Programe

Proportionality:

* It appears in the equal length and width

II-1-2-2-6-The Facades:

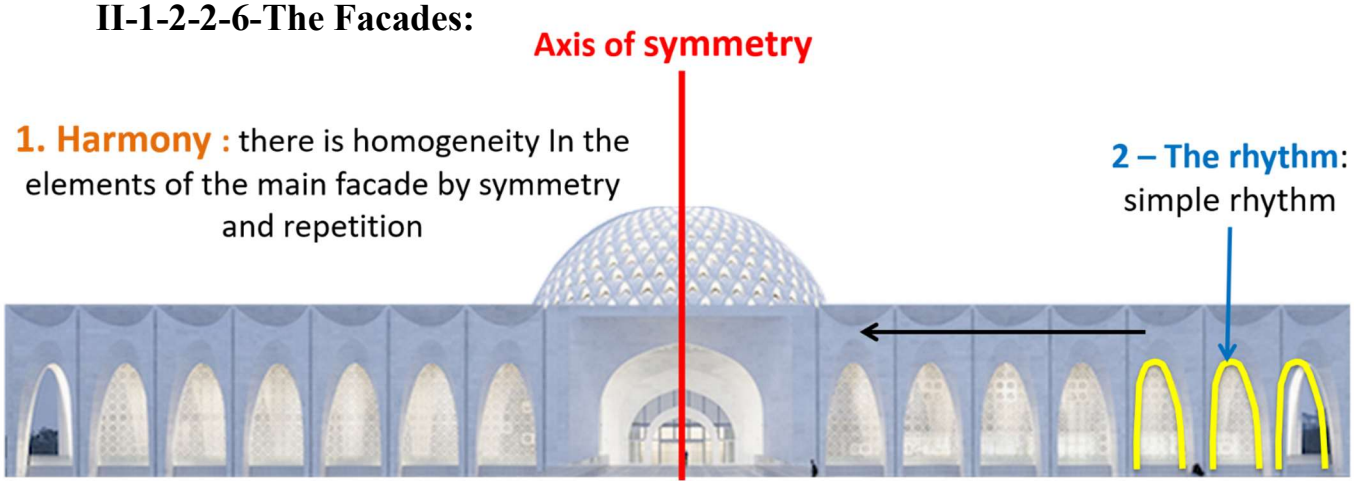


Figure 52South Facade-source: www.archdaily.com + Student work

- **The Facade is relatively heavy by the difference between The Percentage of empty and filled.**

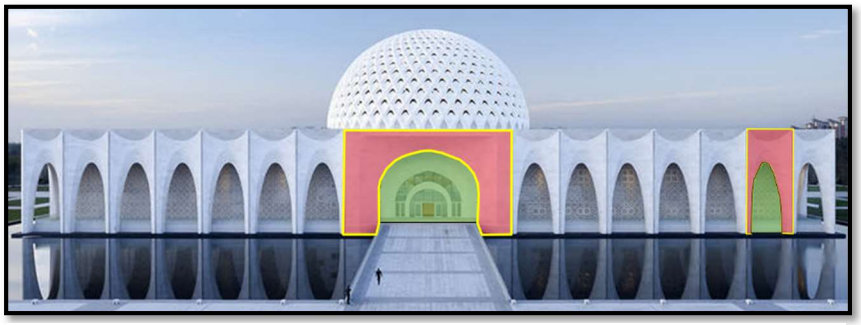


Figure 53South Facade-source : www.archdaily.com + Student work

3- Percentage of Empty and filled:
Empty 45%
Filled 55%

4- This façade is oriented to the south so the percentage is filled more than empty.

5 - The Treatment of The Entrance:

A - monumentality of the entrance

B -The entrance is on one level with the facade

Figure 54South Facade- source: www.archdaily.com

C - construction materials: Glass + plaster + cement

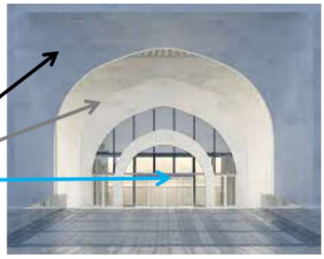


Figure 55 the main entrance – source: www.archdaily.com

6 - colors Study: There is a gradient in the colors White +

There is homogeneity in colors

There is homogeneity in colors

7 – Texture Study : smooth

8- Construction Materials:

Glass .

Plaster .

Cement.

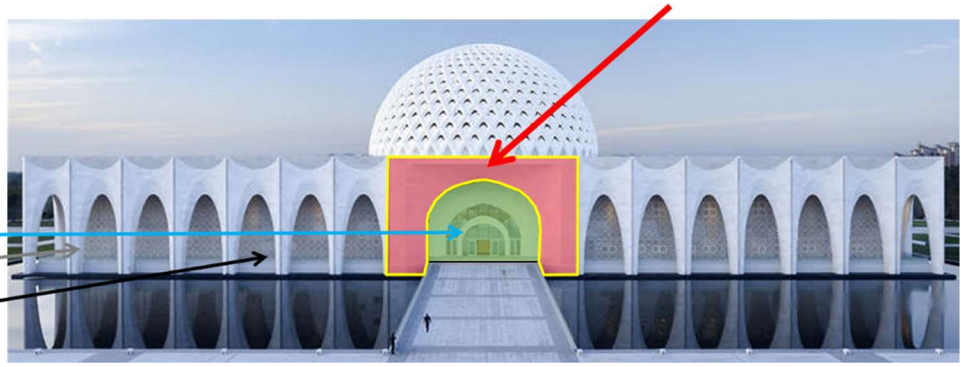


Figure 56 South Facade- source: www.archdaily.com

II-1-2-2-7-The Exterior Envelope:

A- the interior lighting ambience: There is a manipulation in the design of the exterior envelope between the empty and the filled where this manipulation left a significant impact of light in the interior of the building.

Figure 57the main hall- source: www.archdaily.com

B-The type: Double skin envelope

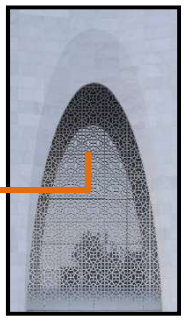


Figure 58Arcade- source: www.archdaily.com

C-The exterior envelope thermal comfort:

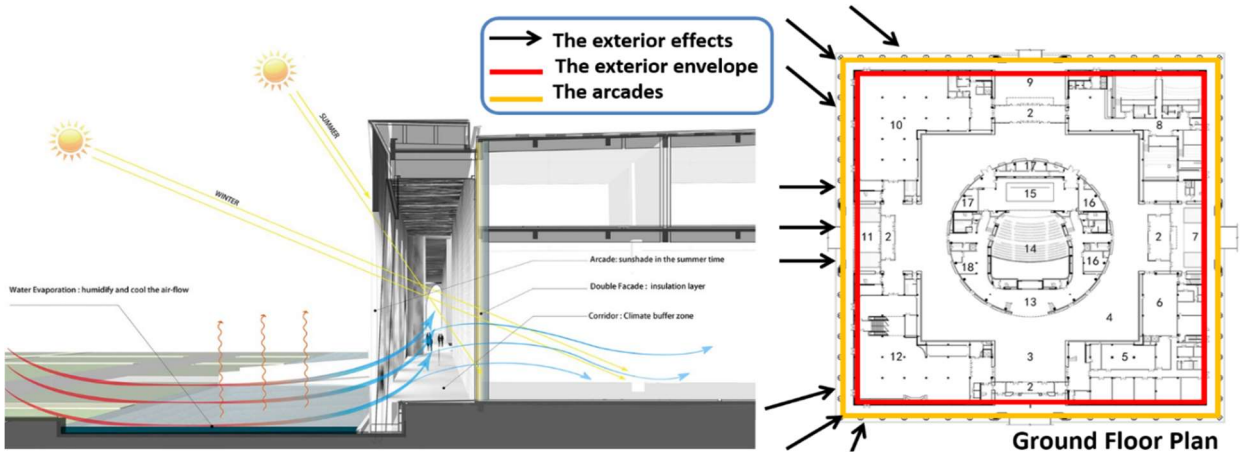


Figure 59 Envelope thermal comfort- source: www.archdaily.com

D-the using of arcades:

* In this project the architects used the arches for thermal purposes, inspired by the old Islamic architecture**.**

* the arcades represent an external envelope

Figure 61the External Envelope- source : www.archdaily.com

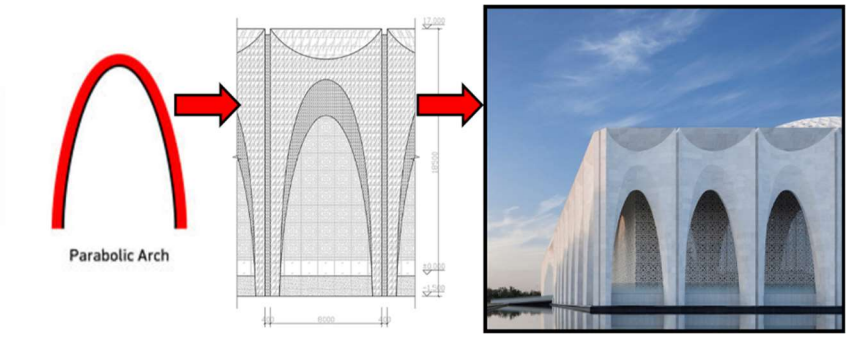


Figure 60the Arcades represent an External Envelope-source: www.archdaily.com

E-the using of the dome:

* the dome Used as a top cover to ensure thermal and lighting ambience.

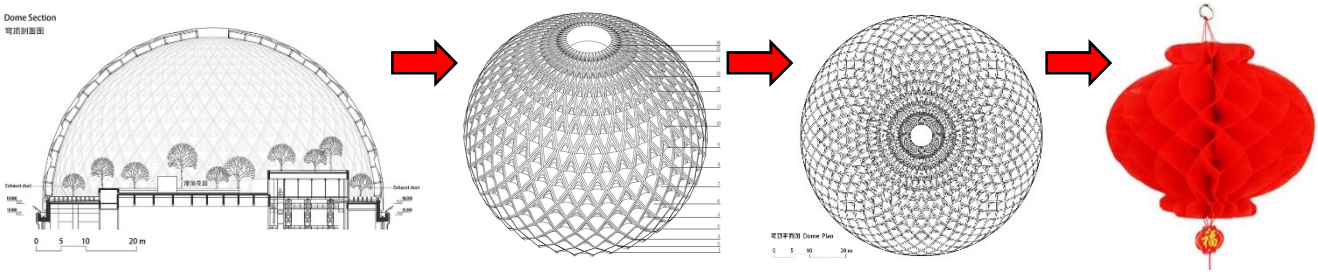


Figure 62the Dome represent an External Envelope- source: www.archdaily.com

Its general form inspired by the Islamic architecture and its exterior envelope from Chinese traditions (Chinese Lantern).

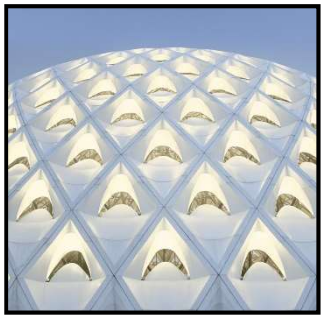


Figure 64the Dome Detail – source: www.archdaily.com

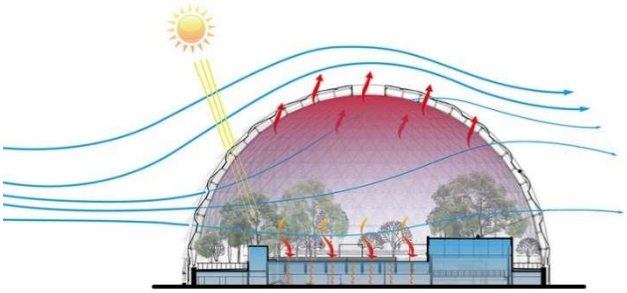


Figure 63the thermal comfort of the Dome Detail – source: www.archdaily.com

II-1-2-3-Internal study:

II-1-2-3-1-The Presentation:

A-Number of floors: The project consists of three floors: ground, first and second

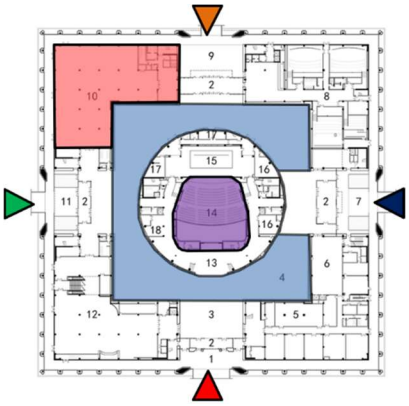


Figure 67The Ground Floor -source: www.archdaily.com+ student work

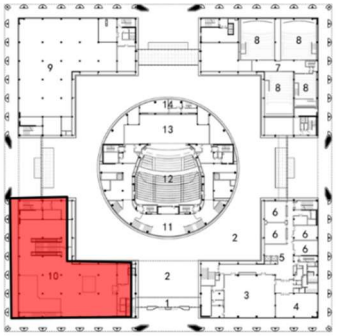


Figure 67The first Floor -source: www.archdaily.com+ student work

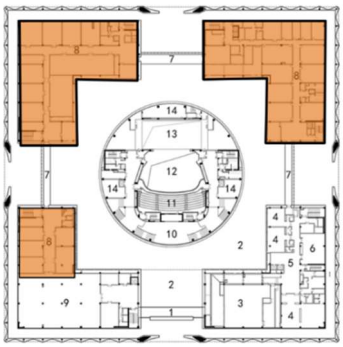


Figure 67the Second Floor – source: www.archdaily.com+ student work

B-The Entrances:

1- Conference Room Entrance .
7- Main Entrance .
9- Back Entrance .
11- Exhibition Entrance

C- Important Departments:

4- Hall .
10-exhibition Room .
14- Auditorium Seating
8- Offices .

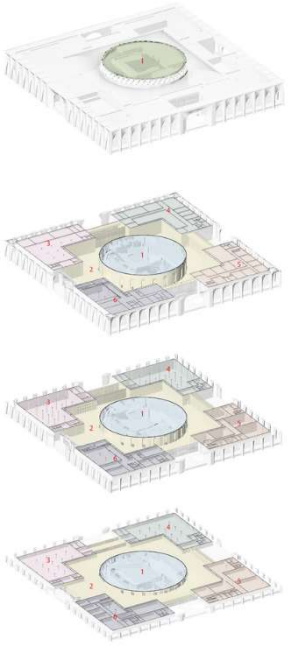


Figure 68 Floor plans Prespective – source: www.archdaily.com

Most Important Spaces:

Ground Floor:
4- Hall.
10-exhibition Room.
14- Auditorium Seating
15- Stage.

1st Floor:
6- Conference Room.
7- Projection Room.

2nd Floor:
7- Corridor.
8- Offices.

II-1-2-3-2-The Spatial organization:

*** Surfaces of ground floor spaces**

1 Conference Room Main Entrance 290 m²
2 Vestibule 84 m²
3 Main Entrance Lobby 430 m²
4 Hall 3675 m²
5 Ethnic's Art and Culture Center 1795m²
6 Lobby 385m²
7 Entrance 370 m²
8 Screening Area 2125 m²
9 Back Entrance 480 m²
10 Exhibition Room 2110 m²
11 Exhibition Entrance 415 m²
12 Exhibition Room 2110 m²
13 Rest Area 465 m²
14 Auditorium Seating 925 m²
15 Stage 460 m²
16 Lounge 335 m²
17 Dressing Room 160 m²
18 Kiosk 120 m²

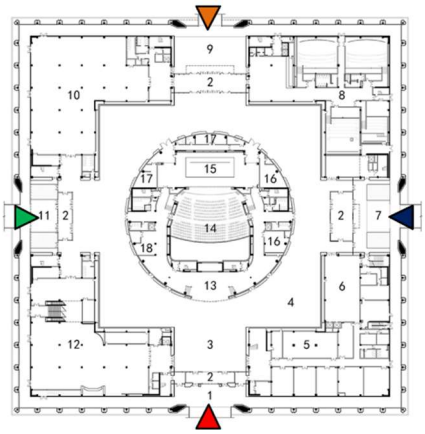
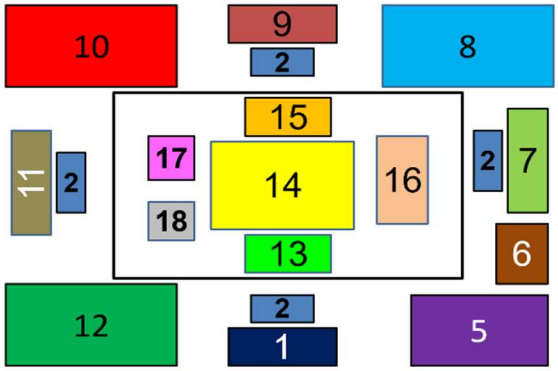


Figure 69The Ground Floor -source: www.archdaily.com+ student work



The Spatial organization of the ground floor spaces is: Circular plan organisation

*** Surfaces of First floor spaces:**

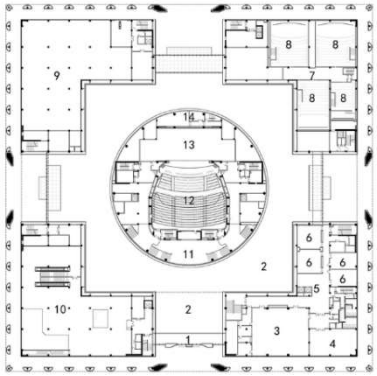
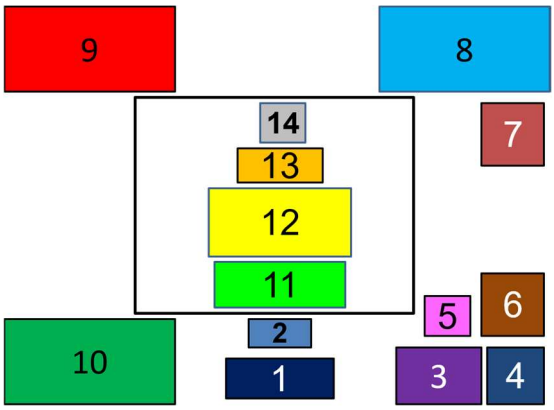


Figure 70The first Floor -source: www.archdaily.com

1 Void over Vestibule 28 m²
2 Void 3700 m²
3 Multifunction Hall 560 m²
4 Reception 218 m²
5 Reception Area 295 m²
6 Conference Room 540 m²
7 Projection Room 681 m²
8 Auditoriums 1200 m²
9 Void over Exhibition Room 1660 m²
10 Exhibition Room 1535 m²
11 Void 480 m²
12 Auditorium Seating 925 m²
13 Void over the Stage 470 m²
14 Dressing Room 140 m²



The plan organisation :
❖ Axial in the forme of « L » letter

***Surfaces of Second floor spaces:**

1 Void over Vestibule 128 m²
2 Void 3700 m²
3 Storeroom 875 m²
4 Conference Room 490 m²
5 Reception 110 m²
6 Waiting Room 220 m²
7 Corridor 330 m²
8 Offices 4980 m²
9 Children's Exhibition Room 1320 m²
10 Void 480 m²
11 Auditorium Seating 430 m²
12 Void over Auditorium Seating 495 m²
13 Void over the Stage 470 m²
14 Utility Room 140 m²

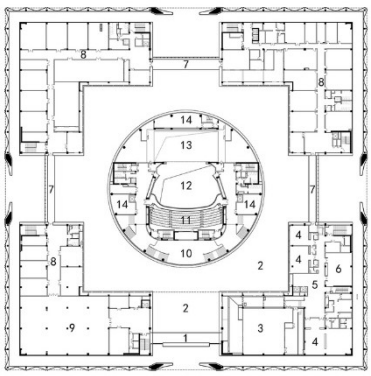
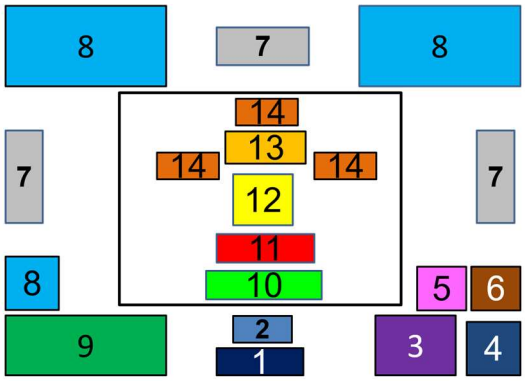


Figure 71the Second Floor – source: www.archdaily.com

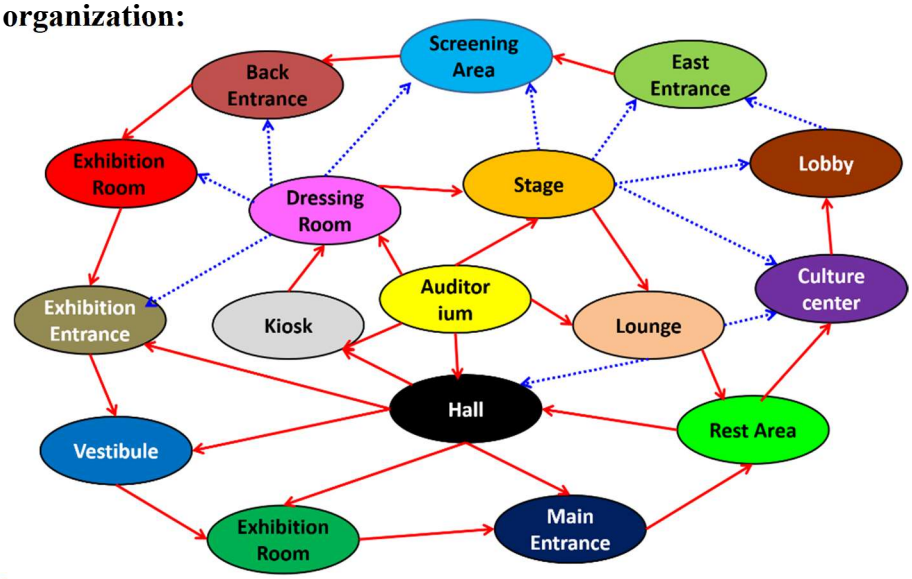


The plan organisation:
❖ Axial in the form of « U

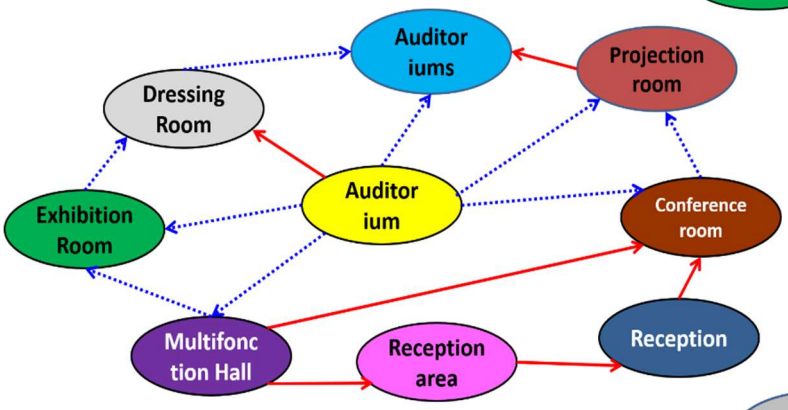
II-1-2-3-3-The Functional organization:

Ground Floor Plan

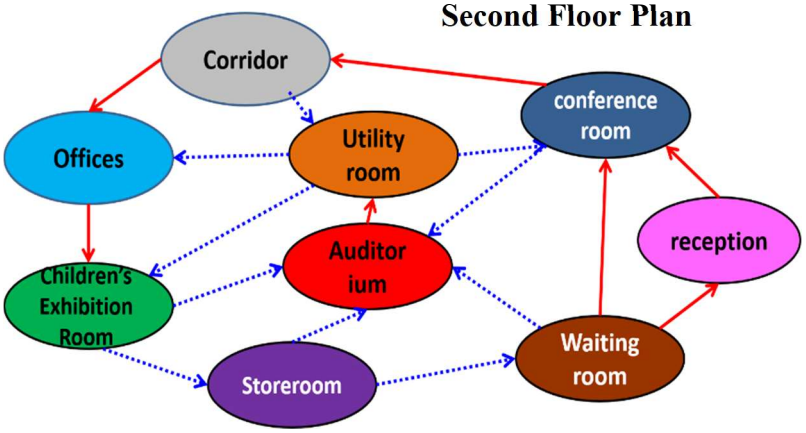
Strong Relation →
Weak Relation .....→



First Floor Plan



Second Floor Plan



II-1-2-3-4-Movement study:

A-Horizontal movement:

Floor Plan	Integration / separation
Ground Floor	There is an allowed Integration in horizontal movement between workers and visitors .
First Floor	There is a separation in horizontal movement between workers and visitors .
Second Floor	There is a separation in horizontal movement between workers and visitors .

Key :

1- Conference Room Entrance .
7- Main Entrance .
9- Back Entrance .
11- Exhibition Entrance
- The Stairs
- The Escalator

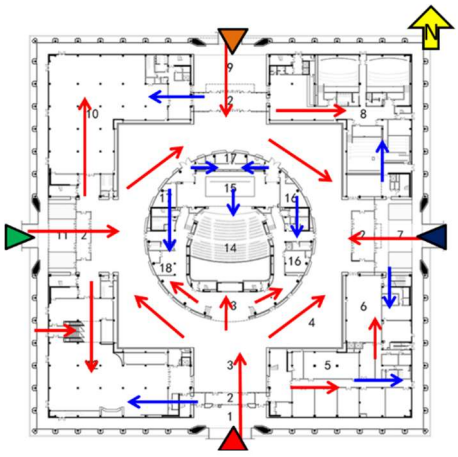


Figure 74The Ground Floor – source: www.archdaily.com+ student work

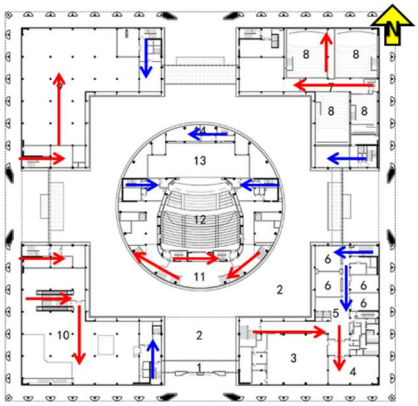


Figure 74The First Floor - source: www.archdaily.com+ student work

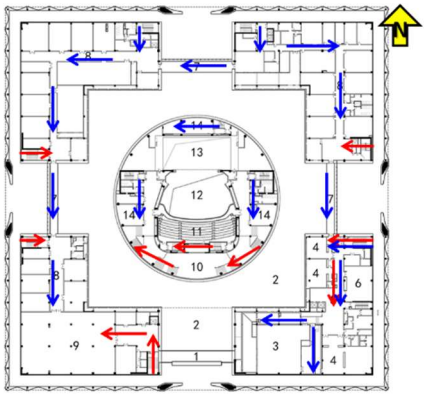


Figure 74The Second Floor - source: www.archdaily.com+ student work

B-Vertical movement:

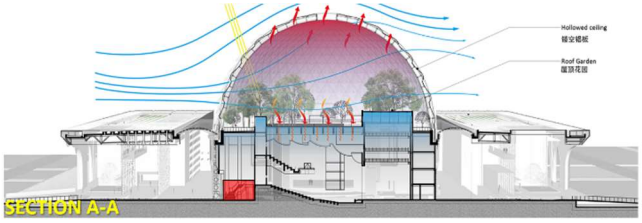


Figure 75Section A-A -source: www.archdaily.com

	Homogeneous / heterogeneous placement	Services
All the Floor Plans	•stairs and escalator distribution in the space is homogeneous	• Visitors mobility (general) • workers mobility (special) • emergency stairs

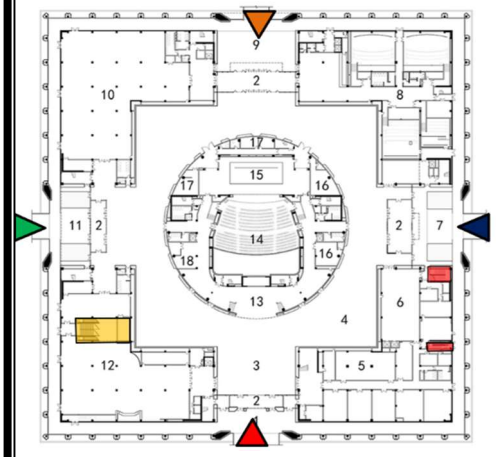


Figure 78The Ground Floor -source: www.archdaily.com+ student work

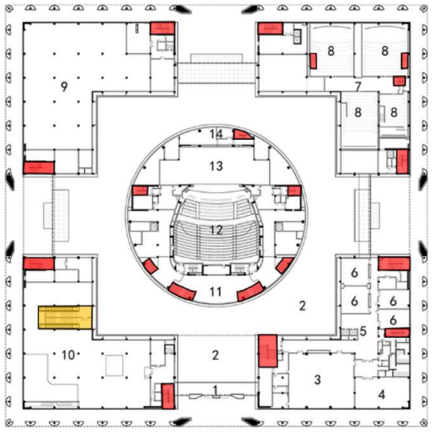


Figure 78The First Floor - source: www.archdaily.com+ student work

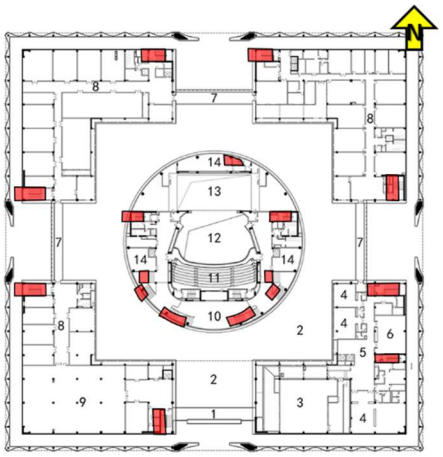
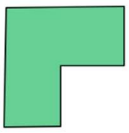
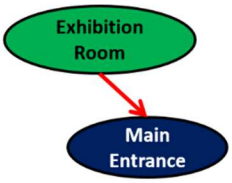
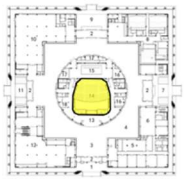
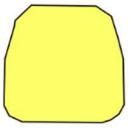
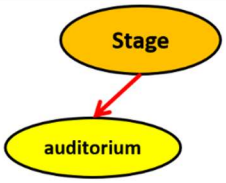
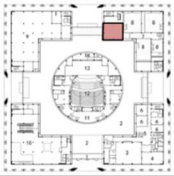
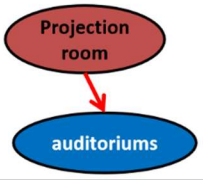
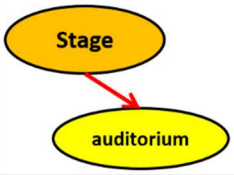
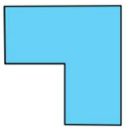
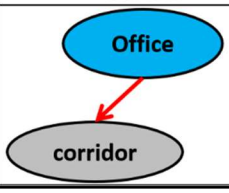


Figure 78 The Second Floor - source: www.archdaily.com+ student work

I-1-2-4-interior spaces study:

Space nam	Position	Shape	Surface	space relations	Lighting	Activity	EX .T
Exhibition Room			2210 m²		Natural concentrate+ Artificial Normal	Exhibition	✓
Auditorium Seating			925 m²		Natural Normal + Artificial concentrate	Lecturing Conferences	✓
Projection Room			681 m²		Natural Normal + Artificial concentrate	Seminars lessons	✓
Stage			460 m²		Natural Normal + Artificial concentrate	Lecturing Conference	✓
Office			4980 m²		Natural Normal + Artificial Normal	Administrative management	✓

I-1-2-5- The Structure:

A- Definition of the structural system: Structural system column - beam + dome

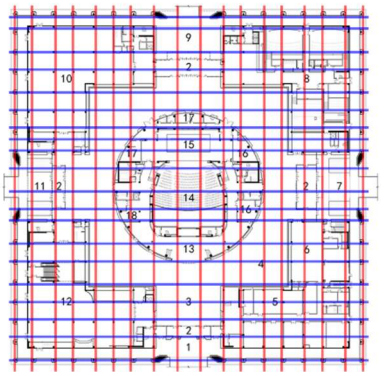


Figure 83 The Gride of Structural System – source: www.archdaily.com+ student work

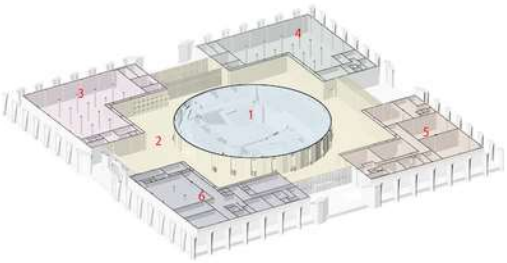


Figure 80The Ground FloorPerspective – source :www.archdaily.com+ student work

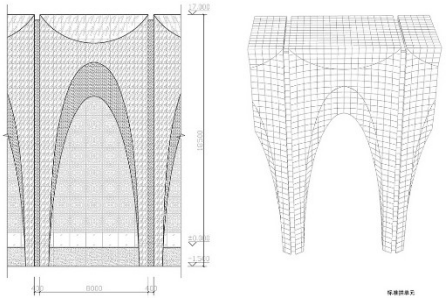


Figure 82The Arc repersent one strectural unit -source: www.archdaily.com

I-5-2- Structural unit :

• The arc width represents 1 structural unit of the basic structure unit

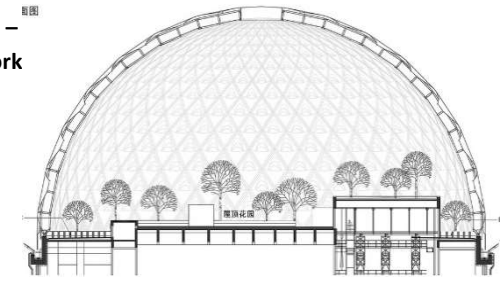


Figure 79The Dome repersent unique strecture -source: www.archdaily.com

Figure 81 the project During construction-source: www.archnet.org

II-1-3-The Third Example: Ouargla Islamic cultural center

II-1-3-1-Project Technical Card:

1-Project Technical Card	
Project	Ouargla Islamic cultural center
Location	Algeria, Ouergla
Opening year	2014
Duration	2008 starting 2018 extension
The owner	Directorate of Religious Affairs (Ouargla)
The Architects	Khelili Abd Hafid
Surface	1750 m²

Figure 84Ouargla Islamic cultural center -source: Student Photography

Figure 85Ouargla Islamic cultural center -source: Student Photography

II-1-3-2-External study:

II-1-3-2-1-Urban integration:

Main road

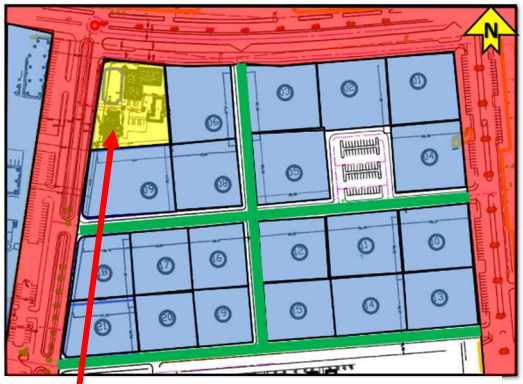
Secondary roads

The parcel

Adjacent parcels

Figure 87 Master plan-source: google earthe+ Student work

the Subjection of parcel's form to the main roads is in parallel



the Subjection of parcel's form to the other parcels is in parallel

Figure 86Master plan-source: google earthe+ Student work

I-1-3-2-2-The Accessibility:

- the placement of the project is in main roads so the Access from the city to the project or vice versa is directly
- the placement of the project is in the angle of the parcel.

- **Paths Determination**

The Key :

Main road

Secondary roads

The parcel

Adjacent parcels

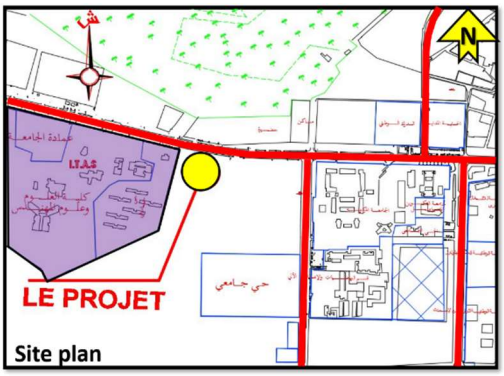


Figure 88Site plan- source: Architectural Office Khelili Abd Hafid + Student work

It is easy to access into the project through the Closest monument (university) so the Paths destined towards the parcel it's an organized path

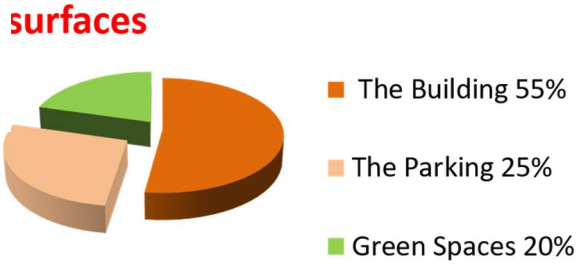
II-1-3-2-3-The Ground Entrances:

Figure 89Master plan- Architectural Office Khelili Abd Hafid + Student work

There is a separation between the floor entrances (occupation mode with separation)

Cars Main entrance

users's Main entrance



II-1-3-2-4-The Flow:

Project's Main entrance

Pedestrian Path

Mechanical Path (cars)

Green Spaces

The Building

Parking

Preliminary space:

*** There is no treatment**

*** It is easy to see it**

Figure 90Master plan-source: Architectural Office Khelili Abd Hafid + Student work

II-1-3-2-5-The Volumetry:

- In this project, the principle of volumetric structure is **Axial geometric structure in the form of *L***
- There is no separation of the volume compounds **(One block)**

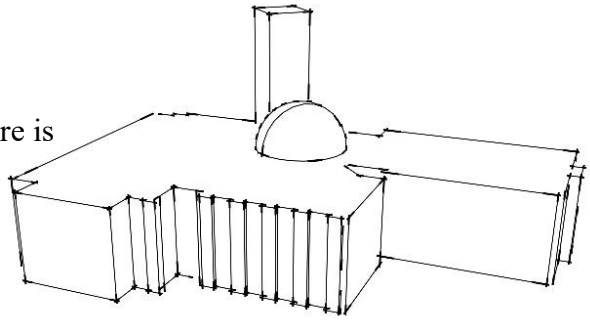
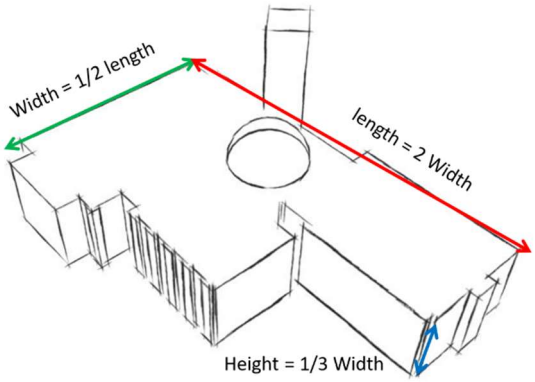


Figure 913d perspective -source: Student work With Sketchup14



Height ⟷
Width ⟷
length ⟷

Proportionality: It appears in the length, the width and the Height

Figure 94 3d perspective -source: Student work With Sketchup14

- In this project, the principle of volumetric structure is

Axial geometric structure in the form of *L*

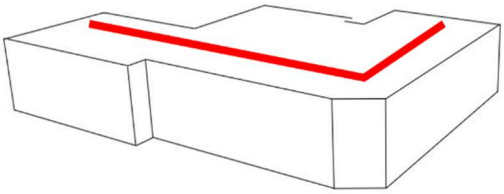


Figure 94project3d fourm – source: Student work With Sketchup14

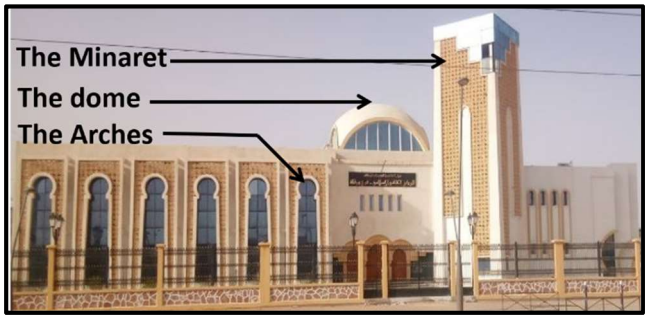


Figure 93 Ouargla Islamic cultural center -source: Student Photography

Functional translation: In the project there is a functional translation on the external volume

II-1-3-2-6-The Facades:

1-Harmony: there is homogeneity in the elements of the main facade by dominance and repetition

3- Percentage of Empty and filled:

Empty 45%

Filled 55%

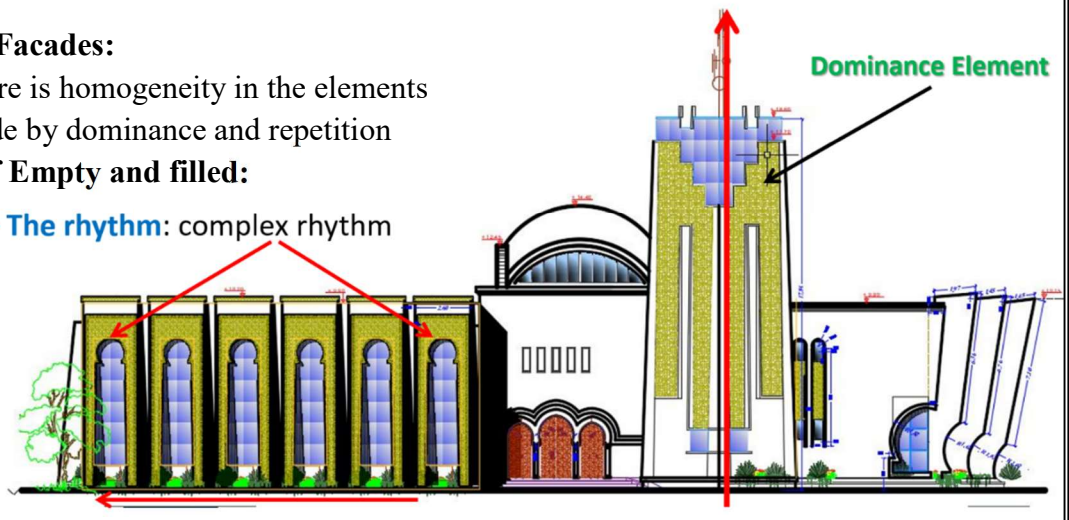
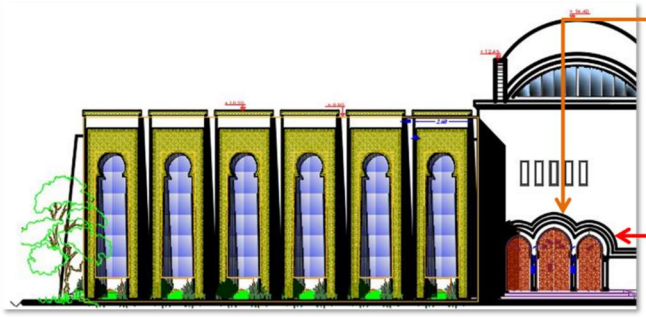


Figure 95 North Facade – source: Architectural Office Khelili Abd Hafid

Figure96 Ouargla Islamic cultural cente North Facader - source: Student Photography

- This façade is oriented to the north so the percentage of the empty near to the filled.
- The Facade is relatively heavy by the difference between The Percentage of empty and filled

4- The Treatment of The Entrance



A - monumentality of the entrance

B -The entrance is not on one level with the facade

Figure 97 North Facade – source: Architectural Office Khelili Abd Hafid +Student Work

C - construction materials: Wood+ plaster + cement

Figure 98 Ouargla Islamic cultural center Entrance -source: Student Photography

6 - colors Study : There is no gradient in the colors
White + Brown + Blue

D - There is no volumetric proportion for the entrance with the facade

There is homogeneity in colors

7 – Texture Study : smooth

8- Construction Materials:

Glass .

Plaster .

Cement.

Figure 99Ouargla Islamic cultural cente North Facader source: -Student Photography

I-1-3-2-7-The Exterior Envelope:

A- the interior lighting ambience: There is a manipulation in the design of the exterior envelope between the empty and the filled where this manipulation left a significant impact of light in the interior of the building.

2-The type :Double skin envelope

Figure 100 The Main Hall -source: Student Photography

Figure 103 The dome - source: Student Photography

Figure 104 The External Arcs - source: Student Photography

Figure 101 The External Arcs -source: Student Photography

C- The exterior envelope and thermal comfort:

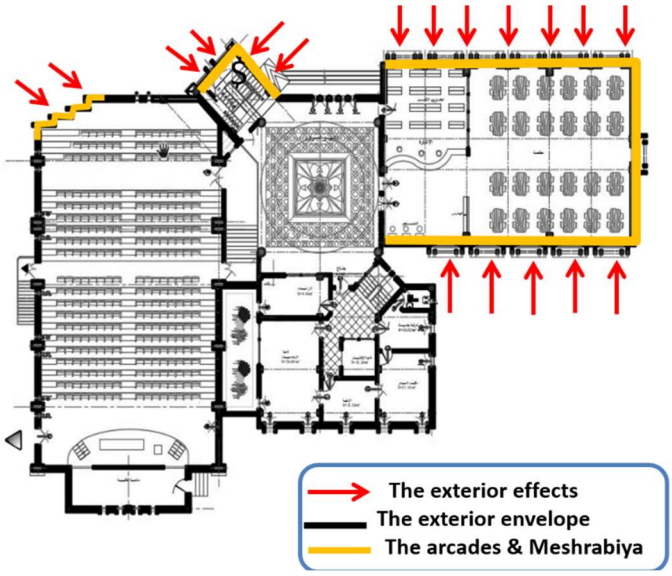


Figure 102 Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

D- the using of Meshrabiya:

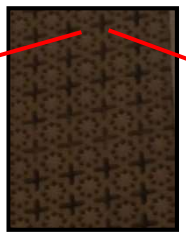


Figure 105Menaret's islamic pattern-source: Student Photography

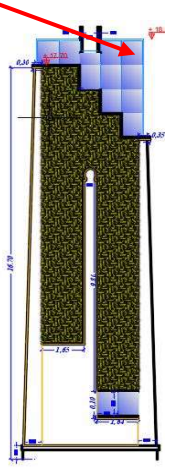


Figure 105 The Menaret -source: Student Photography

Figure 105The Menaret - source Architectural Office Khelili Abd Hafid + Student

II-1-3-3-Internal study:

II-1-3-3-1-The Presentation:

A-Number of floors:

The project consists of two floors: **ground** floor and **first** floor

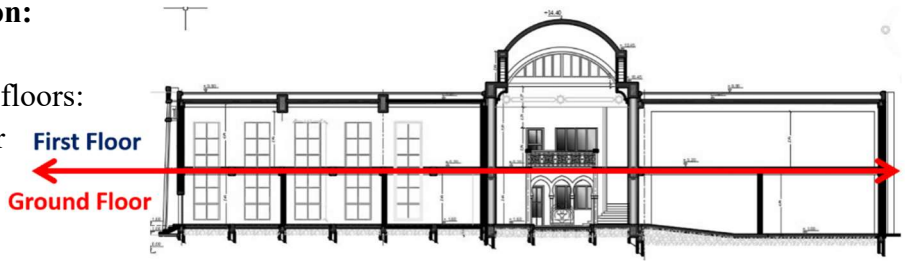


Figure 106Section A-A -source: Architectural Office Khelili Abd Hafid

2-The Entrances:

- Main Entrance.
- office Entrance.
- Auditorium Entrance.

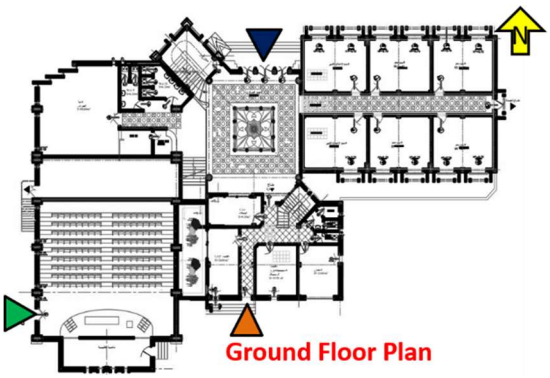


Figure 108Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

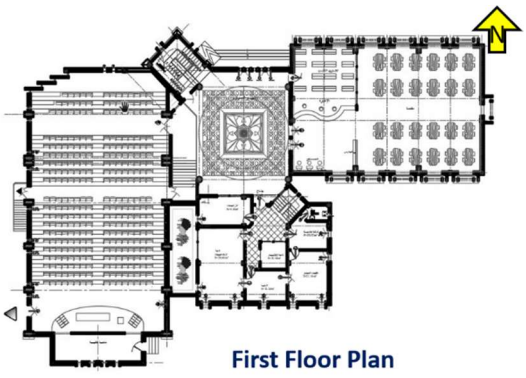


Figure 108First Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

C -The Most Important Spaces:

Ground Floor:
- Hall.
-exhibition Room.
-office.
-classrooms
-Minaret 's
-Stairs.

1st Floor:
-Conference Room.
-Library.
-Auditorium.
-director office.

D-Important Departments:
-Hall.
-Exhibition.
-Culture.
-Education.
-Office.

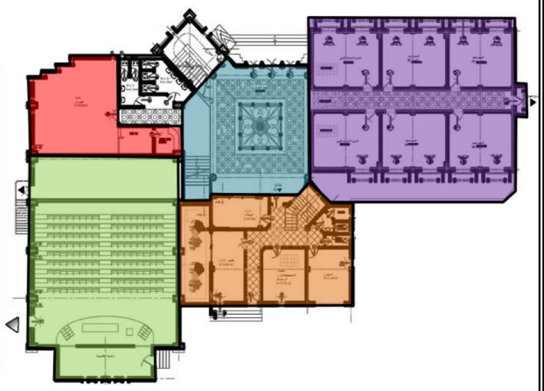


Figure 109Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

II-1-3-3-2-The Spatial organization:

*** Surfaces of ground floor spaces**

- Hall	74 m²
- Exhibition Room	90 m²
- Reception	14 m²
-Minaret's Stairs	25 m²
- Classrooms	30m² x4
- Bathrooms W/M	6 m²

- Computer Room	30m² x2
- Office	20 m²
- Store	21.4 m²
- Phone Center	9.10 m²
- Office Bathroom	12 m²
- Users Office	20 m²

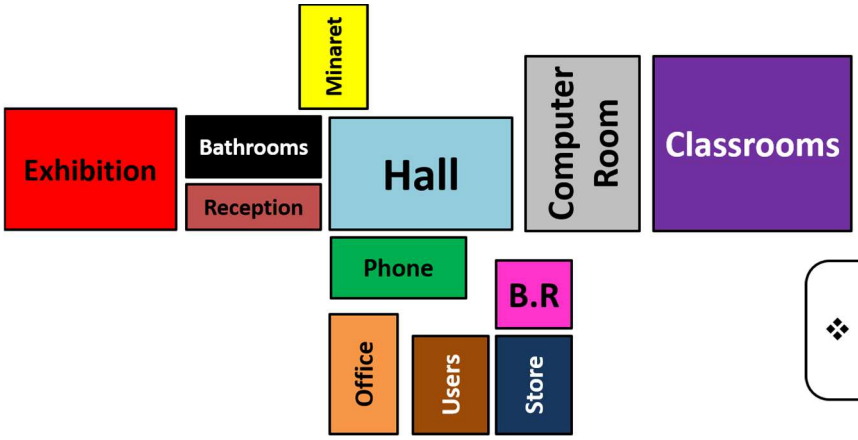


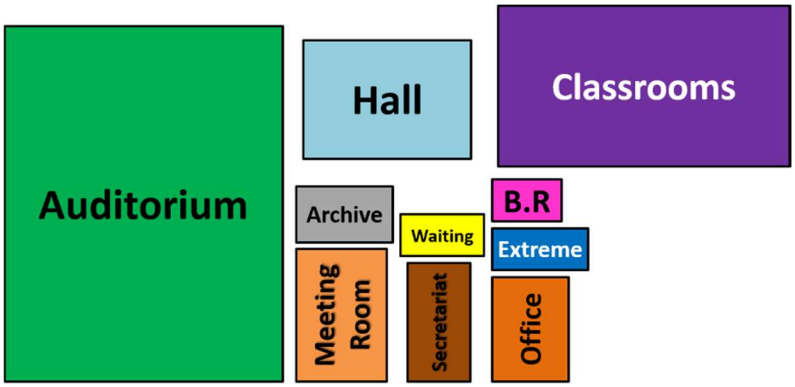
Figure 110Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

The plan organisation :
❖ Axial plan organisation in the forme of « T » letter

*** Surfaces of First floor spaces**

- Auditorium	418.80 m²
- Hall	55 m²
- Library	240 m²
-Meeting Room	28.40 m²
- Director Office	21.10 m²

- Bathroom	04 m²
- Secretariat Office	12.20 m²
- Waiting Room	12.20 m²
- Extreme Room	11.12 m²
- Archive Office	09.10 m²



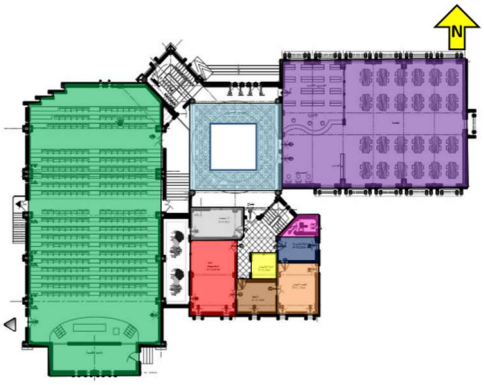
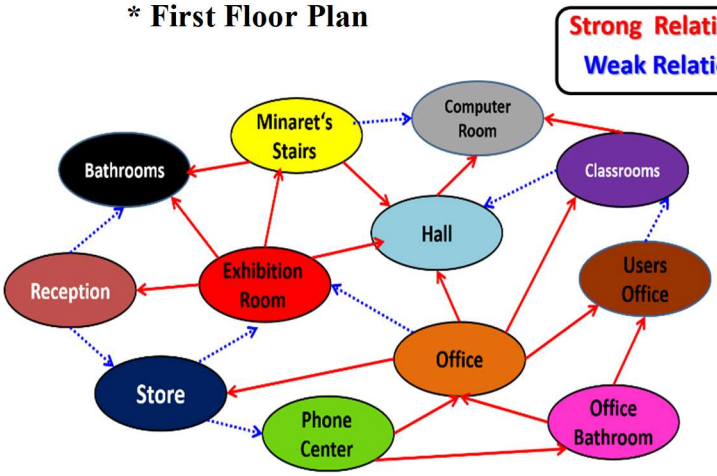


Figure 111First Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

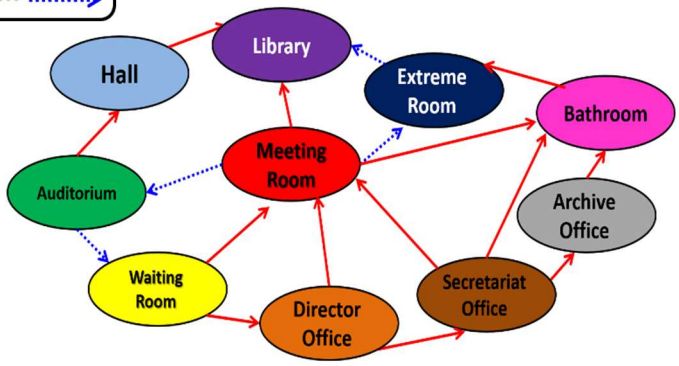
The plan organisation :
❖ Axial plan organisation in the forme of « L» letter

II-1-1-3-3-The Functional organization:

*** First Floor Plan**



*** Ground Floor Plan**



II-1-3-3-4-Movement study:

A-Horizontal movement:

Floor Plan	Integration / separation
Ground Floor	There is an allowed Integration in horizontal movement between workers and Visitors .
First Floor	There is an allowed Integration in horizontal movement between workers and students .

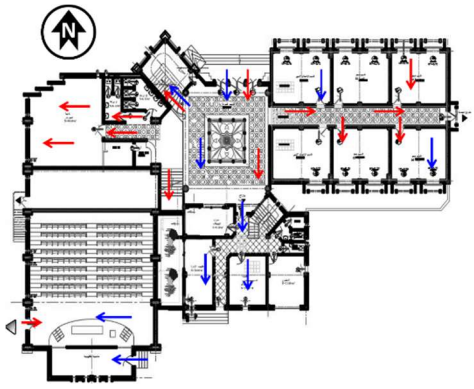


Figure 112Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

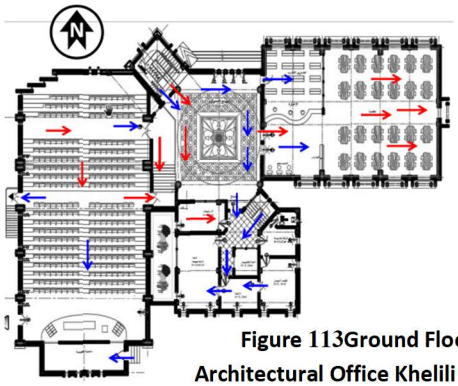


Figure 113Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student

Key :
- Visitors movement
- Workers movement

B-Vertical movement:

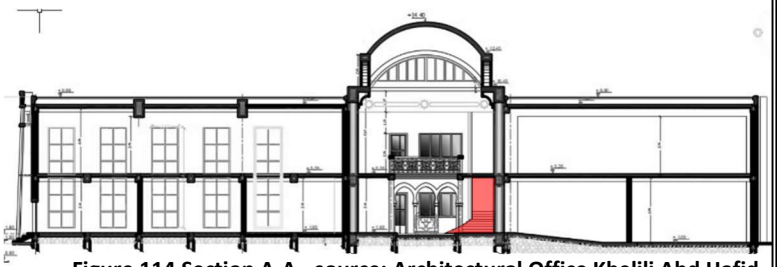


Figure 114 Section A-A - source: Architectural Office Khelili Abd Hafid

	Homogeneous / heterogeneous placement	Services
All the Floor Plans	• The stairs distribution in the space is homogeneous	• Visitors mobility (general) • workers mobility (special) • emergency stairs

Figure 116Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student

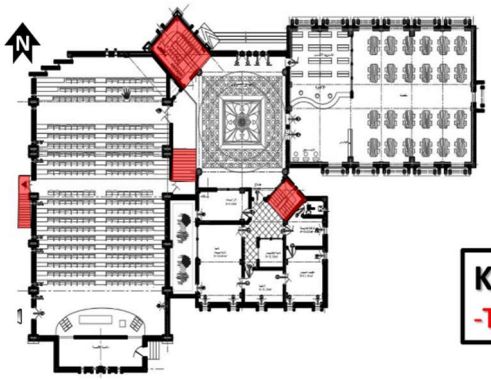
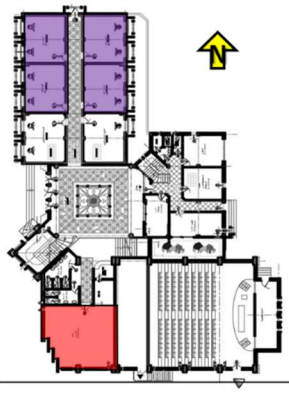
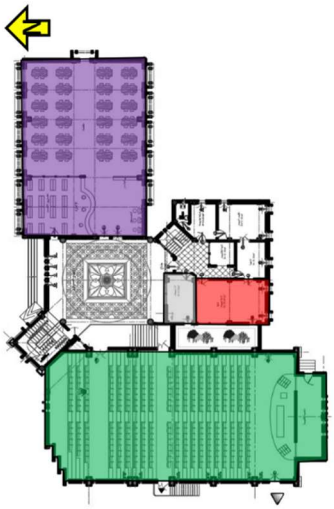


Figure 116 First Floor plan- source: Architectural Office Khelili Abd Hafid + Student work

II-1-3-4-interior spaces study:

Space nam	Position	Shape	Surface	space relations	Lighting	Activity	EX .T
Exhibition			90 m²	Exhibition → Hall	Natural concentrate + Artificial Normal	Exhibition	✗
Classrooms			30m² x4	Classes → Computer	Natural Normal + Artificial concentrate	Learning + reading	✓
Meeting Room			28.4 m²	Meeting Room → Director Office	Natural concentrate + Artificial Normal	Meeting	✗
Auditorium			418.8m²	Auditorium → Hall	Natural Normal + Artificial concentrate	Learning + Lecturing Conferenc es	✓
Library			240 m²	Library → Hall	Natural concentrate + Artificial Normal	Reading	✗

II-1-3-5- The Structure:

A-Definition of the structural system:
-Structural system column – beam

Key :
-Horizontal Grid .
-Vertical Grid .
- SECTION B-B .

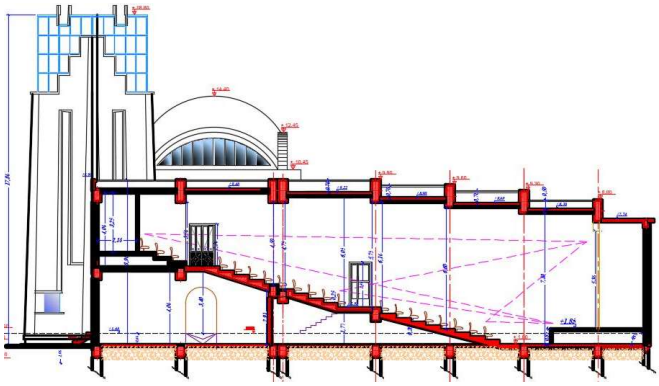


Figure 117Section B-B - source: Architectural Office Khelili Abd

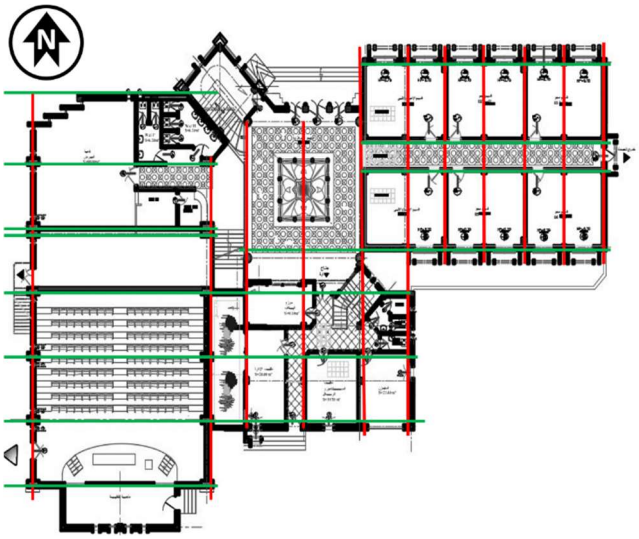


Figure 119 Ground Floor plan- source: Architectural Office Khelili Abd Hafid + Student

B- Structural unit :

• The classroom represents one structural unit of the basic structure .

Figure 118 The External Arcs Structure - source: Student Photography

Notice:

Due to the specific number of pages by the professors I could not put the rest of the studied examples, which is the project: **Algerian Tourism and Travel Biskra Agency and Emam Reza religious and cultural complex.**

However, all the studied examples were used to extract the space program, ideas and Design standards.

II-2-Extracting the Program of Spaces and Surfaces:

II-2-1-Comparing Table:

Da Chang Muslim Cultural Center			Emam Reza religious & cultural complex			Qatar Faculty Of Islamic Studies			Ouargla Islamic cultural center (Official Program)			The proposed Spaces		
Space nam	n°	U.A	Space nam	n°	U.A	Space nam	n°	U.A	Space nam	n°	U.A	Space nam	n°	U.A
Hall	1	3675 m²	Ceremony Hall	1	190 m²	Court	1	1540 m²	Hall	1	74 m²	Hall	1	200 m²
Exhibition Room	4	2110 m²	/	/	/	Exhibition	1	385 m²	Exhibition Room	1	90 m²	Exhibition Room	1	90 m²
/	/	/	/	/	/	Reception	1	20 m²	Reception	1	14 m²	Reception	1	20 m²
/	/	/	/	/	/	/	/	/	Minaret's Stairs	1	25 m²	Minaret	1	25 m²
/	/	/	/	/	/	Classrooms	28	65 m²	Classrooms	4	30 m²	Classrooms	5	50 m²
Women / Men Toilet	3	25 m²	Women / Men Toilet	3	30 m²	Women / Men Toilet	3	230 m²	Bathrooms W/M	2	6 m²	Women / Men Toilet	2	10 m²
/	/	/	I.T	1	80 m²	Computer Room	1	280 m²	Computer Room	2	30 m²	Computer Room	1	100 m²
Offices	1	4980 m²	/	/	/	Faculty Deanship	1	360 m²	Office	1	20 m²	Office	1	25 m²
Store room	1	800 m²	Store	2	80 m²	/	/	/	Store	1	22 m²	Store	2	25 m²
/	/	/	/	/	/	/	/	/	Phone Center	1	10 m²	Phone Center	1	10 m²
/	/	/	/	/	/	/	/	/	Users Office	1	20 m²	Users Office	1	20 m²
/	/	/	/	/	/	/	/	/	Office Bathroom	2	12 m²	Office Bathroom	2	07 m²
Auditorium	1	925 m²	/	/	/	Auditorium	1	440 m²	Auditorium	1	420 m²	Auditorium	1	450 m²
/	/	/	Library	1	143 m²	Library	1	1780 m²	Library	1	240 m²	Library	1	400 m²
Conference Room	7	140 m²	/	/	/	Academy Seminar	3	70 m²	Seminar Room	1	30 m²	Seminar Room	2	50 m²
/	/	/	/	/	/	Faculty Dean's Office	1	20 m²	Director Office	1	21 m²	Director Office	1	20 m²
/	/	/	/	/	/	/	/	/	Secretariat Office	1	12 m²	Secretariat Office	1	16 m²
Rest Area	1	465 m²	/	/	/	Rest Area	2	400 m²	Waiting Room	1	12 m²	Rest Area	1	150 m²
/	/	/	/	/	/	/	/	/	Archive Office	1	09 m²	Archive Office	1	16 m²
Utility Room	1	140 m²	/	/	/	Multipurpose Room	1	235 m²	Extreme Room	1	12 m²	Multipurpose Room	1	100 m²
Projection Room	1	681 m²	Projection Room	1	16 m²	Projection Room	1	95 m²	/	/	/	Projection Room	2	60 m²
Kiosk	1	120 m²	Shop	1	30 m²	Restaurant	1	200 m²	/	/	/	Cafeteria	1	200 m²
Lounge	1	335 m²	VIP Room	1	25 m²	VIP Lounge	2	35 m²	/	/	/	VIP Lounge	1	35 m²
Lobby	1	385 m²	Lobby	1	20 m²	/	/	/	/	/	/	/	/	/
/	/	/	Men Prayer Hall	2	300 m²	Main Prayer Hall	1	1770 m²	/	/	/	Main Prayer Hall	1	1200 m²
/	/	/	Female Prayer Hall	1	120 m²	Female Prayer Hall	2	430 m²	/	/	/	Female Prayer Hall	1	400 m²
/	/	/	Men Ablution	1	30 m²	Mosque Ablution	1	235 m²	/	/	/	Men Ablution	1	70 m²
/	/	/	Women Ablution	1	20 m²	Female Abolition	2	100 m²	/	/	/	Women Ablution	1	40 m²
/	/	/	Mechanical Room	2	110 m²	/	/	/	/	/	/	Mechanical Room	1	50 m²
/	/	/	Electrical Room	2	15 m²	/	/	/	/	/	/	Electrical Room	1	15 m²
/	/	/	/	/	/	Research Offices	3	1000 m²	/	/	/	Research Offices	3	30 m²
Dressing Room	2	160 m²	Closet	2	25 m²	/	/	/	/	/	/	Dressing Room	2	21 m²
Screening Area	1	2125 m²	/	/	/	/	/	/	/	/	/	/	/	/
Art & Culture Center	1	1795 m²	/	/	/	/	/	/	/	/	/	Art & Culture Center	1	60 m²

II-2-2-program of Spaces:

Zone	Space		Unitary Surface	Number	Total area	Note
Reception	Hall		200 m²	1	200 m²	/
	Reception		20 m²	1	20 m²	Added Space
Total	220 m²			220 m²		/
Light	Prayer Hall	Men	800 m²	01	760 m²	/
		Women	250 m²	01	400 m²	/
	Imam room		16 m²	01	16 m²	Added Space
	Ablution	Men	70 m²	01	70 m²	/
		Women	40 m²	01	40 m²	/
	Minaret		25 m²	01	25 m²	Added Space
	Toilets	Men	2.25 m²	16	36 m²	/
		Women	2.25 m²	12	27 m²	/
Total	1205 m²			1264 m²		/
Knowledge / Educational	Classrooms		50 m²	05	m²250	/
	Research Offices		25 m²	03	75 m²	/
	Library		245 m²	01	245 m²	/
	Computer Room		100 m²	01	100 m²	/
	Toilets	Men	2 m²	03	6 m²	/
		Women	2 m²	03	6 m²	/
Total	424 m²			682 m²		/
Knowledge / Cultural	Exhibition Room		145 m²	01	145 m²	/
	Auditorium		450 m²	01	450 m²	/
	Seminar Room		60 m²	01	60 m²	/
	Multipurpose Room		85 m²	01	85 m²	/
	Projection Room		53 m²	02	106 m²	/
	Islamic Art Center		60 m²	01	60 m²	Added Space
Total	1000 m²			1050 m²		/
Administrative	Director Office		25 m²	01	25 m²	/
	Secretariat Office		20 m²	01	20 m²	/
	Archive Office		18 m²	01	18 m²	/
	Accountant Office		12 m²	01	12 m²	/
	Users Office		12 m²	01	12 m²	/
	Meetings room		30 m²	01	30 m²	/
	Cultural Activities Office		20 m²	01	20 m²	Added Space
	Toilets	Men	2 m²	03	6 m²	/
		Women	2 m²	03	6 m²	/
Total	142 m²			150 m²		/

Zone	Space	Unitary Surface	Number	Total area	Note
Entertainment	Cafeteria	65 m²	01	65 m²	Added Space
	VIP Lounge	30 m²	01	30 m²	/
	Rest Area	150 m²	01	150 m²	Added Space
Total	245 m²		245 m²		/
Services	Store	25 m²	04	100 m²	/
	Mechanical Room	25 m²	02	50 m²	/
	Electrical Room	20 m²	01	20 m²	/
	Dressing Room	4 m²	02	8m²	Added Space
Total	78 m²		190 m²		/
Total space area	/		3900 m²		
Circulation	15 % of the total area		585 m²		
Total area	4485 m²				

II-3-The Analysing of The Project's Ground:

II-3-1-The presentation of the state:

II-3-1-1- Geographical Situation:

The state of Biskra Is located in the south-east of Algeria in the door of the desert with an altitude of 112 m up the sea level. **(Biskra Monograph, 2014)**

Figure 12024 Map of Algeria-source: http://maps.tawwat.com

II-3-1-2-The Distance from The Country's Capital:

the capital of the state is located in the south-east, 470 km to the capital Algiers.

II-3-1-3-The Surface: the state covers an area of 216712 km²

II-3-1-4-The Astronomical Coordinates:

Latitude	**34° 51' 1 North**
Longitude	**5° 43' 40 East**

II-3-1-5-The Geographical Limits:

The state of Biskra is limited:

by the state of BATNA in the north

by the state of KHENCHELA in the northeast

by the state of M'SILA in the northwest

by the state of DJELFA in the southwest

by the state of EL OUED in the south.

Figure 124 Location map of Biskra city - source: Biskra Monograph, 2014

I-3-1-6-The Reliefs:

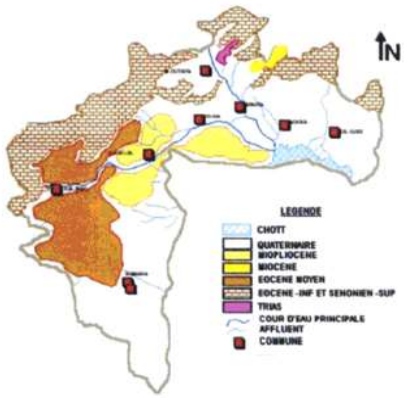


Figure 124 Reliefs map of Biskra city -source: Biskra Monograph, 2014

The state offers a great variety of Reliefs:

- **Mountain** chains in the north and northwest.
- **Valleys:** the intersection of two valleys Abdi and Foddala created another valley is the valley of Sidi Zarzour. **(Biskra Monograph, 2014)**

II-3-1-7-History:

Figure 125 OKBA Ben Nafea - source: (622/682)-google image

Biskra has been an important center of transactions and exchanges since ancient times. From the earliest times, the nomadic and warlike peoples of ancient Africa seem to have Biskra as a place of rest, temporary encampment or sedentary settlements.

Phenicia merchants gave it its name Beckera or "sweet".

Islamic Expansions: In 682, Sidi OKBA was killed near the city, trying to establish its grip on the Ziban. Little is known about Arab Biskra, except Ibn Khaldun ho stayed there several times, especially in 1352.

Figure 126 Biskra in Turkish era (1830)-source: google image

Turkish Presence 1515 – 1830:

The city was occupied by the Turks in the 16th century. The old BISKRA was then installed on a hill in the heart of the palm grove. Around 1740, an epidemic of plague led to the bursting of the mother city in five villages, scattered in the palm grove, and still exist.

Figure 127 Biskra in French era - source : google image

French Presence 1844 - 1962:

On March 4, 1844, the Duke of AUMALE entered Turkish BISKRA, where he left a company of native soldiers, commanded by 5 French officers and non-commissioned officers.

I-3-2-The presentation of the city: Biskra city was established by decree of May 1878, which was subject to government authority on April 9, 1889, for the decision of the Senate and then ascended to the Constituency of the Auras until 1974.

In 1974, the town of Biskra became a state under Law No. 74-69 of July 1974.

II-3-2-1-Geographical Situation:

Figure 128 map of Biskra -source: Biskra Monograph, 2014

Biskra city is located in the south-east of the state, is bordered to the north by the municipality of Lotaya, from the south by the Municipality of Oumach, from the east by Sidi Okba and Chettma and from the west by ElHadjeb.

I-3-2-2-surface: Biskra city has an area of 127.70 km².

I-3-2-3-Number of populations: 200615 people according to the statistics.

II-3-2-4-The most important economic and commercial activities: It appears that one third of jobs are offered by the public sector (42,000) and the rest by the private sector. Agriculture alone occupies 38% of working people (which is 7% more than the Saharan average), with significant local variations: only 5% in Biskra, but between 80% and 95% in El Ghrous, ElHadjeb, El Haouche, Foughala, Meziraa ... **(Directorate of Planning and Urbanization of the State of Biskra - the annual hotspot 2014)**

II-3-3-Climate data:

II-3-3-1-Temperature: The monthly average in the region ranges between 11.2 degrees in January and 36 degrees in July and the annual rate is estimated by 23.2 degrees.

Month / Temperature	January	February	March	April	may	June	July	August	September	octobre	novembre	décembre	The average
Medium	11,2	13,3	15,4	19,1	24,6	30,3	36	32,3	27,7	20,7	15	12,4	23,2
High	19,9	23,9	27,4	32,9	36,9	42,1	45,4	44,0,	39,4	32,8	25,5	22,3	32,7
Low	3,0	3,1	4,0	7,3	11,8	18,3	26,6	21,1	16,3	9,6	5,6	3,5	12,7

Table 1Monthly average temperatures 2014 (mm)-source: infoclimat.fr 2015

II-3-3-2-Rainfall quantity: from the following table we observe: in 2014 the rainfall quantity arrives to 194 mm in 44 days as the topmost quantity in that year; in other part 1998 was attend the least quantity 51 mm in 23 days.

The year	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07
Rainfall quantity (mm)	83	82	194	133	201	103	156	90	153	155	51	190	55	88.8	39.6	159	294	58.8	173	98.8
Days	38	26	51	42	45	28	33	33	41	47	23	51	16	27	32	38	44	41	30	22

Table 2Rainfall quantity1988-2008- source: Biskra Monograph, 2014

II-3-3-3-the Humidity: The monthly average in the region ranges between 58 % in January and 24 % in July and the annual rate is estimated by 41.1 %.

Month	January	February	March	April	may	June	July	August	September	octobre	novembre	décembre	The average
Humidity (%)	58	50	43	50	33	24	24	27	29	43	45	49	41.1

Table 3Monthly average humidity 2014 -source: infoclimat.fr 2015

II-3-3-4-the dominant winds:

from the following table we observe: that the average of winds Maximum speed arrive to 17.2 m/s where in January it arrives to 20.4 m/s while the average of Minimum speed arrive to 3.9 m/s where in July it arrives to 3.5 m/s.

Month / winds speed	January	February	March	April	may	June	July	August
Maximum speed (m/s)	20.4	13.2	16.4	16.6	22.2	21	16.9	15.9
Minimum speed (m/s)	3.7	4.5	4.7	4.6	4.6	4.6	3.5	4.0
Number of Days	1	2	4	5	4	5	2	2

Month / winds speed	September	octobre	novembre	December	The average
Maximum speed (m/s)	17.6	15	14.5	16.7	17.2
Minimum speed (m/s)	4.0	3.6	3.1	3.0	3.9
Number of Days	2	2	1	1	31

Table 4 average of winds speed- source: Biskra Monograph, 2014

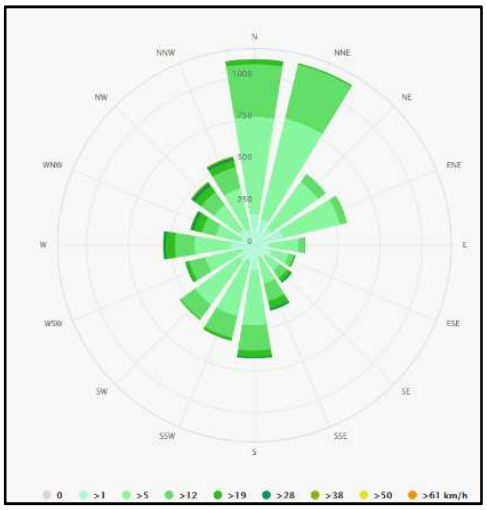


Figure 129 the Rose of winds Biskra-source : www.meteoblue.com

II-3-4-the location of the ground and its limits:

II-3-4-1-the location:

the project ground is located in the east of the city , exactly in ElHouda street ; where the distance between it and the state headquarters is 1.5 km , near to the bridge n° 2 (Oued Sidi Zerzour) also the tow national roads n°31 and n° 83 passes next to the ground.

Figure 130 Biskra City map – source: google earth+student work

II-3-4-2-the ground limits:

is limited by the theatre from the north, by the national road n° 83 from the east, empty ground and Palm Forest from the south and the valley of Sidi Zerzour.

Figure 1213 The limits of the ground - google earth+student work

Figure 131 Oued Sidi Zerzour-source: student photography

Figure 132 Homme of culture – source: student photography

Figure 134 Palm of Forest- source: student photography

Figure 135 road n° 83- student source : photography

Figure 136 the project ground- source : student photography

II-3-4-3-the Accessibility:

the placement of the project is in a main road so the Access from the city to the project or vice versa is directly.

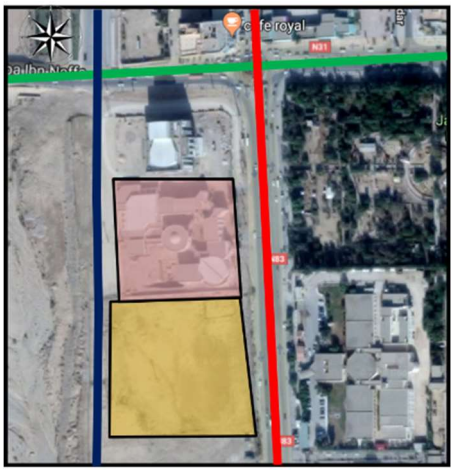


Figure 122The limits roads of the ground – source: google earth+student work

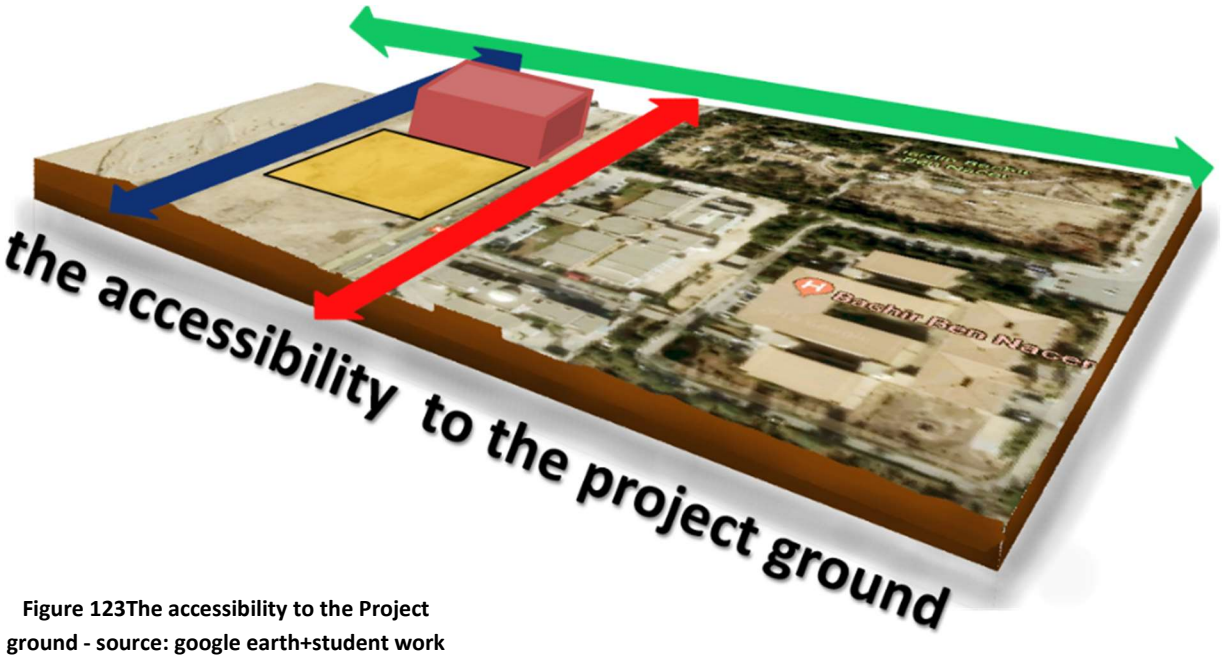


Figure 123The accessibility to the Project ground - source: google earth+student work

It is easy to access into the project through the Closest monument **(homme of culture)** so the Paths destined towards the parcel it's an **organized path.**

II-3-5-The ground and the surrounding environment:

the project ground is located in strategic site where it had many important equipment

II-3-5-1-the important and adjacent equipment:

the theater and Homme of culture next to the ground.

Figure 124The limits roads of the ground - Biskra PDAU 2014+student work

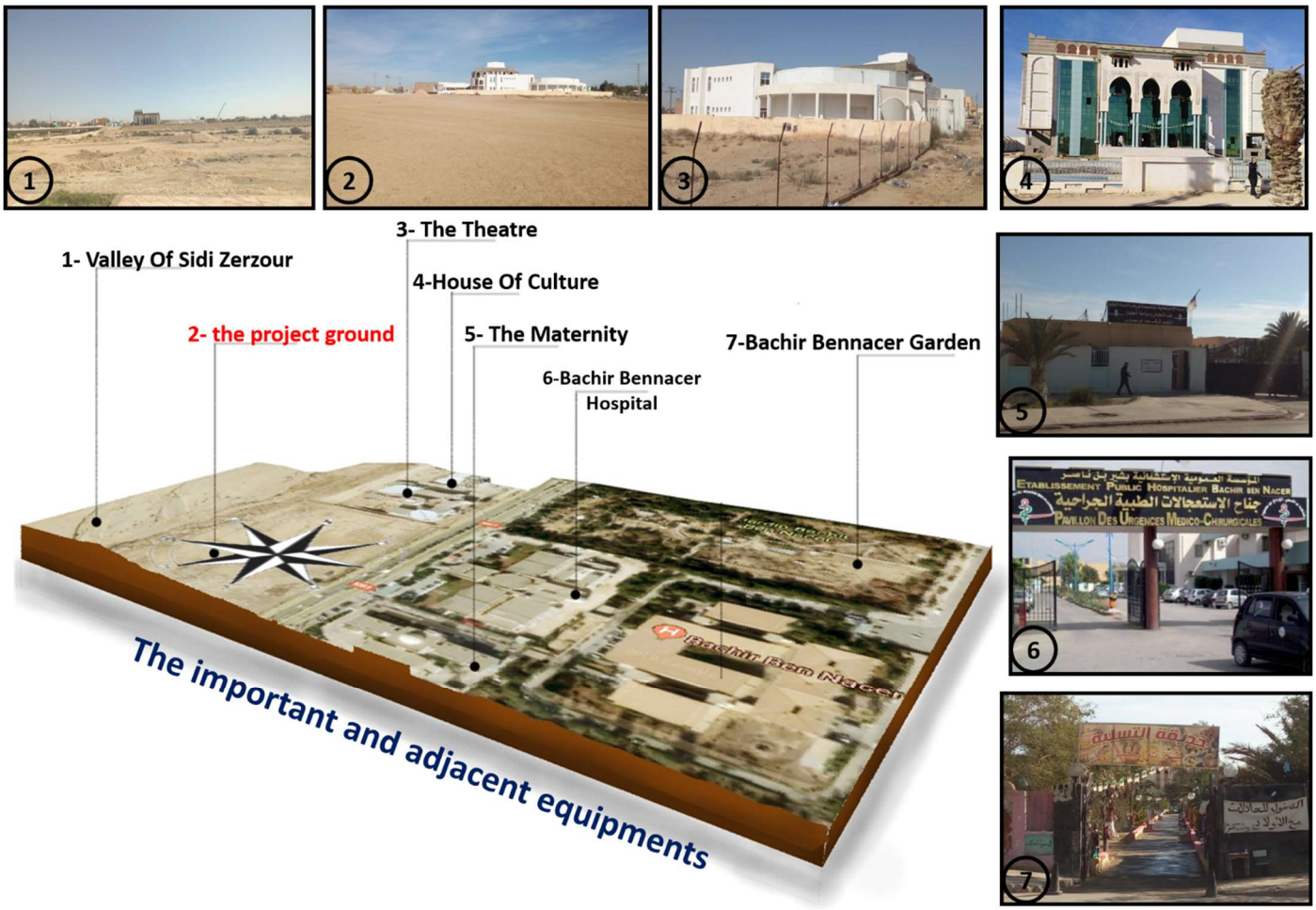


Figure 140 important and adjacent equipment - source: student photography + google earth + student work with Photoshope

II-3-5-2-physical obstacles (Internal and external):

Figure 141 the physical obstacles of the project's ground-source: google earth+student work

- **the Easements:** The ground is located next to Sidi Zerzour valley, so the distance required by the easements must be respected.
- **The outer wall of the homme of culture:** Which is an obstacle to the aesthetics of the project on the one hand and contributes to the difficulty of project vision.
- **the national road n° 83:** Where this road is attending a large flow of mechanical movement, this is what make a big noise affects directly on the project.
- **The empty ground:** The existence of an empty ground in the southern side of the project ground makes the project unprotected.

II-3-5-3-The prevailing architectural style:

Through the urbane facade adjacent to the project's ground we note that the architectural style is **modern**.

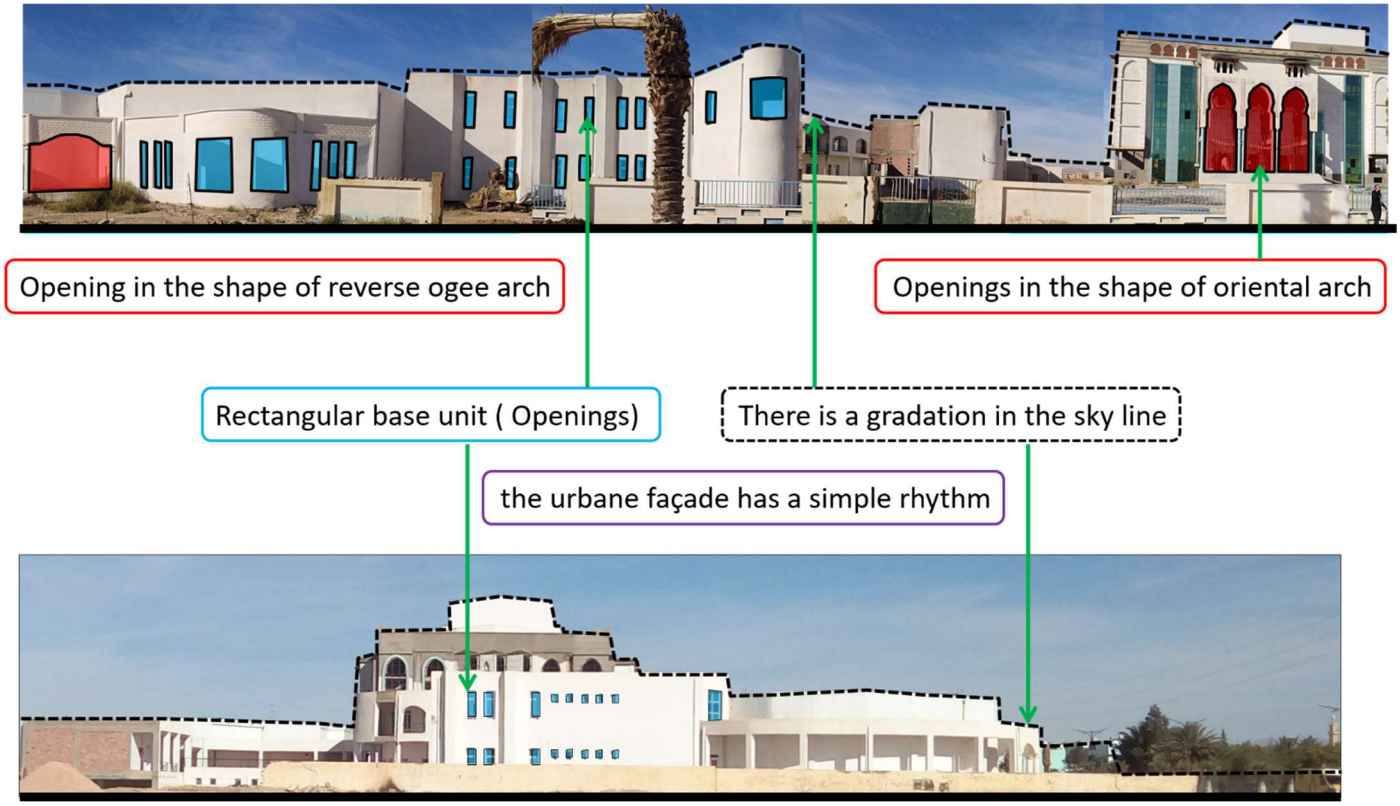


Figure 142 the facades of closest projects-source: student work with Photoshope

II-3-6-The morphology of the ground:

II-3-6-1-The Dimensions: the project's ground has a rectangular shape.

II-3-6-2-The sections: Through the topography section of the floor we find that the ground is almost flat.

Figure 143 the shape of the ground and the section lines -source: google earth

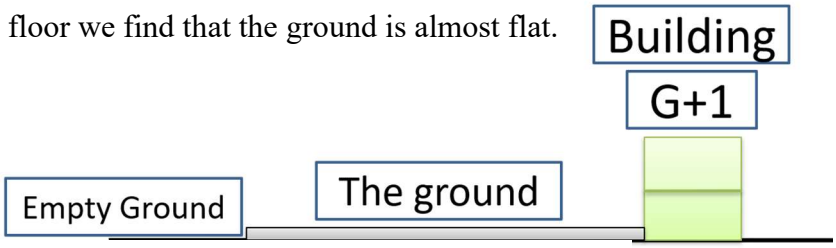


Figure 125Presentation of the section B-B -source: student work

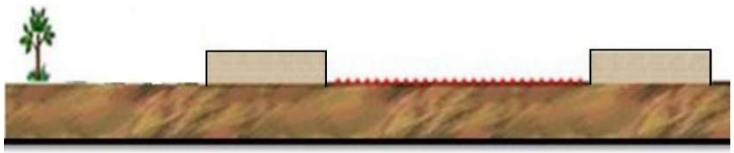


Figure 145 Presentation of the section A-A -source: student work

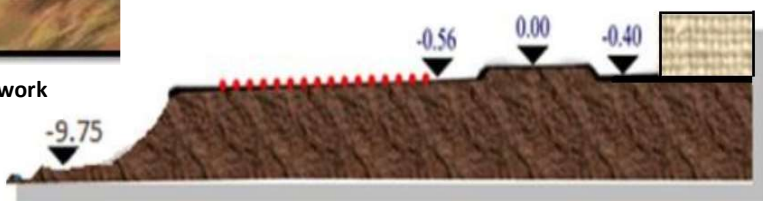


Figure 146 Presentation of the section B-B -source: student work

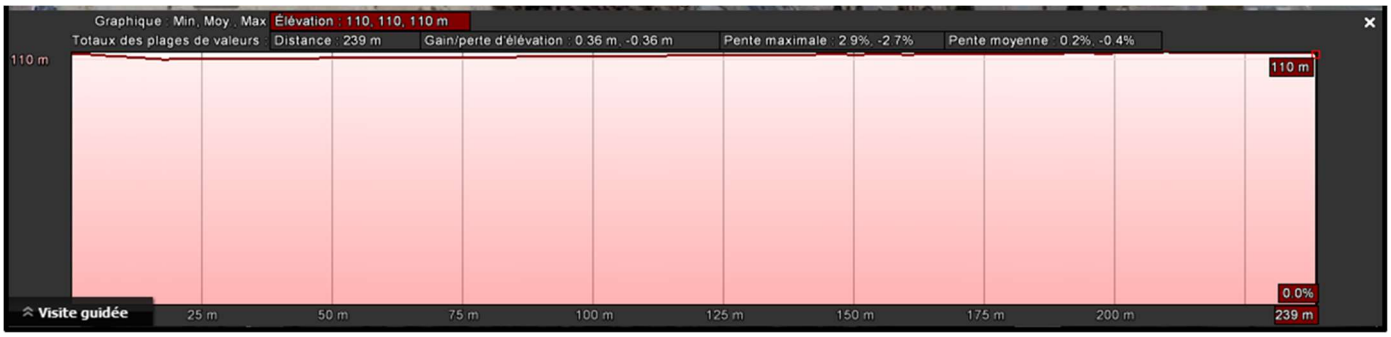


Figure 147 The Section A-A -source: google earth

Figure 148 The Section B-B - source: google earth

II-3-7-Impact of climate on the ground:

II-3-7-1-the Dominant Winds:

The Ground completely exposed to the winds so we must take into consideration all the ways to protect it.

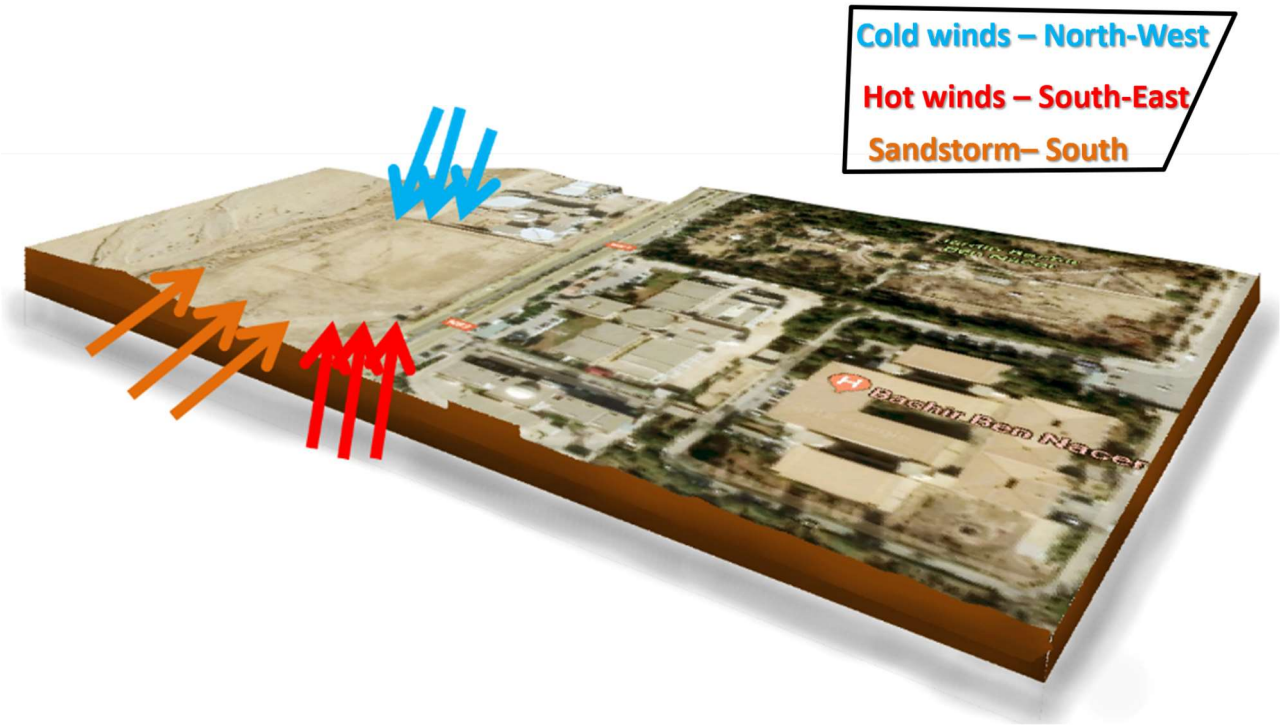


Figure149 the Dominant Winds on the ground – source: google earth+ student work

II-3-7-2-The Sun Path:

The floor is exposed to the sun in most of the time, so consider solarization, especially in the summer.

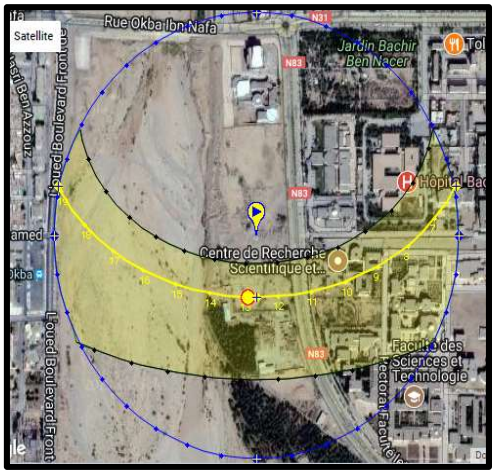


Figure 150 The Sun Path of the ground 15-01-2018-source: google Sun Path

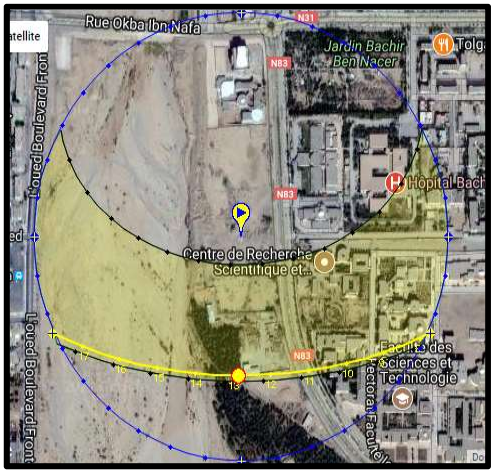


Figure 151 The Sun Path of the ground 15-07-2018-source: google Sun Path

II-3-7-3-the shadow:

The floor is not exposed to shadows in most of the time so must consider it especially in the summer.

Figure 152 The shadow exposure position 1-source: google Sun Path

Figure 1543 The shadow exposure position 2-source google Sun Path

II-1-4- The Syntheses:

Elements of study / The Examples	Da Chang Muslim Cultural Center	Emam Reza religious and cultural complex	Ouargla Islamic cultural center	Qatar Faculty Of Islamic Studies	Algerian Tourism And Travel Biskra Agency	SYNTHESES
1- Urban integration						❖ the Subjection of parcel's form and its proximity to the main road is what make the project have an urban integration
2- The Accessibility						❖ The closest monument and the multiplicity of the ground entrances , make the accessibility to the project easy and organized
3- The Volumetry						❖ The unity of the project`s volume make it possible to achieve the functional translation on the external
4- The Facades						❖ The using of arches and white color gave it a simple rhythm and made it more homogeneous. ❖We should respect the percentage of empty and filled in the facade through its orientation .
5- The Exterior Envelope						❖ The using of the double skin and perforated envelope and the arcades for esthetic , symbolic and Thermal purpose .
6- Idea						❖The inspiration from Islamic architecture and culture in the designing of the project and the envelope pattern
7- The Spatial organization					✗	❖ In this projects the Spatial organization is different from one floor to another because of the privacy of each space and its relation to the adjacent space .
8- The Functional organization					✗	❖ In this projects , the spaces that have a strong spatial relation between them are close to each other ; to achieve the functional organization in the project
9-Movement study					✗	❖ The vertical movement organization depends mainly on the separation and integration between users and workers movement while the horizontal movement organization depends on the positioning of the movement elements and their homogeneity

Chapter Three

III-1- Passage Elements:

III-1- 1-The objectives and the intentions:

1- **The definition of the Symbolism in Islamic architecture and the exterior envelope**

2- **The creating of new Islamic cultural center with attractive characteristics.**

- ❖ By creating a new type of envelope conception.
- ❖ playing with the Islamic decorations and Arabic calligraphy in the pattern.

3- **the integration between the site and the project.**

- ❖ by combining between the Modernity of envelopes and the traditional elements of Islamic architecture.
- ❖ exploiting the site throw its view points and make the project as a communication point.

4- **Achieve the sustainability in the project.**

- ❖ with the using of the Islamic architectural techniques and elements.
- ❖ by using the vegetation inside the building to reduce the heat.

III-1-2- The application of theme elements in the project

III-1-2-1- The Islamic symbolism:

- ❖ **The using of white Color:** The use of white as a symbol of purity
- ❖ **The using of curved roof**: to represent the symbolism of the new style of dome which is a symbol of spirituality symbolizing to the sky

Figure 1 The using of white Color in the project - source:stuedent work

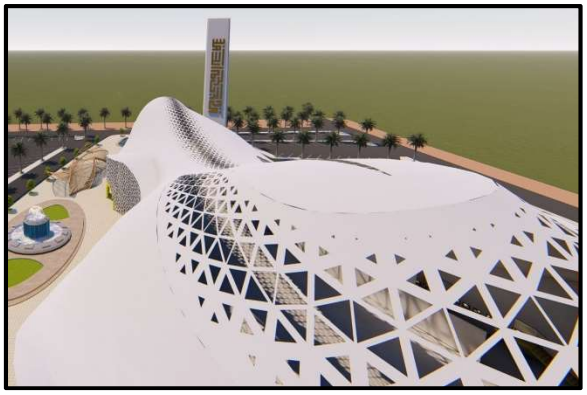


Figure 2The using of curved roof in the project - source:stuedent work

- **The using of Minaret**: to represent the beauty of form, which rises to the sky as arms extended to Allah asking for more mercy and forgiveness, which symbolizes the Muslim worshiper who raises his hands to Allah.
- **The using of Arabic Calligraphy:** An expression of science and learning was used and rewarded by Allah, where I wrote a Quranic Aya as a symbol of learning.

Figure 3The using of Minaret in the project - source: student work

Figure 4The using of Arabic Calligraphy in the project - source:stuedent work

III-1-2-2- The exterior envelope:

***The using of Meshrabiya:**
as exterior treatment to reduce the thermal heat.

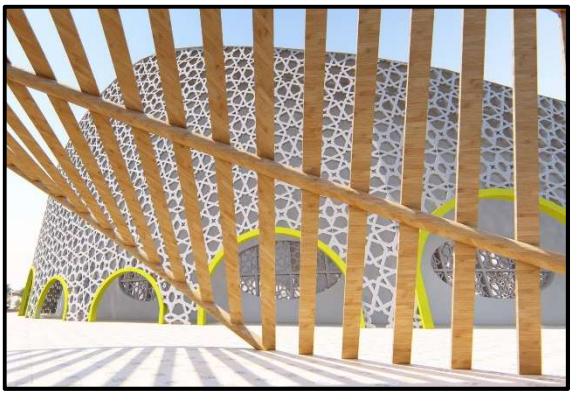


Figure 5The using of Meshrabiya in the project - source:stuedent work

***The using of Arcades:**
as exterior treatment to reduce the thermal heat and for the symbolism of the arches.

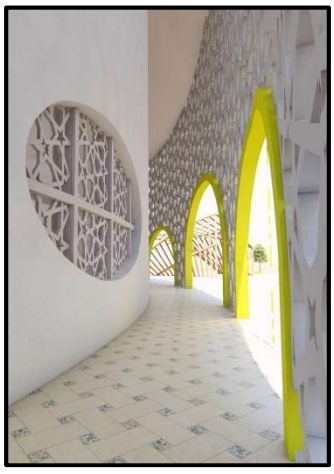


Figure 6 The using of Arcades in the project - source:stuedent work

III -1-3- The conceptual idea of the project:

<u>Step:01</u> The External behaviors

Identify the problems and obstacles which surrounding the project's ground

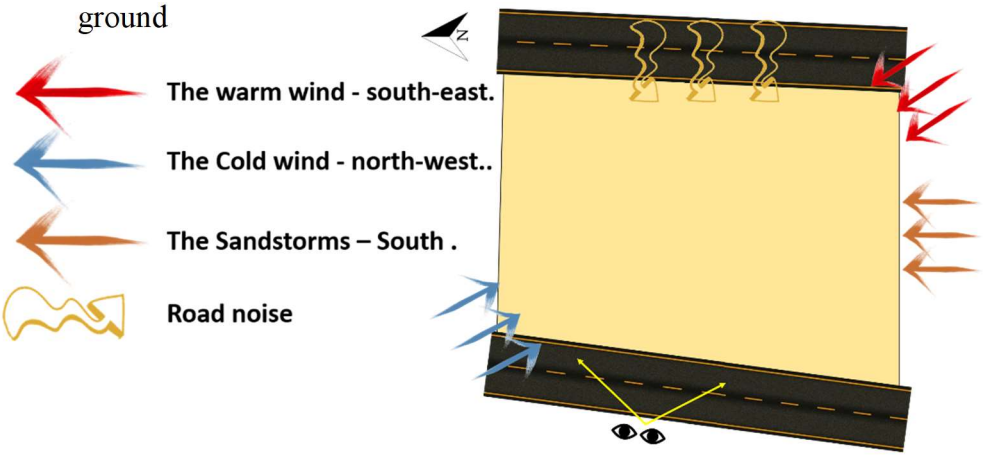
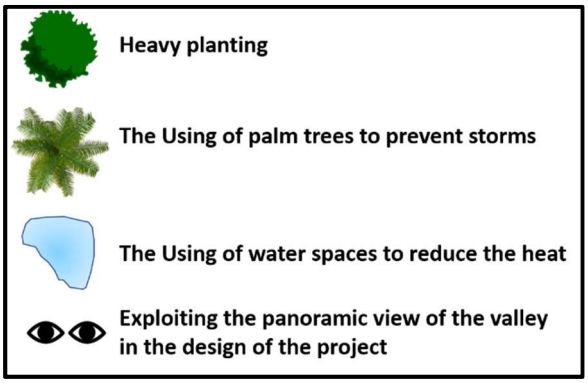


Figure 7 Identify the problems and obstacles - source:stuedent work

Step:02

Proposing solutions to the problems on the ground and Determining the entrance of the ground and the position of the parking through the mechanical flow.



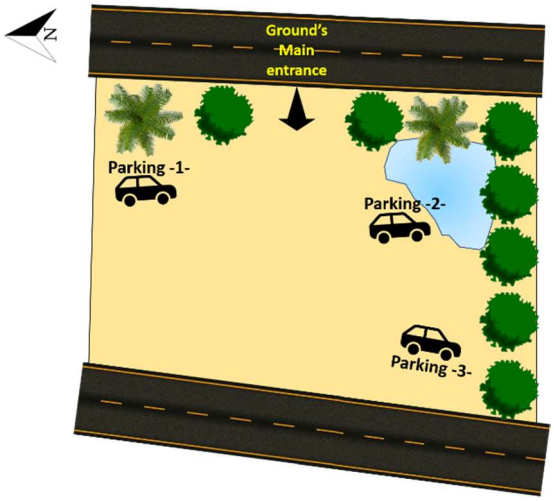


Figure 8 Determining the entrance of the ground and the position of the parking - source:stuedent work

Step:03 The internal behaviors (The Zoning)

Light Zone: contains the mosque to the direction of Qibla.

Educational Zone: contains the classrooms and researcher offices posed in order to stay away from road noise.

Cultural Zone: its situation in the ground came for exploiting the sun light.

Entertainment Zone: situated in the west side in order to exploitation of t panoramic view.

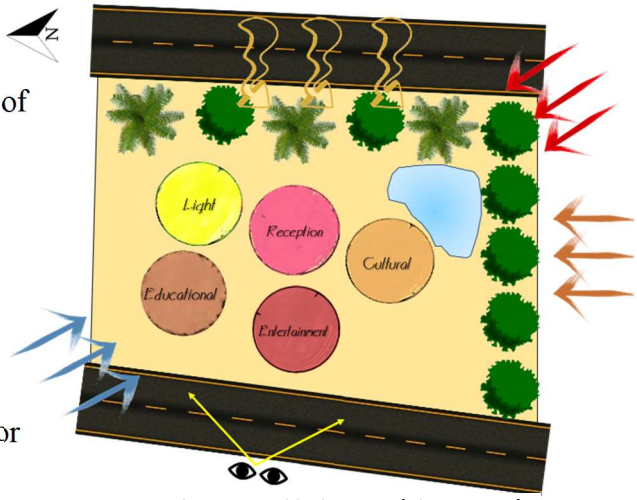


Figure 9 The internal behaviors (The Zoning) - source:stuedent work

The Position of the zones in the vertical plan:

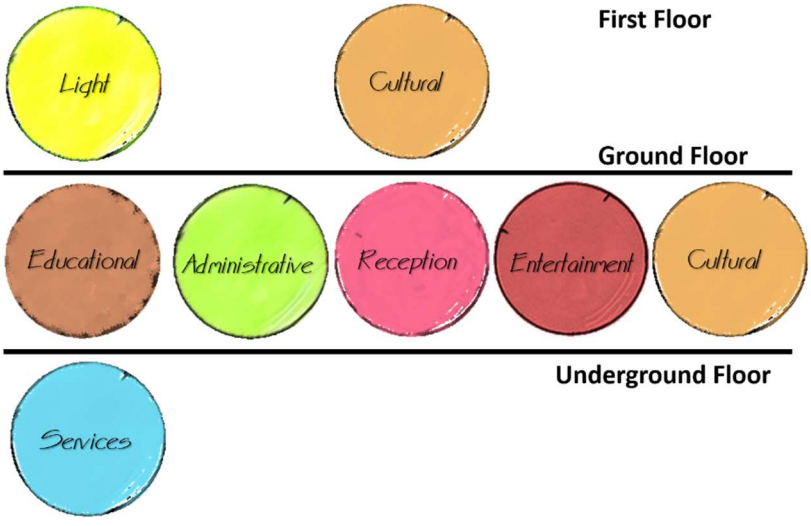
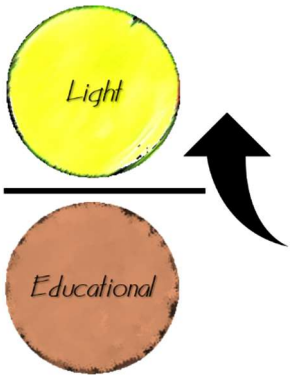
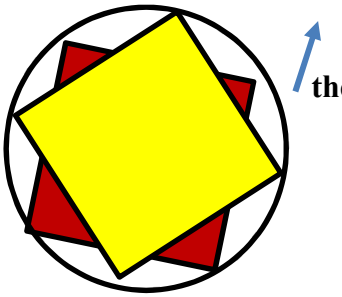


Figure 10 the position of zones in the vertical plan- source: student work

Step:04 extracting the volumetry of the project

The squire is the base of any form in the Islamic architecture so we dropped this concept on the educational zones and light zone





the direction of Qibla.

Step:05

Exploitation of the elongation of the ground in the design of a panoramic facade to give an importance to the project and the benefit of the project from panoramic view – the Valley - according to the principle of taking and response between the project and its environment.

Step:06

The using of the curved shape to change the direction of the wind and the treatment of thermal transfer inside the building as a technical concept also this curving volumetry symbolizes to the waters of the valley as a symbolic form of philosophical direction.

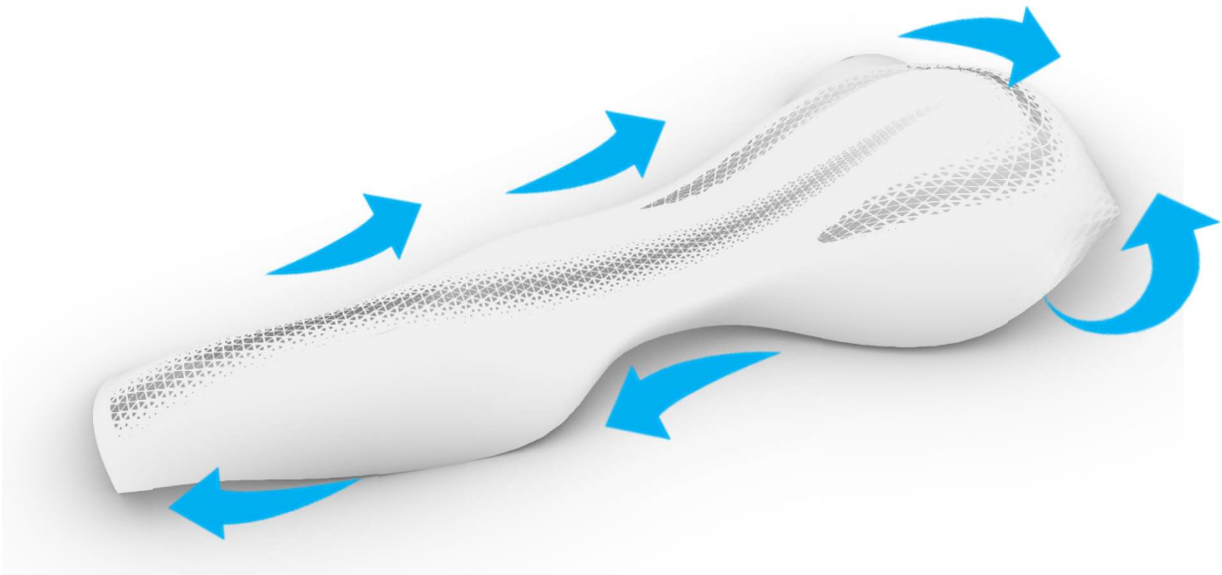


Figure 11the volumetry of the project - source : student work

III-2- The graphic presentation of the project:

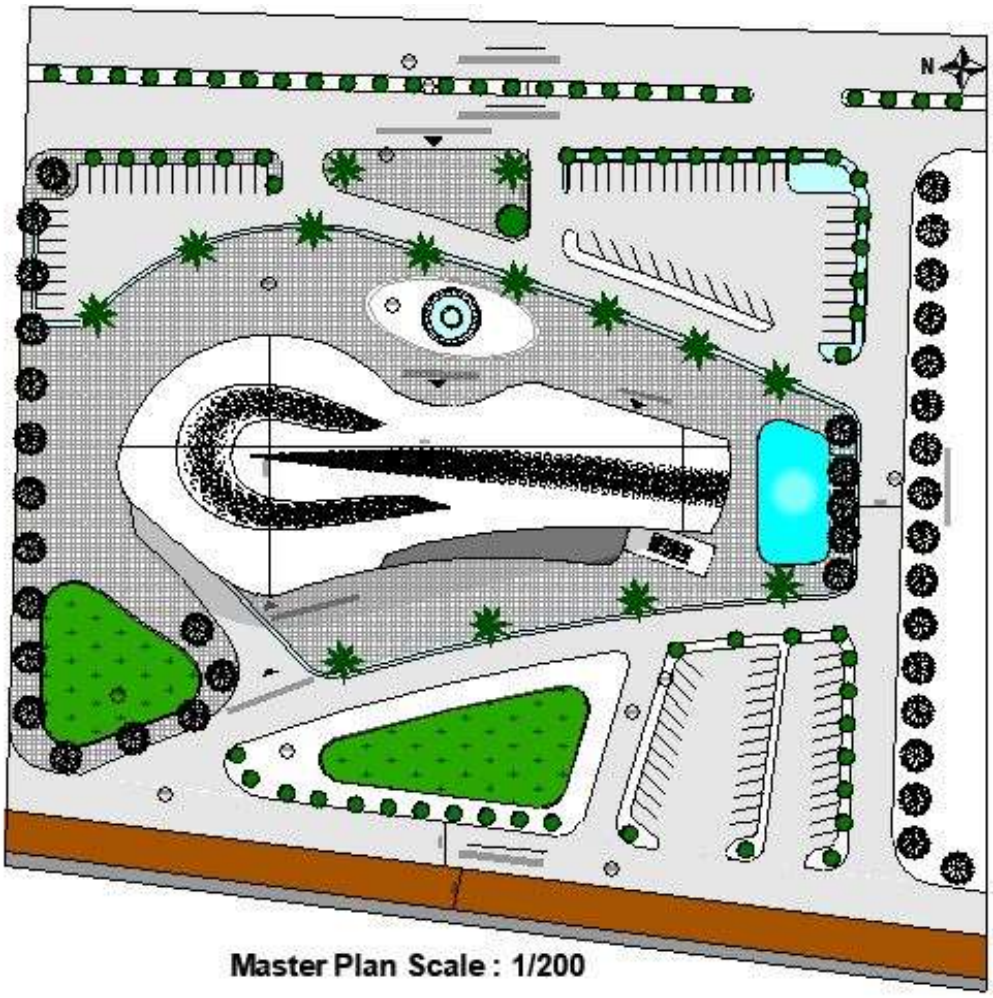


Figure 12master plan -source : student work

The views:

Figure 13 view of the ground entrance-source : student work

Figure 14view from the rest zone to the Minaret -source : student work

Figure 15view to the Arabic calligraphy – source: student work

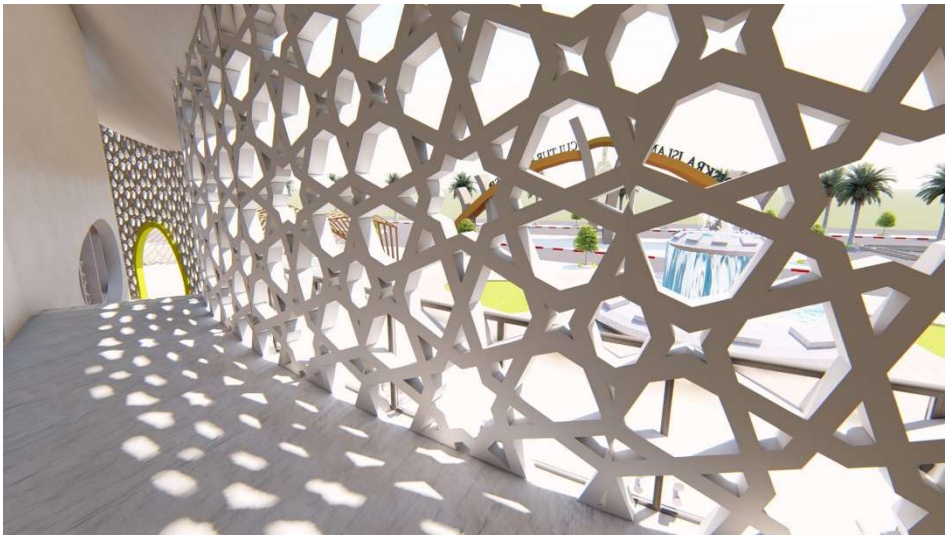


Figure 16view to the Meshrabiya – source: student work

Bibliographic References

Arabic Books:

Abd el Nasser Yassin. (2006). Religious symbolism in Islamic decoration. Cairo: Zahraa Al Sharq.

Abou Hamed ELGhazali . (2011). Panting philosophers . Egypte: Dar Eltalai.

Ali Raafat. (1997). the trio of Architectural creativity . Beirut : Beirut arabic University.

Bader Eddin Elkhouli. (1975). Climate influences and Arab architecture. Beirut : Beirut arabic University.

Omer. S. (2009). Islamic Architecture: Its Philosophy, Spiritual Significance, and Some Early Developments; . Egypte: A.S. Noordeen.

Tharwat, Okasha. (1994). The aesthetic values in Islamic architecture. Cairo: Dar Al Sharak.

English Books:

Akel Kahera. (2013). Islamic Art and Architecture. New York: Clemson University.

Akhtar, S.M. (2011). Islamic Arcitecture at The Cross Roads. New Delhi: Wellworth Books International.

Asif Syed . (2012). Advanced Building Technologies. New Jersey: John Wiley & Sons, Inc.

Cousin, Jean. (1980). Living space. Paris : Presses de l'Université de Montréal-Editions du Moniteur.

Giovanni Zemella. (2014). Evolutionary Optimisation of Façade Design. London: Springer-Verlag.

larousse. (2012). dictionary. French: unknown.

Michell, G. (1979). Architecture Of The Islamic World. China: Thames & Hudson.

NECIPOGLU, G. (1995). The Topkapi scroll : geometry and ornament in Islamic architecture. . Santa Monica, CA.

Peter Warren. (2003). Integral Building Envelope Performance . St Albans, Hertfordshire, United Kingdom: FaberMaunsell Ltd.

Encyclopedias:

ENCARTA. (2003). Encyclopedia of ENCARTA .

Kamal ALJiblawi . (2009). Encyclopedia of The Symbolic ideas of the Egyptian architecture after the entry of Islam. Egypt: Halouan University.

Yahya. Waziri. (1999). encyclopedia of Islamic Architectural Elements. Cairo: Medbouli Library.

Magister Thesis :

Marzougi Wafia. (2008). The exterior envelope and the interior spatial organization. Magister in Architecture, p22.

Toraa Chaker . (2016). .Magister in Architecture .p09

Web Sites :

UNESCO. (2017). unesco in doha. Retrieved from unesco.org: http://www.unesco.org/new/ar/doha/culture/

www.amazon.ae

https://akhbarelyom.com

http://moheinet.com

http://islamicartlounge.com

www.masrawy.com

www.youm7.com

https://ilhyh.com

https://bawabetelmadar.com

https://mawdoo3.com

https://www.hafryat.com

www.sy-24.com

www.islamiclandmarks.com

https://mwthoq.com

https://phys.org

http://theislamicnews.com

google Image

https://en.wikipedia.org

https://www.123rf.com

https://www.romeartlover.it

www.vitaminedz.com

https://previews.agefotostock.com

https://middle-east-online.com

www.shothotspot.com

www.facebook.com/madeinbiskra

By Dr. Fouad Felichi www.facebook.com/madeinbiskra

https://mawdoo3.com

http://cairohistoric.blogspot.com

http://religionscomparative7.blogspot.com

http://4eco.e-monsite.com

http://www.adast-alfn.com

http://www.Archdaily.com

calligraphy-arab.blogspot.com

www.pinterest.com

https://twitter.com

https://al-ain.com

identity-mag.com

www.tomohna.net

http://www.ech-chaab.com

www.marefa.org

https://courdebiskra.mjustice.dz

http://ar.univ-biskra.dz

https://platform.almanhal.com

http://businessdirect.com

http://www.myaa.eu

www.astad.qa

https://architectureprize.com

http://alfozanaward.org

www.constructionweekonline.com

google Sun Path

Others :

Directorate of Culture - Algeria. (2001). Executive Decree 316/01.

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Abstract:

This research is part of the study four developing of Islamic buildings in the framework of the urban project, through the application of some characteristics of Islamic symbolism on the exterior envelope of the Islamic Cultural Center in the framework of applying several principles to achieve quality and sustainability by using the climate treatments of the exterior envelope, In order to preserve its original identity and presenting a traditional Islamic style with a modern and effective vision.

In this work, we will attempt to identify the symbolism of Islamic architectural elements on the level of the exterior envelope and how the climatic treatments of the building cover affect the internal temperature of the building, so that it meets all the requirements of the comfort of the users inside the building.

key words: Islamic symbolism**,** exterior envelope**,** Islamic Cultural Center**,** climate treatments**,** architectural elements**.**

ملخص:

يدخل هذا البحث ضمن دراسة لتطوير المباني الاسلامية في إيطار المشروع العمراني، وذلك من خلال تطبيق بعض خصائص الرمزية الاسلامية على مستوى الغلاف الخارجي للمركز الثقافي الاسلامي في إطار تطبيق العديد من المبادئ لتحقيق الجودة و الاستدامة باستعمال المعالجات المناخية للغلاف الخارجي ، والوصول إلى بنية عمرانية فعالة وكذلك من اجل المحافظة عللى هويتها الاصلية أي تقديم نمط اسلامي تقليدي برؤية حديثة وفعالة.

من خلال عملنا هذ سنتطرق الى محاولة معرفة رمزية العناصرالمعمارية الاسلامية على مستوى الغلاف الخارجي وكيف تؤثر المعالجات المناخية لغلاف المبنى في تعديل حرارته الداخلية ، بحيث تجيب على كافة متطلبات الراحة للمستعملين داخل المبنى .

الكلمات المفتاحية: الرمزية الاسلامية, المركز الثقافي الاسلامي, المعالجات المناخية, الغلاف الخارجي, العناصرالمعمارية الاسلامية .