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Dédicace

This modest work is dedicated to my parents who have dedicated their lives to building mine.

To my father, May Allah bless him with a long life so i can start show him his appreciation in return for his sacrifices.

To my mother (May Allah bless her soul) who constantly encouraged me, and showed me the right path in life . Without it, my success would not happen.

To my stepmother who were always there for me with her Duaa

To my dear brothers, Abederrahim and Salah, and to my great family, and of course my Sisters Abir and Rania.

To all my friends of promotion and to all those whom I knew during my studies .

Charaf

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**In the name of Allah, the Beneficent,
the Merciful**

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I thank Allah Almighty for giving me the courage, the will, and the patience to complete this work.

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My deep gratitude to my parents who have always been there for me and have always supported me and showed me the right path throughout my university studies.

I express my sincere thanks to all my teachers throughout my university education.

Finally, I extend my sincere thanks to all my relatives, Seif. Nadhir. Hamza .Noor .Soulef .Soumia.

My friends who have always supported me and encouraged the court of the realization of this memoir

To all those who helped me from near or far, by a gesture, a word or a council.

Abstract:

Lighting has always played a key role in the definition and formation of architecture. It also considered as a vital element in the process of visual perception of architectural formation.

As the public buildings of different types of service, cultural and sovereign are distinctive architectural and important for all because they are the focus of the public, and frequented by the majority of the segments of society. It seeks to highlight and show them and to shape their identity and strong presence as an active actor within their urban framework. The importance of continuity of this interaction was not only during the day. It was necessary to study the night lighting as the source of the night vision .The festive lighting is one of the most important sources of architectural creation, and one of the most important concepts associated with the concept of architectural identity,

The public buildings are the most important features of the city and the main tool to move development in its various forms economically, socially and academically. The festive lighting of public buildings helps to develop the community by re-energizing the city and attracting visitors, creating a spectacular and modern night scene that can transform the city into an exhibition that inspires a sense of beauty and inspiration.

To create a successful balance between lighting and architecture, it's important to remember three key aspects of architectural lighting:

- Aesthetic, it's where designers determine how they want people to feel when they walk around a space, exterior lighting draw the intention of the citizens into the building.
- Function, we want the lighting to look a certain way, but we have to also make sure it serves its most important purpose to help us see. Areas should be illuminated so occupants feel safe when navigating in the project, which should create a feeling of reassurance.
- Efficiency, the final aspect is very important in today's age of green building and sustainability movements. This can be done by assuring reducing the amount of wasted light will make the building more efficient.

To ensure their full success, it is preferable to be the main element in the design idea of the project and not an addition at the end.

Key words: Light, Night lighting, Night scene, Public buildings, Festive light, Culture, Architecture.

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I. General Introduction:

Lighting is an essential element in the process of visual perception of everything that surrounds us, especially the architecture with which light plays a vital role in the perception of functional and aesthetic aspects. This relation between light and architecture achieve the visual pleasure on the one hand and social interaction on the other hand. Light helped to use the space functionally and enjoy its aesthetic appearance providing the appropriate atmosphere for expressing the design and achieving the visual extension to connect the architectural space with its urban environment.

The process of combining between lighting and the building creates a psychological comfort for user. The harmony between the building and the surrounding environment linked to the first phase of the production of the architectural space where the design of each of them synchronized with the other to achieve the highest level of functionality and comfort for the users of the space, and with the pace of urban life and increase working hours, as well as the length of daylight hours most people have time to enjoy and entertainment and all social activities after day. This triggered an urgent urge to increase quality and aesthetic night scene.

Festive lighting plays a very important role in the night scene as a fundamental artistic and design factor towards enhancing the final image of the night scene. The research tackled the general problem of the role the festive lighting in the continuous interaction between man and the urban environment during the second half of the day. So was addressed artificial light and extract the most important characteristics and patterns, and thus emerged the special problem of the impact of artificial lighting in the formation of the night scene.

Festive lighting was adopted as an influential element in the formation of the night scene, which requires a study of the new technologies used in lighting the night scene and identify the most important features and elements of composing of festive lighting

The importance of research in the lack of previous studies in the Arab world, which touched on the position of festive lighting in architecture, insufficient attention and the neglect of the element of night lighting in public buildings, resulting in buildings completely hidden during the night and appearance dark hills are invisible in terms of architectural form, urban view of the city as a whole. This has led to the emergence of other social phenomena such as sabotage.

II. Research problem :

To highlight the importance of the study in that it works to revive the architecture of the night, where all buildings look similar in the absence of festive lighting. The fact that festive lighting helps preserve the character and the architectural identity of public and private buildings and the continuity of their appearance and presence within its urban environment as distinctive landmarks, and helps to highlight the aesthetics of its architectural form and encourage creativity in architectural design .

In my research on the source of the problem, I found that our Lighting culture is deteriorating or almost non-existent because the history of Algeria was not the main reason for this delay in keeping pace with technology after a century and a half of colonialism, cultural darkness and the black decade of terrorism in the 1990s; Light is strongly linked to other factors such as tourism and trade, the two factors that have seen a significant deterioration of the reasons I mentioned earlier we cannot deny some scenes of night lighting in the big cities of Algeria, but darkness is always in control.

In the city of Biskra we find that most of the public buildings are not completely visible during the night due to the absence and neglect of the element of night light. With regard to all these facts and results, the big questions that deserve to be asked are:

How and when designers do integrate the festive light in there design? How do designers choose the components to achieve festive light in their projects?

Research Hypothesis:

In view of the latest technologies of festive lighting and personal user perception, and from the context in which our architectural project was built, we formulate the following hypothesis:

That the festive light is integrated in the project at the very end which means after the construction of the project is done , and that the festive light is a temporary changement in the look of the building for a specific period or for an event.

And the components of to achieve that might be related to : Social or psychological elements

Objectives and intensions:

The main objective of our research is to determine the technical and artistic tools which can be used increase the project value by giving it its own identity in its urban and cultural context .This mainly concerns the social interaction with architecture and its environment at night time . This research objective cannot be achieved without clarifying the following points:

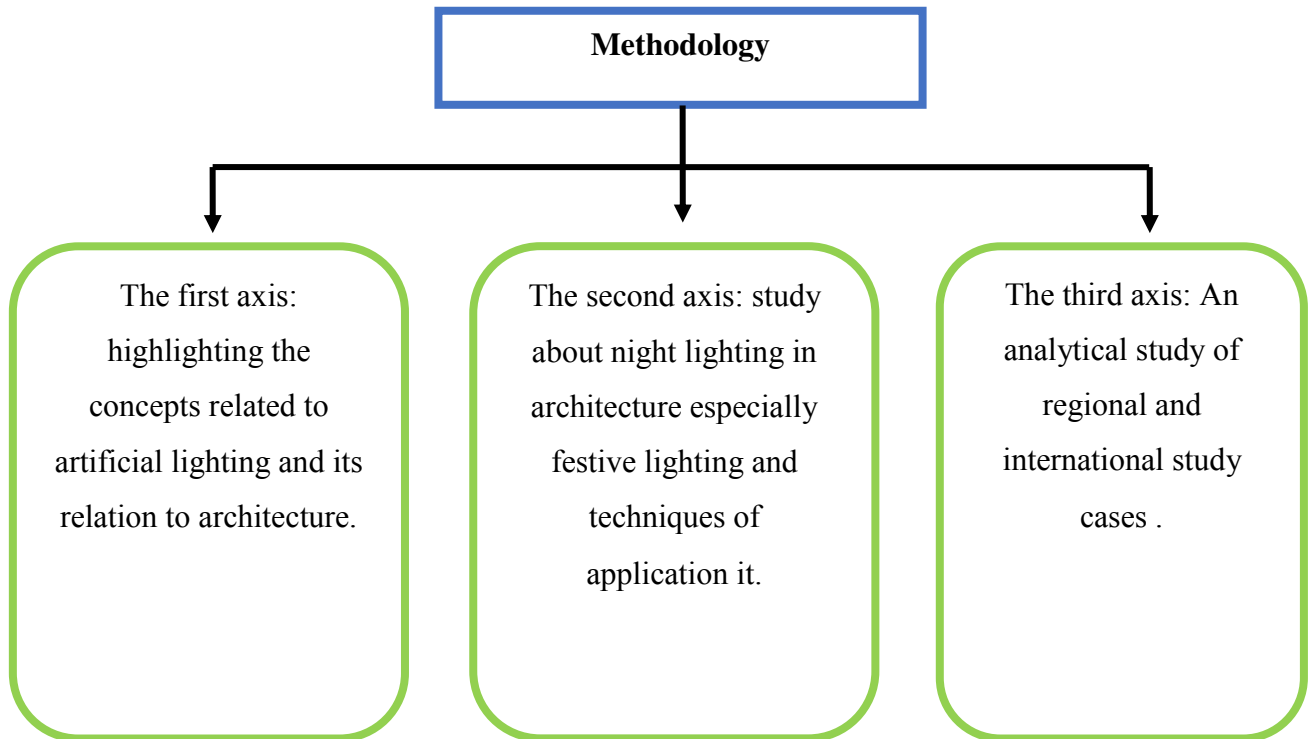
- To reinforce the communication between the project and the users.
- To insure a good visibility of the project from long distance
- Improve city lighting at night to ensure public safety, general enjoyment, architectural appreciation and night entertainment
- To create a greater sense of civic pride in the city at night, and encourage more frequent visits by residents and tourists
- To provide the best practice guidelines for the design of external festive lighting
- To implement high environmental lighting standards, including the use of sustainable energy where possible.
- To enhance glare-free environment.
- To provide the buildings night scene with a vibrant, dynamic and rich through the use of festive lighting effects
- To install the permanent ceremonial lighting to enhance the architectural and contemporary heritage of the city buildings
- Use the festive lighting design to deliver a unique sense of place to the project users.

Methodology:

The study followed the analytical descriptive approach to study the research problem and reach the results and solutions

Through the progression from the theoretical input and the definition of the study vocabulary to the studies based on the systematic observation and analysis of some cases and selected

architectural models, which constitute the practical and realistic aspect that supports theses and theoretical ideas of the study, by focusing on the following axes:



State of the art :

1. Possibilities of Architectural Lighting to Create New Style (2017)

Researcher

V G Chudinova

O R Bokova

Problematic

Architectural lighting is perceived as just a complement to the artistic image of building concept.

Objectives :

The need for the new methods of architectural shaping is dictated by the need to introduce in the building of resource-saving lighting technologies, ecological infrastructure including alternative energy sources.

Methodology :

This research considered the field of lighting design are divided into two groups: engineering-technological and architectural-artistic. Most publications concern the study of the properties . and designs of LED light sources, including their efficiency in terms of energy saving

The second group of the scientific research in the field of form-building, artistic expressiveness of architecture, functional and socio-ecological aspects is represented by a much smaller number of publications . Moreover, the issues of ecology, resource-saving, health and safety are presented in both researched groups

Discussion :

it should be noted that in the art and technology of lighting design, certain genres have been already formed.among them, the above-mentioned genre of festive lighting develops most actively, which in addition to lighting and decorating buildings, plays on existing and creates new objects of the urban environment, including independent installations .

The next, rather new genre in architecture is light projection. Usual for the modern event-industry laser shows in this case use 2D and 3D-mapping with a plot that takes into account the architectural features of buildings..

The next, already fourth genre, distinguished in our study, is probably the most pure from the point of view of the formation of a daylight and artificial light based on interaction. This genre has a full range of style attributes and it is easier to refer it to a visual example, than to describe it verbally. An example is the New Council of the European Union Brussels.

Conclusion and results :

The need for studying the medical and biological effects of the new sources of artificial light, the ecological properties of lighting systems and techniques.

With respect to the architectural design, it is necessary to concentrate efforts on the new methods of shaping, taking into account the new opportunities of lighting equipment

2. Light revealing architecture form - the role Of light in contemporary interpolation (2016)

Researcher

- Sanja Paunovic-Zaric
- Veljko Radulovic
- Ema Alihodzic Jasarovic
- Vera Murgul

Problematic

how to perform new articulation of space by the means of light, and solves requests based on the preservation of compositional — artistic qualities, which represent the sedimentation of cultural — historical trends of the city.

Objectives :

Treating the light as substance, the role of light in constructing and transforming architecture, the role of light in attracting attention, to the communicative and interactive role of light in media towns

Methodology :

Compare multiple examples of building designed based of light and show how artificial and natural light effect the experience of buildings for the users and how it did create new atmosphere in the city.

Conclution and results :

_ The past and tradition are treated as static phenomena deprived of development and frozen in certain moment.

_ New spatial and visual forms established for the first time in a visual environment should express the values in time they occur as well as be their trace of future.

_ Town is never final and completed, butan active organism susceptible to permanent alterations. We architects have to do our best so that the spaces of life of citizens make functional, human-oriented and imaginative.

_ The level of randomness of a newly made architecture has been noticed, leading to the architecture outcast from the contextand directed towards its destruction and negation.

3. Possibilities of Architectural Lighting to Create New Style (2017)

Researcher

-Andrea Vargová

-Beata Polomová

Problematic

The need to solve night image of facade design and thereby design of lighting equipment.

Objectives :

- the potential benefits of tensile structures in the night scenes
- highlights an expression of facade membrane structure in the night urban scenes from the architectural point of view

Methodology :

Illustrative examples are based on completed works which documented various cases of night image of facades. The paper brings three basic groups of lighting design application

Discussion :

Concept 1: illuminated graphic motives

The membrane surfaces are illuminated from the outside and they carry graphic image (media message). The source of light is situated out the tensile facade. They are anchored on the building or out of the building area, and can simultaneously provide the illumination of public area with reflected light. Figure below



(a) Illumination of large areas. The façade reflects light in a public area.

(b) Spatial advertisement (360°) Supported on a difficult shape of membrane structure, strict geometrical orientation of ambient light is required.

(c): image improvement of façade with the application of window opening .

Concept B - translucent membrane structure of building envelope

The membrane structure is intentionally transparent. The façade effect is different during the day and another at night. This membrane building envelope with different tensioned surfaces uses the interior illumination through the textile façade in two ways:

- a) Façade effect created by the interior illumination (transmitted toward outside),
- b) Lighting equipment which is fitted independently and with architectural intention behind the membrane envelope (from inside).

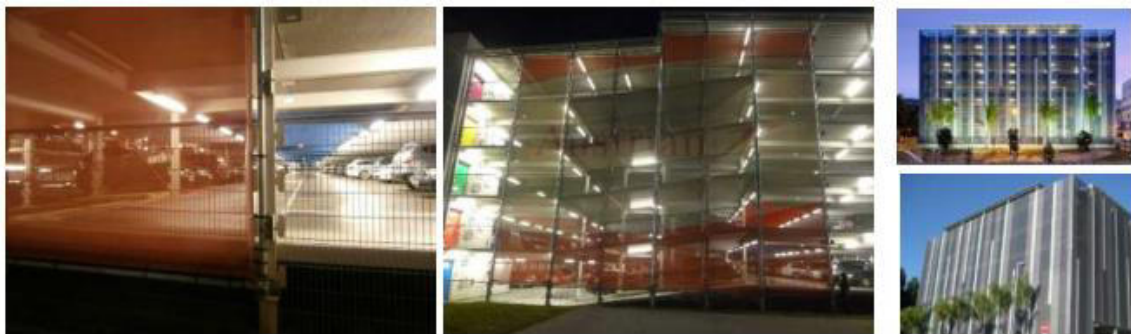


Figure: View of the interior – illustrative examples. Night view of parking house envelope



Figure : Sculpture shaped volume of building is more original than during the day by means of transparent skin. Atypical membrane form stand out better without advertising, revealing load - bearing building construction

Concept C – compact illuminated and luminous surface with own lighting model

Membranes are luminous on the entire surface of facades. The lighting system is hidden inside and translucency of the membrane is used outwards. The architecture of environment is created by the programmed effect of building illumination at night. These solutions are

original, giving a new identity in the environment, . The potential of LED lights is commercially available and color motifs attract attention well.



Figure : Fine plasticity effect of the façade and delicate work with artificial light are consistent

Conclusion and results :

The building aims to be a sculpture and works with natural daylight and shadow.

If using translucency from inside out, it is necessary to take into account requirements for location of lighting system in load bearing construction design. .

LED lighting systems, bring originality and dynamism of the local night scene to a public environment.

The potential of the membrane façades lies not only in their shape, but also in the ability of the author of building to handle with light as with a mean of expression.

Chapter I : Light and light Ambiance

Introduction:

Light Consider one of the most important subject which is still a productive field for researches and architectural studies, which provides by its two types (Natural and artificial) and different field which studied throw it's important results participate in supporting architectural movement continuously .

This chapter is dedicated to the artificial light that creates the night light. Lighting a space is the act of distributing light on surfaces, developing artificial lighting is the fact of mastering the use of artificial light to illuminate this space.

The first chapter of our theoretical part is also devoted to, Generalities about Light in physics the relationship between artificial light and color.

When talking about artificial lighting, it could not go unnoticed without mentioning the atmosphere generated from this lighting, the notion of the atmosphere in the history of humanity was always dark

The luminous atmosphere is strongly linked to the culture of the peoples, in fact, we do not see the space in the same way; so we tried through this chapter of valued The components of the luminous atmosphere.

1. Generalities about Light:

1.1 Definitions of light:

Light is electromagnetic radiation that can be detected by the human eye. Electromagnetic radiation occurs over an extremely wide range of wavelengths, from gamma rays with wavelengths less than about 1×10^{-11} meter to radio waves measured in meters. Within that broad spectrum the wavelengths visible to humans occupy a very narrow band, from about 700 nanometers (nm; billionths of a meter) for red light down to about 400 nm for violet light. The spectral regions adjacent to the visible band are often referred to as light also, infrared at the one end and ultraviolet at the other. The speed of light in a space is a fundamental physical constant, the currently accepted value of which is exactly 299,792,458 meters per second, or about 186,282 miles per second. (Hamouda, Yahya,1998)

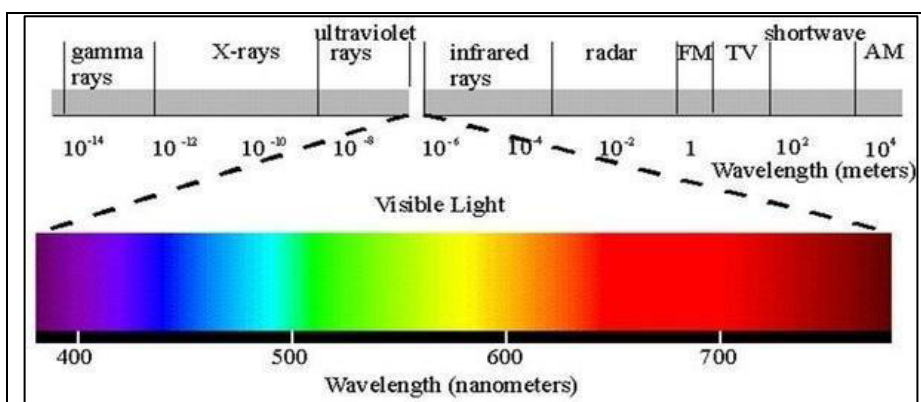


Figure 1: visible light

Source : (issuu.com/Lighting Handbook INDALUX)

1.2 Photometric measures :

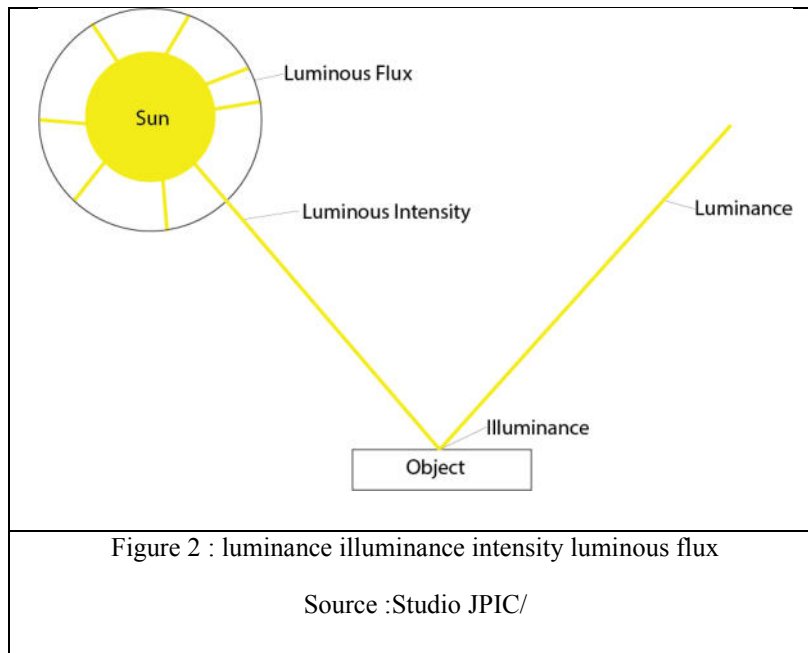
Luminous Flux is how much light a light source emits, measured in lumens (lm). This could be the sun, a light bulb, a flash, etc.

Luminous Intensity is how much light travels in a certain direction, measured in candelas (cd). For example, the sun sends out light all over the galaxy, but chances are we are only interested in the light hitting around us.

Illuminance is how much of that light is hitting an object, measured in lux.

Luminance is how much light is reflected or emitted by an object or scene, measured in candela per square meter (cd/m^2). Luminance can either be measured for the object or scene being photographed, or for the final print photo.

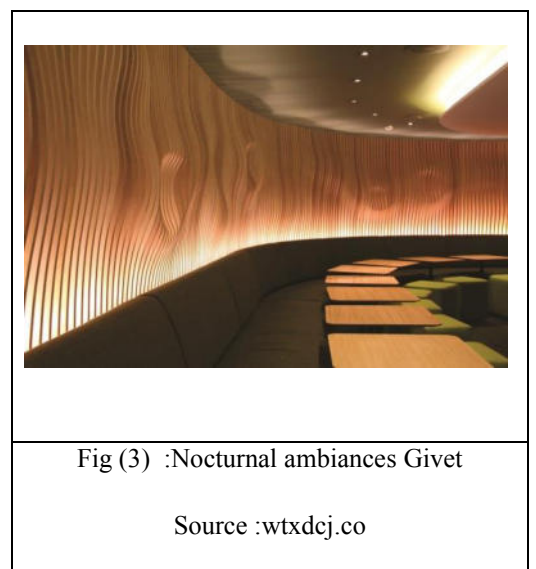
Brightness, on the other hand, is a judgment call made by a subject looking at an object or scene, which can be biased. This is usually made by comparing two objects to determine which is brighter and which is darker.



2. Light Ambiance :

2.1 Light and user :

The French Association of Lighting (AFE) defines a "luminous atmosphere as" a lighting considered from the point of view of its physiological and psychological effects ". This definition does not reflect the complexity of the subject. The light interacts simultaneously with the observer and the illuminated space. Lighting can therefore only be considered from the point of view of the physiological and psychological experience of the observer: the context of the treated space is an essential element of perception that must be taken into account to characterize and define the lighting ambiances. (2006, Roger Naboni)



Therefore we could define a luminous atmosphere as the result of an interaction between one or more lights, an individual, a space and a use. This interaction momentarily or durably influences the perception of the illuminated place

In a given space, light and darkness interact with the individual:

- **Physiologically:** the eyes, the body, nerve light. This perception varies according to the individuals as the course of their life (the vision deteriorates inexorably, in near vision and / or by far, from forty years on average)
- **Psychologically:** the brain analyzes light and space and gives a mental reading;
- **Culturally:** according to the observer, his geographical origin, his experience, his knowledge, his state of mind.

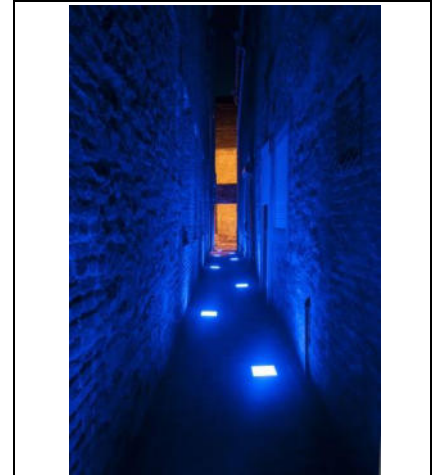


Fig (4) :Ambiance atmosphere

Source :www.archistorm.com

The luminous atmosphere comes from a natural and / or artificial explosion. It can be diurnal or nocturnal, Linked to the vision, it is one of the constituent elements of what one names more generally the atmosphere or the atmosphere of a place and which appeals to other complementary senses (auditory, olfactory, tactile). (2006, Roger Naboni)

2.2 The components of the luminous atmosphere:

Whether indoors or outdoors, the luminous mood can be analyzed according to its different functions.

- **Utility**, because it allows vision and movement in space
- **Signage**, for the identification or the guidance towards the limits of a place
- **Aesthetic** or decorative: it values the place as a whole or some of its parts;
- **Sensory**, determining the perception of this space and the impression that will remain in our memory.

3 Nature of light:

3.1 Natural light

Natural light, emitted by a single source, produces in fact and simultaneously all these components: the naturally lit space is visible as a whole; he reveals his qualities or his faults; it is perceived positively or negatively The almost continuous evolution of the sunlight (in intensity, in color, in direction) nevertheless makes it a variable source which constantly modifies the illuminated space, therefore its perception.

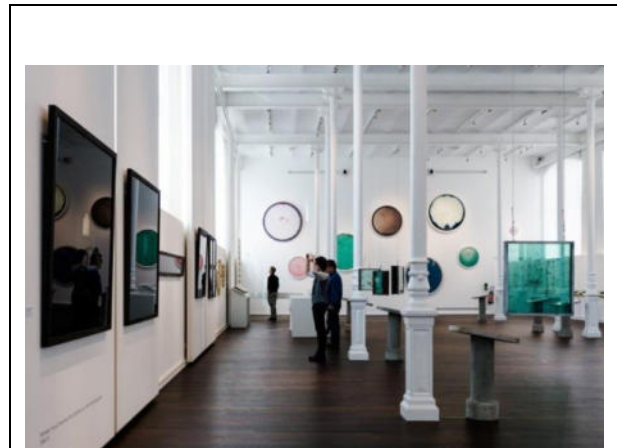


Fig (5) : Chambéry Museum of Fine Arts

Source : daniele-rocco.net

3.2 Artificial light

Artificial light is All types of electric lights are the main source of industrial lighting and are used as an alternative to natural lighting in the first two cases when the natural lighting is not enough, and the second when it is dark (Sunbani and others, 2013), available throughout the day and anywhere and anytime and in any The industrial lighting is flexible in design and distribution, in addition to multicolored colors and providing the designer with the freedom to choose colors that are compatible with the design idea and its compatibility with the building and its compatibility with the activity in it, and help lighting The industrial lighting focuses on building elements such as architectural details and finishing materials with the ability to overlook defects if any. The lighting of the building transforms it into a unique attraction without any other surrounding buildings (Al-Qashti, 2012). For color discrimination, its sources do not require maintenance, and are better in terms of health and psychological (Al-Sanabani and others, 2013).



Fig (6): Orangerie Museum

Source :www.sortiraparis.com

4. Artificial light:

4.1 Brief History about artificial lighting:

The need for man since prehistoric times to fill the lack of natural light with industrial lighting and used fire, torches, candles, saddles, lamps and others, and the purpose of the use of industrial lights from the beginning to provide visibility in the dark on the one hand, and the realization of visual effects according to human need on the other hand. The lighting techniques developed with the development of human ability to control the fire, and access to sources of light with great effectiveness and yield, and to find the appropriate means to control it, the candle placed on the candelabra to increase its brightness, and installed to the oil lamp a number of The reflectors help to focus the light, and use the cotton swab that can be adjusted, and make the lamp outlets allow the passage of air stream provides him with more amount of oxygen necessary for combustion, and installed a bottle of cylindrical (crystallized) to increases the concentration of light, and after the discovery of oil it was replaced with kerosene oil (Kerosene oil) and paraffylene oil to improve the quality of combustion, all of which led to the acquisition of cheap, reliable and easy-to-use light bulbs. By the beginning of the 19th century the coal gas was used to light a street in London in 1820 .



Fig (7):candle placed on the candelabra

Source :Wikipedia



Fig (8):the oil lamp a with the reflectors

Source :pintrest



Fig (9):Oil lamp

Source :<https://www.amazon.fr>



Fig (10):Première Lampe Électrique De Thomas Edison En 1879

Source :<https://housendesign.com>

Electric lighting: Electricity was originally used for illumination in the arc of electricity between two poles of carbon. It was developed for street lighting in major cities, giving bright light close to natural light. However, the invention of the incandescent light bulb in 1878 was the first scientific step in lighting, the next step in industrial electric lighting was the invention of gas discharge pipes, the lighting tubes that operate with the principle of electric arc inside a hollow tube of air containing a small amount (Such as red light) or mercury vapor (blue and white light). The use of these pipes has been common in the home lighting, in the factories and in the facades of the façades from the 1930s until after the improvement of the best practical means of interior lighting, It is known today as a gas or fluorescent light bulb. There were many improvements in the second half of the nineteenth century on these gas discharge tubes. The high pressure mercury vapor discharge lamp and the high pressure sodium discharge lamp, also used in street lighting, The most important achievements in this regard were the xenon discharge lamp (high-energy xenon gas) and the light almost similar to sunlight, and then the electro luminescent lamp which makes The walls and ceilings are self-lighting, which may become the main lighting fixture in the future. (موسى، محمد، والجلاد.)



Fig (11):Fluorescent tube

Source :<https://www.wikiwand.com/>

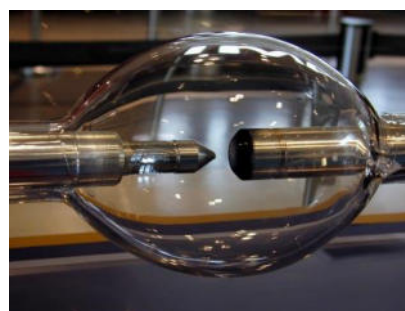


Fig (12):Arc lamp

Source :<https://pt.wikipedia.org/>

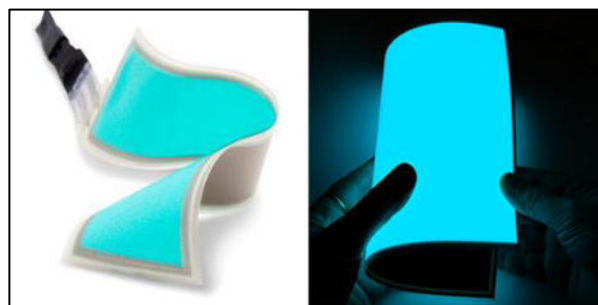


Fig (13):EL (Electroluminescence)

Source :<https://sidabra24.com>

I.1.1 EL (Electroluminescence)

4.2 Types of lamps:

We could resume the different types of light in the following schema below :

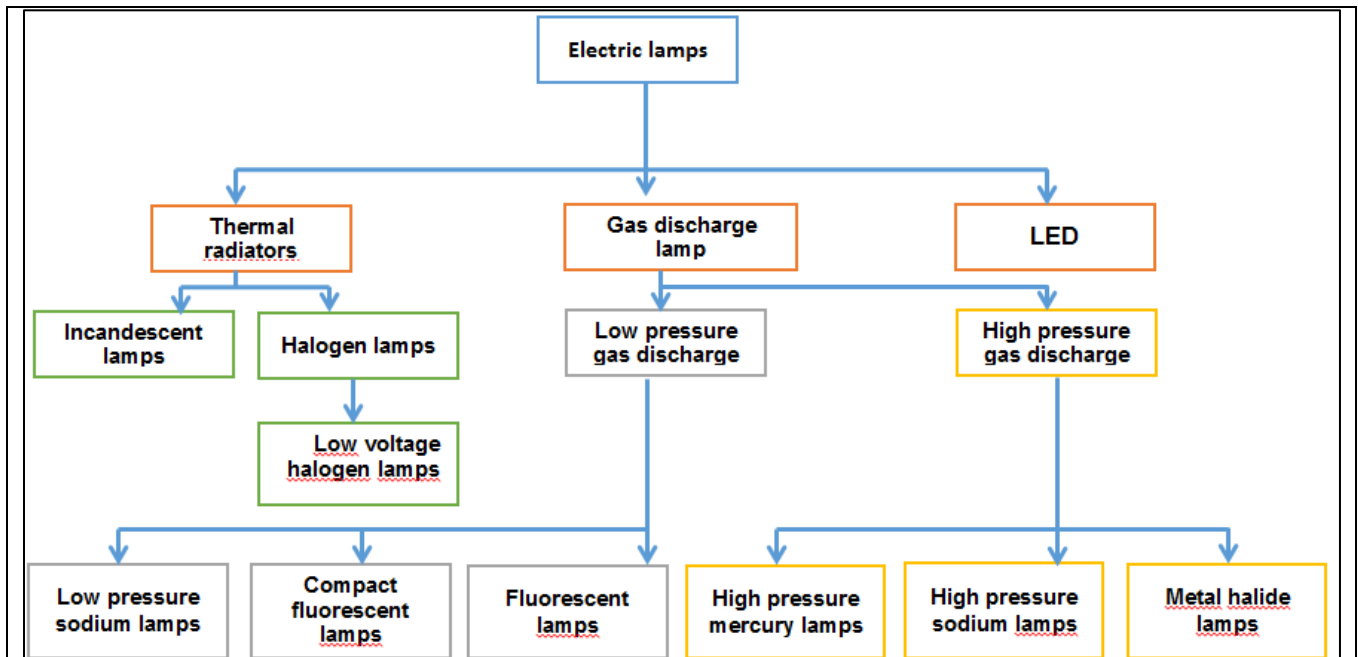


Fig (14):Types of lamps

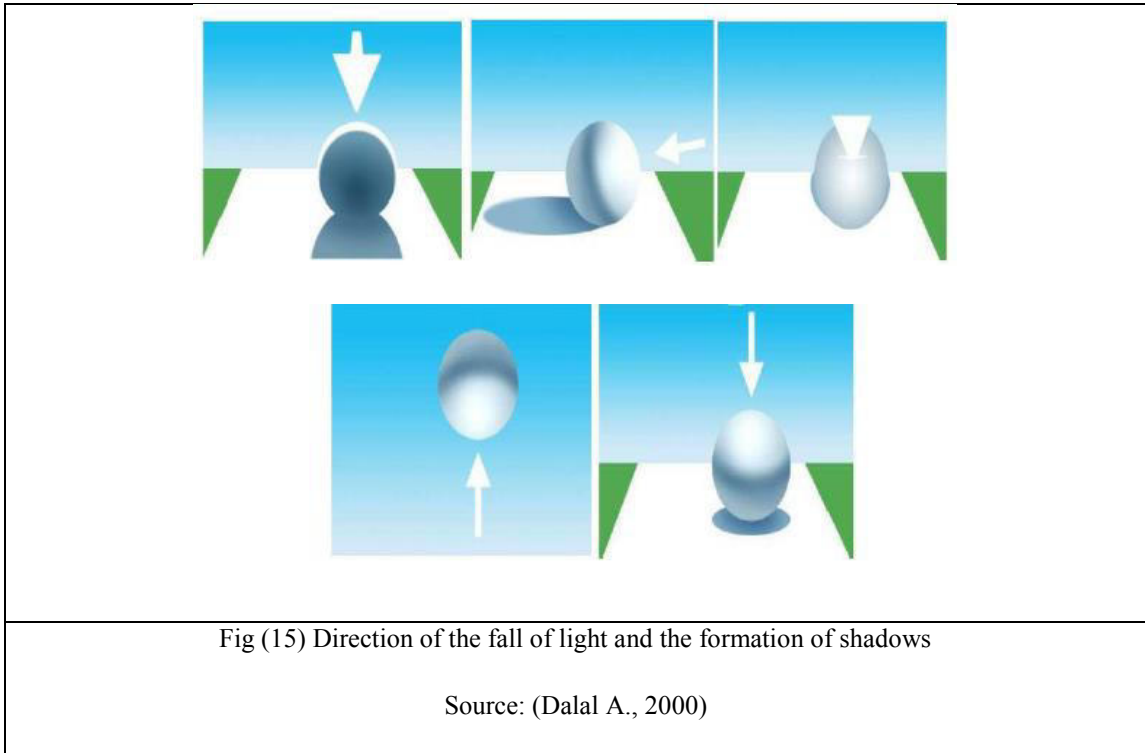
Source : Researcher

4.3 The direction of light falling on objects and the formation of shadows:

Light directions play the primary role in the composition of light works, whether the light falls on the design or is emitted from it. The following are the types of lighting according to the direction of light and the formation of shadows:

- **Front lighting:** It has a weak ability to detect the objects or materials used in external coatings as shadows disappear behind the objects, and as a result, objects appear flat
- **Side lighting:** Good for displaying objects and materials, and gives a sense of appearance and shape of the three dimensions, the shadow is prominent attractive and as a result, the contrast is high.
- **Backlight:** The contrast is very high, but if the light source is at a small angle tilted, the objects appear illuminated tip and some details are shown.
- **Upper lighting:** An unusual condition, although it is present in sunlight, and dim light in this case is an effective means of displaying objects, while strong light can express ambiguity as it hides most things.

- **Under light lighting:** It is a rare kind of lighting, the shadow in this case is inverse and can be used to make a creative effect. (Sharif, 2000)



4.4 Types of artificial lighting:

- **General lighting** is used to provide illumination over a whole floor area with a high degree of uniformity. This enables people, plants, furniture and so on to be positioned anywhere in the space and easily moved without needing to change the lighting array. General lighting is typically provided by evenly distributed overhead lights. (Tabal, 2012)



- **Ambient lighting** Also known as background or ‘mood’ lighting, ambient lighting creates a soft glow that gently illuminates an area without causing glare. Light fixtures such as upward facing wall lights can be effective at creating ambient lighting. (Tabal, 2012)
- **Accent lighting or feature lighting** This type of lighting is used to provide texture and focus to general lighting, and can draw attention to items on display such as artwork, while shadowing other areas. Accent lighting might be provided by spotlights, table lamps landscape lighting, and so on. (Tabal, 2012)
- **Task lighting** is focused, local lighting used to illuminate a specific area where a task is, or may be, performed. It is used as a contrasting light, which produces less general glare than if brighter lights were used to light an entire room. Typical examples of task lighting include; desk, swing arm, angle poise and floor lamps, under cabinet and vanity lights, pendant and track lights.(Zelinsky, Marilyn, 2006)
-
- **Emergency lighting or safety lighting.** is installed to provide lighting in the event of mains power failure and provides sufficient illumination to allow occupants of a building to evacuate safely. Types of emergency lighting include; emergency exit signs, recessed fluorescent lights, powerful halogen emergency spotlights for larger spaces, emergency ceiling lights and downlights, and so on.



Fig (17):Ambient Lights For Room

Source : <https://www.pinterest.fr>

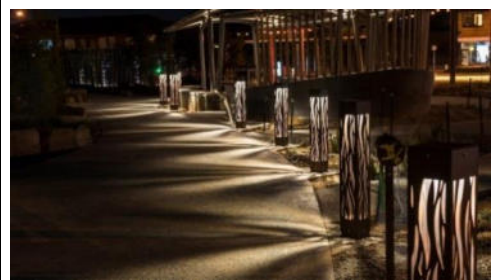


Fig (18):Feature Lighting

Source : www.majorgraphics.com



Fig (19): Task Lighting for Studying Room

Source : www.beautifulhalo.com

- **Security lighting** is generally used to illuminate an area where there is a concern for security. This may be turned on throughout the hours of darkness, to give visibility of an insecure area, or it may be turned on temporarily, for example when a person arrives at a property, sometimes activated by a linked detector.
- **Construction site lighting** In order that construction work can continue effectively and safely in periods of insufficient natural light, it is important that a site is fitting with suitable artificial lighting. Lighting can be used internally for general movement and working on the site itself, externally for illuminating entry, storage and circulation areas, and can also be an effective form of deterrent for trespassers.
- **Architectural lighting** that aims to reveal the actual shape of a building and to establish a link between the structure and the landscape. It allows to create an identity of its own while respecting the living environment of residents .(Tabal, 2012)



Fig (20):Emergency lighting

Source :soso.nipic.com/



Fig (21):Security lighting

Source : www.lyco.co.uk

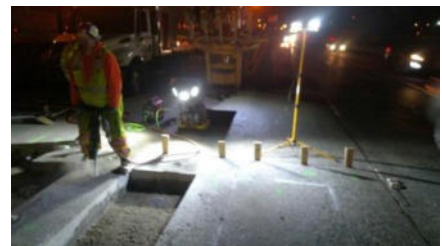


Fig (22):SITE LIGHT

Source : westerntechnologylights.com



Fig (23):Sheraton Hotel – Huzhou

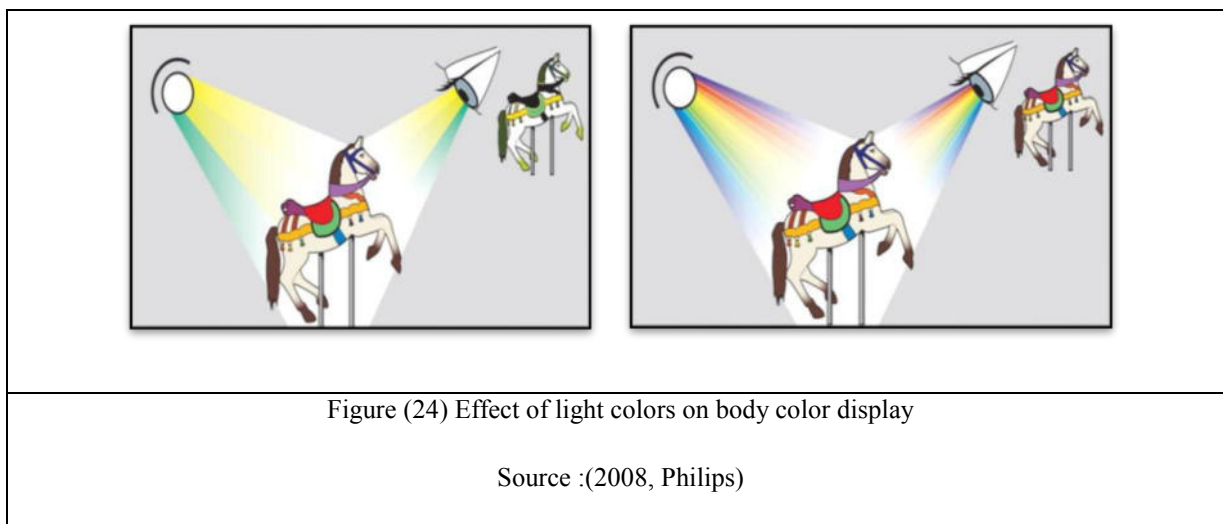
Source :travelchinacheaper .com

5. Artificial Light and color:

The determination of the colors of objects or the colors of light from colored lamps is a complex issue. It is not only a matter of physics, but it depends on the vitality and the psyche of the person being seen (Kalmshoshi and Zaki, 1986). Color is the way we distinguish wavelength. Different light, light material is somewhat complex. It includes the properties of the light spectrum itself, as well as the optical spectrum.

The color of the light source depends on the components of the light spectrum and the color appearance of the light reflected on the surfaces. It is determined by the characteristics of the light spectrum through which it is lighted and the properties of the reflected light from the objects. The colored object appears colored after reflection of the wavelength of the light falling on it. For example, if there is a red object, it can appear red if the light on it has enough red radiation to reflect its color. In addition, it can appear dark when the light source does not contain red radiation (2008, Philips) and Lighting the horse statue with wavelengths light that contains all colors, so all the colors of the horse you will see in their natural colors,

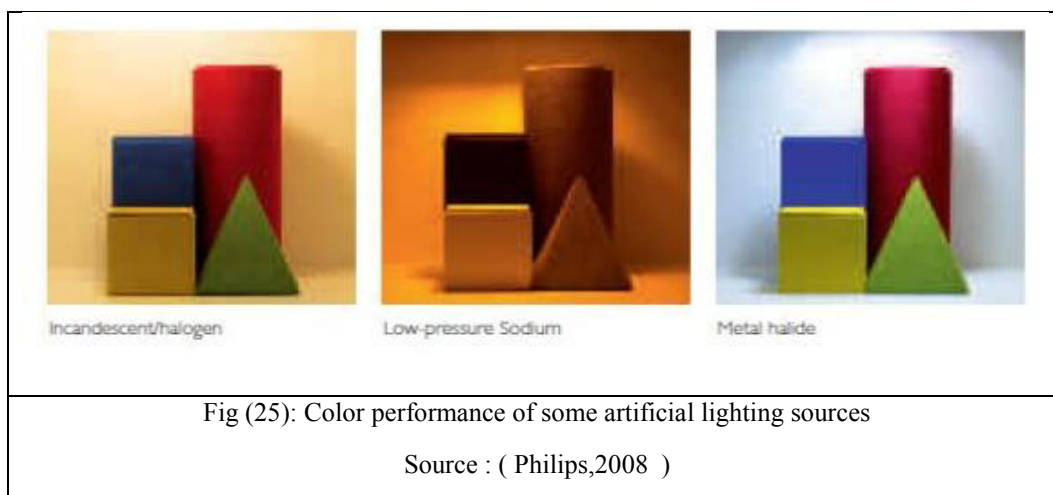
If the light is illuminated by a light wave with only yellow and green colors, we will see the colors of the yellow and green statues only. The rest of the colors will look dark or black as in the Figure, meaning that if the color is not in the light, (TalalTabal2012 ,)



5.1 Artificial light and material chromacity

Chromatic performance is an important aspect of industrial lighting (2008.Philips) because it affects how the brushes and different decorative materials, as well as the viewer's view in general, appear. Chromatic performance is a term used to describe the ability of an industrial

light to provide the true color of objects as seen naturally in sunlight and which has a chromatic value equal to 100. Attention must be paid to color performance when designing different spaces, especially those in which color has an important effect. (Tabal, 2012)



5.2 Color temperature of artificial light :

Color temperature is a term that is sometimes used to reflect the color of the light produced by the light source as compared to the color produced by a black object, which, when heated, first radiates invisible radiation and Temperature increases The body starts to glow in a faint red color and then a reddish color, then passes through a range of colors to radiate white light and then blue light, and any source of light that matches the color of the irradiated black body at a certain temperature can be characterized by this degree, Spectroscopy of energy is similar to the spectral distribution of a radiant black body at a temperature of one (Kamshoshi and Zaki, 1986). The following table illustrates the color temperature of different lighting sources:

Examples of different colour temperatures	
Type of light	Colour temperature (K)
Candles	1900 – 2500
Tungsten filament lamps	2700 – 3200
Fluorescent lamps	2700 – 6500
High-pressure sodium (SON)	2000 – 2500
Metal halide	3000 – 5600
High-pressure mercury	3400 – 4000
Moonlight	4100
Sunlight	5000 - 5800
Daylight (sun + clear sky)	5800 - 6500
Overcast sky	6000 - 6900

Table (26) Different color temperature for different lighting sources
:Philips2008

Conclusion:

From the above mentioned in this chapter it is clear to us:

- Architectural: artificial light is an essential and important element to be studied and to identify its properties, nature and behavior, as it plays a distinctive role in the recognition and recognition and multiplication of the aesthetic effect of the objects surrounding it.

Addressing and achieving architectural design objectives.

- The importance of the relationship of artificial light and color; it is a very complex and necessary issues that must be studied and alert for its impact when the design of night light for buildings, especially those where color has an important impact.

- The development of artificial lighting methods throughout history since the exploitation of fire and the appearance of the light bulb and the extent of man's quest to discover and develop new methods, which emphasizes the importance and the need and the extent of relationship and human connection to light as a vital element.

- Multiple types of artificial lighting according to the function they perform, as well as the importance of artificial lighting in the process of architectural design.

Chapter: Night Lighting and festive light

Introduction:

The night landscape of a city can be treated as a reintroduction of the city during the night. Due to the development of the city's economy and citizens' leisure life, locals are paying more attention to their nightlife. With proper design and lighting systems, a city can draw very impressive images as an "identity card" for the whole world.

However, as a new subject, the night light is generally treated as a subject of urban planning technology or lighting technology.

Recent studies have showed very important sides from night lighting caricaturized by festive lighting and its rules in adding effective steps for the projects.

The beauty of the night seen connected enhance the feelings of place belonging.

Good festive lighting considered one of the most important criteria which connected to the achievement of architectural identity, so the this chapter interested in discussing and analyzing the process of interring the festive light and studying it discovering the conceptual framework and it components and techniques of application it and reaching the final conclusions of research.

1. Part one : Night Light

1.1 Light in architecture:

Artificial lighting is the science and art, and the visual image formed and understood by the receiver occurs when the light rays are reflected and falling on objects, surfaces and materials, the first event is the fall of light and the final effect is our understanding of things (2002, Steffy) Night light is an essential element of architecture, And the way lighting affects the change of space and vision and the general climate inside and outside the space. The night lighting is related to brightness, shadows, distribution of lighting, color, etc., which is related to the effect on the visual sense, and therefore determines our awareness of the space and its

psychological acceptance (Ronn 2008) , and successful designer is the one who the lighting is not a process of

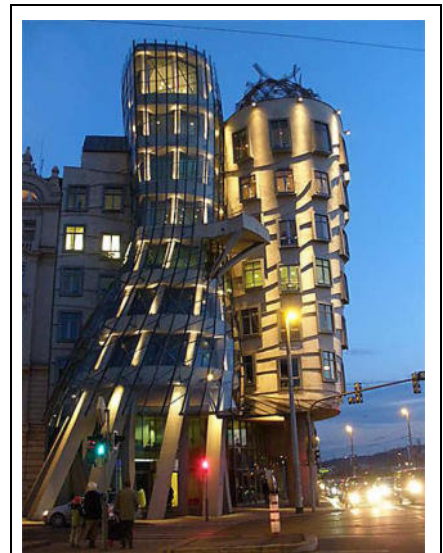
achieving a certain level of lighting for a specific space, but it is a creative process in the first place, it adds aesthetic elements to the architectural space, which adds to the special beauty, lighting can be designed to increase the space of joy and pleasure, or atmosphere .(2010, Thanaphanit)

Light influences architecture in a reciprocal way. The structural elements that we need to measure the space cannot be perceived until it is seen and recorded in the feeling of people through illumination., With good lighting we can make the building appear in the style and shape the architect wants in both day and night.

Since the these speaks of night lighting, it is important to know the fact that architecture during the early 20th century began taking its strong and prominent place during the night



Fig(1) Glories Square - Torre Agbar



Fig(2) : Dancing House at night
Source : <https://www.pinterest.fr/>

1.2 The importance of lighting buildings at night

Despite the fact that the night lighting causes the electricity loads of the buildings and therefore the higher cost, the return that can be returned to the building is greater for the following reasons:

1 - Locating the building: The night lighting of the building facilitates access to and recognition, which in turn leads to encourage people to visit and the continuation of his activities during the evening and night, such as commercial buildings, restaurants, exhibitions, and tourist buildings, and entertainment.

2 - Identification of the place: If the place is distinctive building, it should be lit at night in proportion to its importance so as not to lose the vacuum identity during the night.

3- Identifying building vocabulary: Night lighting helps to locate the entrances and stairs, the service area and the special functions, which makes it easier to use the building at night.

4 - Attract attention: Lighting buildings in a calculated manner commensurate with the function of the building and its importance, which makes the building more attractive to attention, as the distinctive lighting draws the attention of the viewer, and make his view of the building, lighting is a basic material for advertising, and thus reflect the quality of lighting importance of the building.

5 - Community Prosperity: The interest of city planners in lighting public buildings at night encourages businessmen to set up new projects in the community and provides job opportunities, thus driving investment towards economic prosperity.

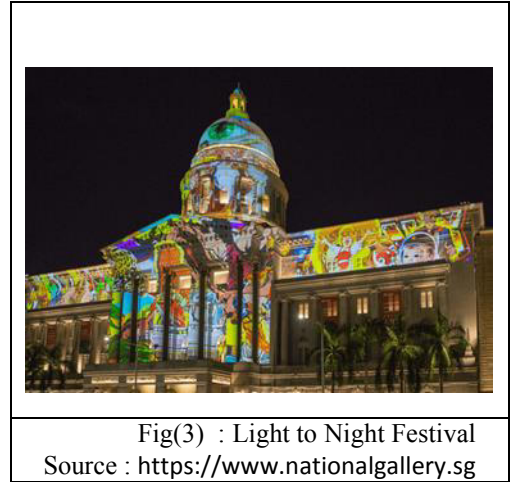
6 - Protection of public buildings at night: Night lighting contributes to the protection of buildings and surrounding areas and frequented by the public, so as not to covet the aggressors and feel the users of the building of security and security and encourages the increase of social interaction with the building a little.(researcher)

2. Part two : Festive light

2.1 Définition:

Light has always been associated with the idea of celebration, because it often takes place at night. Darkness too, because it disinhibits, erases social barriers, accentuates contrasts and enhances your efforts of lightening decorations.

Depending on the case, the luminous elements can participate in the decoration (outside or inside), have been installed only to be contemplated, constitute tools of the festive atmosphere, or even serve to illuminate in a particular way the space of the holidays (Naboni ,2006)

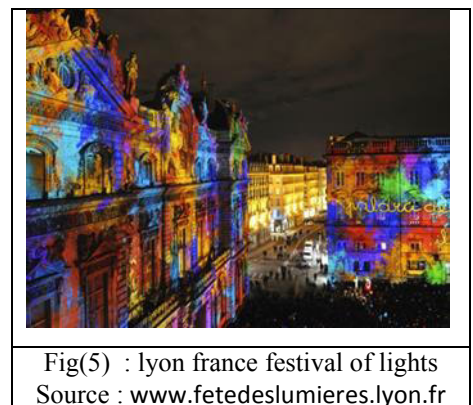


2.2 Celebrations and festivals of light

All eras, all religions, all cultures have developed nocturnal festivals using more or less widely the magical potentials of light: baroque festivals, Christian processions, Hanukkah, Diwali, Chinese New Year, carnivals, Saint John, the Holy -Lucie, Noel

The festivals and festivals of contemporary light come from these cultural practices. Each time, the social and geographical landscape of a city is literally transformed because the nocturnal appropriation of the city, especially during the limited time of the party, erases the forbidden.

Many cities have adopted their light event to federate their citizens, attract or retain tourists and visitors, develop their brand and boost local trade.



We can quote:

- in France, Chartres, Lyon, Paris, Saint Raphael, Thionville or Toulouse;
- in Europe, Turin (Italy), Helsinki (Finland), Frankfurt and Lüdenscheid (Germany), Alingsas (Sweden), Glasgow (Scotland), Blackpool (England), Liège (Belgium), Lisbon (Portugal) or Geneva (Switzerland) ;
- in North America, Montreal (Quebec), Niagara Falls, Charleston, Ashland, Battle Creek or Sioux Falls (United States);
- in Asia, Colombo (Sri Lanka), Nagano (Japan) or Singapore (Indonesia).

Depending on the case, the event was created from scratch, relying on a commercial event, a forgotten tradition or a theme. Topical. Thus the popular and media success is always at the rendezvous, because the city-dwellers, no doubt weaned away from night-time appropriation without constraints of the city, seize with pleasure every opportunity to wander and to contemplate otherwise the urban night to find, for a moment, their child's soul.

(Naboni ,2006)



Fig(6) : Son et Lumière 2017 - Place Stanislas Nancy
Source : <https://www.nancy-tourisme.fr>

2.3 The festive atmosphere

The very idea of the holiday is approached differently by the people who participate in it; some prefer a softness of others on the contrary look for a hypnotic frenzy, others will try to find memory emotions. In addition, throughout the festive, the atmosphere can evolve, adapt to its highs or lows.

However, let's try to inventory some essential elements of composition of party lights:

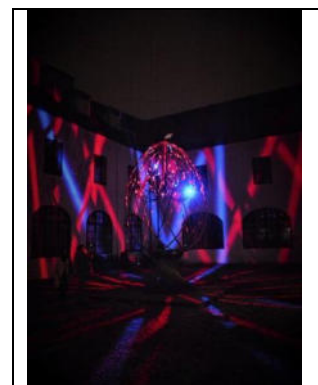
- **the color** (of the decoration or the light) plays an essential role of modification of the space and inversion of the visual perception, favorable to the notion of party;
- **the flame**, by its heat, its vibration, its symbolic, is also a popular tool to set a festive decor and produce strong contrasts with the shadow;
- **Controlled darkness**, coupled with focused areas of light, allows everyone to choose their party space according to their state of mind. It is essential to immerse oneself in the illusion and the dream, created by the light;
- **the luminous animation**, the suave or syncopated variation, the vibration, constitute interesting sensors of attention to seduce the public and to make it actor of the festival;



Fig(7) : the use of multiple colors



Fig(8) : Decorative light in Chinese culture



Fig(9) :light controle darkness



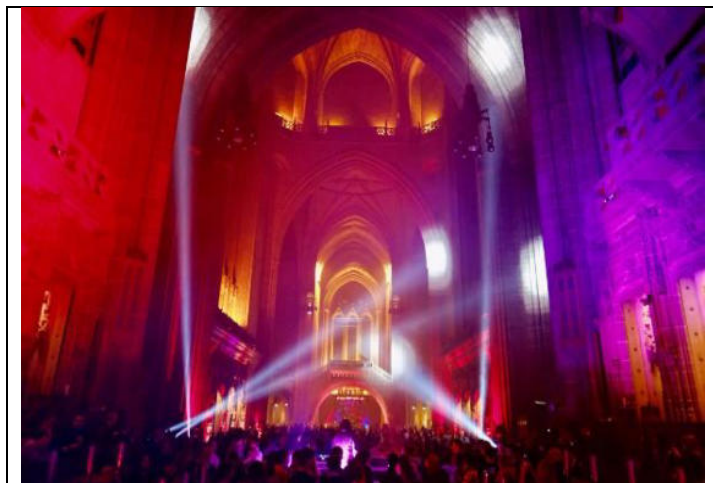
Fig(10) :Lantern Festival lights up China

- **the luminous ornamentation** (even very charged) and the multiplication of the sources refer to a certain idea of the luxury, the baroque, the impossible, sometimes Inaccessible to the daily mats conceivable for an evening;



Fig(11) :Chinese New Year

- **the transformation**, the diversion of a place known by the light, participate in its festive appropriation because they break the social or cultural references and uninhibited the participants. (Naboni ,2006)



Fig(12)Liverpool's annual late-night arts festival

2.4 Classification of festive light :

After my study of many architectural examples, I managed to come up with a division of night lighting into categories in terms of :

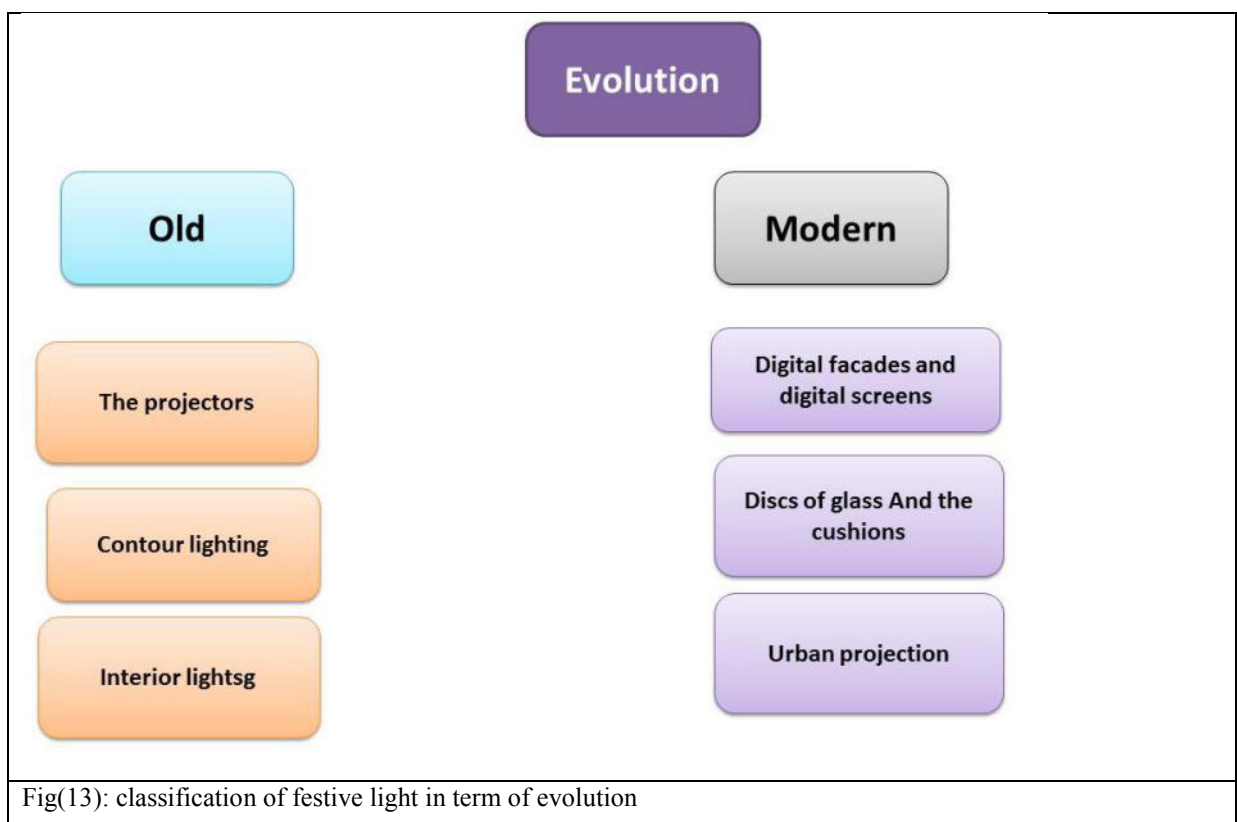
- Evolution
 - Old
 - Modern

- Placing the lighting of the outer shell of the building.
 - Intrinsic (Before the facade, Behind the facade)
 - Extrinsic (complexity and uniformity)

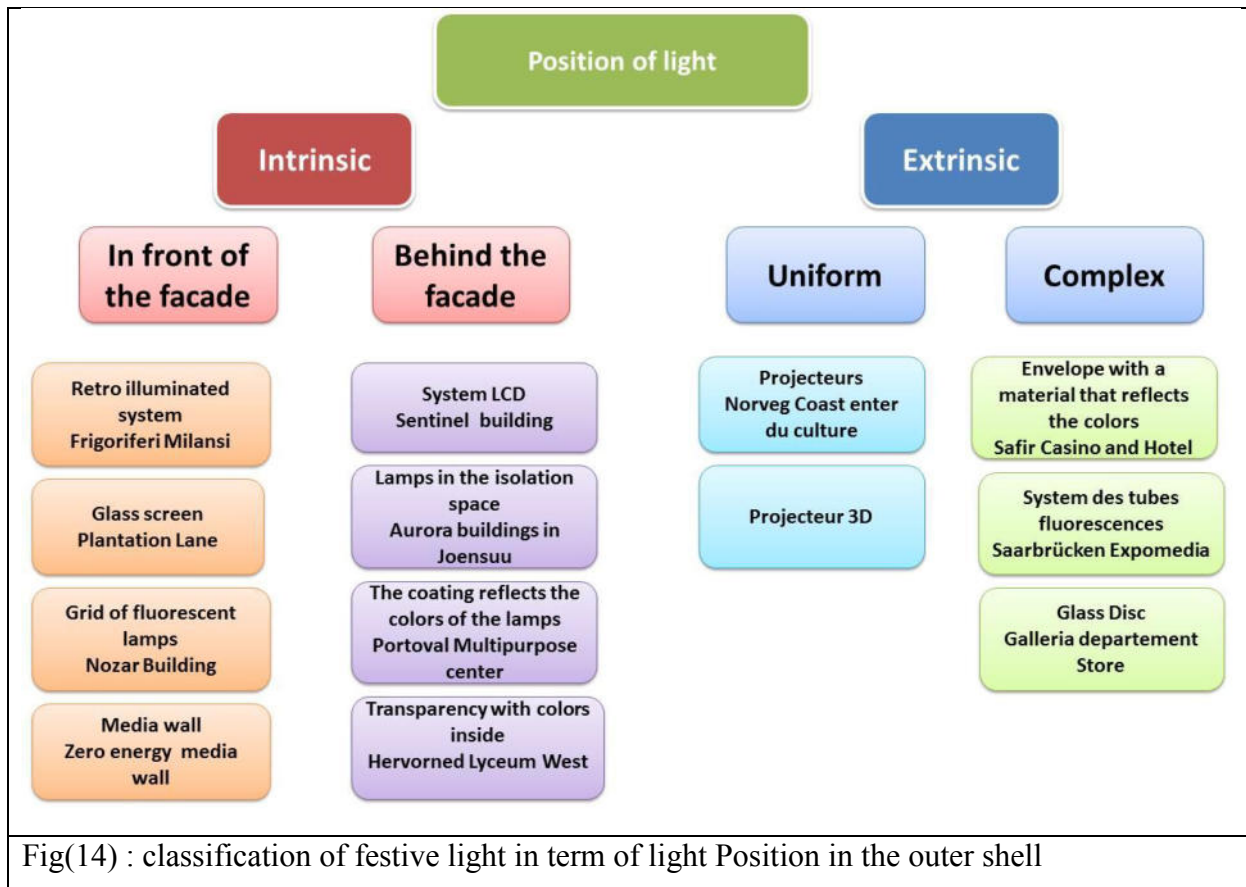
We could also count “ Giving value “ as a term :

- To building,
- To architectural environment

The figures below is the result of the study I made :



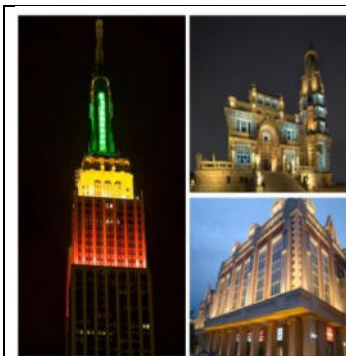
Fig(13): classification of festive light in term of evolution



2.4.1 Evolution (old and modern)

- **Old festive light techniques**

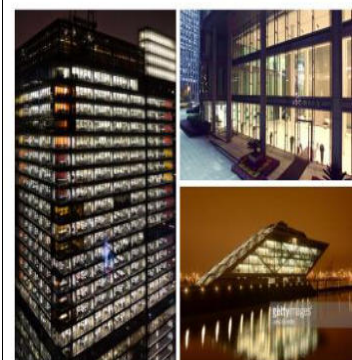
- ✓ **The projectors** are designed outside the building in order to make the architecture brighter than the environment to claim its importance
- ✓ **Contour lighting** is the most common way in architectural lighting. It uses neon lights or other fixtures to trace the outline of the building
- ✓ **Interior lighting.** This method is generally used for lighting modern architectures, including those with glass **curtain walls** or **reflective materials**



Fig(15) : light projectors



Fig(16) : contour lighting



Fig(17) ;Interior lighting

• **Modern festive light techniques**

➤ **Digital facades and digital screens**

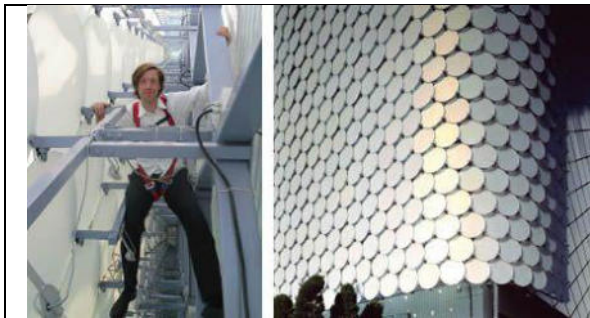
(LED) Digital technology makes it possible to transform the entire facade of the building into a large electronic screen.

This gives an ultimate opportunity to change the facade as needed



Fig(18) : Media facade

➤ Various techniques to connect with the envelope with thermal characteristics like the **discs of glass** And the **cushions** are fixed on aluminum profiles



Fig(19) : glass disc method



Fig(20) : Aliaz Arena Cushions method

➤ **Urban projection (video mapping)** 3D projection is a technique for mapping three-dimensional points on a two-dimensional plane. As most current methods of graphical data display are temporary installations based on a two-dimensional support



Fig(21) : 3D projection in Sydney

2.4.2 Position of light in the outer shell of the building:

➤ Intrinsic (Before the facade, Behind the facade)

Before the facade

System Retro illuminated Frigoriferi Milansi

The project consisted of transforming an ordinary building located in historical surroundings into a feature by using a system of retro-illumination which emits light that changes, following a structured pattern of three chromatic variations of red.

Over the facade there is a glass 'skin' onto which films of color are applied to create scenic illumination.



Fig(22) : System Retro illuminated

Glass screen Plantation Lane

Plantation Lane is a new street in the City of London,

The most prominent feature in Plantation Lane is a glass art wall by Simon Patterson and Arup. The (41m) by (6m) wall happens at the midpoint of the street and follows the slight curve of it. An image of the moon covers the whole wall, with LED lights changing the back-illuminated wall different colors over time. The glass panels are held together with plus-sign clips; their combination lays a grid over the lunar-scape in, sometimes, a commentary on man's treatment of nature and the colonization of space.



Fig(23) : Glass screen

<https://archidose.blogspot.com/2006/03/plantation-lane.html>

Grid of fluorescent lamps Nozar Building

For this interesting facade project, the architects developed a structure of illumination based on a dynamic programmed control system. The installation comprises hundreds of fluorescent lights equipped with a modern RGB system. The intensity of the light in each of the colors can be regulated completely independently, which creates very different effects, converting the building into a landmark on the nocturnal landscape.



Fig(24) : Grid of fluorescent lamps

Media wall Zero energy media wall

GreenPix – Zero Energy Media Wall – is a groundbreaking project applying sustainable and digital mediatechnology to the curtain wall of Xicui entertainment complex in Beijing, near the site of the 2008 Olympics. Featuring the largest color LED display worldwide and the first photovoltaic system integrated into a glass curtain wall in China, the building performs as a self-sufficient organic system, harvesting solar energy by day and using it to illuminate the screen after dark, mirroring a day’s climatic cycle.



Fig(25) : Media wall

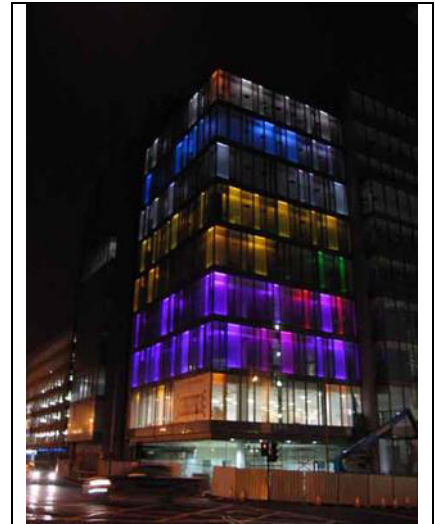
<https://www.mediaarchitecture.org/greenpix-zero-energy-media-wall-beijing/>

Behind the façade

System LCD

Sentinel building

Sentinel, the new £ 11m office development in Glasgow by Gordon Murray and Alan Dunlop Architects, the buildings unique lighting f created a dramatic effect., A system using light sources at the base of selected windows on the building's frontage which glow at night and offer a continuous and changing spectrum of color, from red to purple to blue to green.



Fig(26) : System LCD

<http://www.glasgowarchitecture.co.uk/sentinel-glasgow>

Lamps in the isolation gab

Aurora buildings in Joensuu

The University of Joensuu campus lies close to the city Centre.

An important point in site plan is to coordinate the complex both with campus and grid-style city Centre.



Fig(27) : Lamps in the isolation gab

The building has a reinforced concrete frame and the red brick façade that characterizes the university campus was a natural choice of material.

Glass block walls that shine in the dark are an important part of the overall composition. Lighting is assembled behind glass façades into the buffer zone outer side of auditoriums

<https://www.world-architects.com/en/jkmm-architects-helsinki/project/joensuu-university-aurora-buildings>

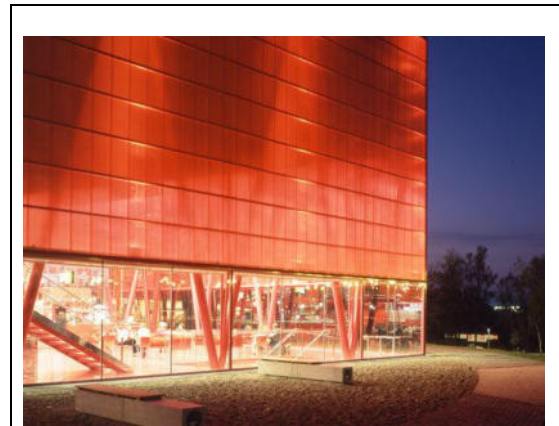
The coating reflects the colors of the lamps

Portoval Multipurpose center

Center consists of multiplex cinema, games hall, supermarket, general store, offices for different bussines activities and garage.

The colour is used as the unifying concept in creating various characters to the different functional areas of the complex.

The skin of the building responds to the changeable light conditions and offers a mutual experience of reflection, translucion and projection of light and structure over time. Polycarbonate clading is reflecting the changeable daylight and shinning in the dark this creating strong visual identity of the centre.



Fig(28) : The coating reflects the colors of the lamps

<https://eumiesaward.com/work/666>

Transparency with colors inside

Hervorned Lyceum West

The Hervormd Lyceum West originally occupied a school building constructed in 1963. The original building has been reorganized, renovated, cleaned up and ‘peeled open’, so that introversion and secrecy have now made way for openness and transparency. Because of that, the building has acquired an appearance untypical of a school.

Colour and light are crucial ingredients for the new wing and give the school a new identity. The lighting, integrated with the internal walls, ceilings and furniture, defines routes through the building and its different functions. At night the multicoloured areas of light lend the gardens and the school yard a theatrical quality.



Fig(29) :Transparency with color lighting inside

<https://tangramarchitekten.nl/portfolio/hervormd-lyceum-west/>

➤ **Extrinsic (complexity and uniformity)**

Complexity

Envelope with a material that reflects the colors

Safir Casino and Hotel

This facade creates the impression of an abstract texture formed by triangular prisms of light which interact with the shadows during the day and disperse the effects of the LED system at night through a kaleidoscope effect which distorts the images. The vertical windows provide privacy during the day but at night they become a 'barcode' which changes with melodic movement.



Fig(30) : Envelope with a material that reflects the colors and change it

Glass Disc

Galleria department Store

The facade causes a constantly changing perception, shimmering and seductive
Total of 4330 glass discs suspended from a metal substructure directly mounted on the existing concrete floor of the department store
The glass discs are sandblasted laminated glass, including a special **Dicolic** sheet



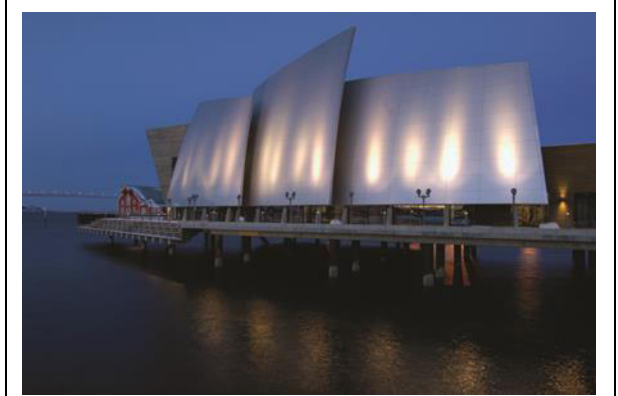
Fig(31) : glass discs of the galleria department stor at night

Uniformity

Projectors

Norveg Coast culturel center

This building was inspired by the culture and the way of life of the coastal communities in Norway. The facade made up of three sails supported by a modern ship is an eye-catching feature which fuses tradition and modernity. The illumination of the facade emphasizes the size of the sails and pays tribute to the famous Northern Lights, the Aurora Borealis.



Fig(32) : the uniformity of lighting with projectors

2.5 Stages of festive lighting design:

Each festive lighting design goes through a series of stages to be completed according to the nature of the project and the objectives of the work team, and it is not necessary that all projects pass the same stages sequentially, depending on the privacy of the building, whether designed based on light or not. Divide these stages according to the chronology and importance as follows:

2.5.1 Pre-design:

There is a set of things that the designer or design team must understand before starting to design the idea, so understanding these things will help to choose the components for the festive lighting adopted and make the project a success as a whole and can be scheduled as follows:

- Understand the nature of the activities required within the spaces of origin and their need for lighting and according to the specificity of these activities.
- Different types and specialties of users and thus provide their needs in order to achieve optimal state of comfort.

- Lighting design to enhance the primary objective of the design of the origin as a whole.
- Identify practical objectives.
- Determine lighting parameters and patterns and how to control them.

2.5.2 Sketch phase:

This phase involves starting with default scenarios and identifying a set of important aspects agreed by the team as follows:

- The plan of the locations of the elements responsible for the festive lighting.(element that we want to give value and attention)
- Determining the importance of the architectural element so we they choose the appropriate festive lighting for it.
- After passing through the above stages begins the design of the preliminary.

2.5.3 The development of the design process:

The architectural design team, the electrical engineer, should determine the final design direction of the project.

At this stage, the preliminary design developed in the previous phase is strengthened, or in a particular case the objective is to redesign and develop what actually exists.

2.5.4 The termination of the design process:

The process of completing the festive lighting design of the project requires the designer to take into account a range of important aspects that if dealt with appropriately to strengthen the final output to reach the best effects are as follows:

- Select the type of festive lighting and techniques used to determine the general lighting of the place in order to obtain the best effects.
- Choose the appropriate lighting.
- Attention to detail.

For projects implemented, the designer's objective is to develop **rehabilitation processes**:

It is one of the stages through which the development of the overall appearance of the project and the completion of deficiencies and missing, and some aspects that were not taken into account in the early stages of design and represent the most important stage to develop lighting schemes and show the project properly.

Whether the design begins at the beginning of the project or as operations designed to develop it permanently, the design of festive lighting shows the architectural output in a distinctive and related manner. Its ability to produce the expressive influences also creates the appropriate atmosphere for the users and the positive aspects of the production. The design of the festive lighting is closely related to the definition of the place. (Mehdi, 2008)

Conclusion :

The great importance gained by the festive lighting in the composition of the night scene of the constituent features of the city,

Attention to the festive lighting of public buildings as a symbol of communities and a great interest to the public, as it accomplishes most of the functions of the city and have a direct impact on the urban environment, and is supposed to these buildings to be characterized by beauty and clarity and clear identity.

This chapter is dedicated to the festive light and multiplicity of techniques used in highlighting the festive lighting and dividing them according to the extent of its development and its positioning in relation to the outer shell of the project,

The phases of the design of the festive lighting are characterized by the nature of the project and the objectives of the team and the specificity of the building and are divided according to the chronological order and according to the importance as follows: aspects of (pre-design stage - design planning stage - development of the design process - finishing the design process).

There are factors that influence the process of designing festive lighting, which should be considered to obtain the correct solutions for lighting (spatial factors - factors of the comfortable optical environment – factors Aesthetics).

To be thinking about the design of the festive light from the early stages of the development of ideas and design plans to ensure the integration of parts and multiple systems of the project and deferred to the late stages so that it appears as a collection and does not serve the product, the connection of the idea of the festive light with the main philosophy of the project is the feature of the present and future productions .

This answer our research questions and reject our hypothesis that said the festive light is an addition to the final stages of the project or after it's done by proving that the festive light can be the main element in the design of the project and it does participate in all the stages of designing the project , but in the same time it did confirm that there are factors that need to be taking in consideration to lead us to choose the right components for the festive light .

Chapter III : The Multimedia library

➤ Part 1 : Theoretical of the project:

1. From the library to the Multimedia library:

"The term multimedia library is the giant leap accomplished by municipal libraries over the last ten years, the number of square meters available per occupant has doubled, and most libraries have acquired new media: video cassettes, CDs, software, works of arts. This evolution recognizes the key role played by multimedia library in the cultural policies of cities".

This excerpt from an urbanism magazine, entitled "spring of multimedia library " published in April 1993, shows that the multimedia library is a kind of evolution of the traditional library which had as sole support to disseminate the information the written documents; mainly The Book.

Due to the appearance of the new modes of communication, the library was forced to follow this evolution, this upheaval induced by the introduction of image and sound gave birth to the multimedia library The multimedia library Villeurbanne made in 1984 by "Mario BOTTA" was one of the first multimedia library to see the day.

So the multimedia library is a version of the public library of information using all media, which has a reception and animation function.

2. Definition of the multimedia library:

The multimedia library is defined as "the place where a collection of documents is gathered on different media (books, films, records, slides ... etc.) The multimedia library is a place, collections, skills. Outside the trading system, we will talk about users and not consumers or customers. We will not retain the notion of too reductive reader. Today a multimedia library is the conjunction of 4 elements:

- Space (building, meeting place and sociability)
- Organized collection of documents on different media
- Regular budget to ensure its functioning
- Qualified personnel to ensure its management

3. The missions of multimedia library :

The fundamental missions to the accomplishment of which the public library should be directed, are information, literacy, education and culture, and consist of:

- 1-create and reinforce the habit of reading in children from an early age;
- 2-facilitate individual study as well as formal education at all levels;
- 3- foster the creative flourishing of the personality;
- 4-stimulate the imagination and creativity of children and young people;
- 5-contribute to make known the cultural heritage and to appreciate the arts, the scientific progress and the innovation
- 6-give access to the cultural expressions of all the performing arts;
- 7-encourage intercultural dialogue and promote cultural diversity;
- 8- support the oral tradition;
- 9- to ensure the population's access to all kinds of community information;
- 10- provide appropriate information services to local businesses, associations and interest groups;
- 11- facilitate the acquisition of skills in the field of information and informatics;
- 12- to support and participate in literacy activities and programs for all age groups and, if necessary, take initiatives in this area.

➤ Part 2 :

1. Examples analysis:

Exemple 1 :

Multimedia library of « parselle »

❖ Data sheet:

Architect: Jean Pierre Lot
Location: Vitrolles, France
Land area: 3,990 m²
Completed a: 2016



❖ Descriptive text:

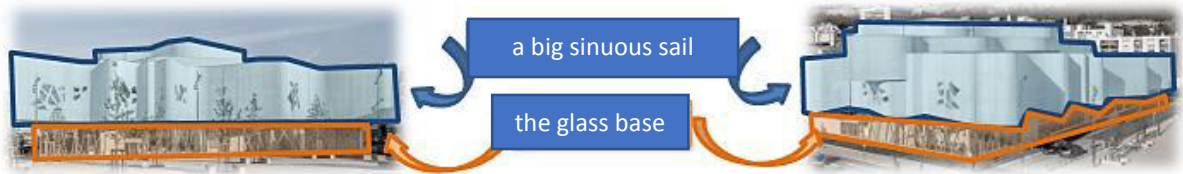
The bridge multimedia library is a real meeting place for the city, with a transparent ground floor whose exhibition spaces, cafeteria and auditorium open visually on the square. The transparency and regular geometry of the lower floor, is contrasted by the upper levels, which are mostly closed, and designed for viewing books and library materials. The openings and windows have been carefully planned to allow natural light to illuminate the interior evenly, making reading and viewing easier.

❖ The conceptual idea:

«An opposition between glass and concrete»

The building plays on the opposition between a glass base and two concrete "clouds".

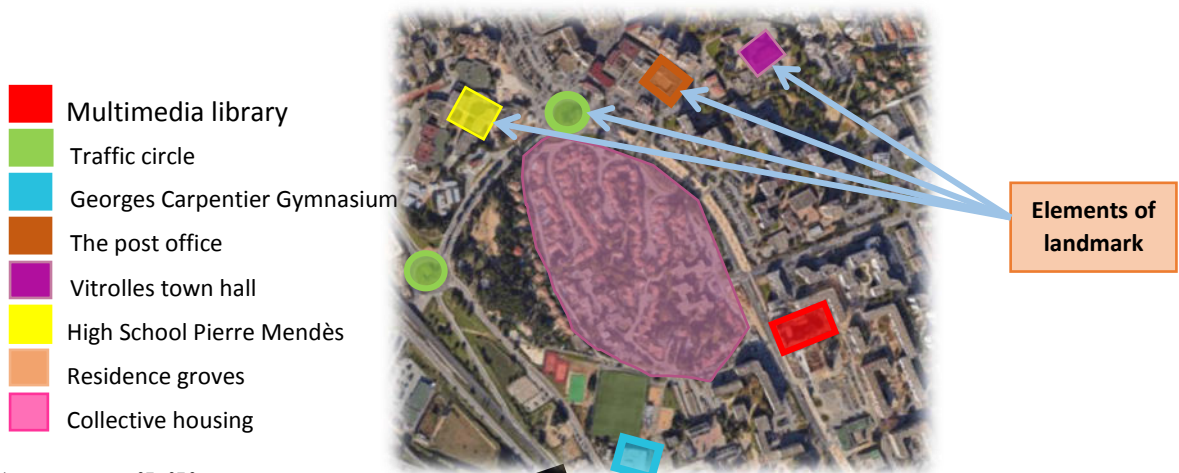
The glazed base left transparent **invites** to enter the building; and a floor composed of a **large winding veil that expresses movement, lightness, metaphor of reading**. It is in this opposition that the project finds its strength.










Environmental study:

1)-Situation/environnement :

The multimedia library of "Passerelle", the new media center, has become the building that symbolizes the entire city of Vitrolles -France.



2)- accessibility :

-  Multimedia library
-  Placette
-  Main Street "Maréchal Foch"
-  Secondary street
-  Car park
-  Mediatheque entrance
-  Project entry



3)- Integration in the site :

The building by its forms, its curvatures, will give the contribution of matter, of singularity which is missed so much in the city.



The mass :

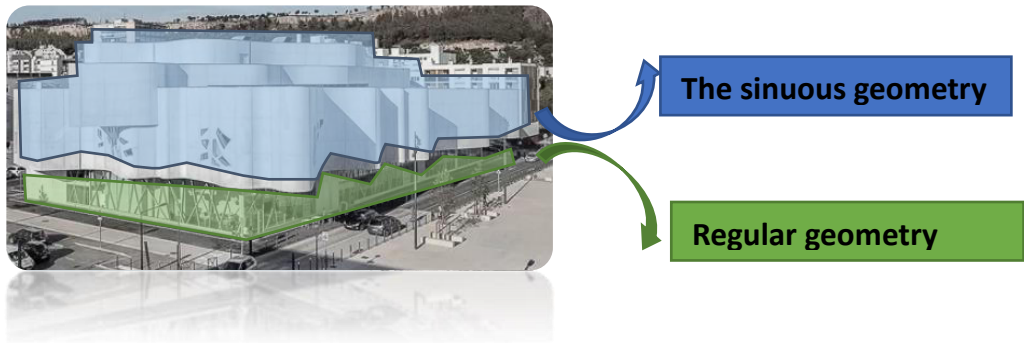
1)-volumetry :

Noticing the opposition between the ground floor and the first floor:

Regular geometry: the ground plan implanted in alignment, completely glazed, inviting to enter.

The sinuous geometry: the library has the particularity of being capped with an immense winding white concrete curtain with a cantilever designed on 8 meters.

The floor, corbelled, protects consulting spaces from direct sunlight.



2)- envelope and material :



Reinforced concrete has been used for its **plasticity**, it can give shape to **drawings**, express abstractions. Continuity in employment

"The sinuous geometry"

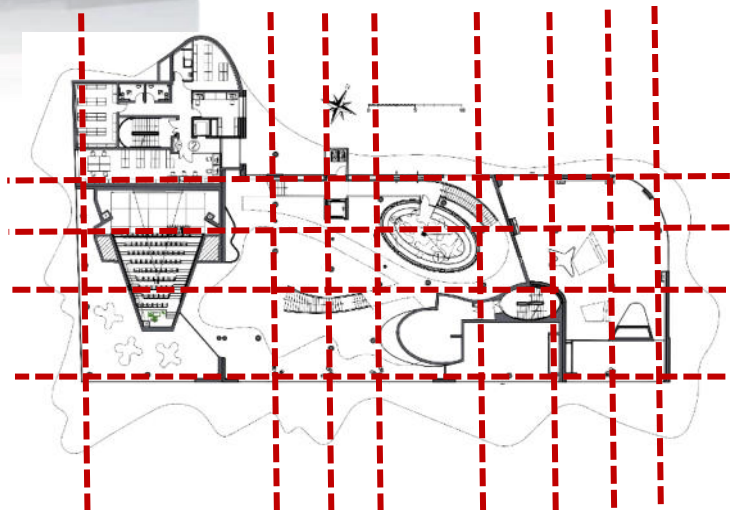
A real urban living room with the transparent ground floor, opening visually to the square

"Regular geometry"

3)-structure :

- The structure is:

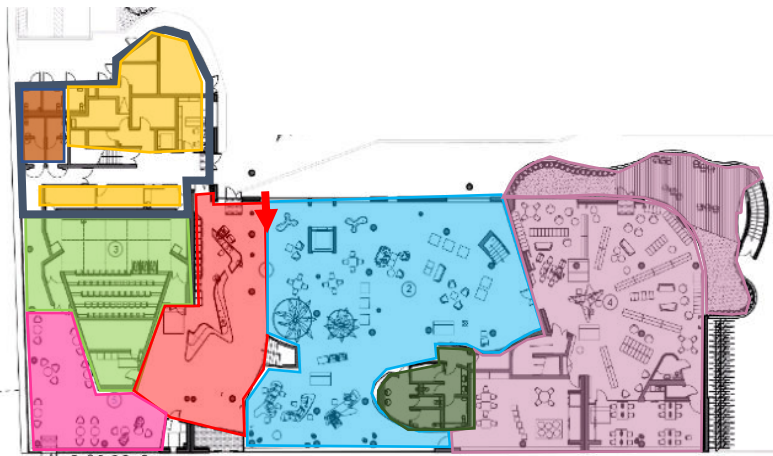
Post beam reinforced concrete



-Plan First Floor -

Plans :

1)- spatial organization:



Ground floor plan

Ground floor plan

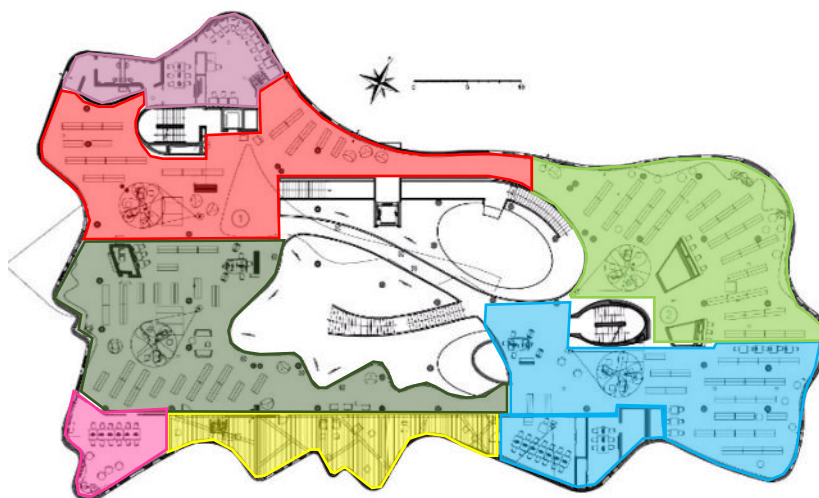
- Reception hall
- Auditoriu
- Press
- Early childhood space
- sanitary
- Bar
- Administration
- Office
- sanitary



1st floor plan

1st floor plan

- Story time
- Internal Services:

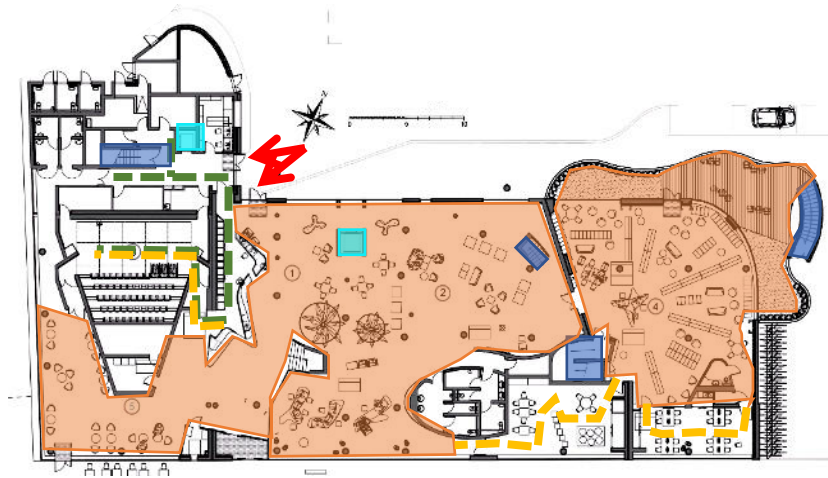


2nd floor plan:

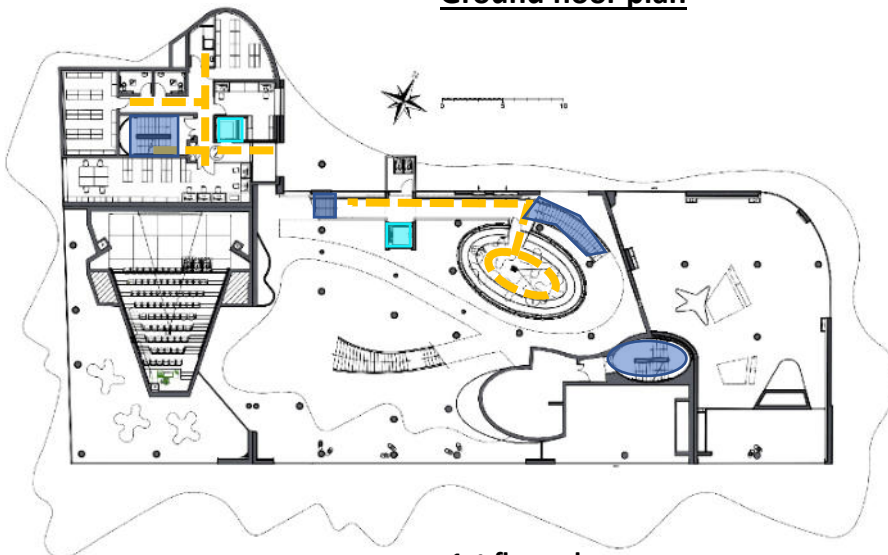
2nd floor plan:

- Digital space
- Pole Literatures
- Pole arts and
- Teen area
- Pole Science and Society
- Pole practical life and training
- Terrace

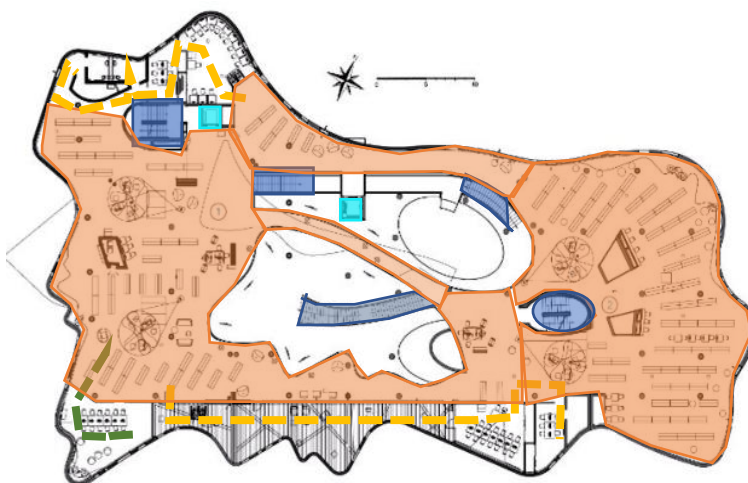
2)-circulation :



Ground floor plan

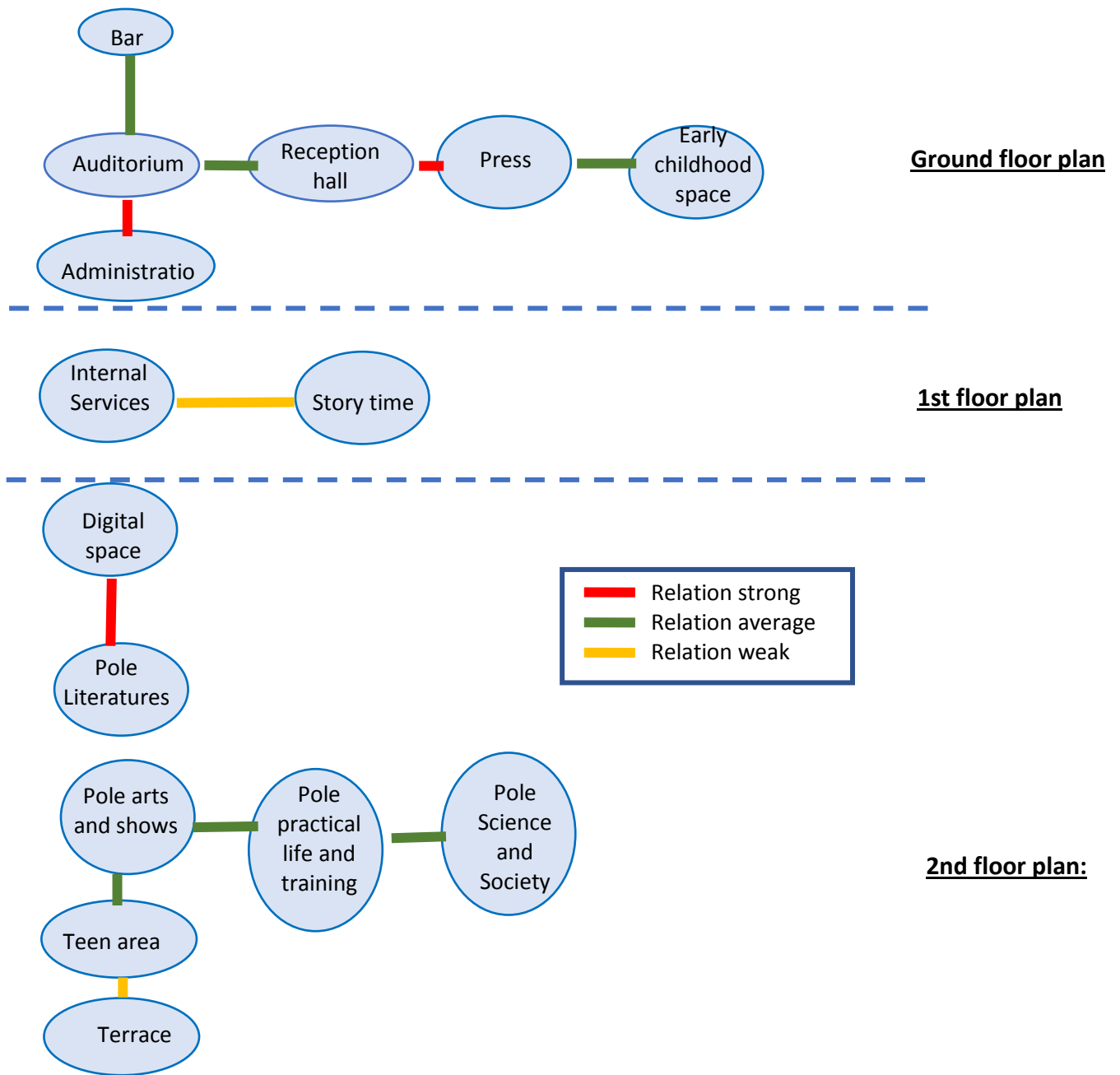


1st floor plan



2nd floor plan:

3)- functional organization:



The views

* interior :



Terrace



Story time



Mezzanine



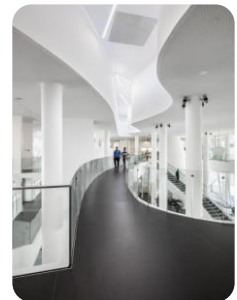
Entrance hall



Reading area



The lighting :
- The ground floor is well lit thanks to the glass envelope "in the day".
The night. Use of artificial lighting.
Note that the interior design indicates the fluidity (symbolized by the curves) as the outside.



Passerelle

* exterior :



Exemple 3 :

**Multimedia library of
« Marsan »**

Data sheet:

Architect : Archi 5

Location : Mont-de-Marsan, France

Land area:4750 m²

Completed at: 2012



❖ **Descriptive text:**

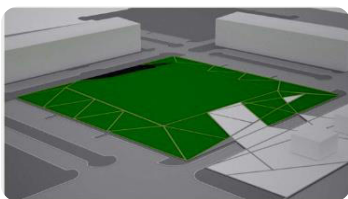
- The multimedia library Mont of Marsan was thought of as a place of discovery, meeting and exchange.

Through the transparency of the facades, the continuous treatment of the soil and its location in the heart of the former barracks of Bosquet, on the site of the former army square, this building is a covered cultural square. This design is read by extruding the green roof, like an existing floor suspension. The vegetal glaze surrounding the building starts extrusion, then gives way to a glass facade, transparent or reflective..

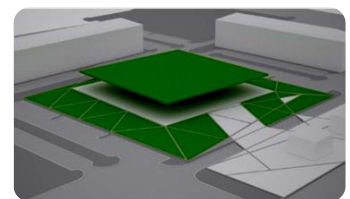
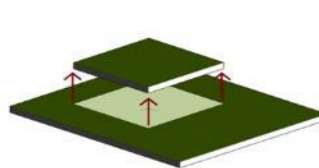
The conceptual idea:

The conceptual idea of this project is:

- A design is read by the extrusion of the green roof.



Showcasing the vegetable carpet



Preserve transparency

- The rendering of this bright project, which gave pride of place to natural light and artificial lighting

"urban lantern"



Environmental study:

1)- Location / environment:

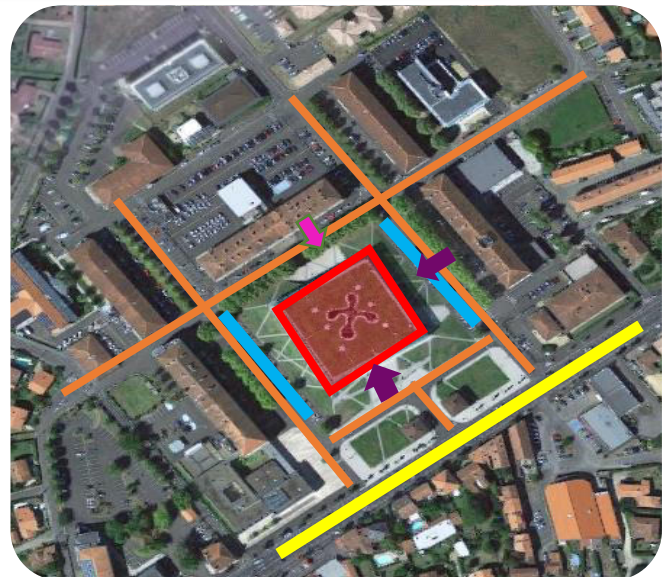
The mediatheque is in the immediate vicinity of downtown Mont de Marsan -France-
 Located in the architectural ensemble of Bosquet barracks.

- Multimedia library « marsan »
- FPT Management
- Agglomeration community
- Municipal Board of
- Jean Rameau
- Departmental Archives
- Collective housing



2)- accessibility :

- The Multimedia library Marsan
- Main Street "Maréchal Foch" Rue
- Secondary street
- Car park
- Multimedia library entrance
- Parking entrance



3)- Integration into the site:

-The project respects the traditional ordering by the pure geometry of the building



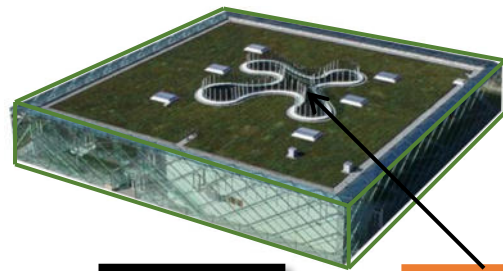
The mass

1)-volumetric :

The Mediatheque is shaped parallelepiped 60x60

With a patio in the center of the building.

The patio, inspired by the drawing of an acanthus leaf, naturally organizes the various functions on a free plate. It maintains visual continuity and diffuses a controlled daylight.

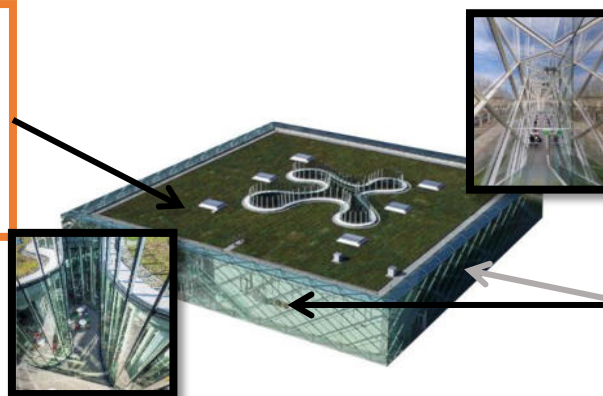


The patio



2)- envelope and material::

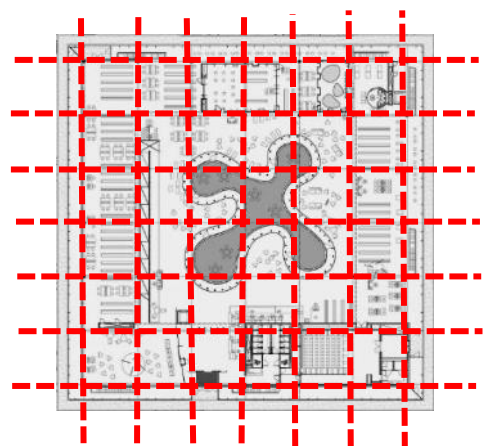
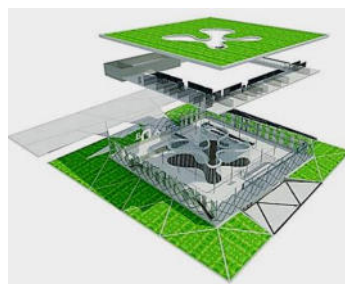
The green roof induces a better thermal and phonic insulation and participates in the retention of rainwater



The patio and the envelope are (a double skin) made of metal and glass déploie sur les quatre côtés du monolithe

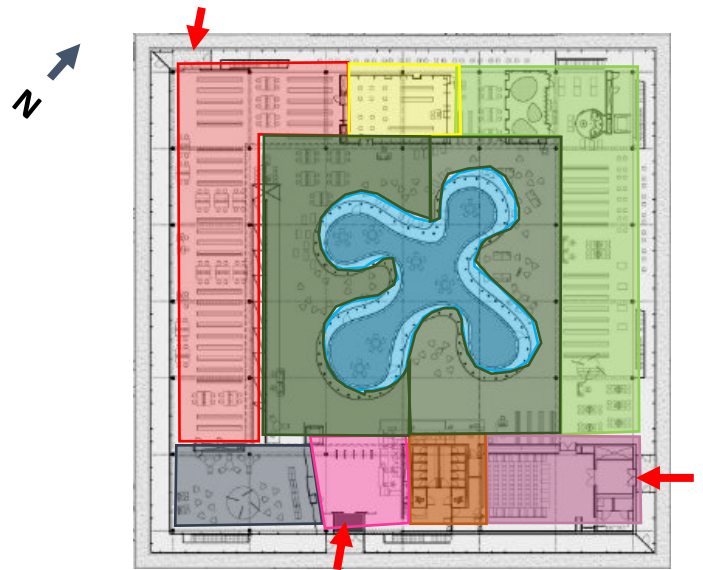
3)-structure :

-The structure is:
Post beam "regular grid"

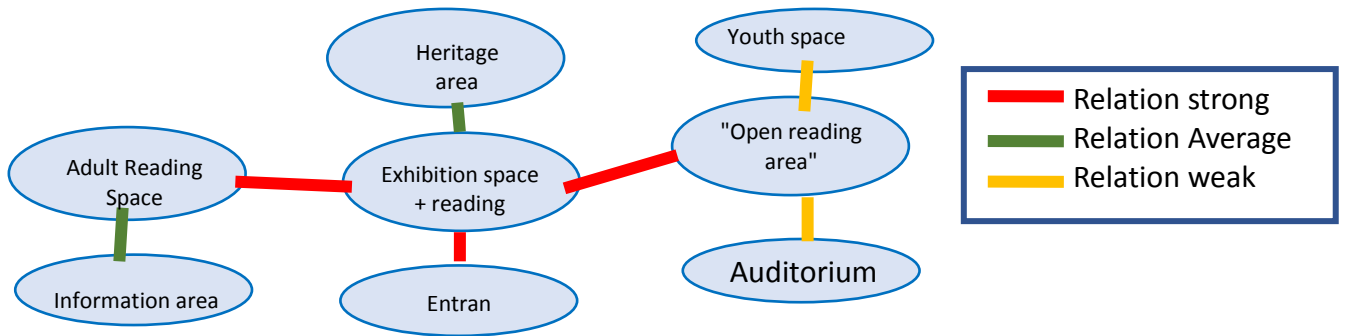


The Plans :

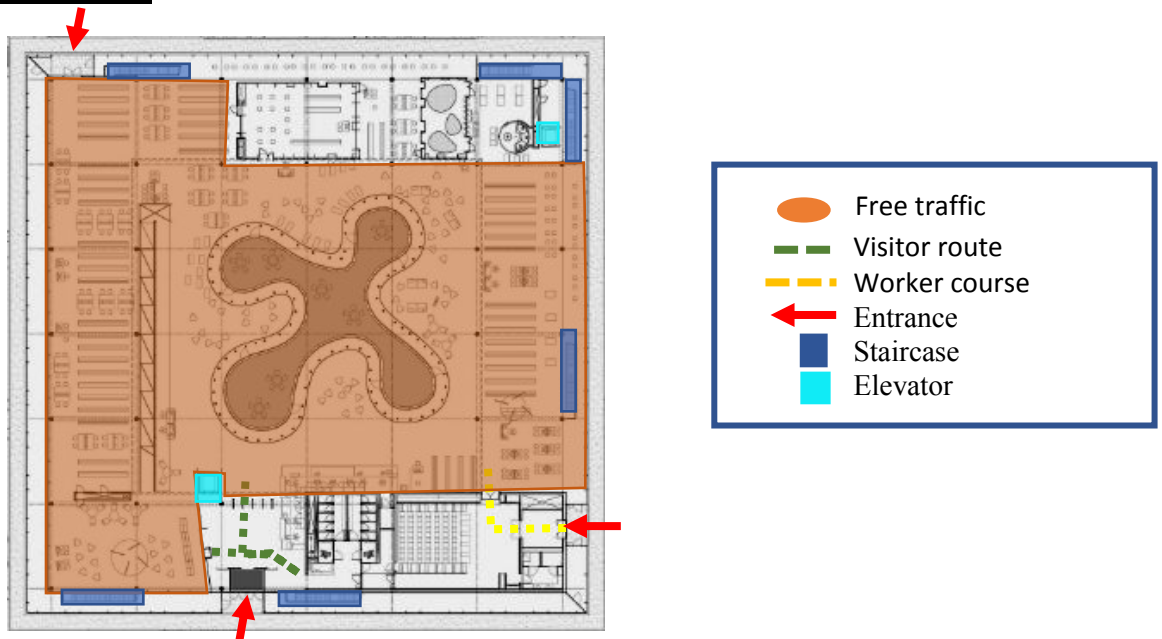
1)- spatial organization:



2)- functional organization:



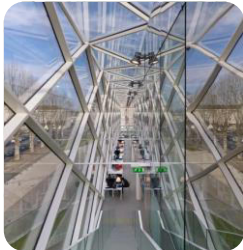
3)-circulation :



ground floor plan

The views

interior



Double skin



Computer area



Youth space



Patio



Youth space

The lighting:

-the building is well lit thanks to the glazed envelope and the central patio " During the day " .

The night. Inside, lamps are placed on the ceiling, above the reading and working spaces "Artificial lighting".



Auditorium

outside:



Exemple 3 :

Multimedia library of « Anzin » :

❖ **Data sheet:**

Architect : Dominique Coulon
And Associates

Location : city of Anzin, France

Land area: 1750m²

Completed at: 2010

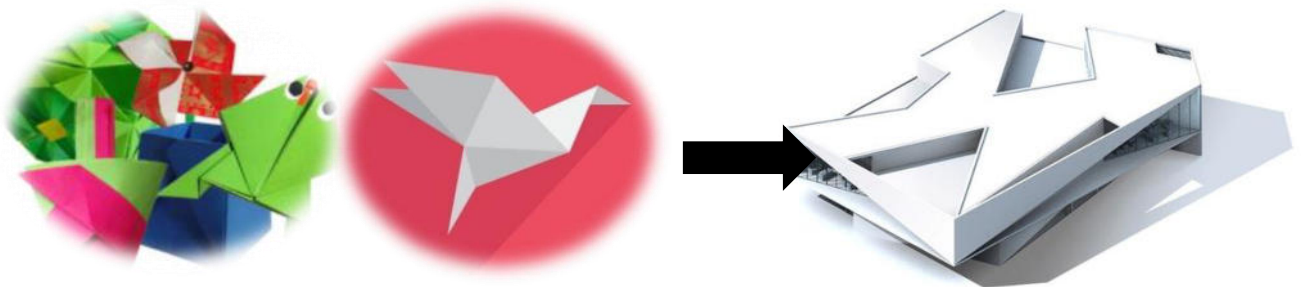


❖ **Descriptive text :**

The multimedia library Anzin at first sight, quite simple: a large rectangular volume on a base recessed. Approaching the building, we perceive a geometric complexity that is hard to grasp at first glance: the envelope is made of folded plans, fine veils of concretes slightly shifted and pinched. This articulation and interlocking game is an almost two-dimensional composition, an origami with an intriguing look.

❖ **The conceptual idea:**







The idea is the use of a modern "origami" technique, that is to say the folding of the paper to use the natural light and integrate it in the white

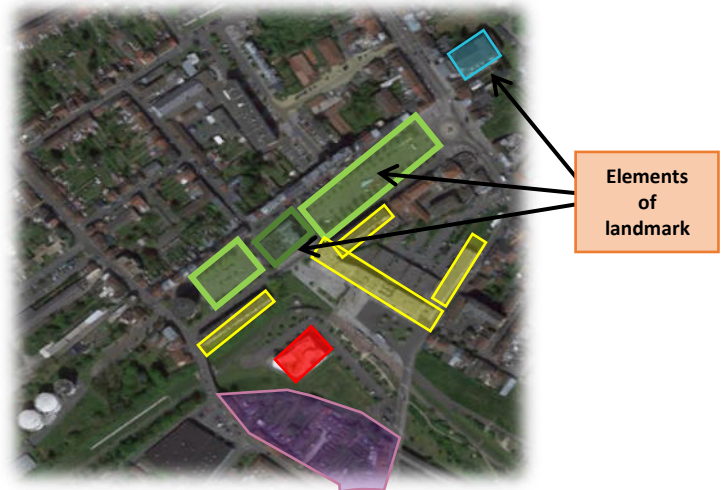


Environmental study:








1)- Location / environment:

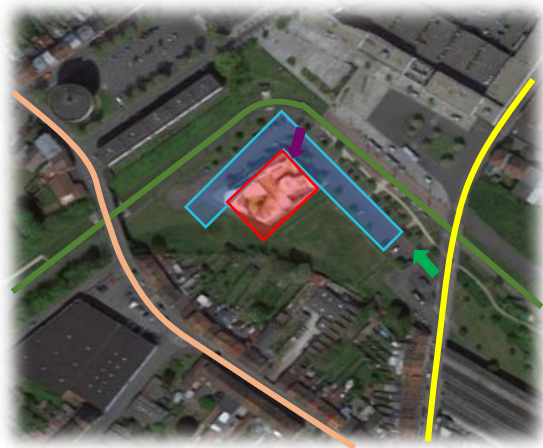
Dominique Coulon Architect recently completed this new multimedia library In Anzin, a small town in the north of France..

-  "Anzin" multimedia library project
-  Place « Roger Salengro »
-  Municipal Theater
-  Town hall
-  Individual housing
-  Collective housing



2)- accessibility :

-  "Anzin" multimedia library project
-  Main Street
-  Secondary street
-  Railway
-  Car park
-  Project entry
-  Mediatheque entrance



3)- Integration in the site:

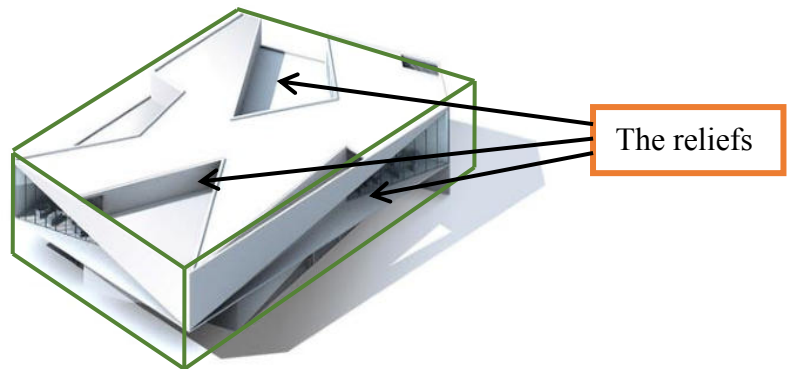
The project is well integrated into the site



The mass

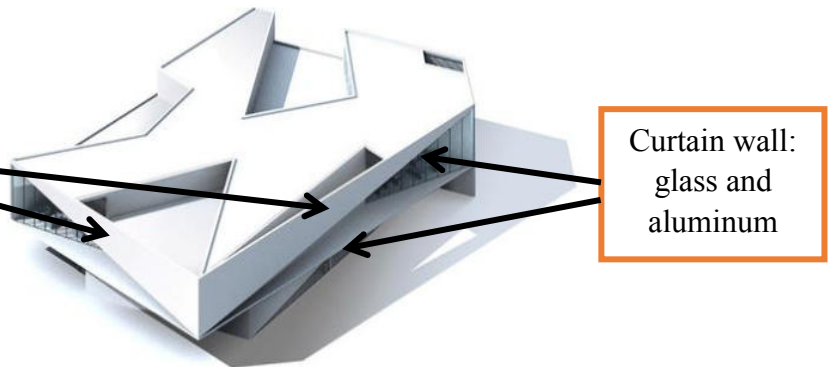
1)-volumetry :

The Mediatheque is shaped
parallelepiped with reliefs.



2)- envelope and material:

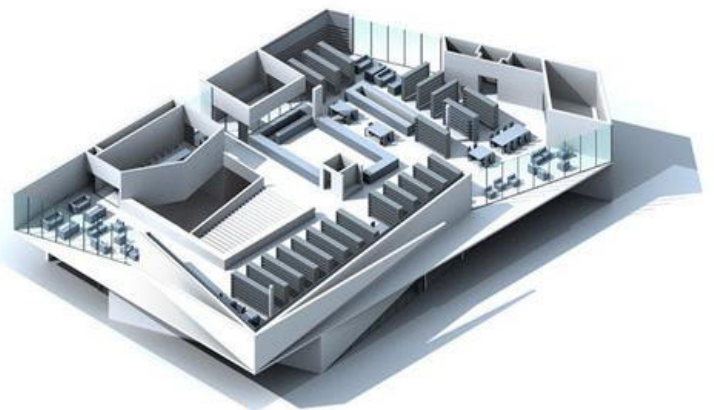
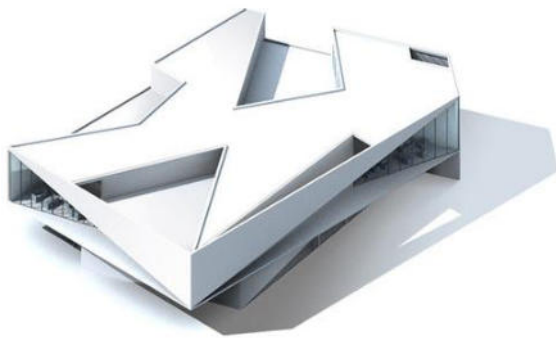
Large white sails that
reflect concrete light



The facade of the building is characterized by multi-faceted openings, flaps and folds and large sails that protect against direct sunlight and reflect the light inside.

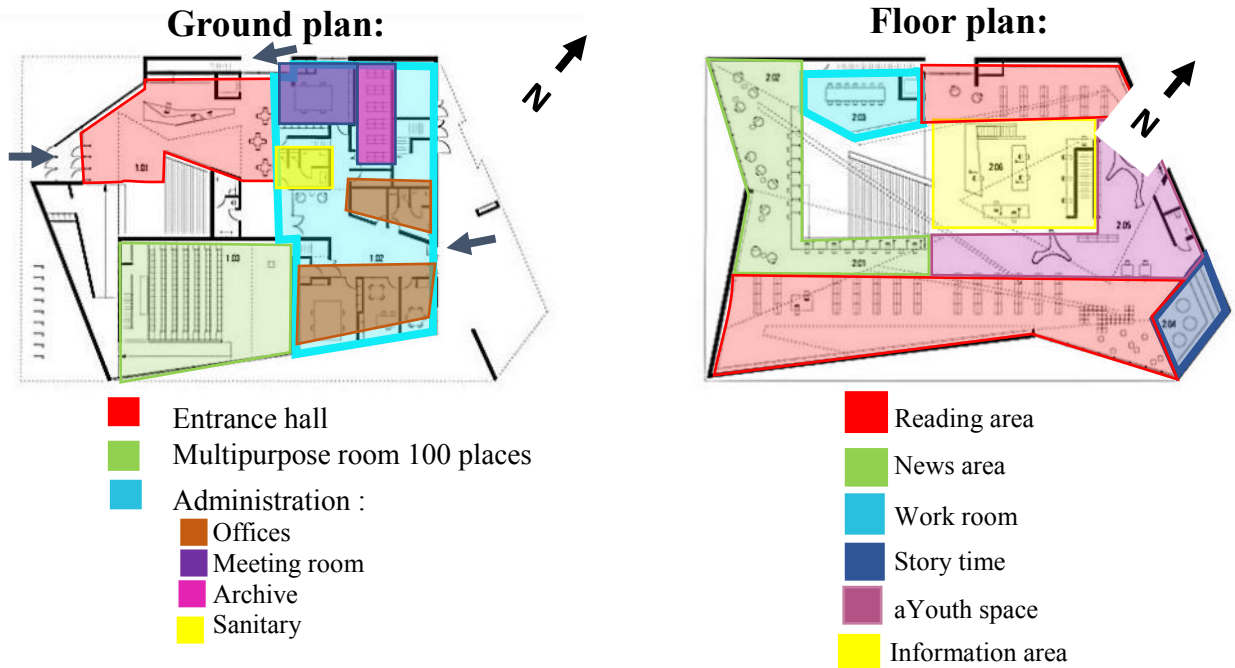
3)-structure :

- The structure is: bearing wall

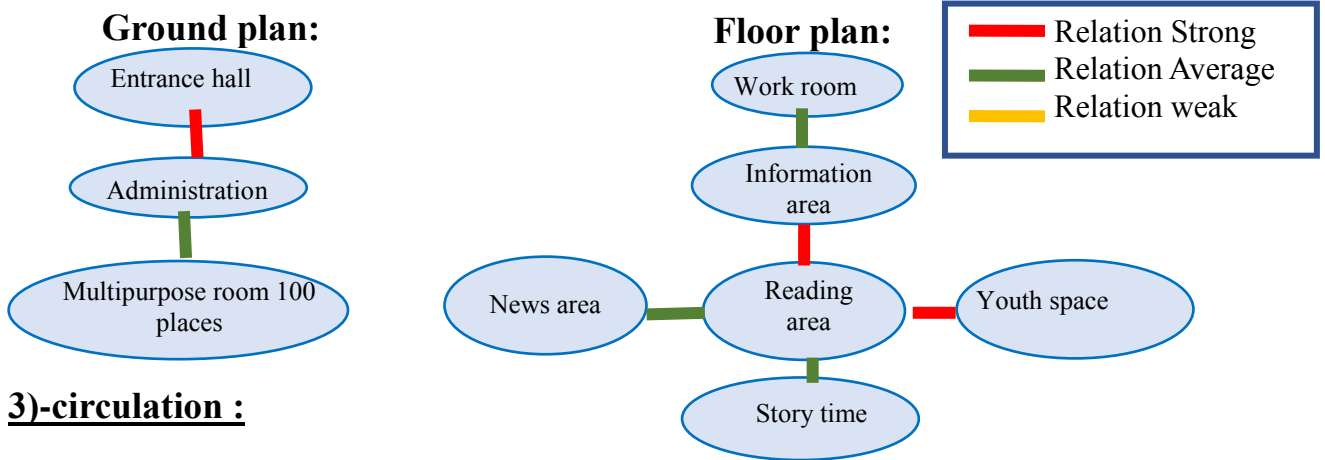


The Plans :

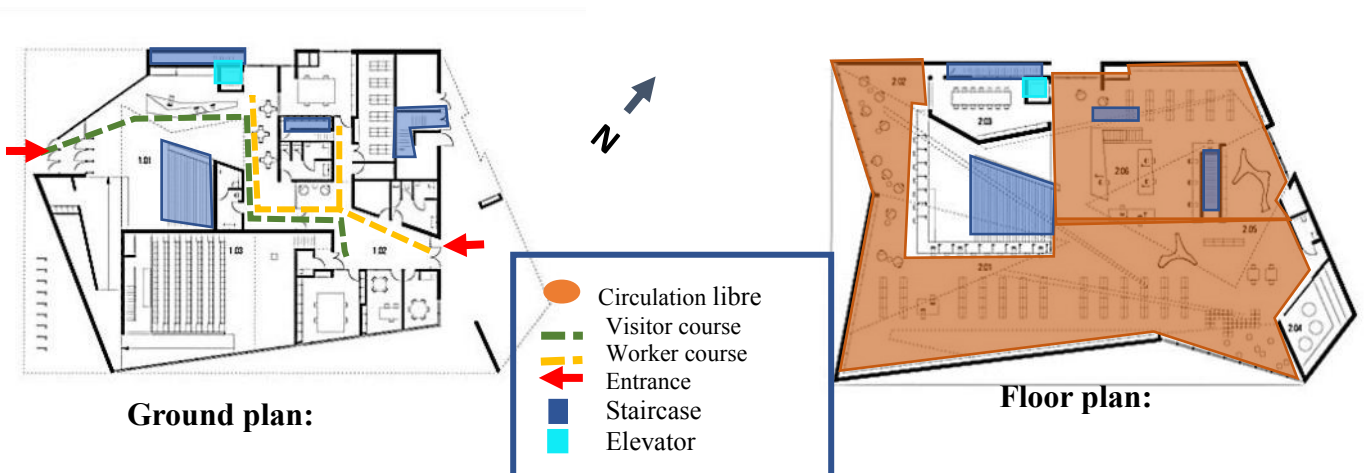
1)- spatial organization:



2)-organisation fonctionnel :



3)-circulation :



The views :

Interior :



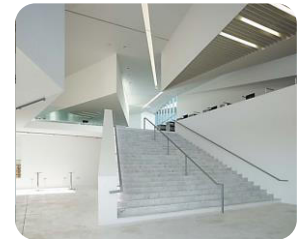
Entrance hall



Information area



Youth space



Main staircase



Youth space

-In the interior the light is abundant and homogeneous (natural lighting). Space is free and fluid.
- the large volumes that seem to float in the space is really beautiful and it gives a great poetry to the whole.



Multipurpose room

Exterior :



Summaries of examples:

The study:	Main points:
urban	<ul style="list-style-type: none"> 1-the project is located in a dense urban fabric. 2-the project gives an identity by its particular characteristics (the project becomes itself a reference element). 3-located in a mechanical axis that facilitates its accessibility (ensure good connectivity to users). 4-integrates the project into the urban fabric by: good orientation; the entrants ... 5-the media library must be an attractive monument and an urban element for the visitor
architectural	<ul style="list-style-type: none"> 1-the use of mono volume (simple volumetry) 2-diversity in building materials used 3-achieves a visual relationship between inside and outside 4-simple facade treatment through project design and orientation 5-organization or level of facades and openings
functional	<ul style="list-style-type: none"> 1-spatial organization organized according to the function of spaces 2-flexibility across the free plane (most indoor circulation is free) 3-the functional hierarchy of spaces according to the degree of calm 4-the separation between public spaces and internal spaces (technical and management)
Technical	<ul style="list-style-type: none"> 1-The use of natural and artificial lighting depends on the lighted space 2-use light colors to support natural lighting 3-the use of simple structural systems 4-the use of acoustic insulation in spaces that require calm

2. Qualitative program:

- The public library must provide documents in the appropriate media to assist with learning. It must also help users use these resources effectively, as well as provide facilities for the public to study. The ability to access and use information effectively determines the success of the study, and where possible, public libraries should, in cooperation with other educational institutions, teach how to use the information resources. Where adequate library facilities already exist to support formal education, the public library should complement them rather than repeating what else is already available.

The spaces occupied by the library / multimedia library must be specially designed for this purpose, adapted to the pace of work and functional. The efficiency and success of the service is largely dependent on a welcoming and physically comfortable environment.

- The objective of multimedia library is to meet the needs of a wide variety of readers, their collections includes in addition to traditional literature :

- Information on social services.
- Reference works.
- Records and videos.
- They organize conferences, debates and symposiums.
- Musical, theatrical or cinematographic performances, as well as exhibitions.
- Reading aids and cassettes for blind people
- Large print books for people with loss of sight ...

-In order to make our site a cultural hub, our library's role is to help raise the intellectual level of the masses to create the conditions necessary for the development of society

-The multimedia library :

- Designs the communication that ensures the meeting between the different social strata.
- Its mission is to encourage cultural and intellectual growth.
- It will complete the role of universities and bookstores (several booksellers are not frequented because of the high cost and lack of variety of books)

-The study of the content program of a media library has allowed us to identify three services::

- Public service
- Internal service
- Additional service

3. Quantitative program:

Service :	Secteur :	Espace:	N :	Surface unitaire (m ²) :	Surface totale (m ²) :		
Service publique :	Accueil:	Hall d'accueil	2	60	120		
		réception	2	30			
		Inscription	2	30			
	Exposition:	Exposition Temporaire	1	200	200		
	Salle de lecture :	Section Adulte:	Espace de lecture	1	160	750	
			Espace jeunesse	1	100		
			Rayonnage	1	160		
			Espace de périodique	1	100		
			Espace de travail en groupe	4places	8		10*8
				6places	6		15*6
			Espace de recherche	1	60		
		Section enfant:	Espace de lecture	1	140	1050	
			Rayonnage	1	100		
			Espace de périodique	1	120		
			Espace de travail en groupe	4places	4		10*4
				6places	6		15*6
			Espace de projection D'animation	1	60		
			Heur de conte	1	60		
			Atelier	ludothèque	1		100
	Salles d'arts			1	50		
	Salles des cours		musique	1	60		
		Langue	1	30			
		Informatique	1	30			
Sanitaire :	3H-3F	6	30				

Service :	Secteur :	Espace:	N:	Surface unitaire (m ²) :	Surface totale (m ²) :	
Service interne:	Administration:	direction	Salle d'attente	1	20	290
			Bureau directeur	1	30	
			secrétariat	1	15	
			Bureau assistant	1	20	
			Salle de réunion	1	30	
		Bureau relation extérieur	1	20		
		comptabilité	2	20		
		Bureau chef de personnel	1	20		
		archive	1	80		
	Sanitaire:	5H/5F	1	15		
	Logistique:	Atelier de maintenance et entretien		1	60	240
		Atelier de restauration et reluire		1	60	
		Magasin de livres		1	60	
		approvisionnement		1	60	
	Locaux techniques:	groupe électrogène		1	20	100
		chaufferie		1	20	
		Local gaz		1	20	
		Local eau chaude/ froid		1	20	
Climatisation		1	20			

Service :	Secteur :	Espace:	N:	Surface u (m ²) :	Surface T (m ²) :	
Service publique :	Auditorium:	hall	1	100	360	
		Cabinet de projection	1	200		
		dépôt	1	30		
		Local de service	1	30		
	audiovisuel:	Salle de music	1	50	570	
		vidéothèque	individuelle	12		8*12
			groupe	4		60*4
		audiothèque	1	80		
		Bureau de responsable	2	20		
		Cyber espace	Espace internet	1		80
			Traitement texte et image	1		20
	initiation		1	40		
	Sanitaire:	5H/5F		1	30	
Annexes :		cafeteria	1	200	200	
		archive	1	200		

Chapitre IV: Conceptual approach

Site analyzes :

1. Motivation of the choice of site:

The criteria of choice of land are:

- A high density of population
- The site is near important areas in urban agglomeration.
- A high density of complementary equipment "CEM, Bachir ben nasar hospital ..."
- Near to an educational equipment (CEM Mostafa Achouri)
- Land accessible by two mechanical axes
- The lack of cultural infrastructure in the eastern area of the city of Biskra.
- Sufficient space to implement the project.

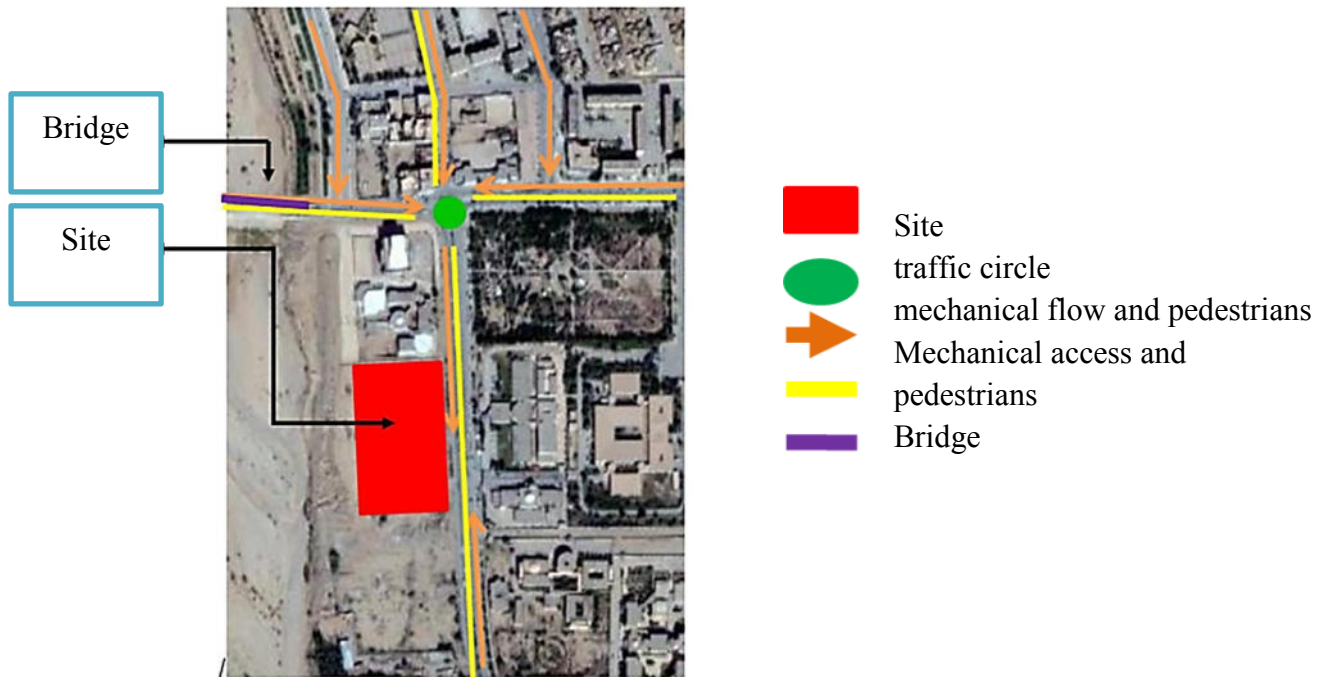
2. Land situation in the city :

The proposed site is located in the city of Biskra "the Northeast area" next to the valley "Sidi Zarzour"

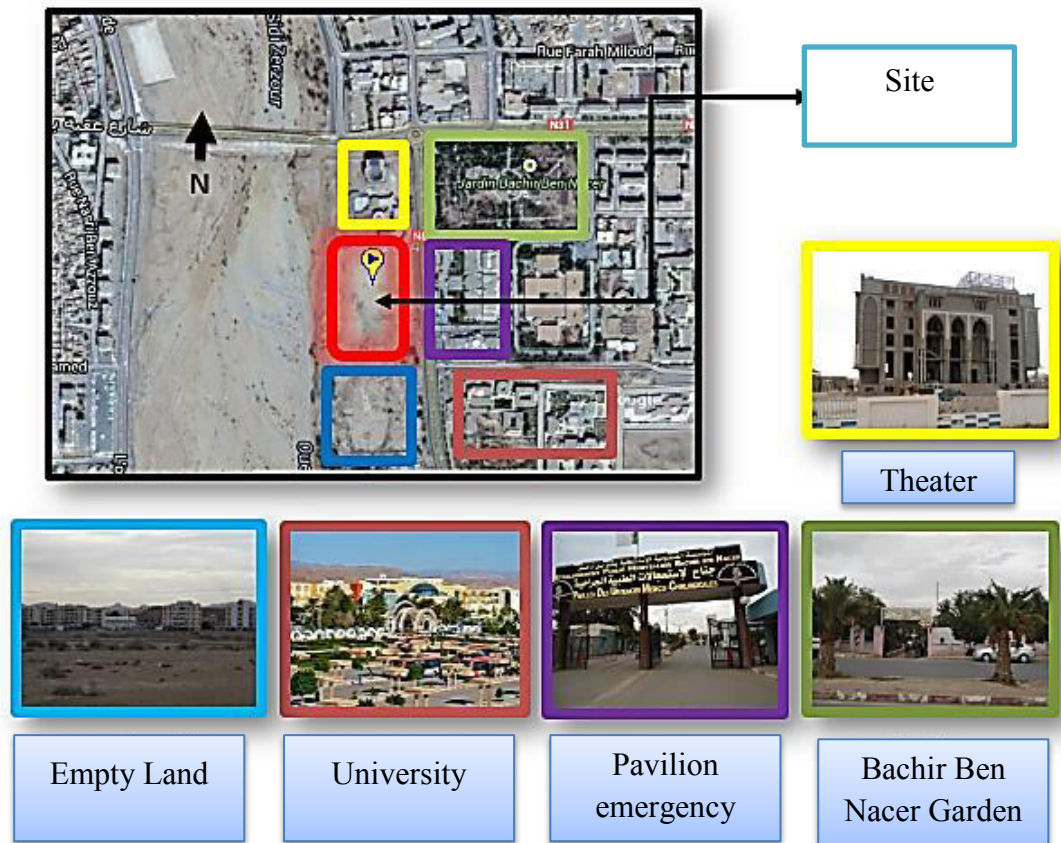
The Project
site

3. Accessibility :

The land is located in the intersection of two main mechanical lane (N83-N31) which has an interesting mechanical flow.



4. Neighboring equipment::



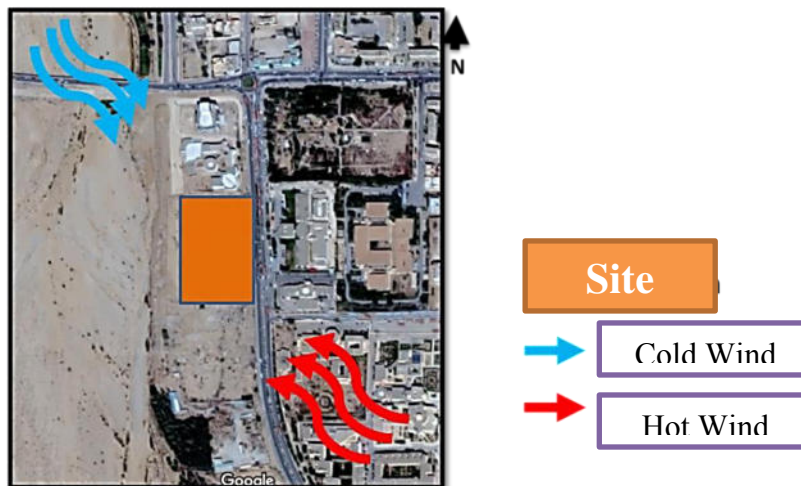
5. The vegetation:

There is vegetation in the site. A palm grove has south side of land and shrubs in the sidewalks and opposite the land there is the public garden.



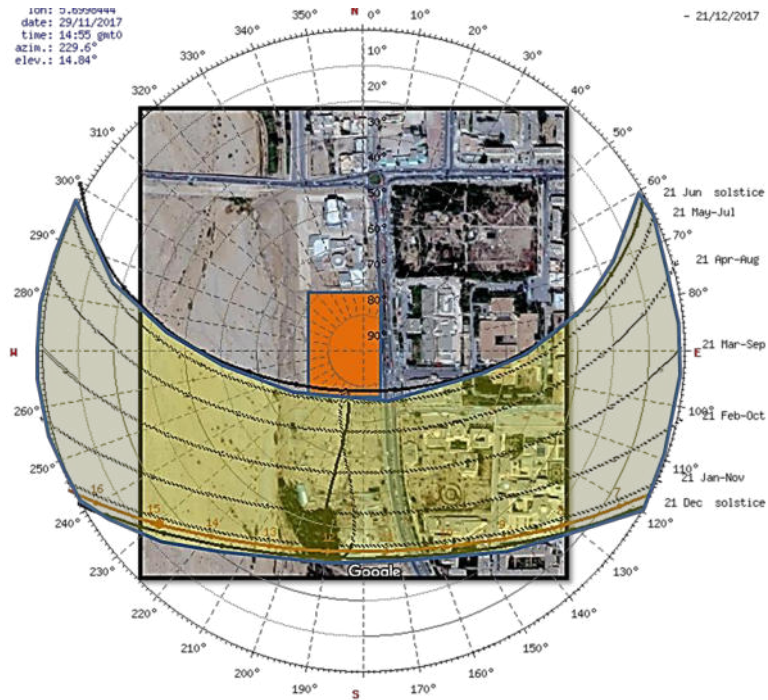
6. The winds :

The land is exposed to hot and cold winds directly.



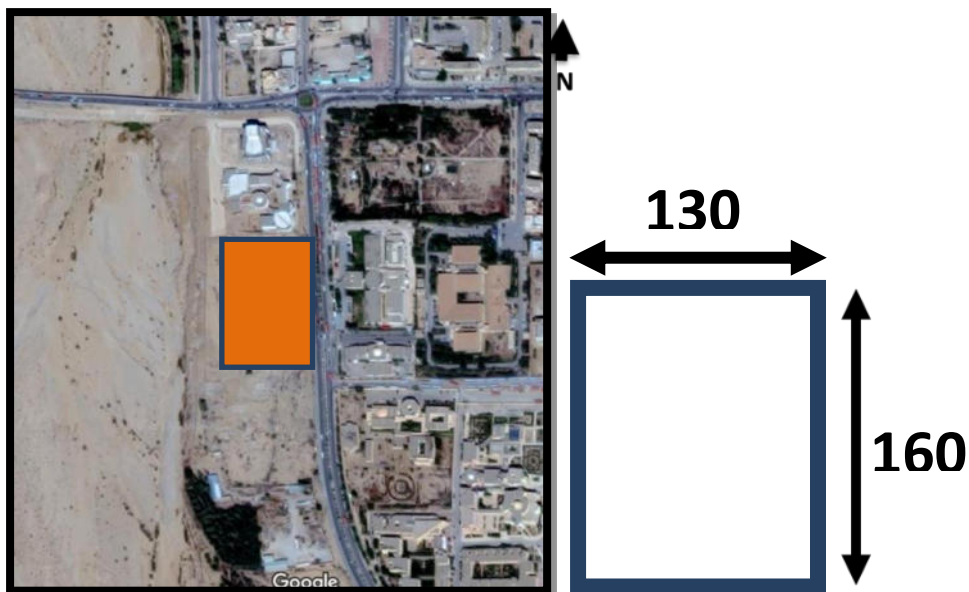
7. Sunlight :

the ground is exposed to the solar radius of the three sides (there are no constraints that prevent the sun's rays from reaching the ground).



8. Morphology:

- The terrain shape: a rectangle parallel to the mechanical way
- Field dimensioning: 130m / 160m
- Land area : 20800m²



9. The temperature :

During the period (1984-2009), the lowest monthly average temperatures are recorded during the month of January (11.6 ° C). The average monthly maximum temperatures are recorded during the months of July and August with respectively 34.3 ° C and 33.9 ° C.

Mois		J	F	M	A	M	J	J	A	S	O	N	D	Moy
Tp (°C)	1984-	11.6	13.6	17	20.7	26.1	31.2	34.3	33.9	28.9	23.1	16.5	17	22.82
	2009													
	2009	11.9	12	15.9	18.5	26.2	32	35.8	34.7	27.1	22.9	16.8	13.1	22.24

Table1 : Average monthly precipitation (mm) in the Biskra region during the period (1984 - 2009) and in 2009

10. Relative humidity :

The relative humidity varies between 26% in July and 59% in December, while during the year of study (2009) averages vary between 25% in July and 67% in January.

Mois		J	F	M	A	M	J	J	A	S	O	N	D	Moy
HR %	1984-	57	48	42	37	33	29	26	29	39	46	53	59	41.5
	2009													
	2009	67	52	49	44	32	26	25	26	52	46	47	62	44

Table 2 : Average monthly relative humidity (%) in the Biskra region during the period 1984-2009 and in 2009..

11. Rainfall:

During the period (1984-2009) the rainy period extends from September to May. While during the year of study a rains irregularity is noticed with a peak in January with 48.9mm, (Table 3)

Mois		J	F	M	A	M	J	J	A	S	O	N	D	Cumul
P	1984-	19.4	9.1	14.7	12.7	11.3	4.1	0.7	3.9	13.9	10.8	17.5	11.4	129.5
	2009													
	2009	48.9	11.4	16	12	15.7	0	4	0	47.7	0	0.3	13.8	169.8

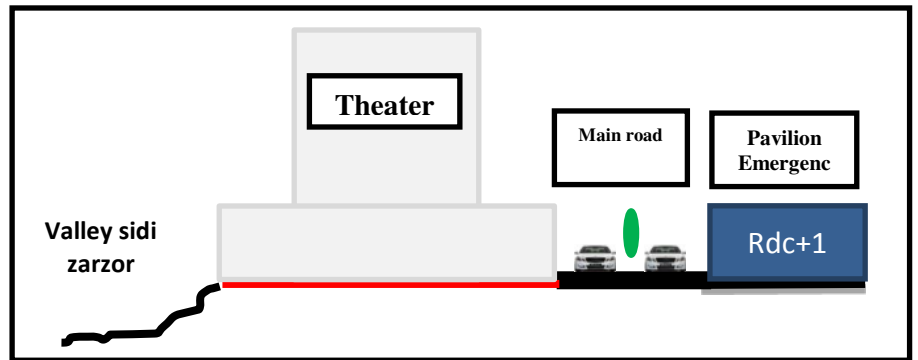
Table 3: Monthly mean precipitation (mm) in the Biskra region during the period (1984 - 2009) and in 2009.

12. Topology:

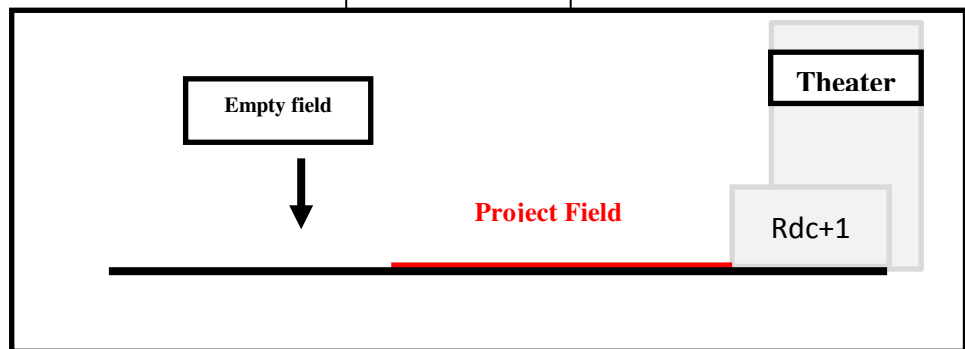
The field topology is flat



-plan-



-section AA-



-section BB-

13.Syntheses :

- Our land is located next to valley "Sidi Zarzour" so we need to create a vegetation that separates between the wadi and our project to avoid "sandstorms" and at the same time for the shading of the side facade Where is.
- The design of the west façade should be distinctive to attract pedestrians crossing the bridge and pedestrians on the other side of the wadi.
- The terrain in context The presence of two important mechanical axes RN 83 and RN 31 allow easy accessibility and good servitude.
- There is a centrality of vision towards the roundabout and opening of sight towards the other mechanical ways. So, for a picturesque reading the main facade should be oriented to the northeast "towards the roundabout"
- The field well exposed to the sun "need sunscreen is, south and west"

1. The passage elements:

1- According to the theme Festive light:

Media façade : use of Media façade that contains photovoltaic panels at the East and West facades that control the weather conditions outside "wind. Outside temperature and more exposed to the sun... »



FIGURE 1: GREENPIX: ZERO ENERGY MEDIA WALL.

Source : ArchDaily.

Contour lighting: use of contour lighting in the north and south facades to make a play of light that marks the play of spaces within the project



FIGURE 2.



FIGURE 3:

2- According to the analyzes of the examples:

The simple form: the form of all the examples that was analyzed is a simple form



FIGURE 4: MEDIATHEQUE OF SANDAI.

FIGURE 5: MEDIATHEQUE MARSAN.

Transparency: for a visual relation with the outside "visual comfort" and for the exploitation of the external views:



Urban lantern: use the light at night as a lantern for the attraction of people



3. Genesis of the project:

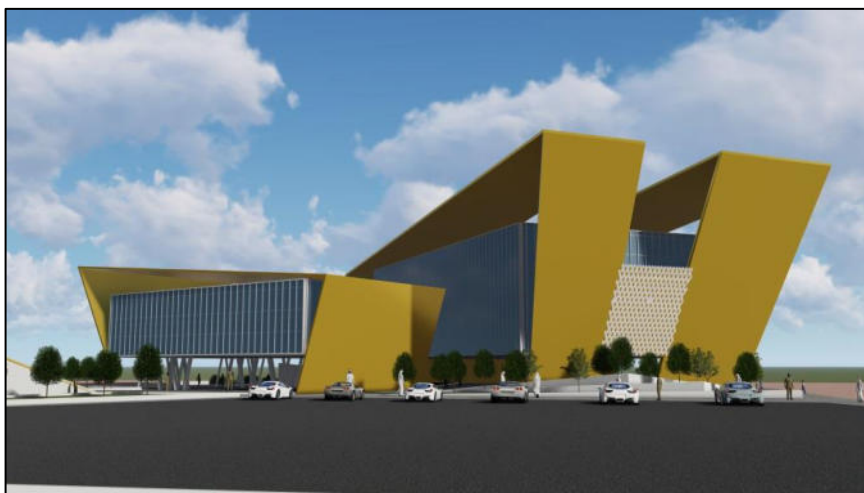
3.1 The Idea :

The design idea of the project lies in the basic function of the project in moving the person from the darkness of ignorance to the light and we see this in the gradient of blocks from below the horizontal level of the floor towards the height of the ground level

I also highlighted the nature of the project “ Multimedia library “ as a development of the library of the dimensions of blocks and processing

4. Application du thème sur le projet :

Media facade application in the east façade of the project .



Before



After

Transparency :



5. Presentation of the project's graphic document:

Location map:

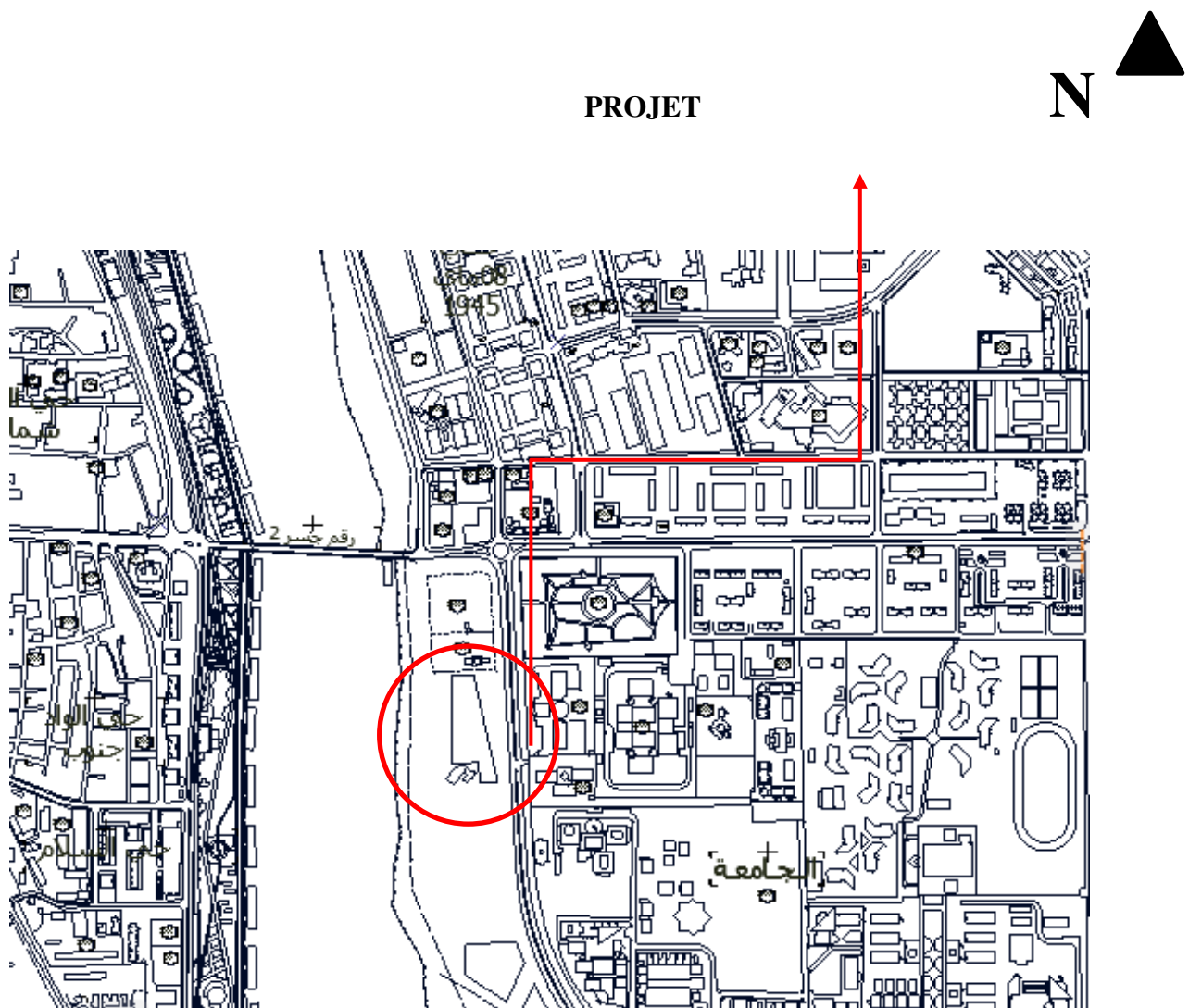


FIGURE : SITUATION PLAN .

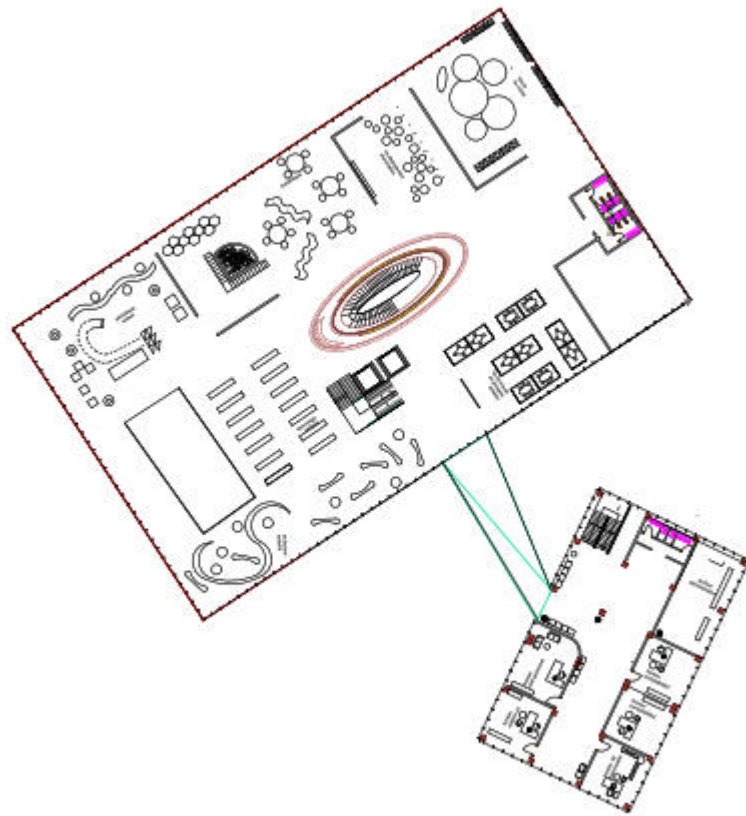


FIGURE : First Floor Plan .

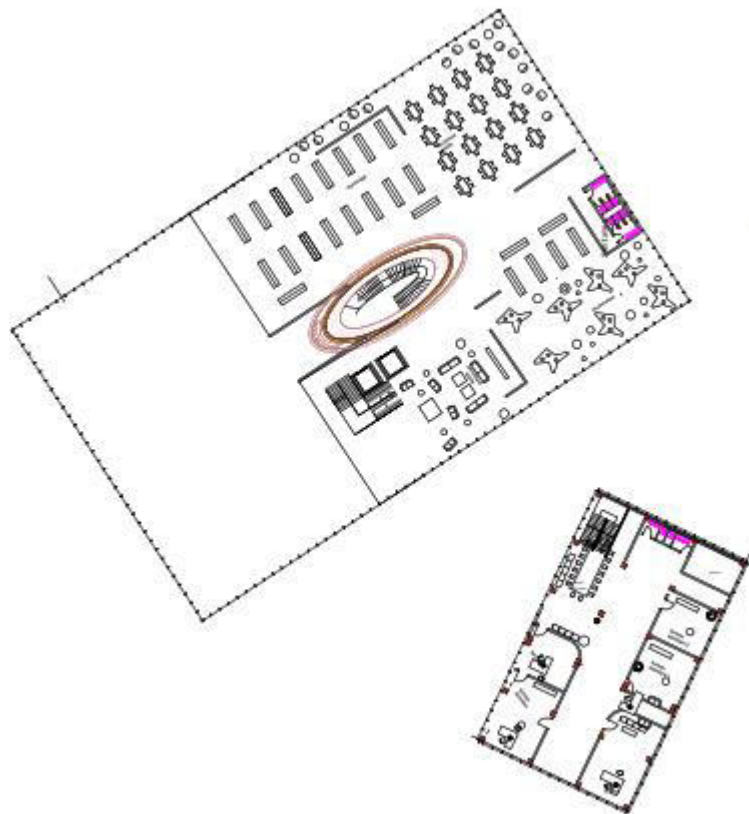


FIGURE : Second Floor Plan .

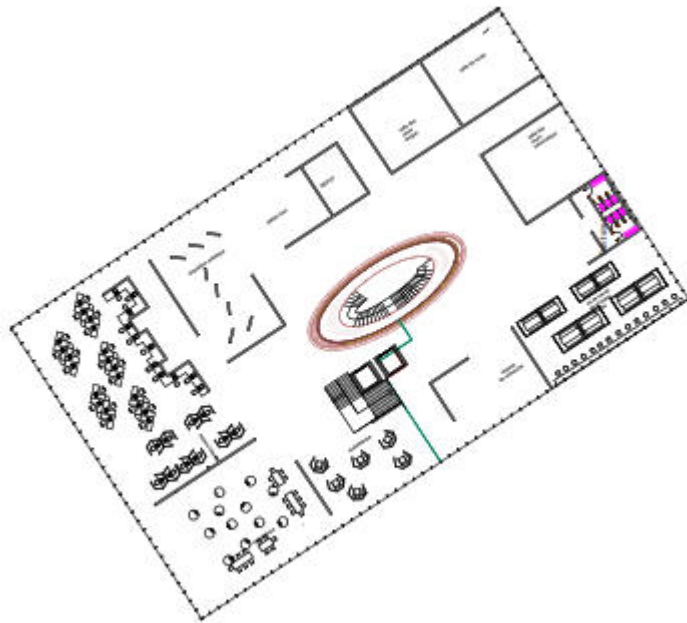


FIGURE : Third Floor Plan .

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