MASTER THESIS SUBMITTED TO

Hochschule Neubrandenburg- University of applied sciences - Department of Landscape Science und Geomatics.

Master of Engineering Landscape Architecture and Green Space Management.

Neubrandenburg- Germany

"The Public Squares".
(Aleppo –Syria as a case study)

August 2019

Approved as to style and content by:

- Prof. Dr. Caroline Rolka

- Dr. Mohamed Faisal Al-Kazee

- Arch. Rim M Khanji

Submitted by: Oula Joukhadar

urn:nbn:de:gbv:519-thesis 2019 - 0455- 8

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ACKNOWLEDGMENTS

Abstract

The research aims to address the importance and the meaning of public square in different cultures and the influence of culture on the production/construction of public squares.

In addition, the research will present also the historical and contemporary theories about public squares, and characteristics of successful public squares.

So the result is, an attempt will be made to apply these theories to Aleppo city center Squares, in order to obtain an appropriate design solution.

Urbanization and development of cities are necessary for contemporary society, however, these advancements are also causing urban problems, such as lack of open green space, density problems, traffic problems, and overpopulation. Also, there are some buildings that were designed in the past need to add new components to fit the present and the future.

In brief, open squares and streets for pedestrians have been decreased. Expansion of buildings, reduction of streets, and degeneration of urban squares have started to diminish the space for public activity in addition to huge using of technology with different generation in every space in the cities in this time.

Thus, the objective of this study is to reconsider the concept 'urban squares' in cities and The study includes analyzing a connection between urban space and architectural space, in conclusion, the study will be used to suggest a new solution for the public square to connect between certain types of people in the same place and add pleasant in the sociality by adding new activity in the public square that not existing in the past.

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1- INTRODUCTION

2- Public square in society

3- Square related to architectural space

4- Aleppo, Syria as a case study

Chapter 1: Introduction

The study reflects the life in the public square is beneficial to people and societies and; that a good balance between private and public life is necessary for an interconnected society. Public life offers comfort from the stresses of life and provides an opportunity for relaxation, social interaction, entertainment and furthermore represent the aesthetics of a city.

There is a great concern over the disappearance of public square worldwide, as many of these square convert to parking space or less management. The lack of public square may not be the most important problem of a poor neighborhood, but overcrowding inescapable refuse the enjoyment of the square (the availability of larger spaces for children to play, the possibility of relaxing with more comfort in the urban square). These squares have become instead, centers of trade and shopping areas.

In addition to that, the extravagant influence of social media in individuals' lives has caused our community to change towards more privatization and isolated life. At this point, the role of the public square in the community has become more significant.

This thesis raises the issue of considering public squares and how urban public squares can encourage citizens to increase the connection between their space. Starting with a description of a clear definition of the public square and urban squares. Thereafter, the study addresses effectual functions which can help to reach the successful design of an urban public square.

The project as a case study transformed an empty space in Aleppo, Syria into a truly public square that reflects daily lifestyles and attitudes characteristic with Respect for the historical character of the space is a prime objective.
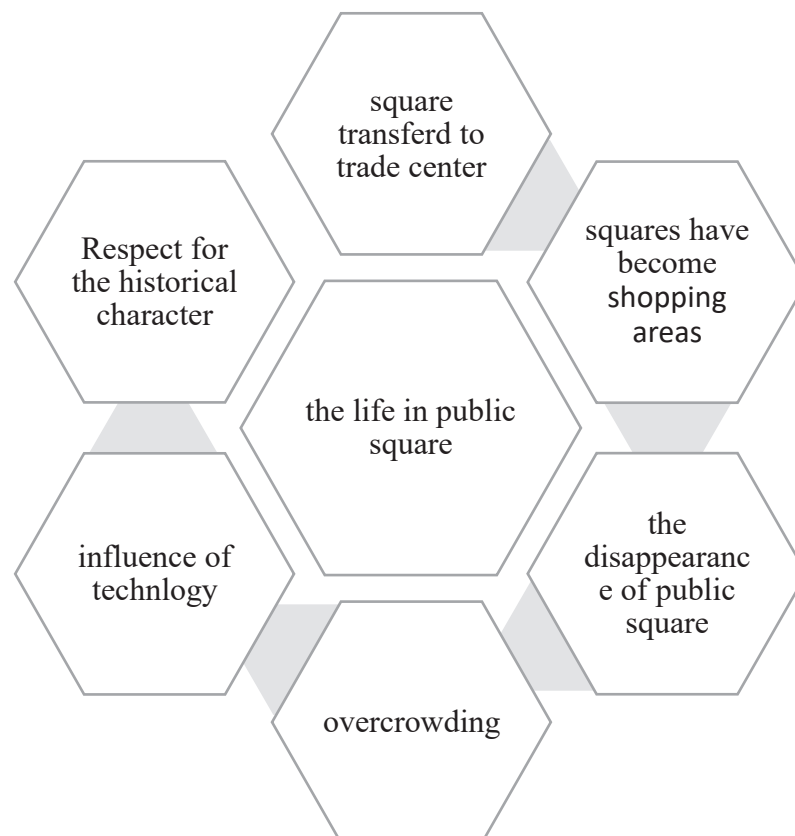
1.1- Project objectives and aims

1.1.1-Purpose of the Study:

The purpose is:

improve the life and its activities in public squares

design public square for today's environment

experience a strong feeling of location.

know how to revive unused squares
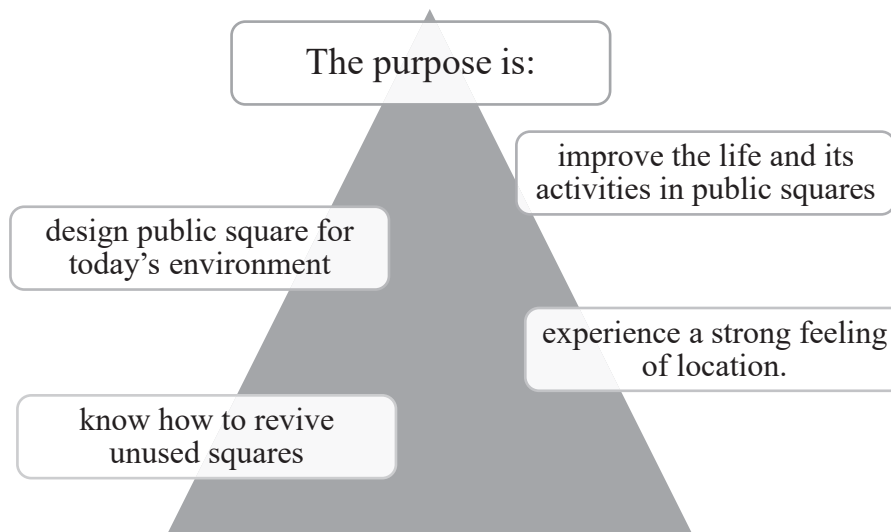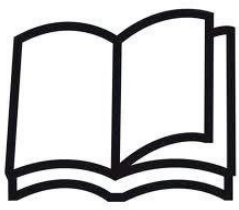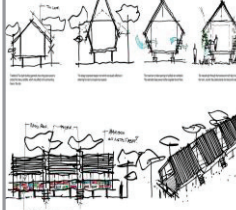
1.1.2 - Research Question:

1.1.2.1- The thesis discuss to answer these questions:

1. what is public square and how started to develop during the time?
2. Which factors encourage social interactions?
3. how we can create a new square in the center of the city?

1.1.2.2- The objectives are:

- to analyses what is important in order to design a public square Through the literature review.
- to interact with people with the urban environment and with urban squares by adding the activities that they need it.
- to make an image of populations' needs in Aleppo after the war.
- to present a proposal design, analyses a case study and project location to encourage the people in Aleppo to participate in the public space.

literature review	adding the activities	populations' needs	proposal design

1.1.3- Structure:

As seen in the below figure, the first chapter (1) of the thesis discusses the background of studies, the purpose of the research and it also contains research questions.

The methodology of the research in chapter two (2) The concept of the public squares and their importance and historical development.
At the end of this chapter, the literature review illustrates the definitions of public squares and also describes the patterns of the urban square and how it developed through the times.

The third chapter (3) is divided into two main sections; <u>first:</u> the ten principles to design public square Focus on the elements and criteria of the urban design of the public square.
<u>second:</u> The Relation between square and surrounding elements contained the engineering and planning roles, in order to design and coordinate the living and environmental characteristics of a certain square.

Chapter (4) is related to a case study in Aleppo that has been chosen in order to understand important and influential factors about social needed in an urban square including a historical overview of the city of Aleppo, location and geographical boundaries, urban and planning developments of the city of Aleppo, an analytical study of the squares in the city of Aleppo.
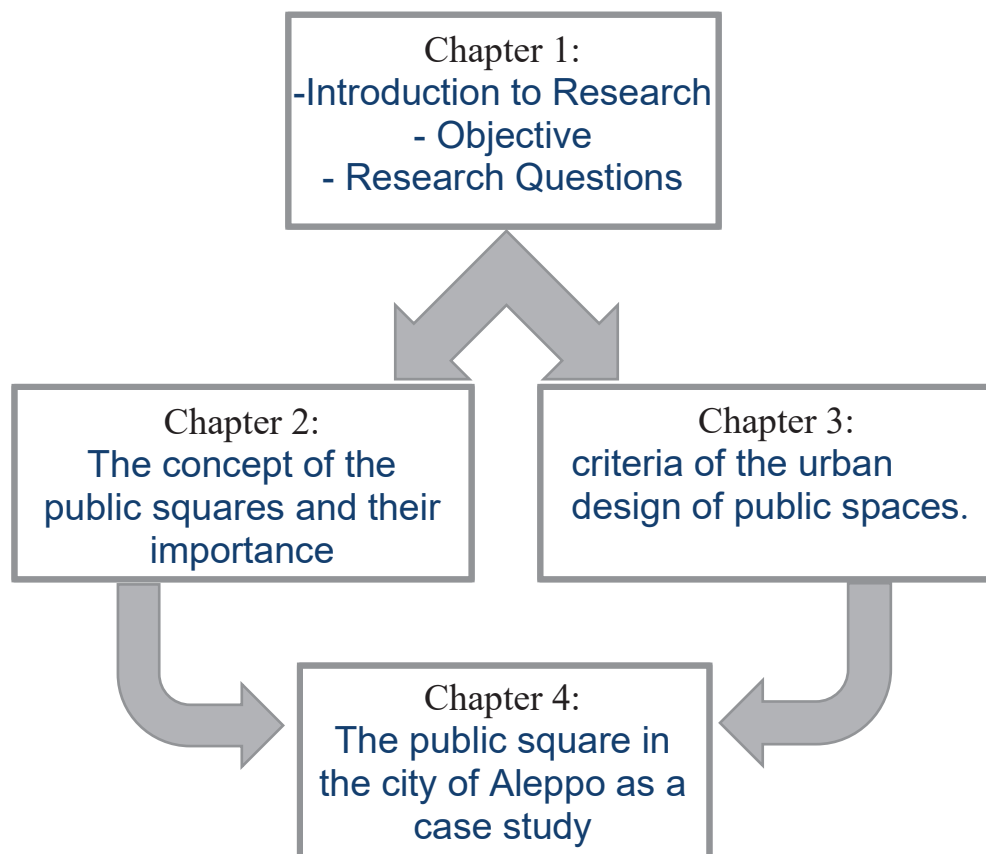
1.2- Research Methodology

1.2.1-Choice of Methods:

This issue needs to reach a clear definition and a clear framework; therefore, I have employed a literature study to determine the research design.

The methodology used in the research logical and sequential, noting the start to define the public squares as a spatial space with characteristics, types and specific classification and then move to talk about the design of the public squares and what standards, foundations, and elements used in the design.

1- to reach a clear framework	2- define the public squares	3- design foundations of the public squares	4- choose a case study start with site analysis
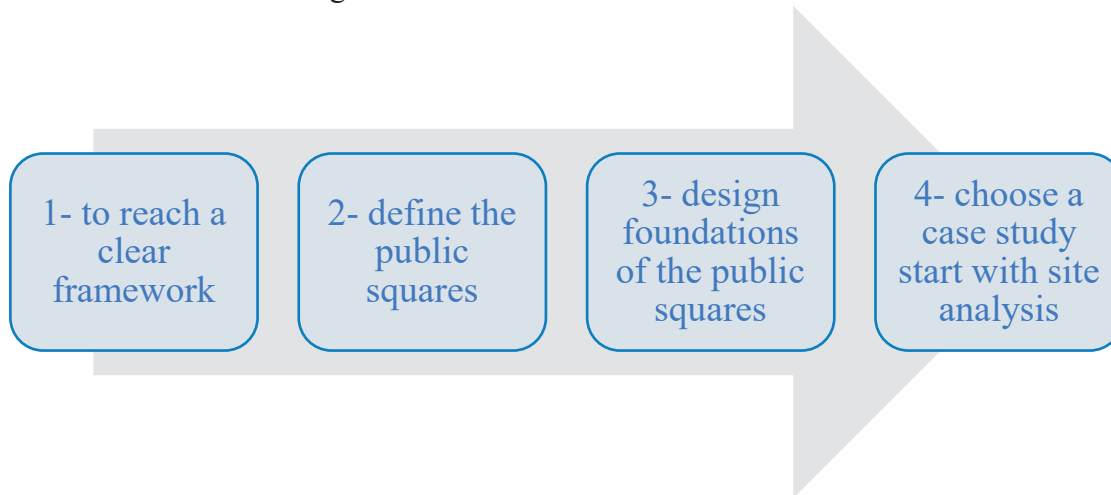
1.2.2- Practical Study:

Observation as an important empirical method can be used to realize the unique characteristics of a space.

By observing the segments of the spaces, I can have a clear perception of spatial form, and how space is utilized. In addition, considering the quality of activities occurring in the squares is another significant issue which can be examined in this way.

This method makes it possible that we can establish a closer connection with the space environment in Aleppo-Syria. Attendance at a space makes it possible to achieve new ideas that have not been mentioned in the past.

1- observation	2- know how the space is utilized	3- considering the quality of activities	4- closer connection and new ideas
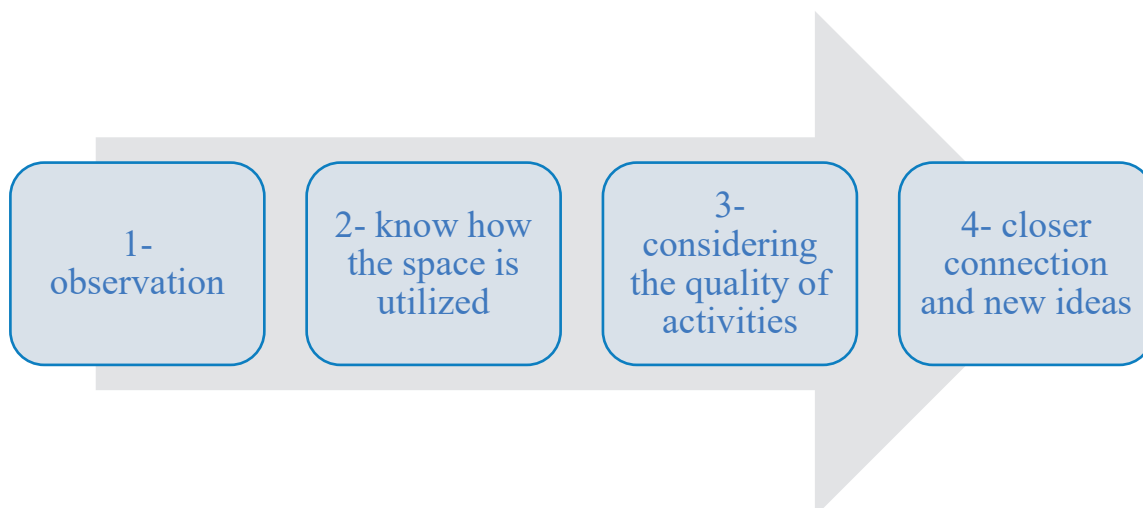
Chapter 2: Public square in society

2.1- Understanding Public Squares.

2.1.1-What is a Public Square?

In general, it is an empty space inside the city. It is made up of a floor, surrounded by buildings, and has openings to access the square. [1]

The role of the public square, as *Palladio (1997, p.193)* mentioned, is as a place in which people can gather to carry out a business which is essential and useful to their needs; and they are used for various purposes. [1]

As well as, giving people the opportunity to walk, to use wide spaces left open refine them when they are located at the end of a street in a beautiful place. [1]

squares are a significant element of open space in cities and their shape is created based on nodes of pedestrian passages or roads. [2]

In this space, social interaction for personal purposes has been happened based on people gathering and this figuration has a similarity to the living room in a house. [2]

This is a placeable to talk or share what they are thinking just as they do in their living room, and its significance is confirmed by the high density of the city in contemporary society. [2]

Figure 1: show how public square connected with a different value in the society.

certain public square come into existence at a specific period. During the life of a square period, they may undergo a transformation or even disappear depending on social and economic circumstances. As an example *Place des Vosges*, originally designed as a royal square but later became a residential square. [1]

Figure 2 and Figure 3: Place des Vosges in Paris.

Other public squares, which have lost their functions as a gathering place or the center of the city, turn now as parking space. [1]

Modern public squares that result from zoning proposes the separation between the pedestrian path and the street network by a small empty square without any activities and don't give it any role so public squares so became of minor importance in city planning. [1]

type	Example
Changing from Walking space to traffic square Figure 4+5: Bab al-Faraj square(Aleppo)	
Modern public squares for cars. Figure 6: New York City square.	

2.1.2- Why is the Public Square called a "Square"?

The meaning of the word "square" is poorly understood, despite five centuries of literature on squares, from *Leon Battista Alberti* to *Camillo Sitte,* to *Jan Gehl*, in which squares are defined as "*gathering places under the open sky*". [5]

the main reason of calling it a "square" goes back to ancient Greek planning from the 5th century BC that When *Hippodamus* (architect and town planner) redesigned the city of Miletus by arranging the streets in a rectilinear pattern, in its center he allocated a few central rectangular blocks for the agora *(Wycherley, 1962, p.33)*. by the time the word "square" became a generic term referring to such public squares, independent of their geometric shape. [1]

2.2- Historical background: [3]

The first city showed 6000 years ago and city squares were created at the crossroads of trade routes.
the earliest example of today's public squares is the Greek "agora". It was an open place in the downtown area where political meetings and financial activities took place and for a wide range of social events, for example, athletic and musical amusements, theatre exhibitions and business activities *(Hölscher, 2007)*.

The geometric shape of the Agora was generally square or rectangle *(Zeka, n.d)*. the square has played a main role in urban life since Ancient Rome and this was much before the formation of the modern street or arranging modern planning.

According to *The Urban Culture Book* by *Robert Cowan (2005),* a square is defined as a closed rectangle contain walking and green space that is surrounded by buildings. So the importance of the walking role and social life is the most important benefit of a square. *"In all probability, the square was the first-way man discovered of using urban space" (Kerir, 1979, p.17).*
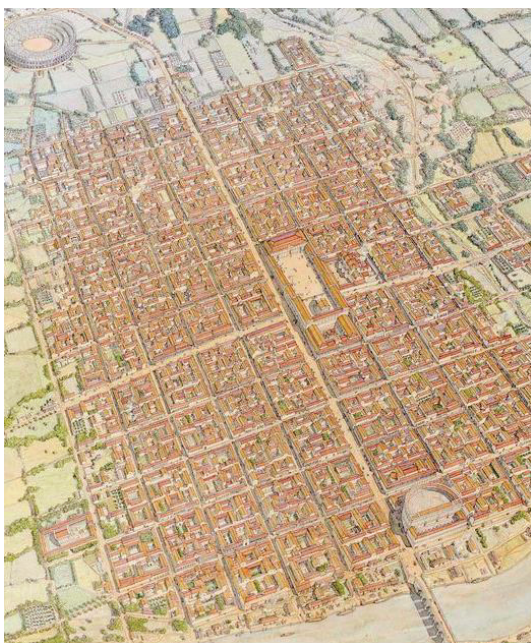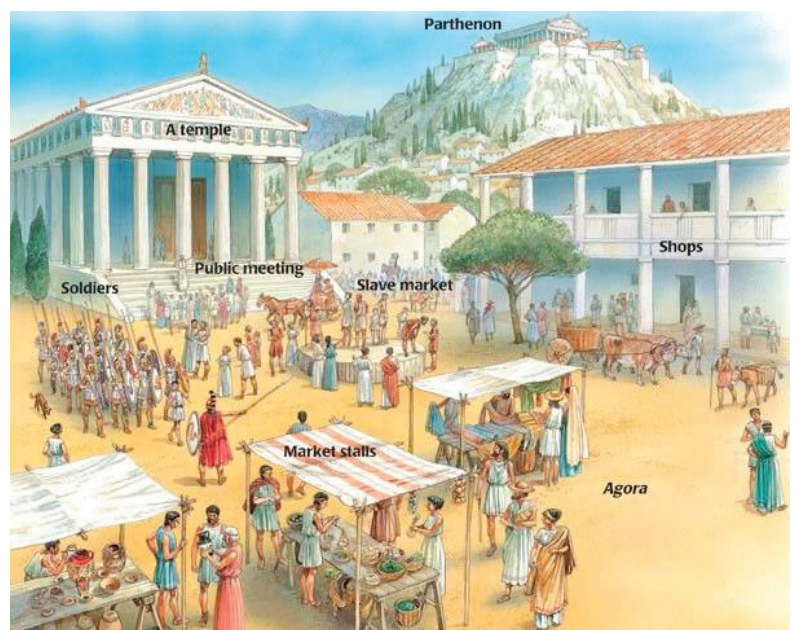

Figure 7: The geometric shape of the Agora.   Figure 8: the daily activates in Agora

2.3-Developing the public square through the times: [8]

"In ancient times… public squares, or plazas, were… of prime necessity, for they were theaters for the principal scenes of public life." Camillo Sitte. [10]

<u>Ancient Agora</u> with a concept of rectangular type had shown as a formation of public opinion, and the Roman E wanted to add a new image for the city.
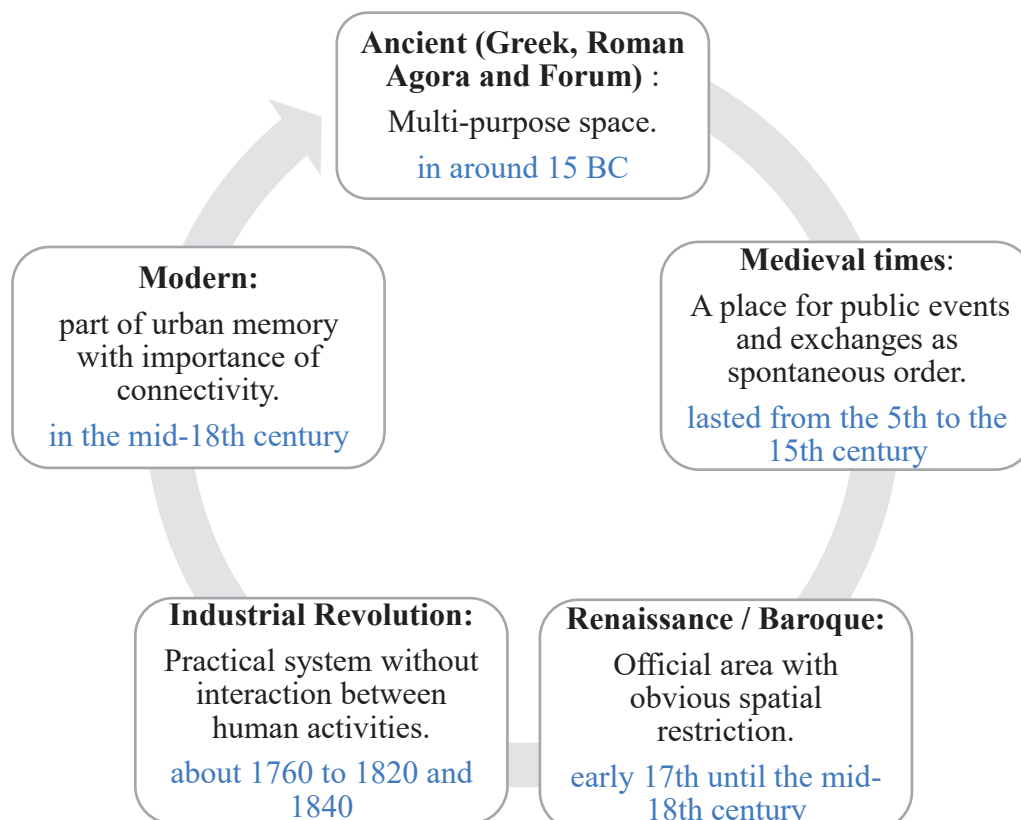
In the early part of <u>medieval time</u>s, squares with a characteristic of narrow and irregular form was a public event space due to awareness of a community with economical interacting. Also, it was a strong binder connecting city social with each 0other.

<u>In the Renaissance</u>, unfortunately, its role had not been developed as much as in previous eras, however, beauty function was used with the improvement of existing shapes while a number of grand scale squares were emerged based on other reason like political authority.

After the <u>industrial revolution</u>, streets and roads became wider and take a part of the public squares due to the increasing density of population and the number of vehicles and then the needed was changed from the concept of a square to the axis of streets in order to maintain new development system.
As a result of this, the traditional role for a vibrant life of the citizen and public square for interacting between individuals was lost of its meaning.

New means of transportation and the development of communication technology have been developed. since <u>the modern era</u> have begun, people activities has been spread. This sort of square has been changed from a central role to joining with streets and roads so we can conclude that It is no longer an independent wide place unto itself is but has become a place, which is important to the connectivity between human activities.

Ancient (Greek, Roman Agora and Forum) :
Multi-purpose space.
in around 15 BC

Medieval times:
A place for public events and exchanges as spontaneous order.
lasted from the 5th to the 15th century

Renaissance / Baroque:
Official area with obvious spatial restriction.
early 17th until the mid-18th century

Industrial Revolution:
Practical system without interaction between human activities.
about 1760 to 1820 and 1840

Modern:
part of urban memory with importance of connectivity.
in the mid-18th century

2.4- Definition of square types:

As time went on, it became clear that architects experienced in designing buildings do not have expertise in designing squares or the places between buildings. As *Edmund Bacon* writes in his seminal book '*Design of Cities*' many designers are *"space blind".* [4]
So these are the 6 types of public square :[2]

2.4.1- Open square:

This is a sort of property belonged to local government, therefore, it is connected or separated with public buildings as urban infrastructure, and also, it has openness between diverse classes of society.

This is designed for any kind of events with huge scale crowd and the size of it is as big as the population is in the city because of its function. However, the events are not frequent in a year, therefore, it remains a simple open space without definite activities and located in the city center.

Figure 9: "Saad Allah Aljabri square" Aleppo, Syria.

2.4.2- Commercial square:

This space is the most diverse public square which is opened to the user to buy or sell a product as a service space.

Department stores or shopping malls do not give a right for commercial activities to all people. In this case, this place is required to buy their product and then they offer a high-performance service area for people.
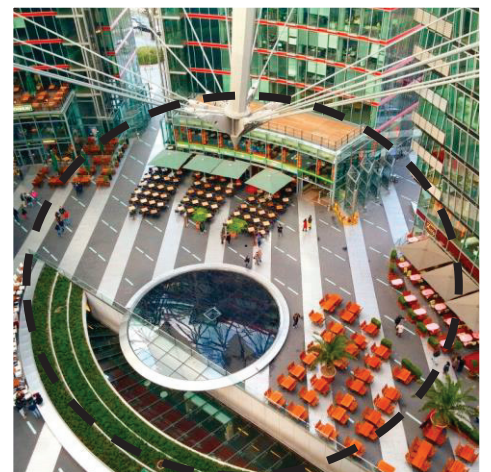
Figure 10: Potsdam Platz Berlin, it is looks like a center of Department store.

2.4.3- Privet square:

This is recognized between public property and commercial area and includes some cases that combine private areas and streets and a place (which used to be public area) transformed to the private section.

It is similar to the back yard of a house and there is no clear main access or entrance. Most of them exclude the characteristics of politic issues in this type of squares.

Figure 11: housing space and specific squares.
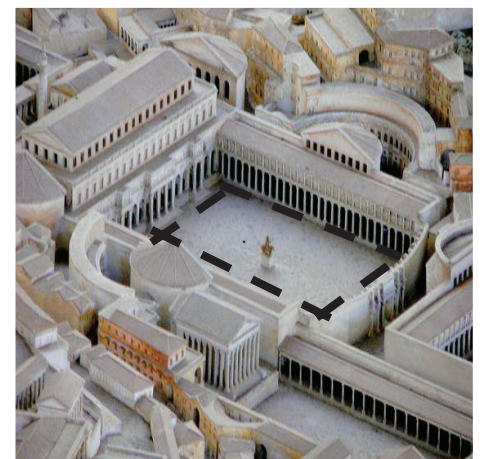
2.4.4- Flexible square:
contain all kind of public square for people such as political and commercial issues in mixed patterns. The best example that contemporary city cannot have generally like Agora square.

2.4.5- Traffic square:

It is placed on a node of crossing roads so that it is created for cars instead of a pedestrian. This is difficult for pedestrian to walk through or restrict, therefore, usually, it could be inhuman space so that it would be uncomfortable space for people to pass or sit in.

Figure 12: Al Sabaa Baharat, Aleppo, Syria

2.5-Understanding Urban Public Square: [2]

it is defined as an available place inside the city for the citizen. Especially in the European culture therefore, there are many cities, which have been developed based on this sort and the squares are very important elements and structure.

There are two types of urban public squares and have different names. The first one is called 'Plaza' is from Spain means wide road and the second one is "Platea" from France means street yard.

Figure 13: "Platea" is from France.

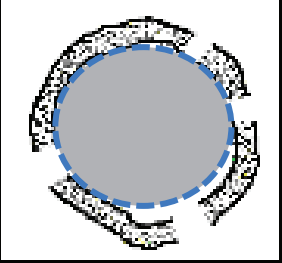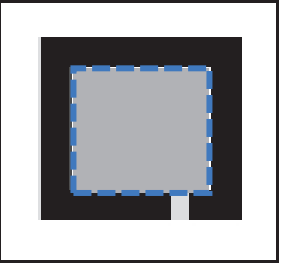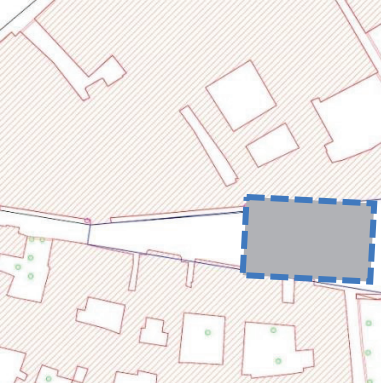Figure 14: "Plaza" is from Spain.

In brief, an Urban Public Square is communication place, also it could be a plaza for readers with several kinds of screens and share their thoughts and needs within such an open space as was done in the forum in ancient Rome.

2.6- Patterns of the urban square:

The form, type, and spatial features of square expressed based on depending on location, placement of form and composition of the plan these are categorized by six groups below: [2]

Type	Features	Example:
1- **Grid Pattern.**	1-High accessibility. 2-High connectivity.	Figure 16: Aleppo, Syria (Al Hatab square).
2- **Symmetric Pattern.**	1-Symbolic space. 2-Transition space, Similar to foyer in a theatre. 3-Continuity with urban space.	Figure 17: FONDI piazza della Repubblica
3- **Arc Pattern.**	1-square as a stage. 2-Continuity between urban space and stage as event area. 3-Irregular form.	Figure 18: TERRACINA piazza Garibaldi

4- **Centered Pattern.**	1-square similar to foyer in a theatre. 2-Higher connectivity with diverse direction roads. 3-The centrality by surroundings.	Figure 19: GRAMMICHELE piaz za Umberto.
5- **Closed Pattern.**	1-Closed form by building. 2-Higher psychological stability. 3-Semi-public square. 	Figure 20: Farhat square Aleppo,Syria.
6- **Amorphous Pattern.**	1-Flexibility of space. 2-Irregular form – Diversity. 3-Continuity with urban space. 	Figure 21: Aleppo citadel square

Chapter 3: Square related to architectural space.

3.1-How to make great public squares:

When we say 'public square' we have to ask some question to know what we need to design and choose the right location: [23]

- Are you protected as a visitor and cyclist against the vehicle, is the focus on the car or on the pedestrian areas?
- Is the squares' size suitable for crowded time (the comfortable sidewalk must be up to 13 people per minute per meter)?
- Are there enough shelters to protect against wind, rain or heat?
- Is it quiet enough so you can have a normal conversation (a noise level of 60 decibels is experienced as the maximum level)?
- Does street furniture support relaxing?
- Can you drink anything nearby?
- Is the square designed considering people with special needs?

The nine principles below are based on the hundreds of squares (the good and the bad) that had analyzed.

What emerges is the design is only a small part of what goes into designing a good square and it must take into account some factors for better success square.

1- Image and Identity.

2- Attractions and Destinations.

3- Amenities.

4- Flexible Design.

5- Access.

6- The Central Role of Management.

7- Getting the proportions right

8-Use all your senses. .

9- Trust the user experience.

Figure 22: a tool to help people in judging any place, good or bad.

3.1.1-Image and Identity:

In the past, squares were the center of the city, and it gave the identity of whole cities and adding a fountain in the middle or a statue was used to give the square a strong image. The image of many squares was taken from the great buildings located nearby such as cathedrals like St. Peter's Square city halls or libraries. [9]
The surrounding building and the color environment draw the identity and the character of the square to feel like you belong to this community and this place. [6]

Today, creating a square that becomes the most significant place in a city is a huge challenge because it must be coming from the city environment and the visitors needed and meeting this challenge is absolutely necessary if great squares are to return. [9]

Figure 23: St. Peter's Square. every step brings along centuries of history, art, and culture.

3.1.2-Attractions points: [9]

Every good square contains a group of activities or small places to attract the people and these places could be outdoor cafés fountains, sculpture, or a small platform for performances but the important thing is these places don't need to be very big.

In fact, best squares should respect people of different ages are using the space that why we need to use the idea of *"The Power of Ten"* to set goals for destinations within a square (game tables – kiosks – open-air cafes - children's play equipment - vendor cart – walking – eating – chess - relaxing, reading). As a conclusion, creating ten good places offers a full program for a successful square.

Figure 24: A hidden space in Manchester, London is being transformed into a vibrant city square, forming a new destination to attract people to visit, work and live.

3.1.3-Amenities: [9]

A square should have amenities and facilities that make it comfortable for people to use because it is the key to its success. That maybe considering in a small detail like a bench or waste receptacle just in the right location that will make a big difference in how people choose to use a place.

A square should provide easy and direct access especially for the old people, disabled and young children. Ramp slopes shouldn't be more 8.3% and handrails should be combined.

Figure 25: The series of steps and ramps are treated in natural stone with planting. This new topography integrates all pedestrian movement and allowing for different uses.

3.1.4-Flexible Design:

The function of a square changes during the day, week, and year and respond to this natural changing it should include the flexibility. [9] when we keep the design as simple and adaptable as possible that will allow for future enhancement of the space. [7]

Likewise, it is important to have on-site storage for movable chairs, tables, umbrellas, and games so they can be used at a moment's notice that's mean a successful square can't flourish with only one design. [9]

Figure 26,27,28,29: Great squares such as Bryant Park in New York change with the seasons (Skating rinks, markets, sitting area, park).
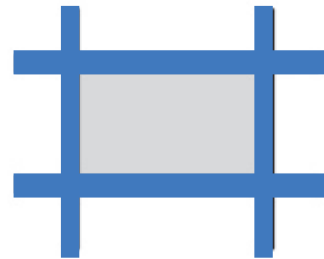
3.1.5-Access:

To get a successful square it needs to have easily accessible by foot and remarkable entries because the best squares are surrounding by narrow streets, well-marked crosswalks, lights determine for pedestrians and slow traffic. [9]

the Reaching to the square must be like an Octopus extending into the surrounding neighborhood, the influence of a good square starts when Vehicles slow down, walking becomes more enjoyable, and pedestrian traffic increases.

In the end, the access to the square should lead the people to go where ever they want and not restrict their movements and a clear hierarchy of streets and paths should confirm pedestrians, cyclists, and disabled to move around the square safely and quickly. [8]

therefore, there are 4 types of accessibility roads:

Type [12]	Shape
With 4 direction road: This place has high accessibility with four direction road. This type is shown grid patterned cities and noisy square comparing with others because it is Using for big events.	
With 1 or 2 direction road and buildings: This square is an entry place or attached place with building and it is for pedestrian or resting space.	
Beside of road: Main square and sub. it is Quiet and safe to pass through	
Isolated from the road: This has high accessibility with streets connected roads with silence.	

3.1.6-The Central Role of Management:

The first step to reach a good public square is maintaining and good managing, it is the way to response the needs of the sociality and the ongoing changes of the community.

That will happen when the waste receptacles get emptied at just the right time and refreshment stands are open when people want them. Good managers create a feeling of comfort and safety in a square because people feel assured that someone is in charge. [9]

Figure 30: this is an example in Japan to show people the important role of the cleaner.

3.1.7-Getting the proportions right:

Judging from *Portland's* experience, to attract the everyday social life needed and it is not easy to challenge may be in achieving right proportions which is the relationship between the width of the square, and the height of surrounding buildings because a narrow square with high buildings will feel claustrophobic and uncomfortable. [17]

According to *Alberti's* treatise *On the Art of Building*, "*A proper height for buildings about a square is one-third of the breadth of the open area or one-sixth at the least."* [13]
This results in a calm square because The buildings do not press on you, but it takes a step back to give you space and the sky cover it to let the sun-light go through. [17]

Indeed*, Kidder Smith*, [14] *Edmund Bacon*, *Michael Webb* [15] and many others have recognized that success squares feel you like you are in a well-proportioned room, theater, or a grand hall open to the sky. [17]
There is a golden angel to estimate building heights around the square. So *Jan Gehl* emphasizes that building heights framing public squares should be human scale, our angle of vision is 50-55 degrees above the horizontal. [6]
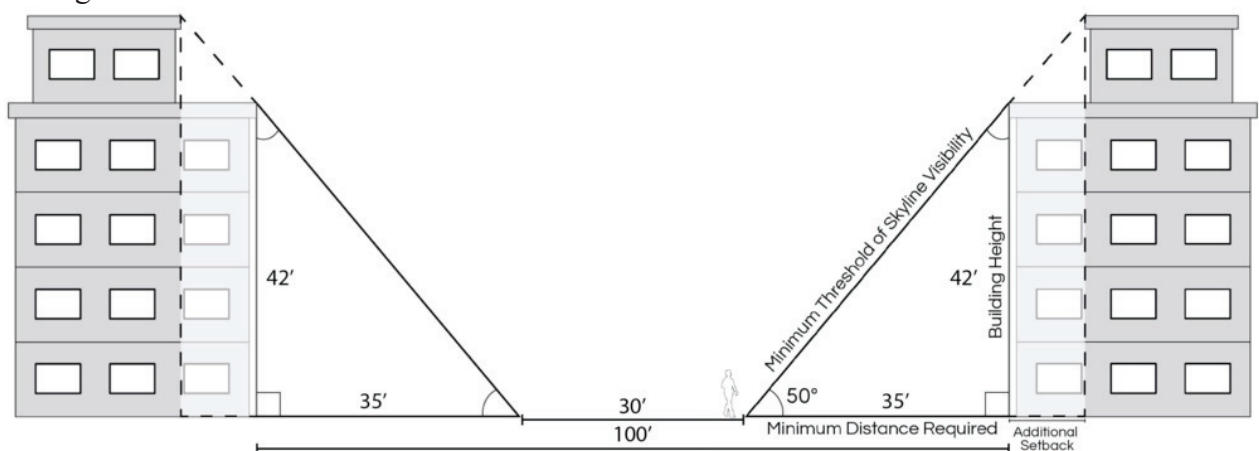
Figure 31: Appropriate proportions of square width and building heights. And Angle of vision. Within a short distance from the building, there is no view of the sky above buildings.

3.1.8-Use all your senses: [6]

As written in the book of Jan Gehl, figure 32 there are Five ways of facilitating or preventing visual and acoustic contact in order to encourage and enhance the user experience with sensory or physical disabilities to use smell, sound, and touch. In addition to that, a square should also provide easy and direct access to public telephones and information signs

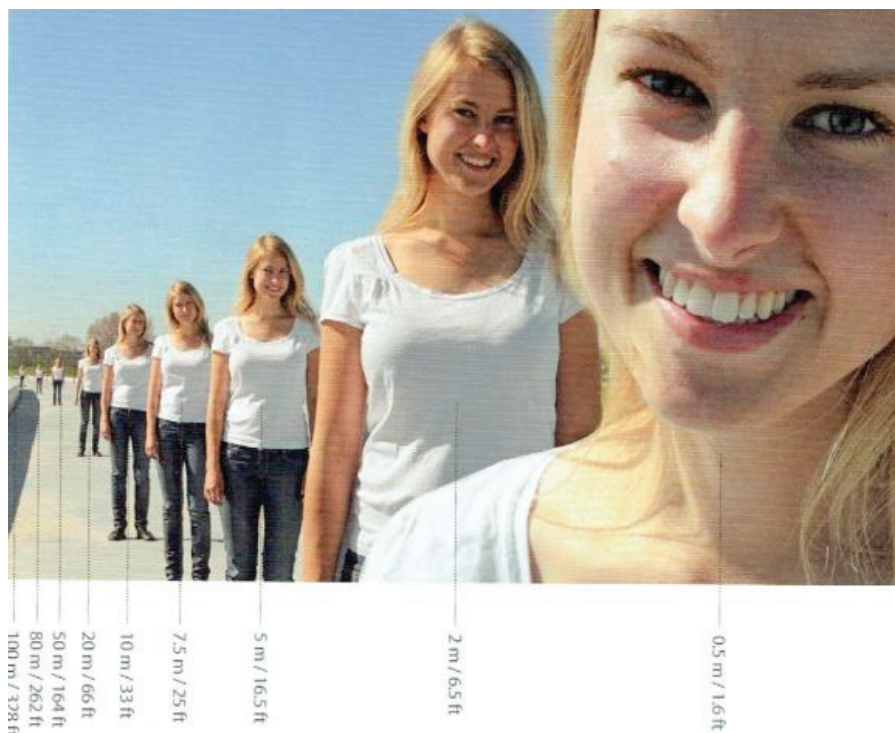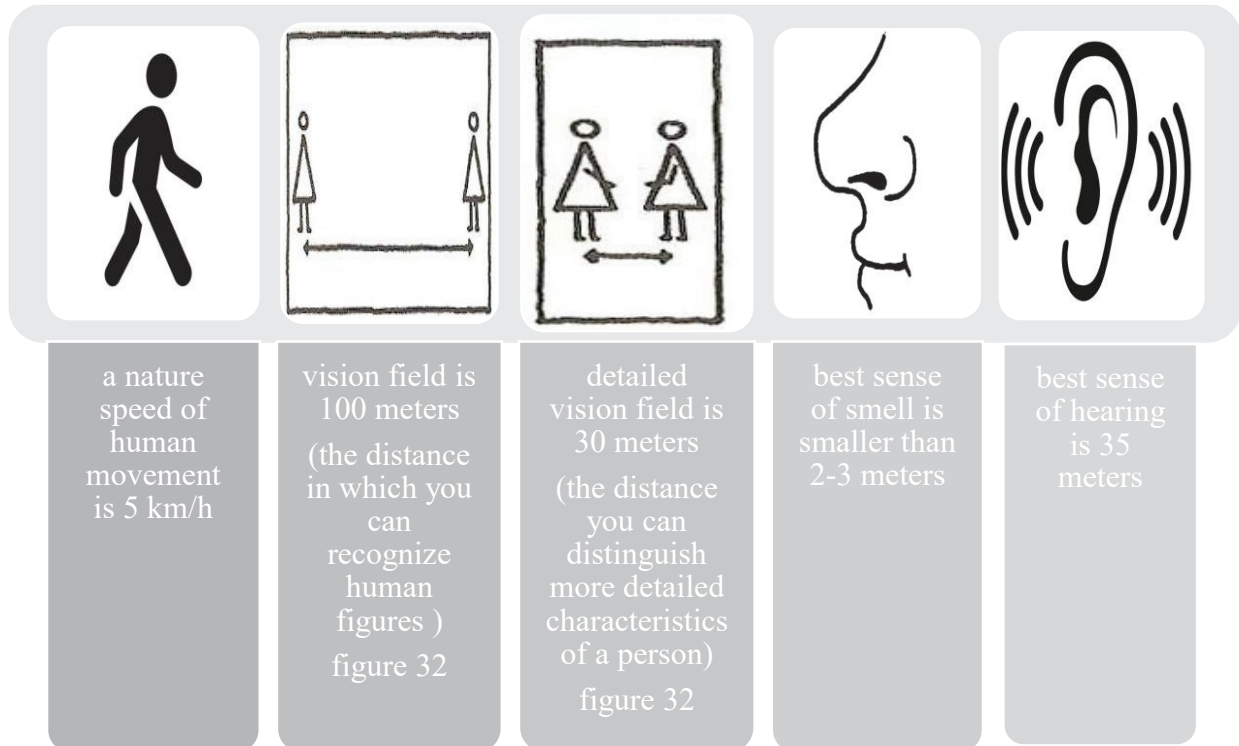| a nature speed of human movement is 5 km/h | vision field is 100 meters (the distance in which you can recognize human figures) figure 32 | detailed vision field is 30 meters (the distance you can distinguish more detailed characteristics of a person) figure 32 | best sense of smell is smaller than 2-3 meters | best sense of hearing is 35 meters |

Figure 15: Social field of vision (Gehl)

3.1.9-Trust the user experience: [10]

people prefer to walk straight routes and to use "shortcuts" in addition to that, they tend to avoid long paths from their predefined destination and they are heading straight if this destination is visible.

The acceptable walking distance is affected by the length of the street and the quality of the path, considering the sense of safety but as normal in daily circumstances is 400-500 meters and for children or disabled people the acceptable distance is often shorter.
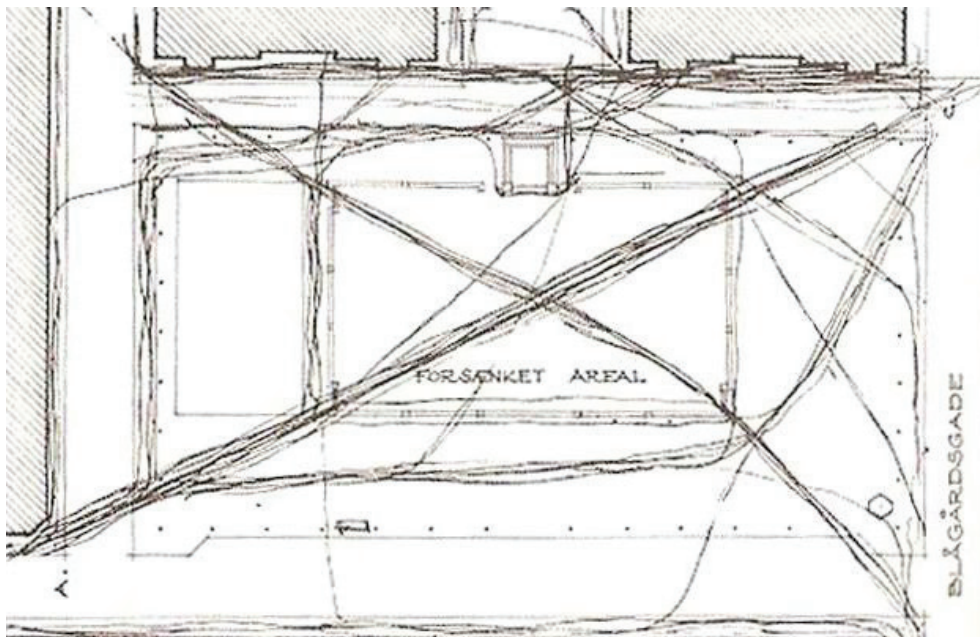
Figure 33: Keeping track of all the walking routes pedestrians use in a square in Copenhagen. Courtesy of Jan Gehl.

conclusion

The public squares are one of the oldest urban elements in the cities and it still receives great attention in the town, it became tourist attractions, social and cultural could distinguish one city from another.

There are basic elements that must be taken into account during the design and development of any square and how it is treated because the design of the square change from site to site according to a number of determinants, such as the identity of the area, its function, area, climate and the purpose of development we should don't forget the human scale because people love to feel that the square is a part of them self and they belong to it, that why Kidder Smith showed us how *"an architectural and urban setting can be created that breathes and pulsates with a very human feeling and very human scale"*[14]
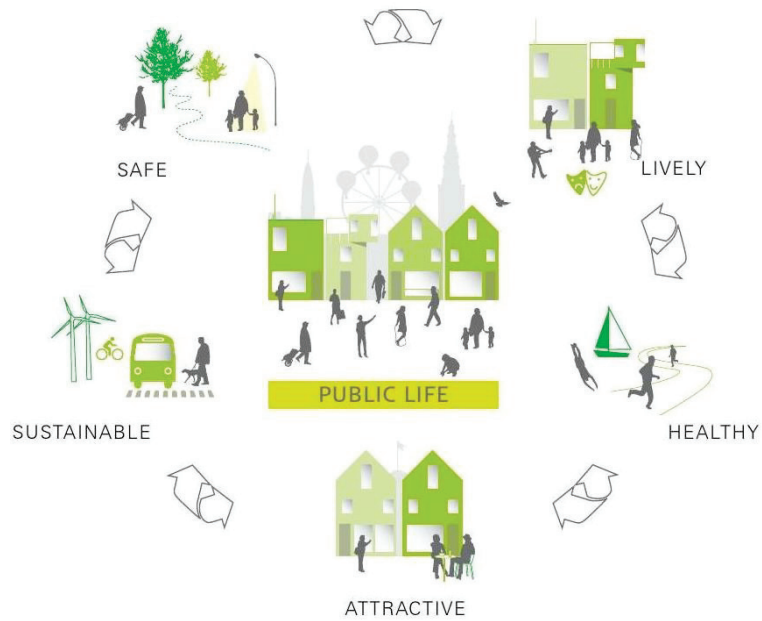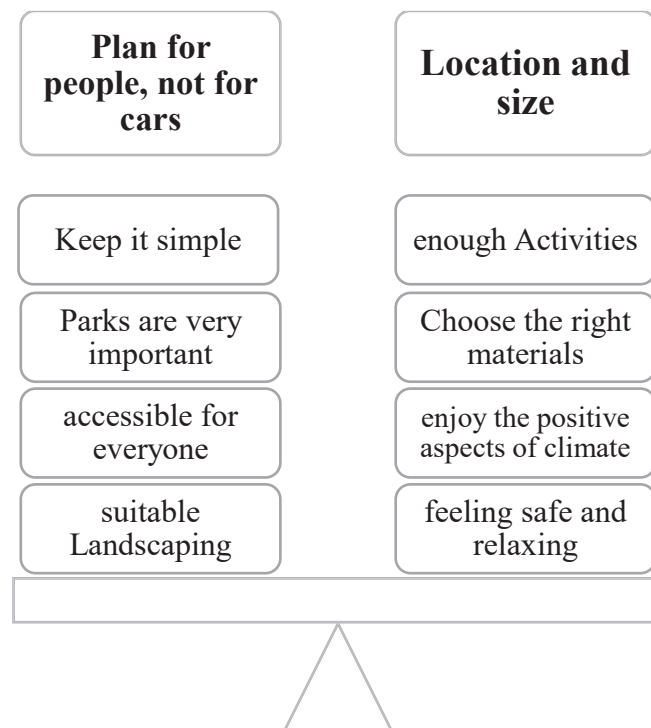
Figure 34: Graphic by Gehl architects as a vision for the 2030 public life.

In the end, Public spaces are complex, organic things and design is only a small fraction of what goes into making a great public square. at first, we cannot expect to do everything right but it will come over time when it tested over the years to reach the balance between all the functions.

3.2- Relation between square and surrounding elements:

The surrounding elements can play a big role in the public square and make it more or less used and make its influence on the visitors:

> 1- materials.

> 2- Protection against unpleasant sensory experiences.

> 3- Lighting.

> 4- types of plants.

> 5- color effects.

> 6- street furniture.

> 7- technology role

3.2.1- Materials:

There are also some criteria that we should take into consideration when choosing the appropriate materials for a project:

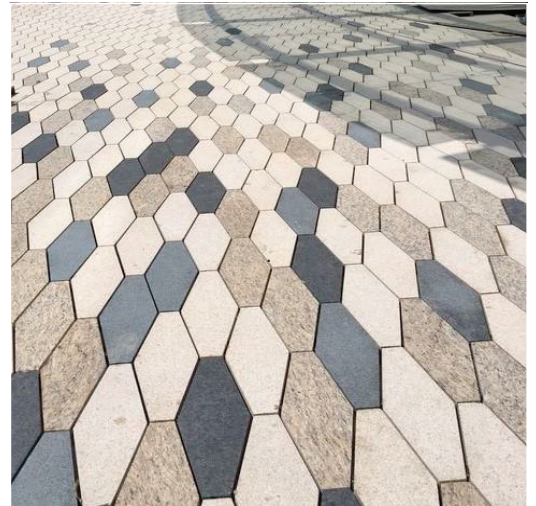| 1- Sustainability	Use local materials that can found in the same area of the project because of this method better for the environment and give more energy to the place. [10]
2- Cost	start to add materials in the highest public usage and in the right position and focusing on detailed and implemented to avoid extra construction and maintenance costs. [10]
3- Aesthetics	Use simple, robust and fit to purpose materials that are multi-functional and thoughtfully designed. [10]
4- Quality	square has a good chance of being successful which are built of high-quality durable materials, non-slip paving and easy maintenance. [11]
5- Facilities	The first rule is the parking spaces should be marked with different material from pedestrian crossing points that lead to the square. [18] The second rule, the paving patterns should be simple to look like a subordinate element of the street scene, not a dominant one. In other meaning, the large expanses of uniform block paving are to be avoided. [18]

Figure35: mixed between wood and stone.   Figure 36: the same material but different colors.

3.2.2-Protection against unpleasant sensory experiences:

1- sunlight:

Warmth and sunshine are major user attractions and by some methods can the sunlight maximized: [11]

- Define the sitting area where the sunlight stays most of the time during the day.
- creating sun traps - areas surrounded by walls with an orientation toward the south (walls should not block plaza-street visibility).
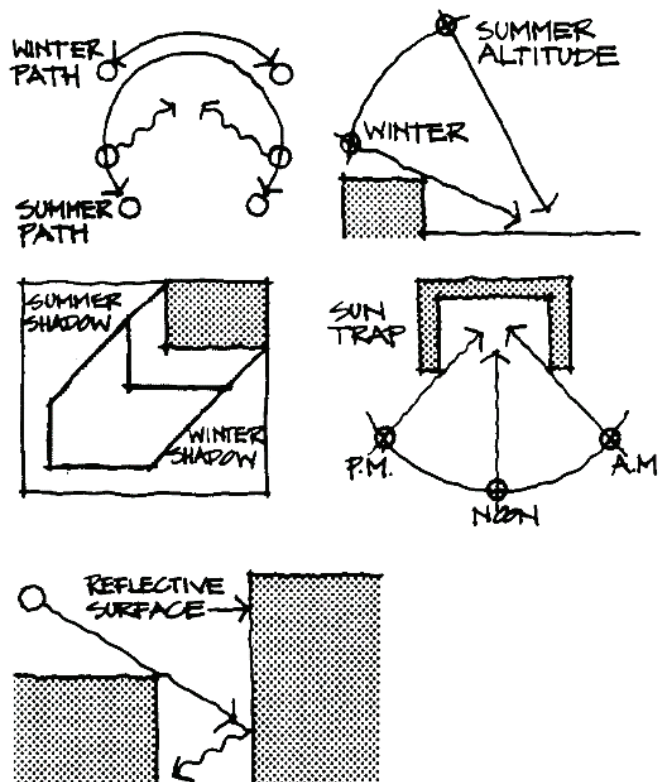- if no direct sunlight is available reflective so light surfaces are the solution.

Figure 37: Plazas Should Consider Sunlight Factors.

2- wind: [11]

In Aleppo, we need to protect areas from strong and harsh wind that comes from the north side and from the east side and that could happen by the following measures: [11]

- avoid large, open, unprotected areas with awnings.
- avoid wind funnels: narrow openings between buildings with easterly or north alignment.
- utilize planting, low walls, and canopies for wind deflection.
- provide protection at waiting points and along major pedestrian routes with shelters.
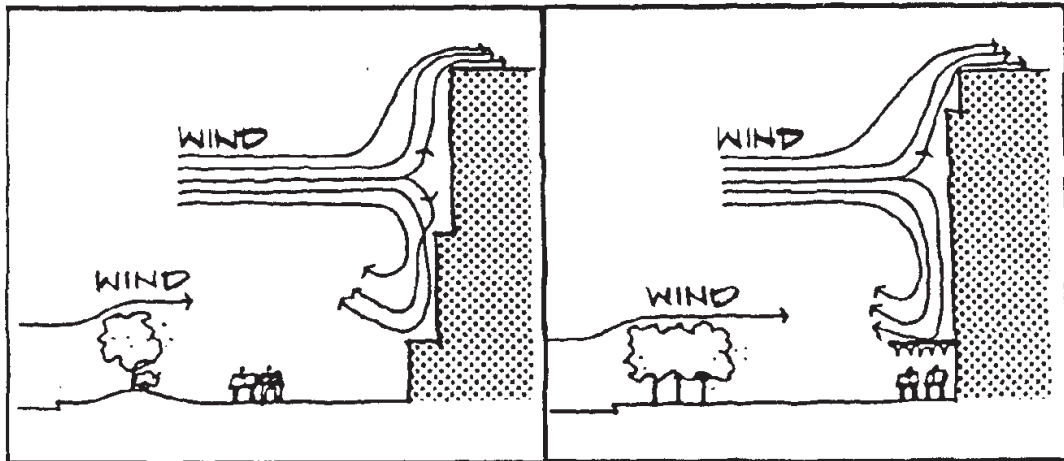

Figure 38: Plaza users should be protected from unfavored winds with planting and canopies.

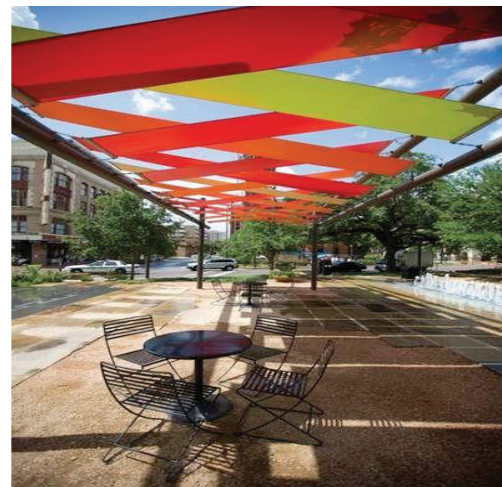Figure 39: planting canopies in Japan.   Figure 40: Shade sails could protect up to 97% UV.

3- noise:

Noise can be partially mitigated like traffic because it detracts from the enjoyment of the square by adding elements such as fountains or waterfalls. [11]

3.2.3- Lighting:

A view is expressed in a research article by *Antonakaki (2006)*, suggested that light can affect not only our perception of public square but also the way we use public square. [19]

A similar research from *Augustin (2009)*, explains that low light intensity level could create relaxing space, while higher level of light is psychologically and physically activating and by

observation public squares we see that people tend in lower light level to have more friendly conversations and speak more quietly but in higher light intensity level they think more cheerful and more creative and gives more powerful. there are two types of lighting vertical and horizontal. [19]

Warm colors used in calming space. another site, the simple introduction of white light presents a very elegant solution to festive lighting [18]
Light and color together influence how people move through space. In this respect, *Augustin (2009)* pointed out that lights in public square are usually used as a direction guide tool, to illustrate connections between buildings that lined them. [19]

Figure 41: a combination of nature and artifice with LED stain steel street lamp as a vertical type.

Figure 42: Finsbury Avenue square in the UK as a horizontal type. Which it is look like the people's legs are merging with the floor.

It is recommended to lit up the trees, where possible, from a street lamp or horizontal light, for example, Seasonal decoration is an important aspect of inspiriting areas during winter months when tree foliage is missing also trees can be effectively decorated with strings of low voltage lamps. [18]
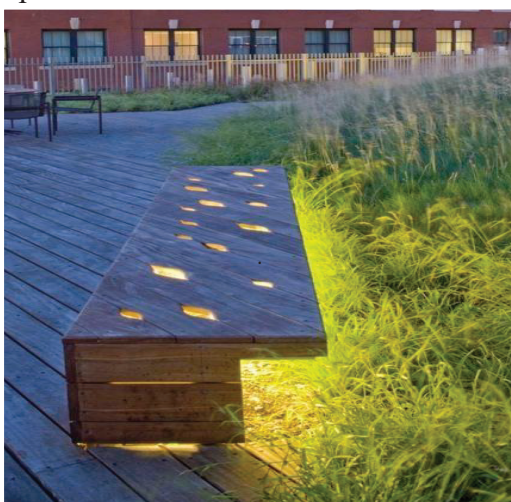

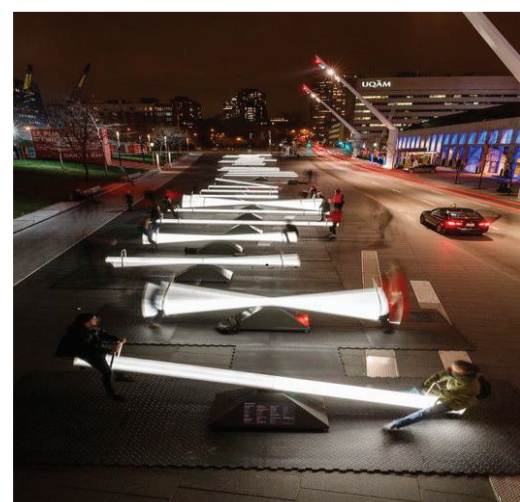Figure 43: warm light adds mysterious beauty to public squares.

Figure 44: in Montreal, they created an installation consisting of 30 illuminated seesaws

3.2.4- Plants:

In now day, permeable surfaces should be considered, use of drought-resistant plants may lessen dependence on automatic irrigation and Select plant that need low chemical laden.

Seasonal change can be achieved by selecting a variety of flowering or colorful shrubs and perennials instead of largely relying on annuals which are put to waste several times during the year. [11]

some versatile and striking shrubs come into their own in winter, once their leaves and berries have dropped like Cornus alba. in addition to that, trees with poisonous fruits like Viburnum lantana should not be used, especially within the reach of children. [3]

Figure 45: Cornus alba have appealing visual effects in winter.   Figure 46: Viburnum lantana

3.2.5-color effects: [19]

The wide availability of many building materials for both buildings and floors cape often reduce local specialty. therefore, the intention is to use local colors which help instill a sense of place.

As *(Alexander & Angle, 1977)* said, people are very influenced when space is more colored but they prefer simpler pattern around because *Lynch (1960)* described that pattern characteristics could affect the clearness of a place.

Augustine (2009) pointed out that pattern is the repetition of shapes and in public square, people tend to feel less confused to look at certain patterns that are mathematically similar to each other.
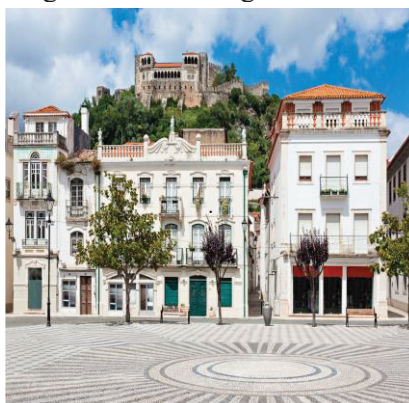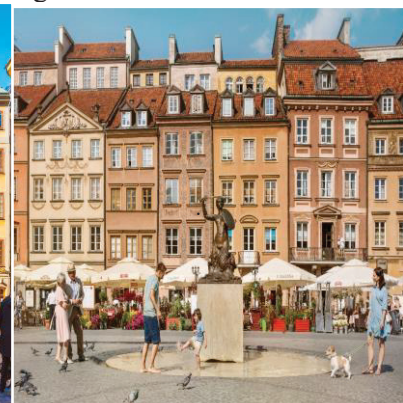
Figure 47: in Portugal   Figure 48: in Stockholm   Figure 49: in Warsaw

3.2.6- street furniture:

There are four major points to remember when planning street furniture: [11]

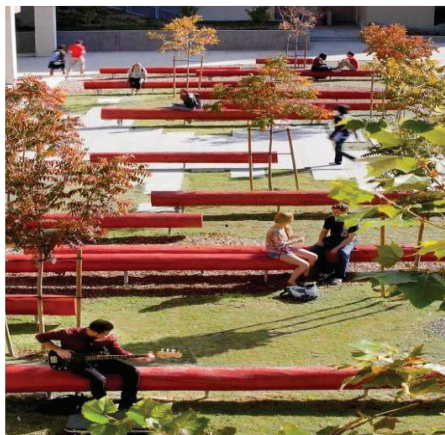| 1-Choice of Sitting Location		
locate seating toward the street.	oriented to a view.	next to attractions in shade or in sun.
2-Variety of Seating Types:		
in groups - couples – alone.	fixed and moveable.	disabled accessible.
3-Comfortable Seating:		
wood provides warmth than stone, concrete or metal	provide seating with a back and armrest.	slaps or steps with round edges. [3]

Figure 50: use trees trunk as a seating area in California.

Figure 5: steps as a seating area.

3.2.7- technology role: [19]

Just because people are working on laptops or smartphones, doesn't mean that they are isolated from the public environment that's why *Dougherty (2005)* suggested the technology could be one of the amenities to attract the community members to have a new development that is used every day.

Graham (2004) pointed out that wireless network technology should be used as a means of energizing public space rather than retreat it into isolating virtual world.

Figure 52: chairs to use a laptop.

Figure 53: chairs able to give charging to electronics.

Chapter 4: Aleppo, Syria as a case study

4.1-Brief history of the development of landscape urbanism 2011 "Aleppo"

4.1.1- Location:

Aleppo is located in northern Syria, about 50 kilometers away from the Turkish border to the north. West winds are prevalent, carrying cool air from the coast and mountains. [20]

Figure 54: Aleppo location in Syria.

4.1.2- History:

Aleppo is one of the Levantine cities that vie for the title: *"the oldest continuously inhabited city in the world"* and It has been populated for 8 millennia at least. [20]

The city's location allowed it to become a major trading place on the Silk Road, as it sat at the crossroads of two trade routes; the route from India, Tigris, and the Euphrates, and the route coming from Damascus in the South. in addition to that, the strategic location with topography, agriculture, and an industrious population helped Aleppo to be one of the most important trading centers in the ancient world. [20]

Fiqure 55: The Silk Road was a trade network connecting Eurasia and North Africa via land and sea routes.

4.1.3-Economy:[20]

Aleppo is Syria's largest urban area with a population of more than 2.1 million. it is the country's dominant manufacturing center, with a share of 50 % or more of manufacturing employment, plus an even greater export share. Its economy is driven by textiles, pharmaceutics, agro-processing, tourism, and engineering.

the old city and its magnificent citadel designate as a world heritage cultural site by the UNESCO's World Heritage Committee.

4.2-Urban general analysis:

start analyzing the city in 2010 with10 layer of master plan before the war:
 4.2.1- District Boundaries.
 4.2.2- Roads.
 4.2.3- Sub and District Centers.
 4.2.4- Water, pipelines and channels.
 4.2.5- commercial roads.
 4.2.6- Industry, Storage and Trade.
 4.2.7- University and Science.
 4.2.8- Existing building area and housing Types.
 4.2.9- Public Services.
 4.2.10- Tourism Areas.
 in the end, describe the land use plan and some photos as collecting layers to better understand how Aleppo divided into different functions in different locations.
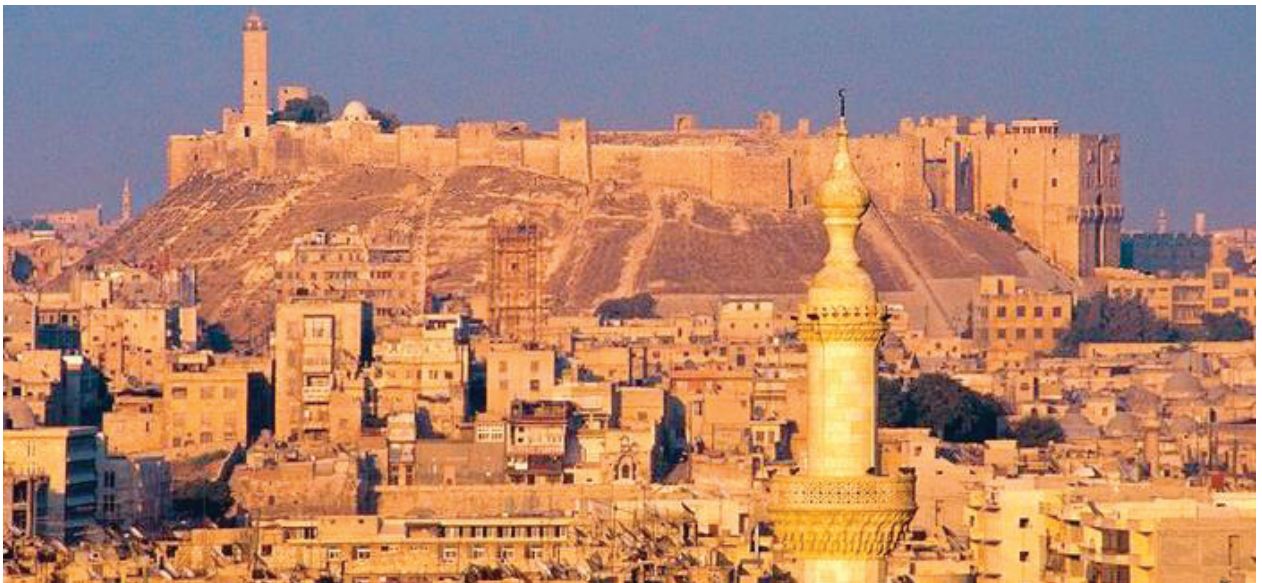
Figure 57: Aleppo from the citadel.

Figure 58: A photo taken in 2001, It shows Aleppo's citadel peacefully overlooking the Old Town bathed in a golden light.

Figure 59: The Citadel of Aleppo pictured in 1993. In recent years the site has suffered untold damage, which can only be properly assessed when the war is over.

4.2.1-The district boundaries: The district boundaries should not necessarily define the physical limits of the city. Figure 60
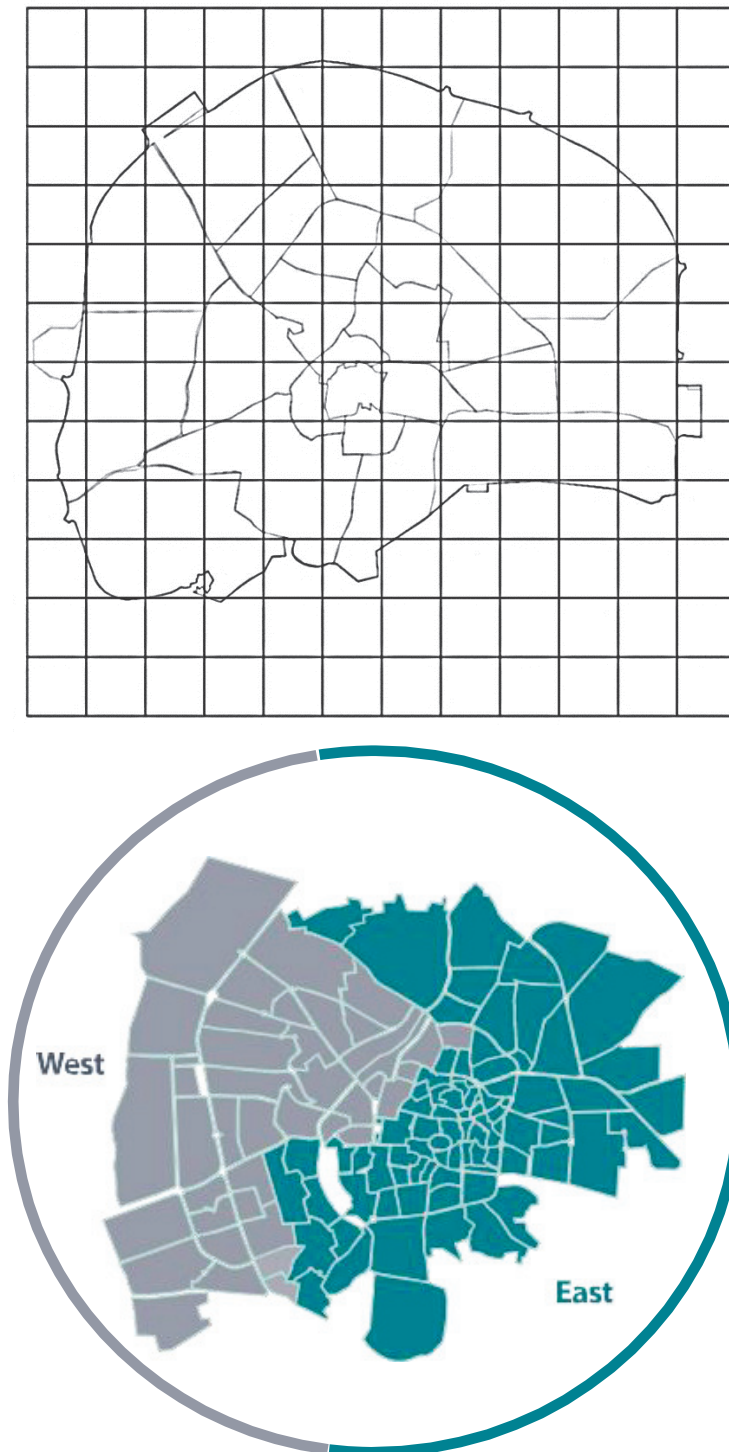
City Overall Areas: Figure61

It is essential to recognize two main areas in the city today, generally referred to by eastern and western areas throughout the city profile. Services provision, humanitarian conditions, and protection issues significantly vary based on this recognition. [21]

4.2.2-The existing building area and housing Types: the existing residential typologies are clustered in a relatively homogeneous group. Figure 62, 63
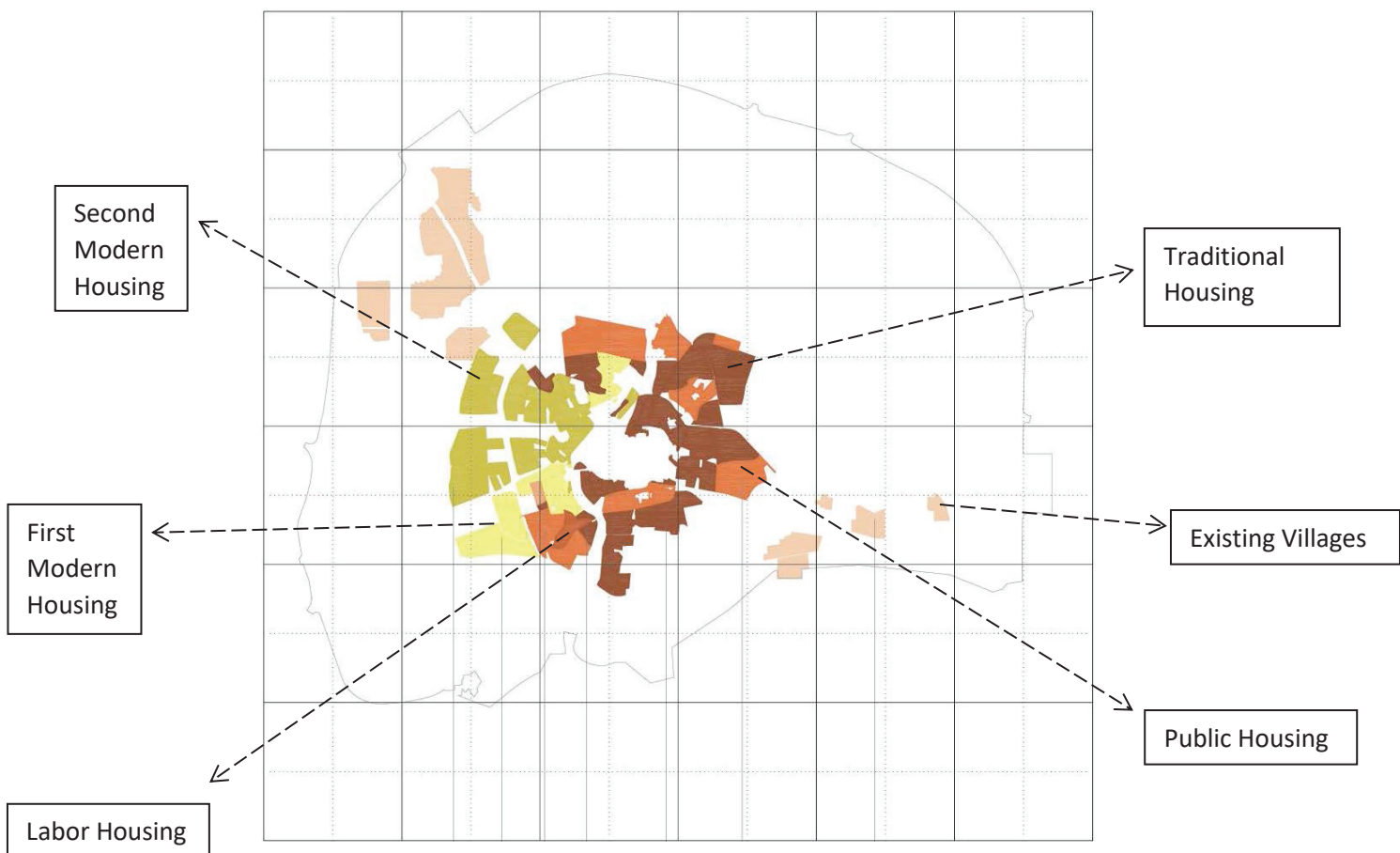
Open Space

Main Radial Transport Corridors

City Growth Area

Existing City

Second Modern Housing

Traditional Housing

First Modern Housing

Existing Villages

Public Housing

Labor Housing

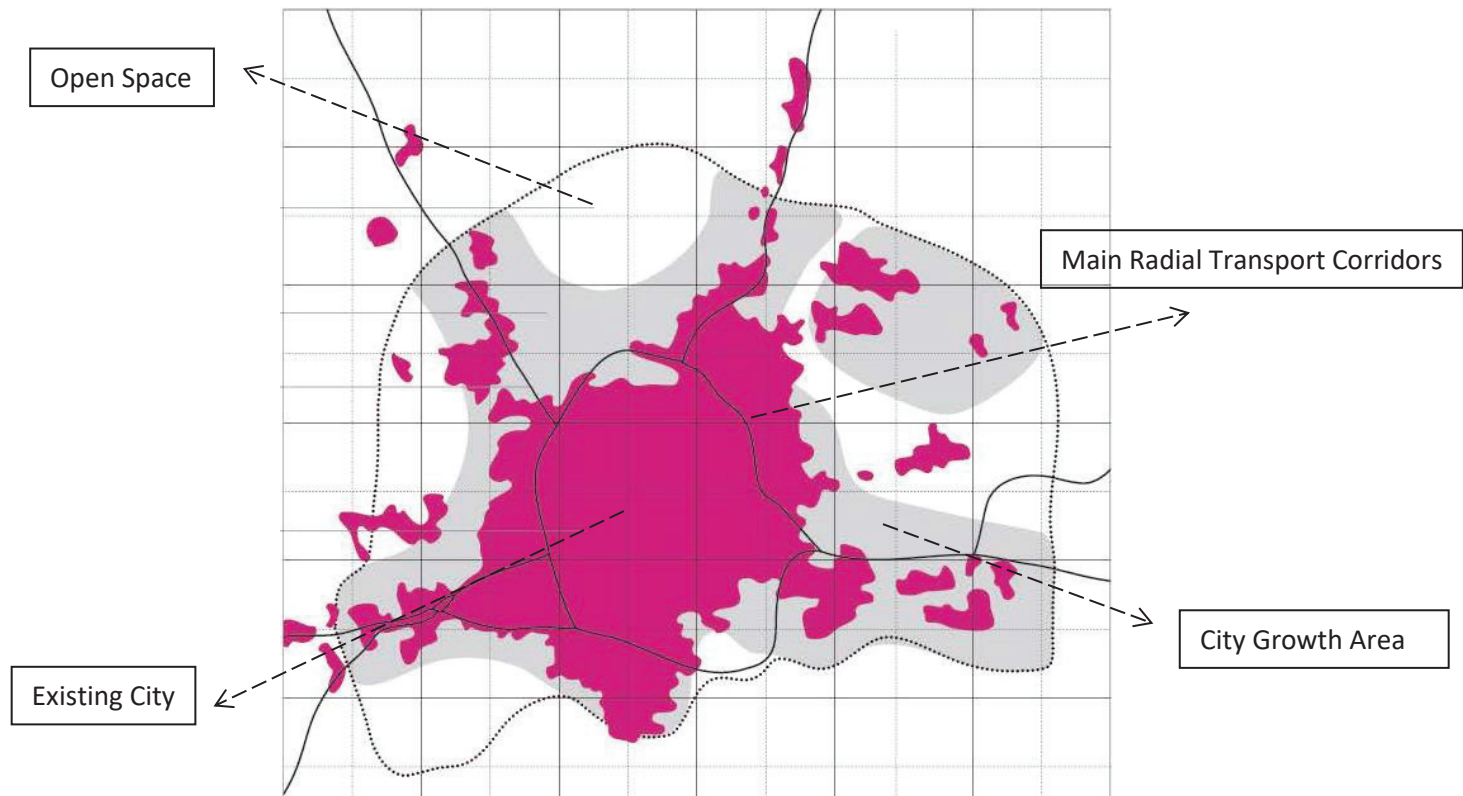Figure 64: first model housing in west side.

Figure 65:west Aleppo Al-shahbaa neighborhood.

Figure 66: Traditional Housing on the east side.

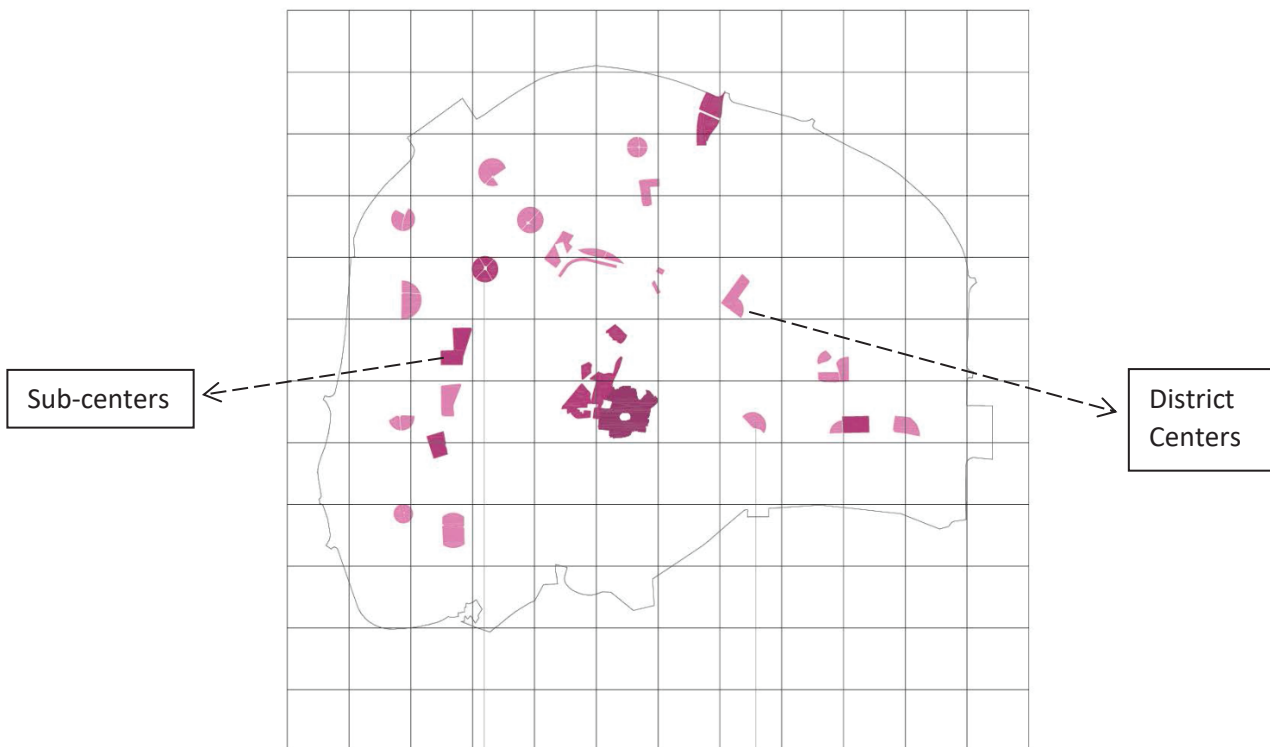Figure 67: Al Jdeydeh neighborhood.

**4.2.3-Roads:** a fifth and ring roads are planned to connect all the directions together. Figure: 68, 69.

4.2.4-Sub and District Centers: new centralities are mostly planned in the west of Aleppo along the infrastructure arteries. Figure 70.


Sub-centers

District Centers

4.2.5-Water, pipelines ,and channels: Figure 71.

river Quweik is fed by water pipelines carring the water from Euphrates in the East.Much of the water is used for irrigation of agricultural land in the south aftre it flowed through the city
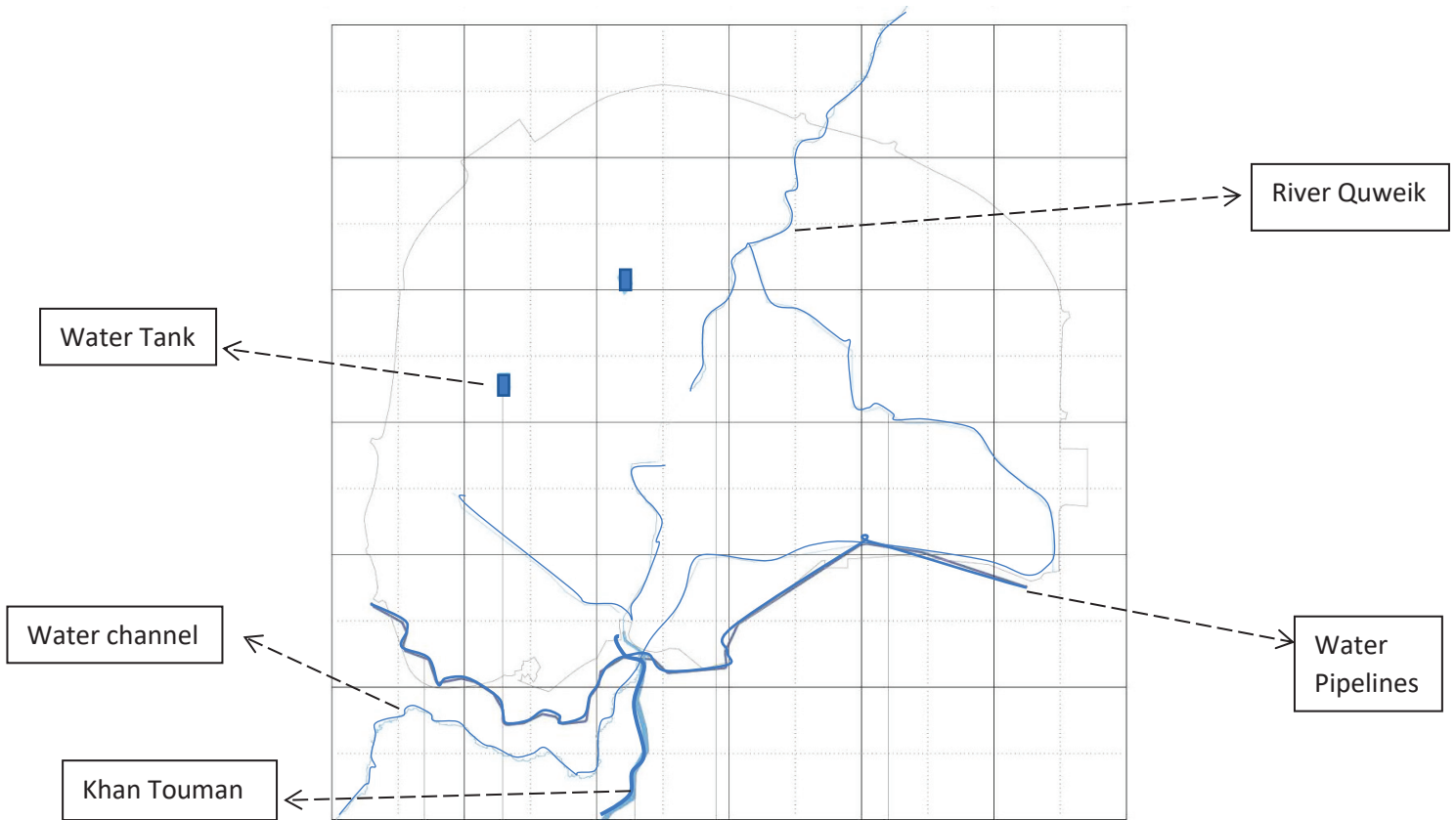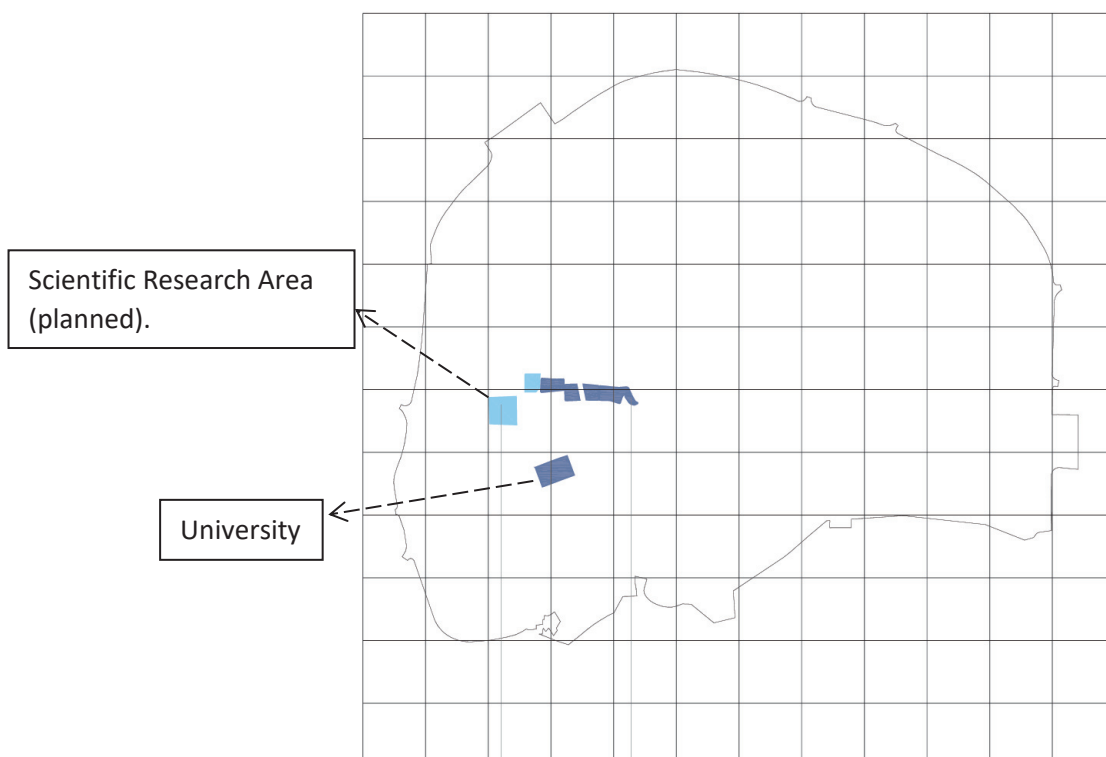

4.2.6- commercial roads: shopping streets are clearly concentrated in the west and north-west, mostly along the main concentric roads. Figure 72.
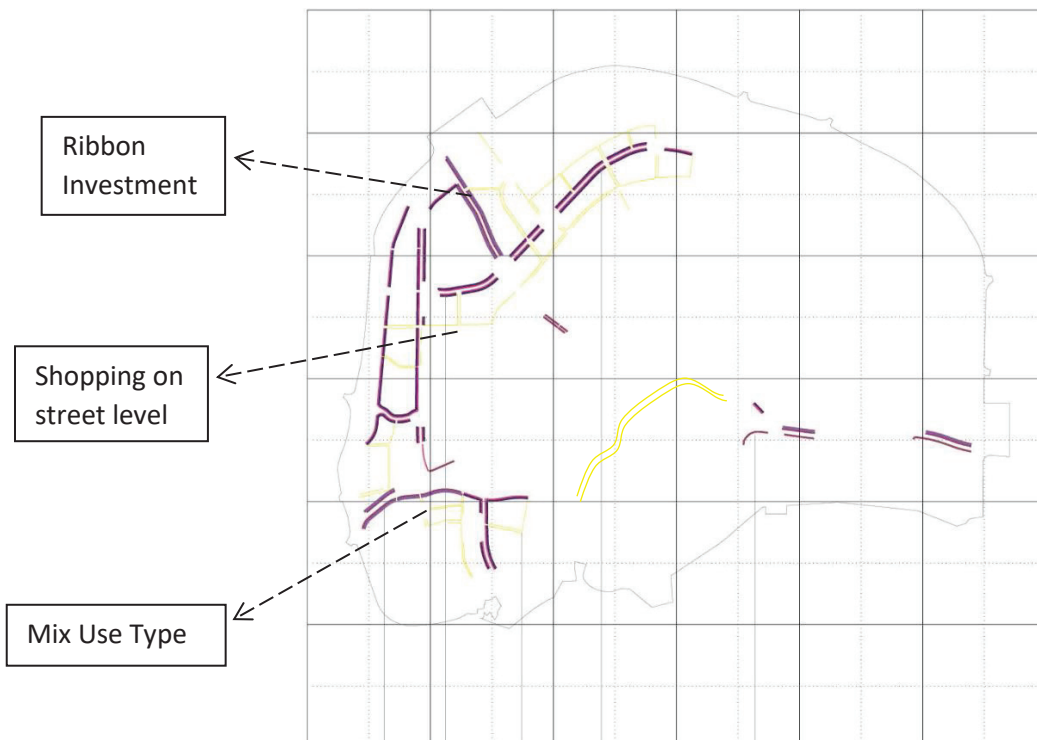
4.2.7-Industry, Storage and Trade: new large industrial areas are planned in the North-East and East in proximity to the airport. Figure 73, 74.

Sheikh Najjar Industrial

Crafts Areas

Warehouses

Cattle trade

Industry and Investment

Non-Polluting Industry

4.2.8-University and Science: the university campus is going to extend westwards.

Scientific Research Area (planned).

University

4.2.9-Public Services: while some public functions are going to be dislocated from the center, public service still mainly concentrated around the existing city core. Figure 75.
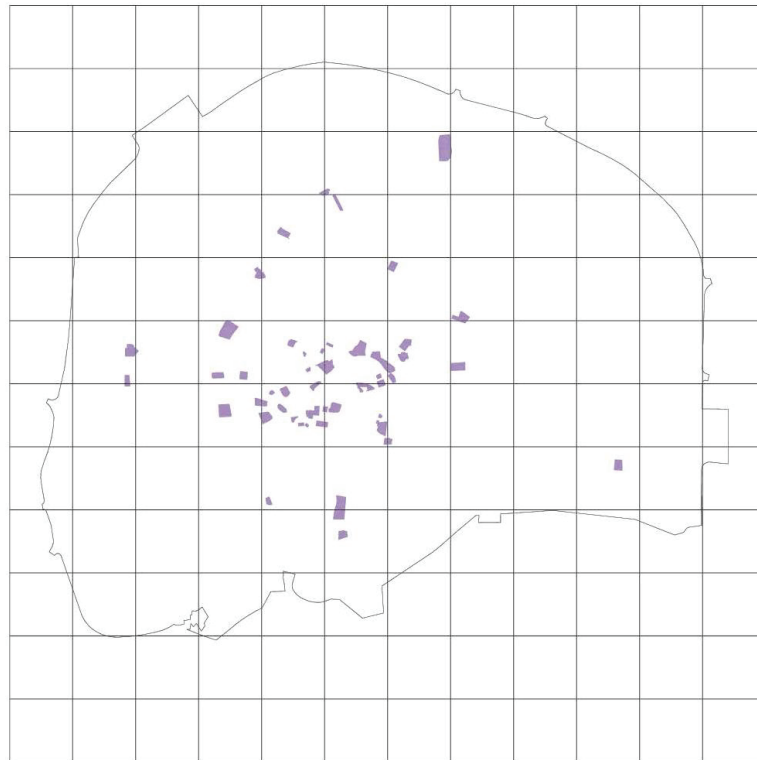
4.2.10-Tourism Areas: these attractive green in the West and along with the river bed show potential to be linked to integral green backbones. Figure 76.

4.2.11-Land-uses "Aleppo Master Plan" 2010: Figure 77.

Residential		Airport	
Industrial		Green Area	
commerial		Old City	
Tourism Areas		cemeteries	
Educational		Empty area	

4.2.11-Land-uses "Aleppo Master Plan" 2010: Figure 77.

4.2.12-Some of the tourist areas and public square:

figure 78: Al-Sabeel park

1

figure 79: Al-Rahman Mosque

2
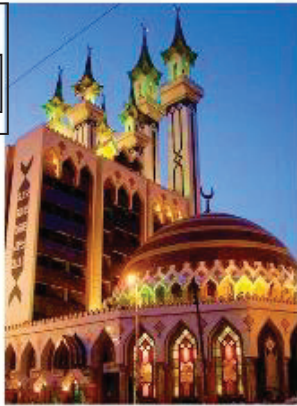
figure 80: Saint Francis of Assisi Church

3

figure 81: Saad Allah Al-Jabri Square.

4
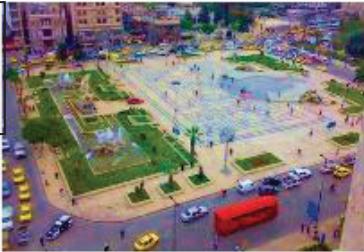
figure 82: Jamal Abd-Alnasser square

5
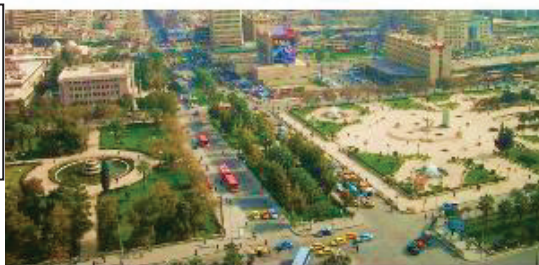
figure 83: Aleppo Public Park.

6
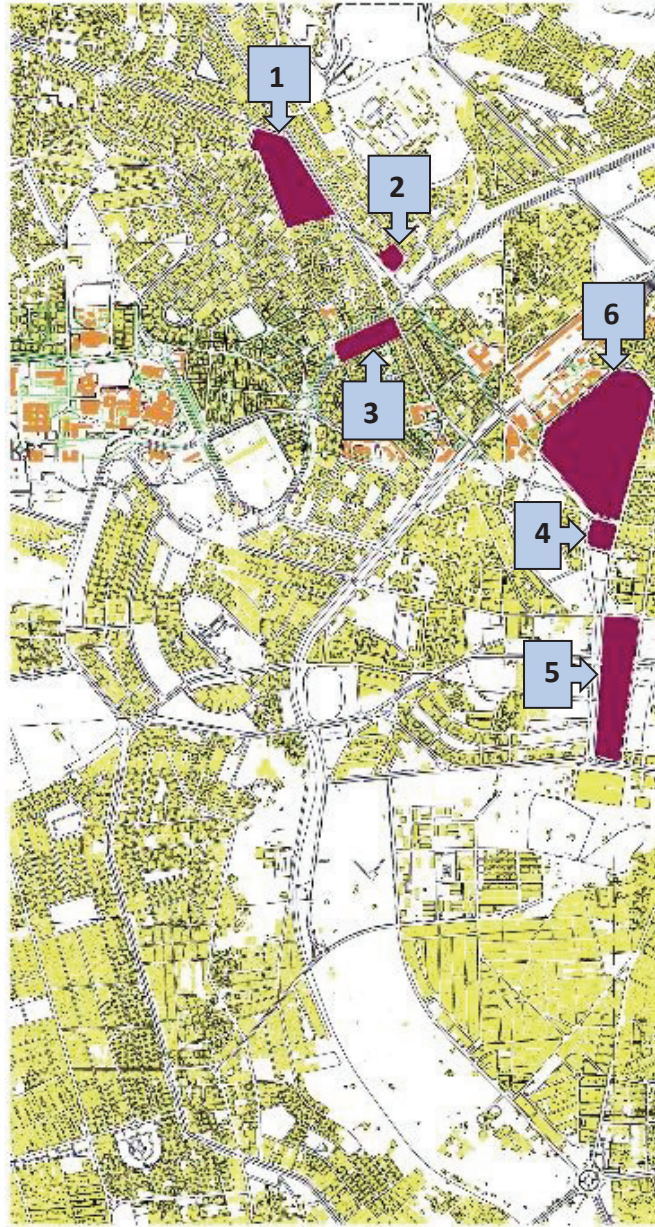
figure 84: Queiq River 7

figure 85: Bab al-Faraj Clock Tower 8
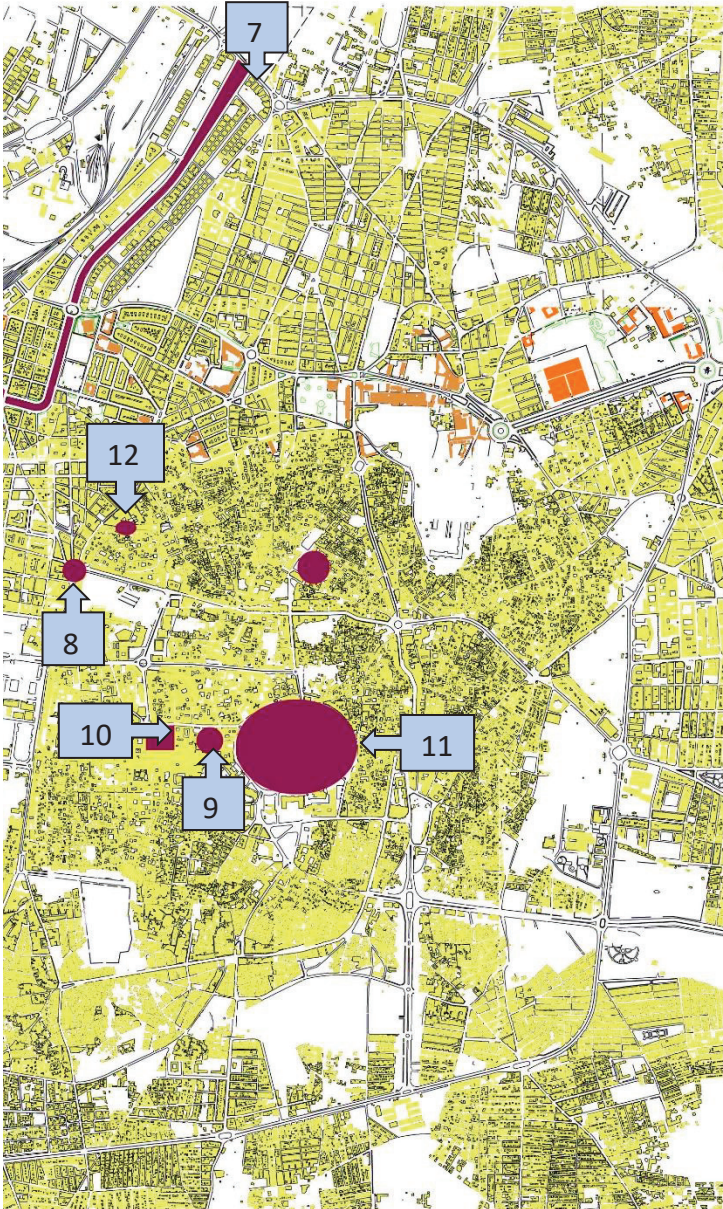
figure 86: Khan al-Shounah market 9

7

12

8

10   11

9

figure 87: Great Mosque 10

figure 88: Citadel of Aleppo. 11
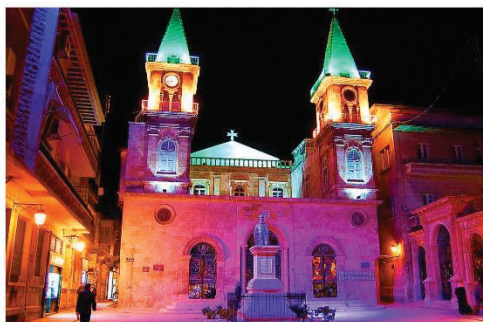
figure 89: Cathedral of Saint Elijah 12

4.3- Aleppo after the war

4.3.1-Density: [22]

Before the war, an approximate 120,000 people lived in the 355-hectare Old City, however much of the built-up area is not residential. In fact, a deep study showed that only 51% of the built-up area was residential, in addition to another 8% in upper-stories of mixed-use buildings such as restaurants or hotels.

The most damaged areas are on the east side that caused much of people moved from the east side to the west for more safety.
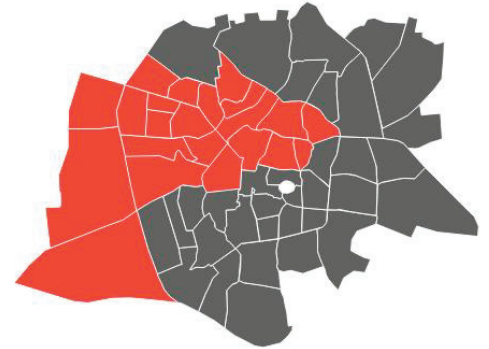
Figure 90: the red area is the higher density neighborhoods after 2012.

4.3.2-Frontline of War: [22]

the Old City is made up of over 300 km of narrow roads and many adjacent buildings, except for the main arterial roads added in the mid-20th century, making vehicular circulation very difficult and that has led to an increase in the number of destroyed areas due to the proximity of houses to each other. many reasons made the old city the frontline of clashes between the Syrian regime and opposition forces fighting for control of the city.

All together caused extensive damage to the ancient district and regardless of the historic value of those buildings. In addition to large-scale destruction of heritage, illegal excavations and trafficking of historical artifacts are on the rise.

4.3.3- Damage analysis:
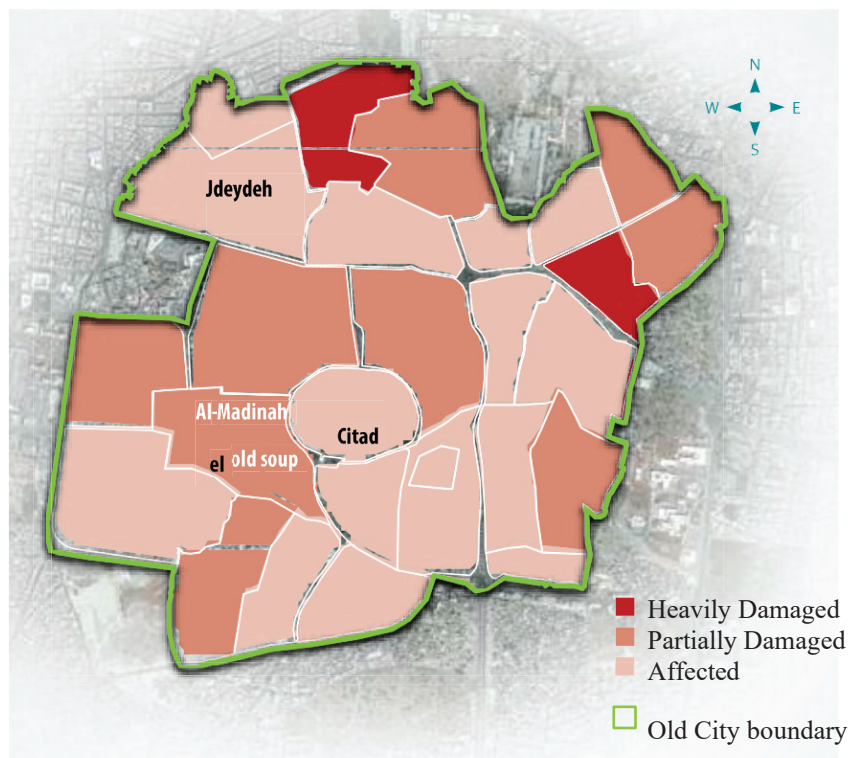
Figure 91: Heritage sites reported to be damaged.
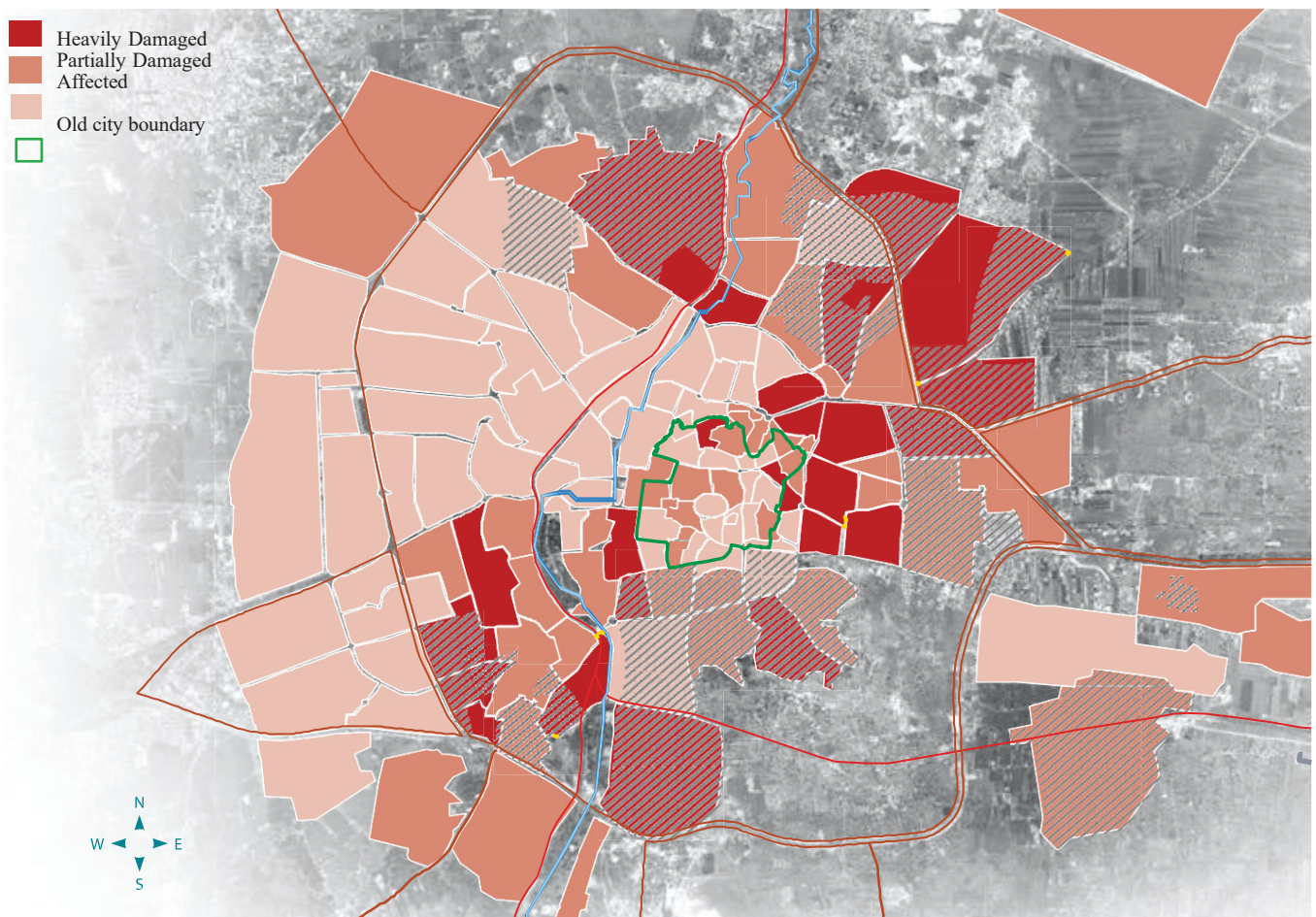
Figure 92: DAMAGES OF BUILDINGS AND HOUSING STOCK: 67% of heavy damages are in informal settlements.
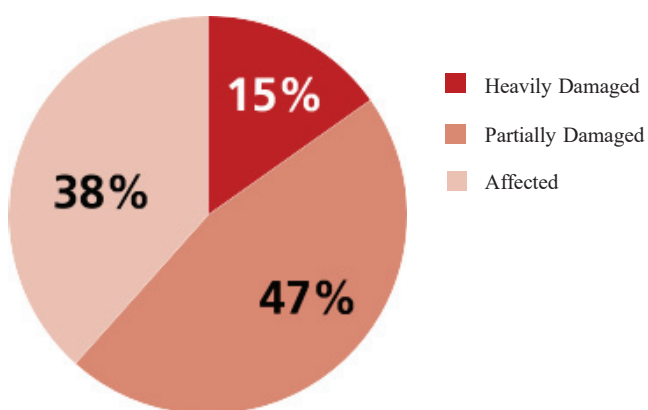
Figure 93: Neighborhoods per damage level.
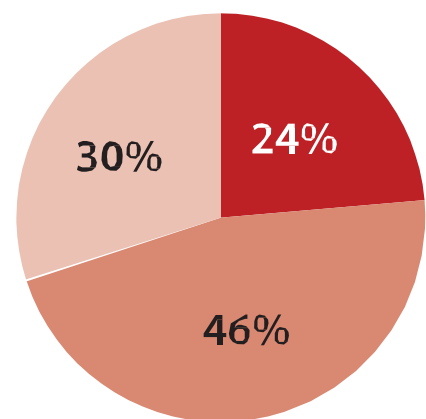
Figure 94: Affected population per housing damage level (for the total city population).

4.3.2-Aleppo Heritage site before and after the war:

Figure 95: Khan al-Shounah market.

Figure 96: Aleppo citadel.
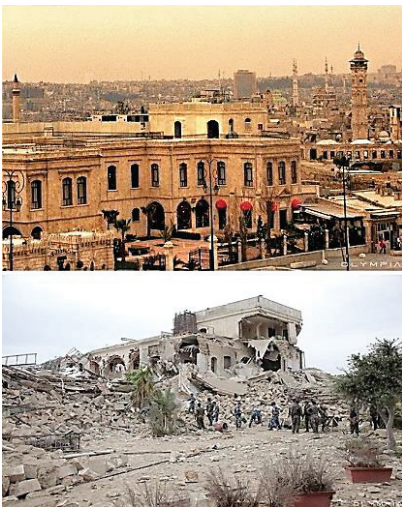
Figure 97: Carlton Hotel
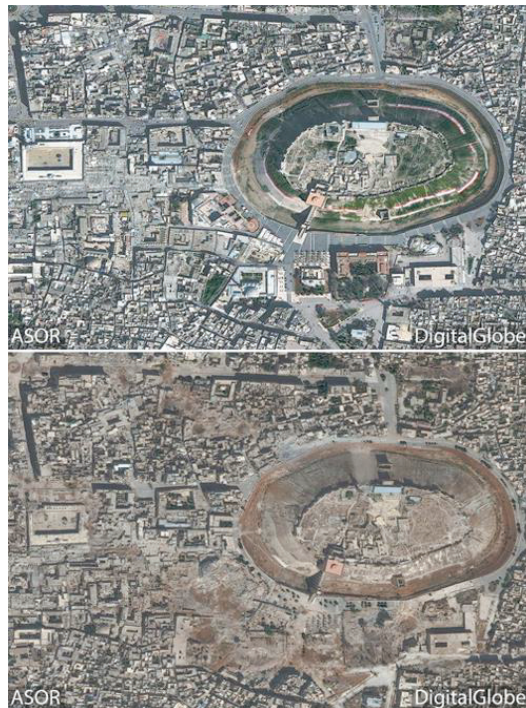
Figure 98: part of the World Heritage Site
showing the area around the citadel in 2012
and after years of raging conflict.
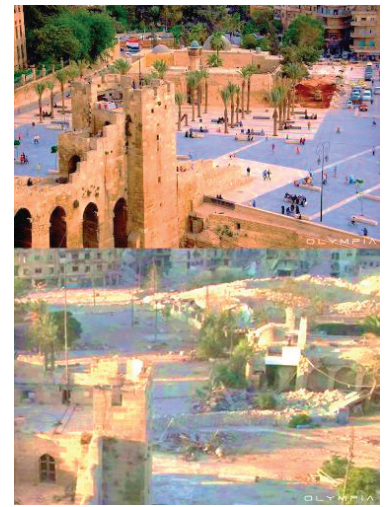
Figure 99: citadel surrounding area.
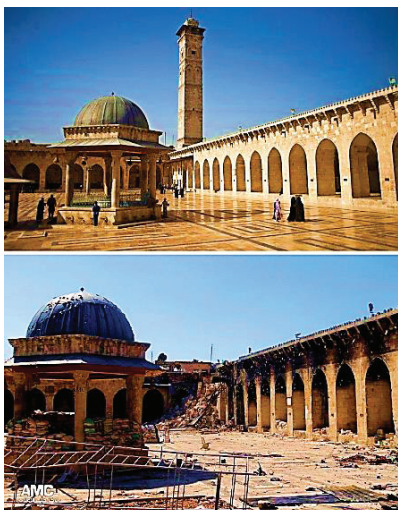
Figure 100: Great mosque

Figure 101: Carlton Hotel

Figure 102: one of the main road to
the citadel.

48

4.4- Landscape urbanism objective:

Each urban public square has a specific context to impact on its users and also gives a different reaction about the place, consequently I decided to choose Al-Hatab square in Aleppo for analyzing as a case study which has different characteristics.

The purpose of analyzing inside the old city boundary (Al-Hatab square in Al-Jdayde Neighborhood) in Aleppo was to find out impressive strengths and destructive weaknesses due to their impact on social interaction after the war.
In other words, this is an attempt to develop the city center and make a connection between the social spots areas.

4.4.1- Site Analysis and brief history:

Using several pictures and diagrams is the most prominent and significant feature of this method that provides a perspicuous explanation and a comprehensive image of the location.
Al-Hatab Square (in English mean the woodpile square) is one of the oldest squares in Aleppo. It is located in the old Jdeydeh Quarter, outside the historic walls of the Ancient City of Aleppo.[24]
The study will start a view on how Al-Hatab square was designed then how it is now transformed.
Figure 103: location of Jdayde neighborhood and Al-Hatab square comparing from Aleppo citadel.
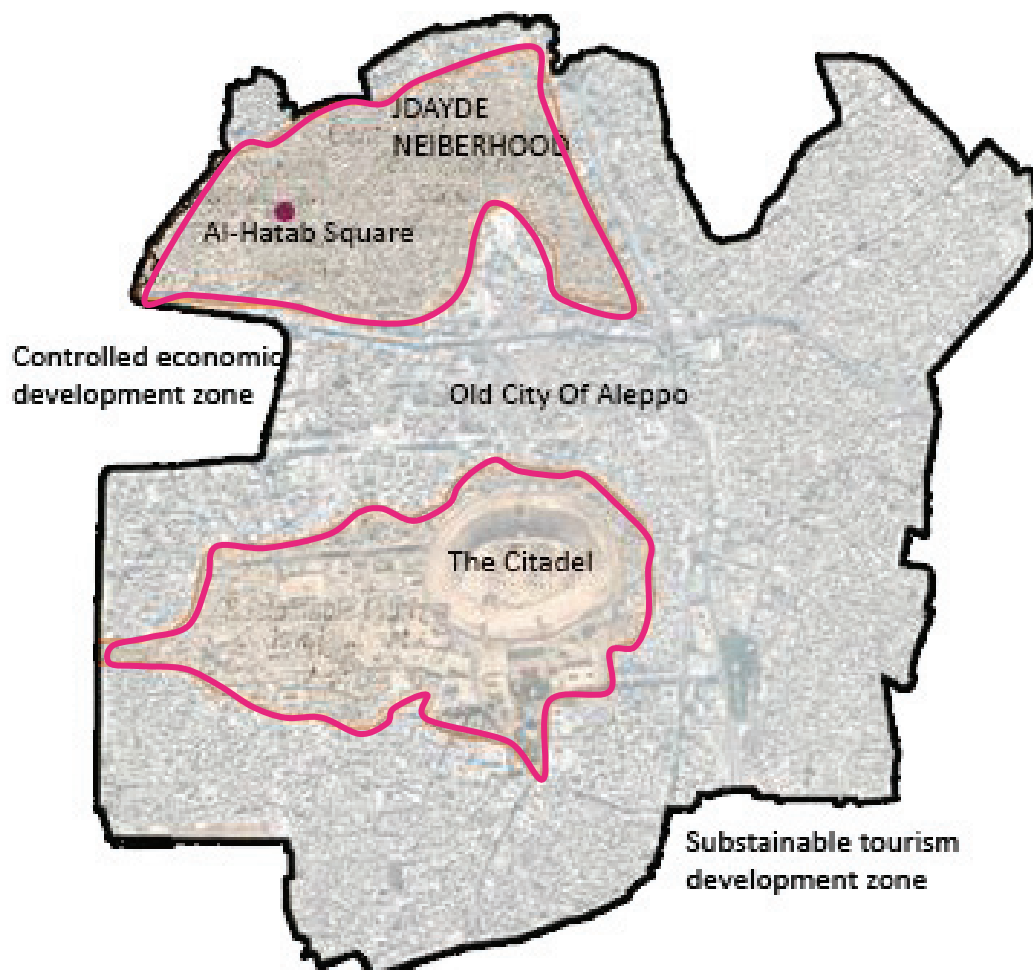
In 1400, the Mongol-Turkic leader Tamerlane captured the city of Aleppo and killed many of its inhabitants. After the Mongols left the area, the Muslim population returned to Aleppo except for the Christian residents they build a new neighborhood in the north of the city walls boundary in the1420s and this Quarter became known as "Al-Jdayde" that means in English "The New". They chose this location because it is surrounded by a number of fifteenth-century churches and AL-Hatab square became the centers of this area. [24]

By the seventeenth century, it was established a mosque (Al-Sharaf Mosque), Khan and coffee around the square to help service the local inhabitants and visitors.in addition to that, Many Armenians worked in silk trade that was growth in Persia that's why the square and khans quickly became one of the busiest commercial center of the city. [24]
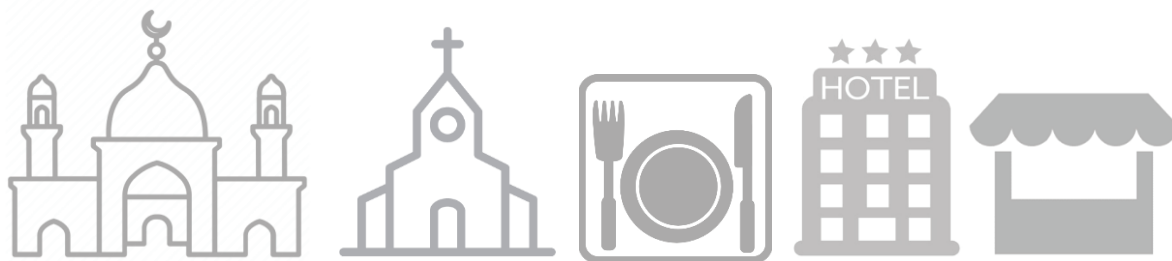
Figure 104: the function of the surrounding buildings.

The importance of the square, that became a popular destination, especially for visitors passing through the narrow alleyways of Aleppo's Old City, it was home to many shops of antiques, handmade jeweler, museum (Beit Ghazaleh and Beit Achiqbash), hotels and historic buildings and restaurants like (Zamaria House) that made one of the best Syrian foods. [24]
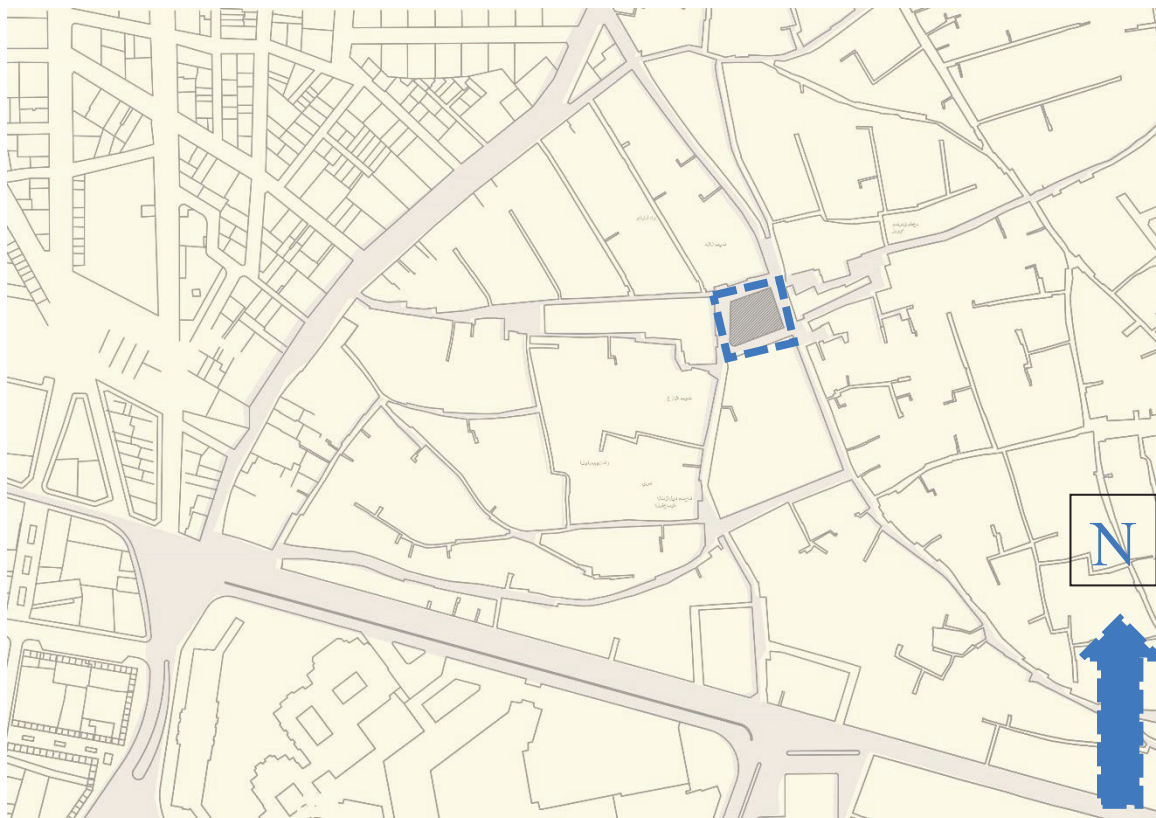
Figure 105: a top view for the square and the surrounding narrow streets.
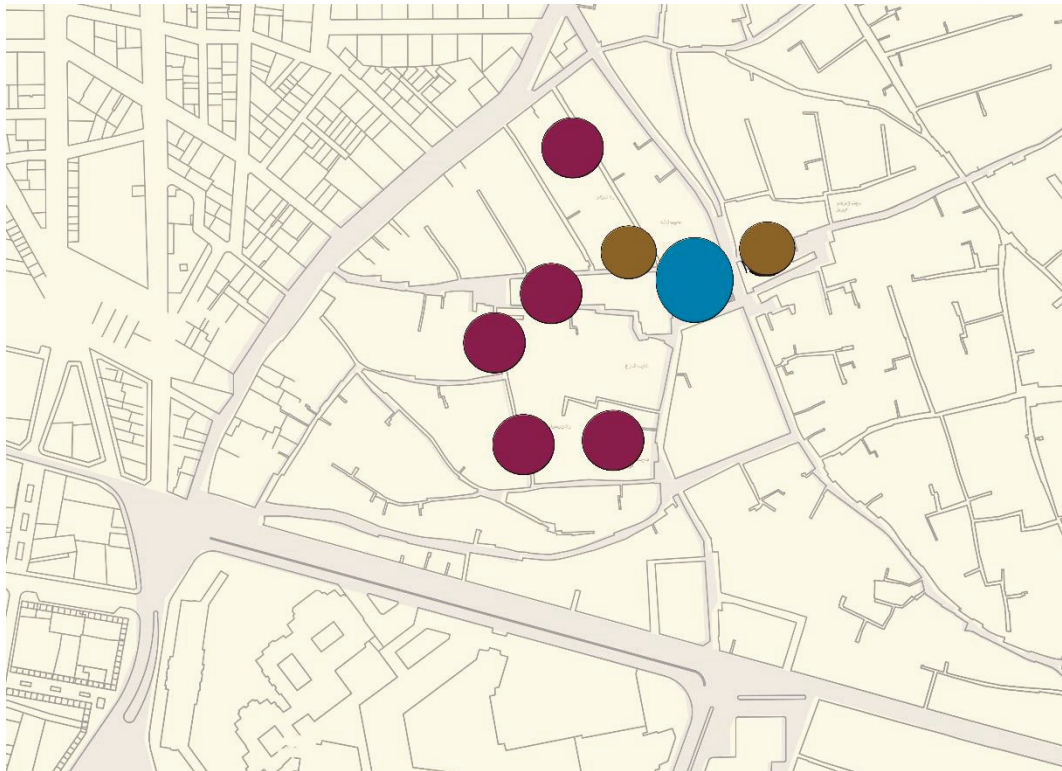
Figure 106: a top view for the location of the churches and mosques.

Figure 107: Maronite Catholic Arch eparchy of Aleppo.   Figure 108: Al-Sharaf Mosque

Figure 109: a top view for the location of the restaurants, hotels, and museum.

Figure 110: Al-Jdayde Hotel located on the west side.
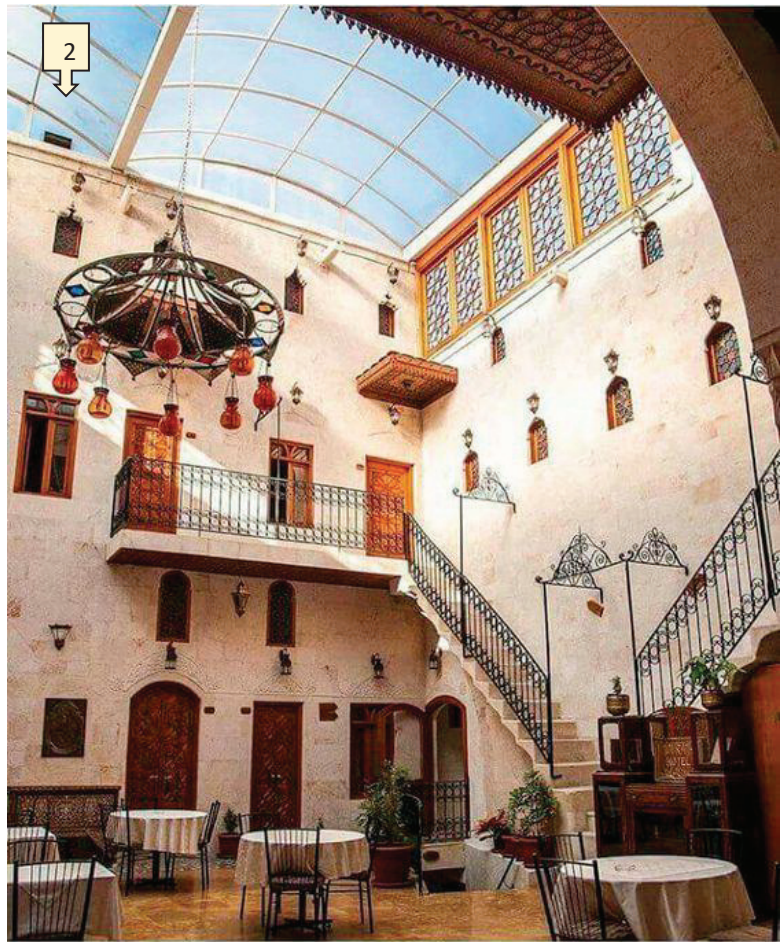
Figure 111: Dar Zamaria Restaurant and hotel.

Figure 112: locally made Antique shop.
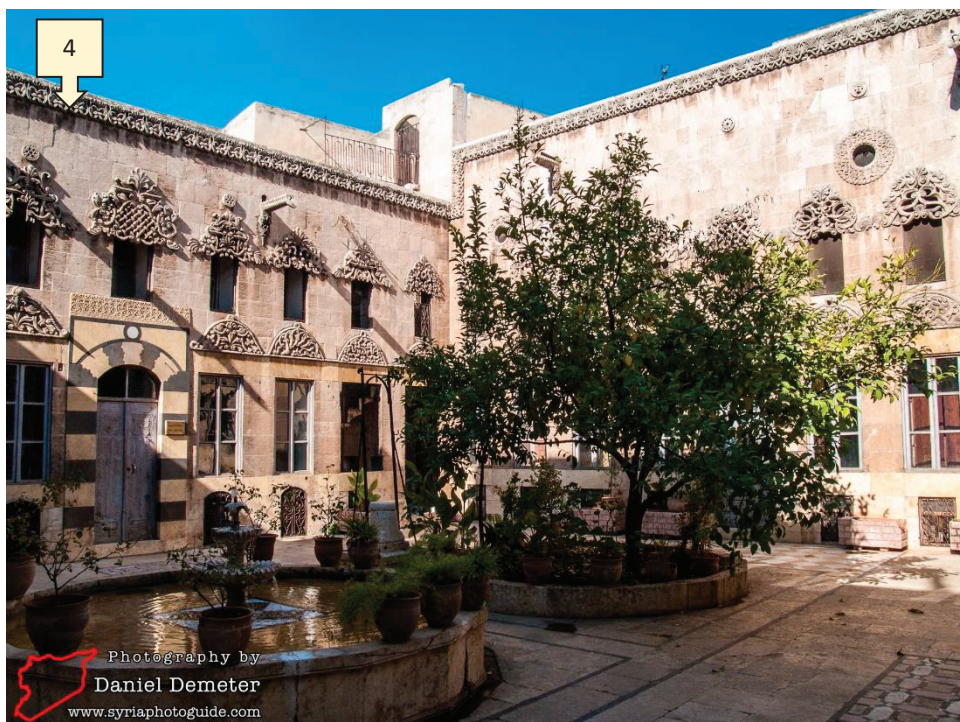
Figure 113: Beit Achiqbash Museum.

Figure114: Beit Ghazaleh museum.

Figure 115: Sheraton hotel.

Clothes Markets

Gold Markets

Wood Markets

Fish Markets

Cloth Markets
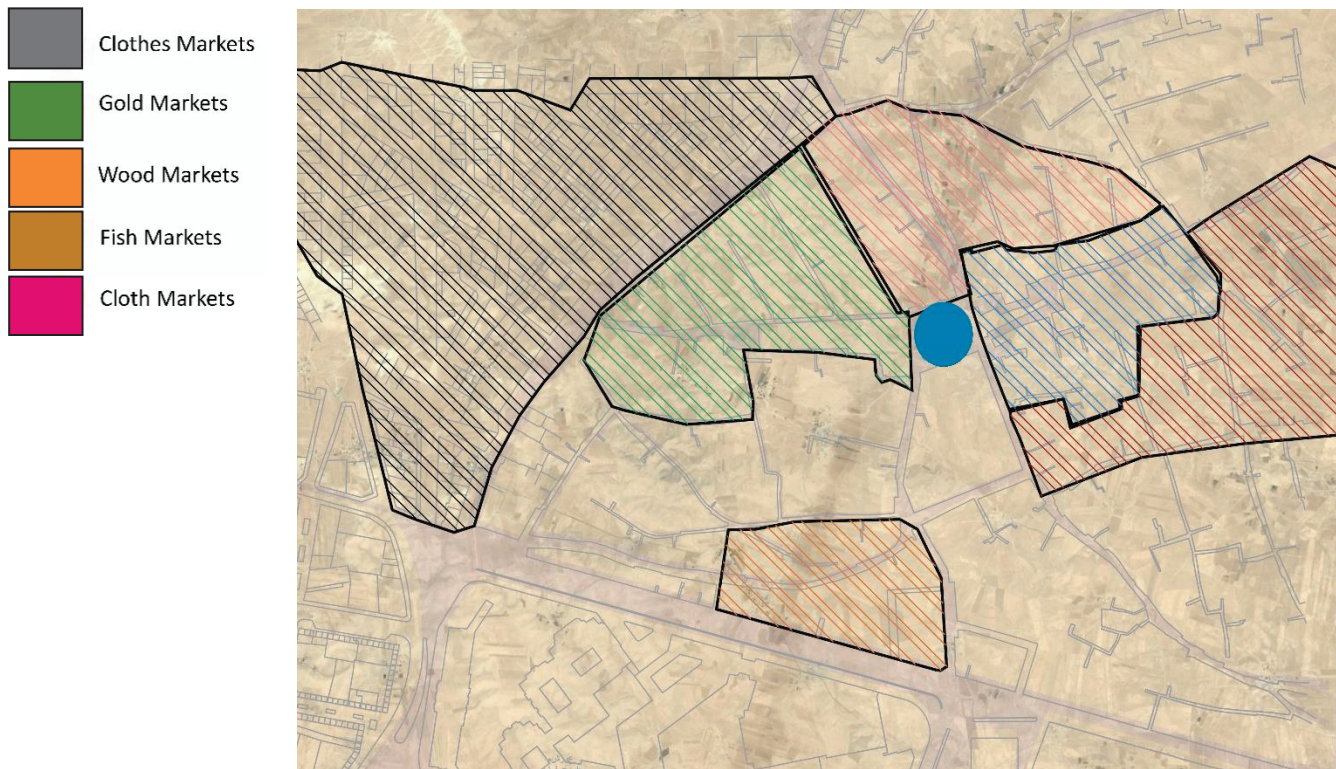
Figure 116: a top view for the location of the markets varieties besides the square.

Figure 117: Al Hatab Square.

4.4.2- Points of strength and weakness:

to propose a successful design, the first step is the perception of space and understanding of the existing potential in locations. this method is employed to mention weaknesses and deficiencies that there are in a site, in addition to depicting strengths and the existing conditions that can help to achieve a better identification to investigate and design.

properties	Strengths	Weakness
1- Image and Identity:	Strong historical identity. Touristic attractor. Use Local material for the ground.	Weak of some surrounding building quality.

Figure 118: it takes the same historic environment.

2- **Attractions and Destination:**	The mulberry tree in the middle of the square and surrounded by palm a tree.	wireless network technology is not available.

Figure 119: the mulberry tree is the most attraction points.

3- **Amenities:**	The woody benches are in just the right location toward the street. Make more it comfortable	Lack of wastes receptacle There are no Varieties of Seating Types.

4- **Flexible:**	Used as a small exhibition like Drawing Paintings, Antiques, playing music and Storyteller for the children.	it has no on-site storage for movable chairs, tables, umbrellas, and games so they can't be used at a moment's notice
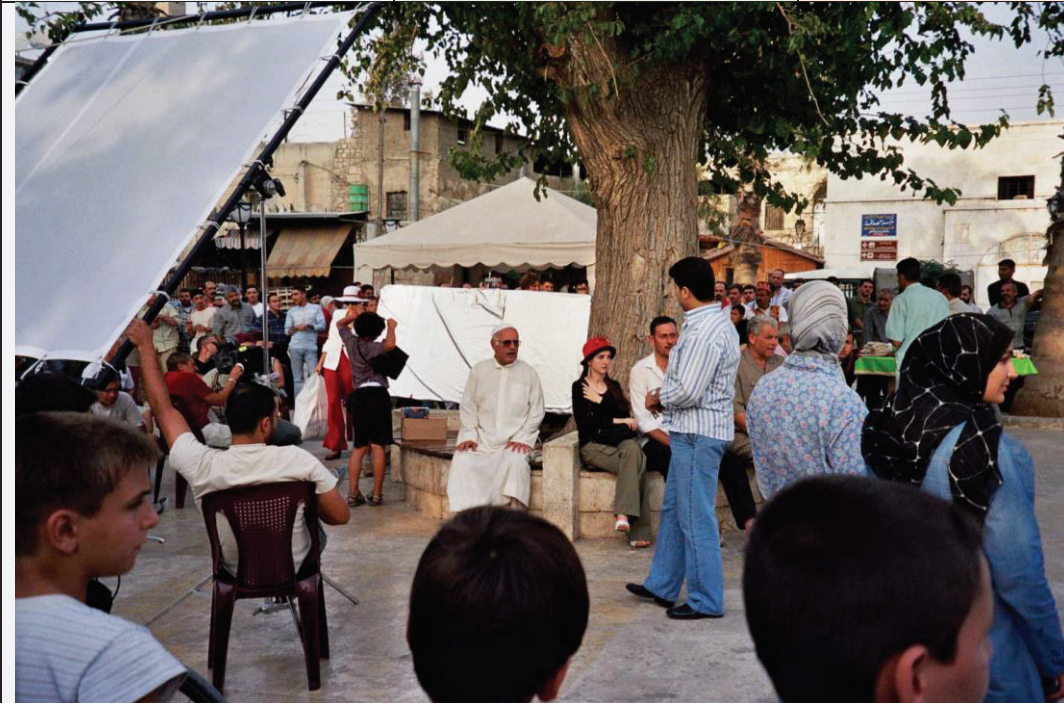
Figure 120: a square as a place for many events and historical exhibitions

5- **Access:**	The square has high accessibility with four direction road	The roads are so narrow and have no Sidewalk.
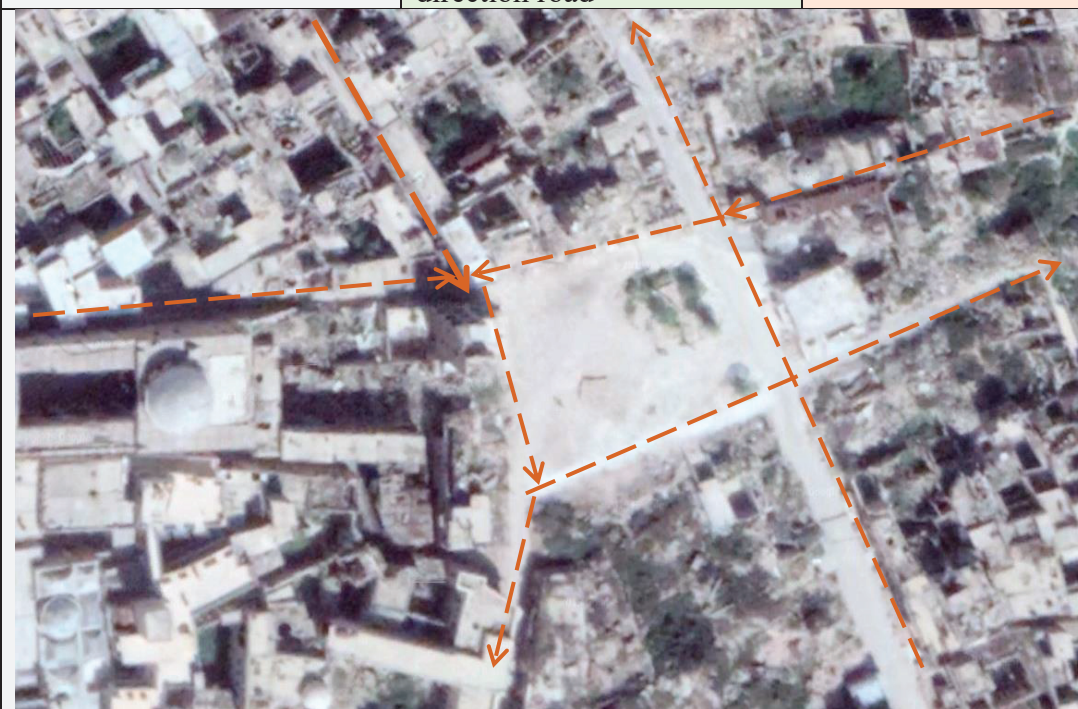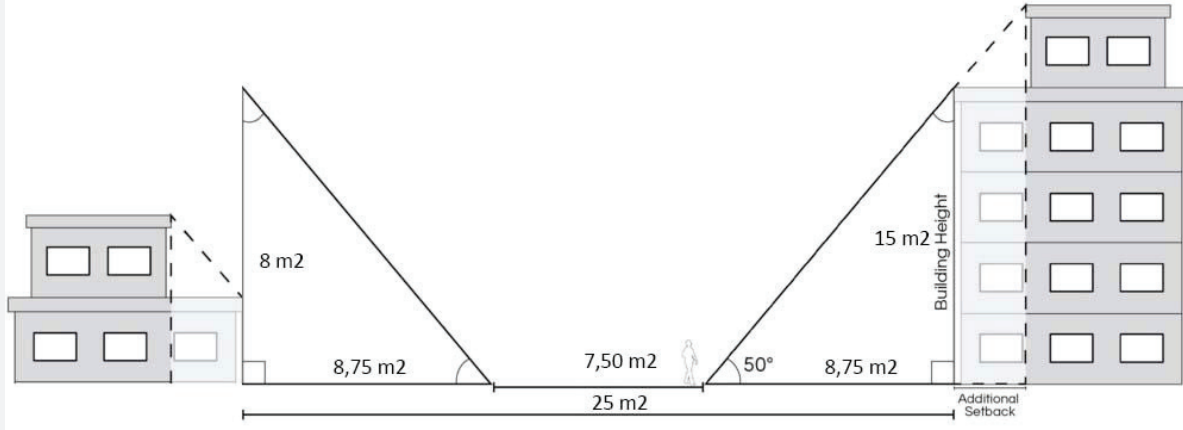
Figure 121: 4 the streets surrounding the square like an octopus.

6-	**The Central Role of Management:**	The waste receptacles get emptied at the right time	The cars make noise for the visitors.

Figure 122: Permanent and temporary parking spaces.

7-	**Getting the proportions right:**	the square surrounded from the north and west side by 8 m2 high houses and that between the right height.	But on the other side of the south and east side by 15 m2 houses and that more than the maximum height.

Figure 123: Correct proportions by Gehl.

8-	**Use all your senses:**	The sense of smell the mulberry tree	There is no easy and direct access to public telephones and information signs.

9- **Trust the user experience:**	The square defined by a boundary element to focus on a specific entrances	The street is direct beside the square and there are no pedestrian walk area

Figure 124: Solution to prevent random movement

| colors | The major color selection belongs to warm colors such as warm red, red-orange, light orange, warm brown. They generally lead to higher energy levels (Augustin, 2009).

This gives intimate and energizing effect to the place, | in the surrounding buildings the looking at facade patterns that are mathematically not similar to each other the small number of cool colors such as light grey are confused. |
|---|---|---|
| | | |

Figure 125: The basic colors of the square and surrounding buildings.

lighting	Al -Hatab square uses vertical and warm-colored lighting not only increase visibility but also creating a more relaxing environment where people feel safe. the careful use of light sets enable users to use the square comfortably also encourage activity to maintain at night	the discordant white light in the side of the mosque are disturbing visual elements may produce confusion and distraction.
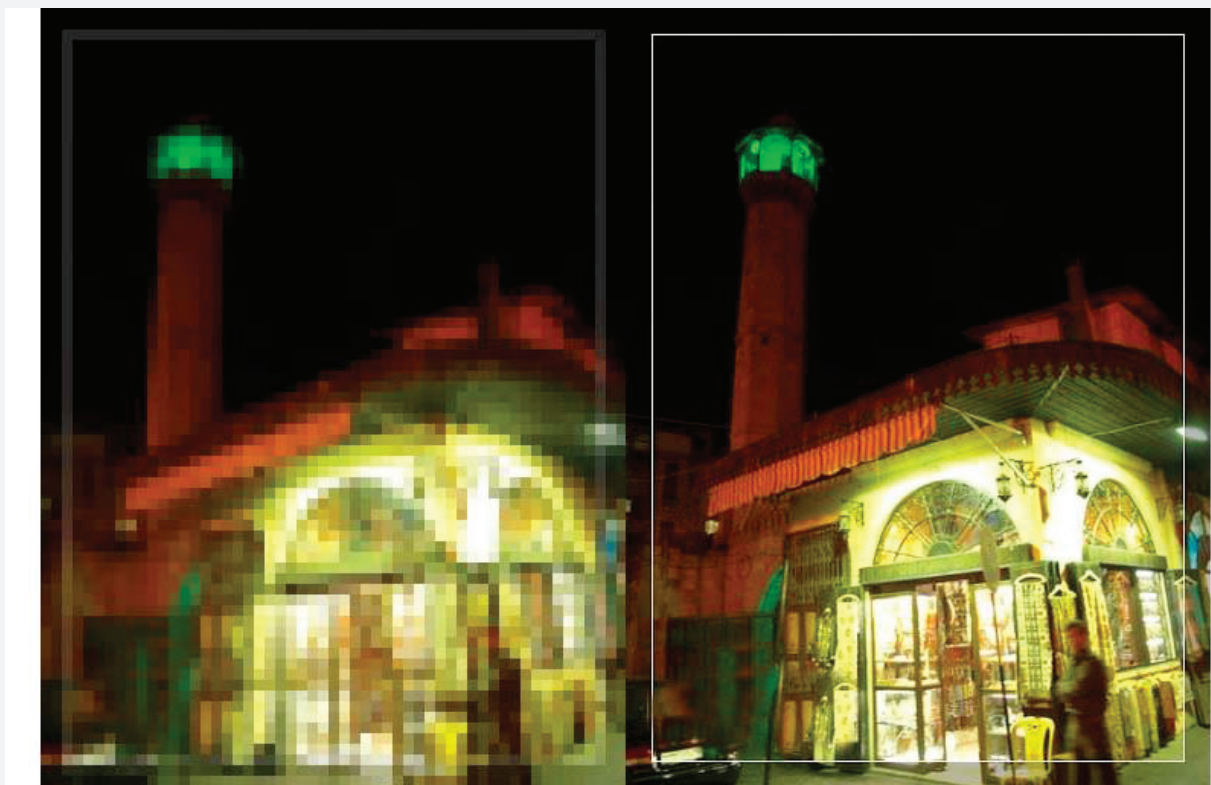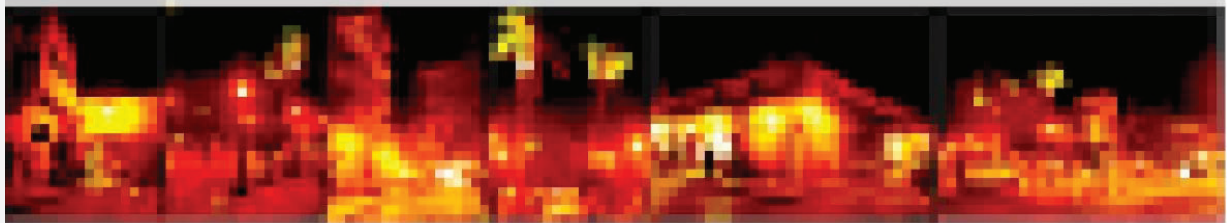
Figure 126: AL-Hatab square at night and how the lights affect the atmosphere.

4.4.3- Al-Hatab square after the war:

After 2010, the square was severely damaged during the war and by a series of massive underground explosions carried out by the armed opposition under the field in April 2015 that destroyed along with all the historic buildings next to it.

Al-Hatab Square and its Al-Jdayde Quarter found itself on the front line from the beginning and the area, like much of the old city, remained a closed militarized zone for most of this period and was heavily damaged from fighting. Official damage assessments conducted after the evacuation of rebel forces determined Al-Hatab to have been *"highly affected"* by civil warfighting.

While the Jdayde Hotel along with other buildings surrounding the square were mostly destroyed, the craters on it were backfilled and its surface-level during 2017. In 2018 further remediation work was undertaken in the area.
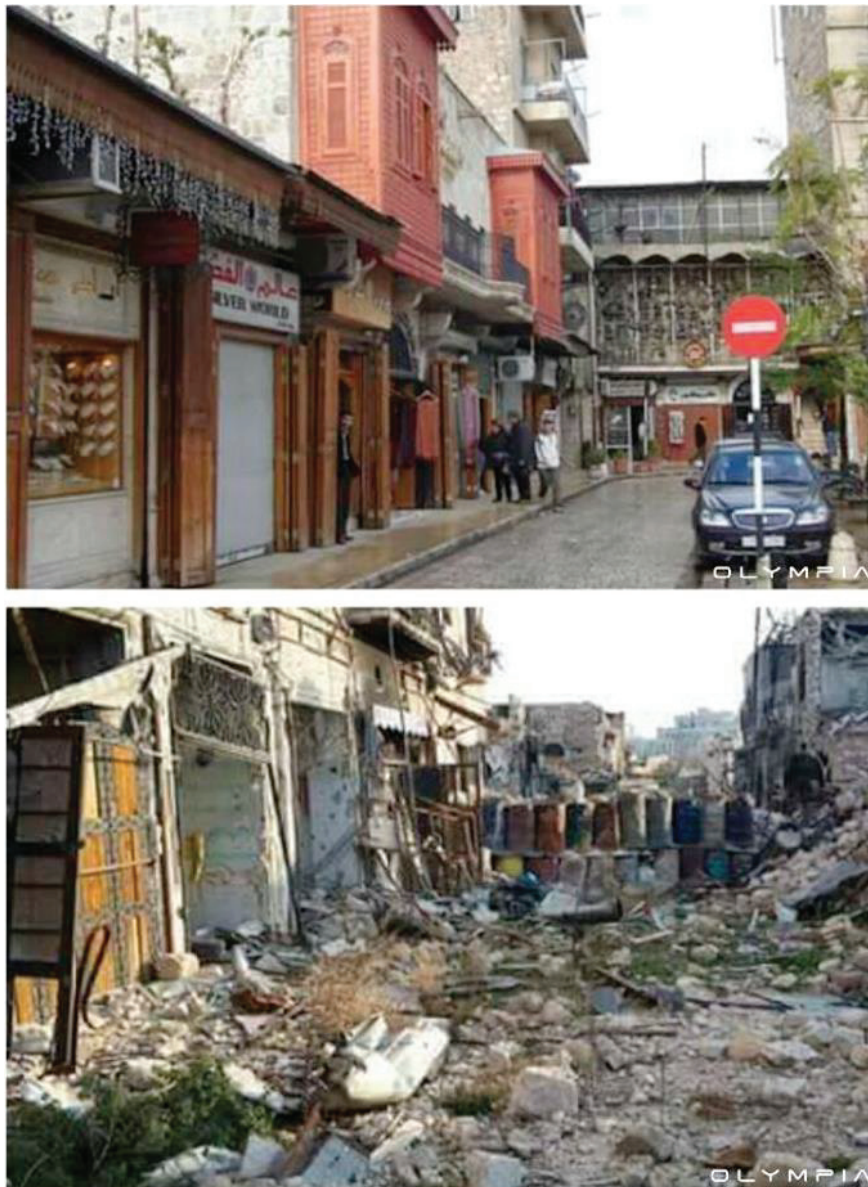
Figure 127: the difference before and after between the north side and west side of the square.

Figure 128: Al-Hatab Square in Aleppo's Old City for The New York Times

Figure 129: Aleppo Today: View of Sahat Al-Hatab and the citadel from the roof of Beit Sissi, Jdayde, Old Aleppo. A few building and store owners are returning, and volunteers are starting to clear the square itself (which is actually in good condition under the dirt Nov 14, 2017.

4.4- The Concept of the new design:

The design concept is to create a meaningful public square. This means a square whose space is shaped by the historic surrounding buildings.

Their Islamic architectural style gives the square a specific character, which changes its physical appearance depending on the light and shadows received during the day and the seasons. Furthermore, the integration of architectural elements like sunshades and sitting areas with the natural environment creates a sense of place.
The main elements for this square are the water, trees and shelters which symbolizes the rest, and meditation.

Figure 130: main function in the square.

The role of the square, besides being designed to have a rest as well as a gathering place for the community and make the connection with people after a long day of work, is to know the history of the square and how much changing had done. in addition to that, to give the craftsmen the space to show their products and their handmade works that express the history of Aleppo and its fame in industry and trade.

The new character of the square has an enclosed quality which provides intimacy and protection for the people so the starting point for the historical theme for the square is represented by designing the architectural elements in a symmetric way to add the balance to the square despite its informal shape and make it look like an indoor courtyard.

The placement of the sitting area is equally spaced along the periphery of a square facing the fruit trees and the fountains, which is located in the center of the square. The sitting area in the middle can be used as group seats and as a platform for handmade products.

4.4.1-Drawings:

1-parking and pedestrian paths: The site is surrounded by 4 narrow streets and 2 permanent parking areas and 2 sides of temporary park place that as I said before that's will be a challenge so I suggest transforming the parking in the south side to the pedestrian path to cut the circular traffic.
The figure explains the old plan for the square with 4 park sides and the new one.

before   after
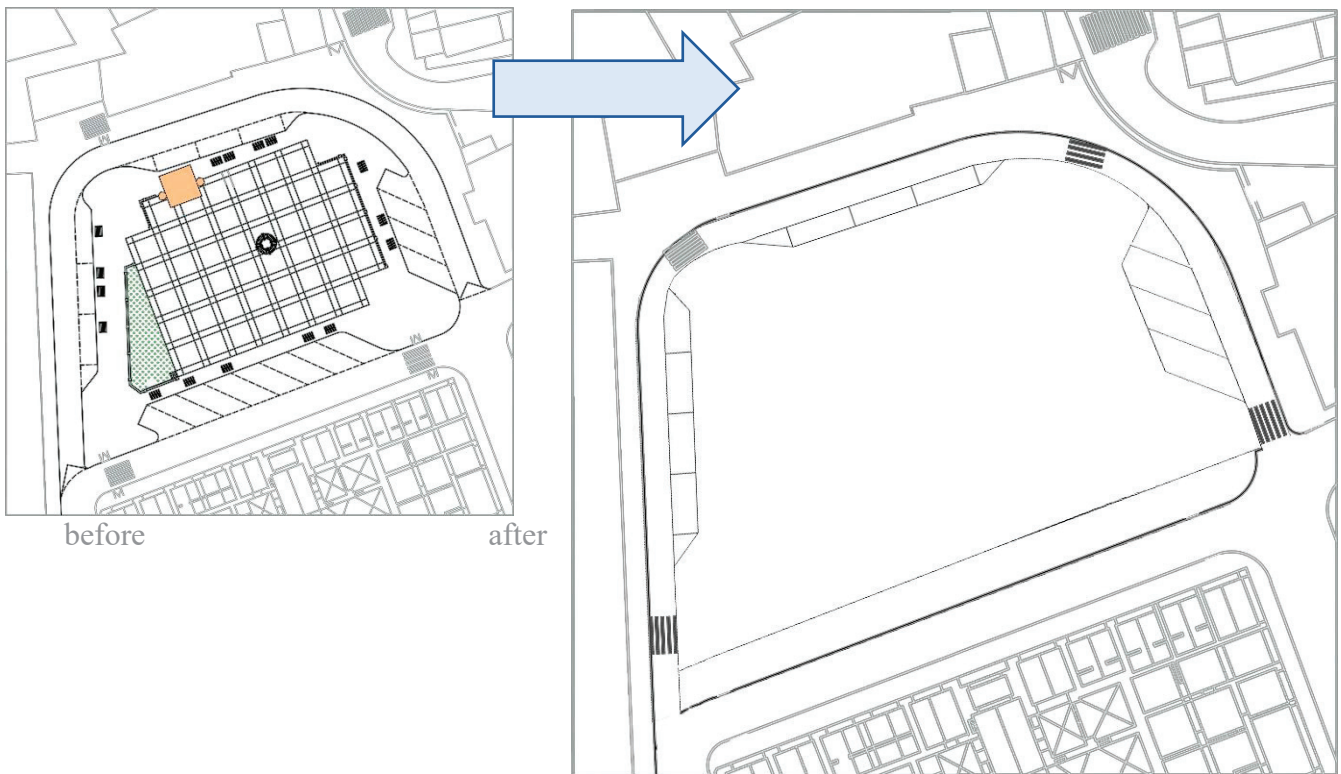
2-floor patterns and square plan use: The pattern on the ground designed to defined the square and the main elements in the center in two-level and the steps can be used also as a seat covered with trees shadows.
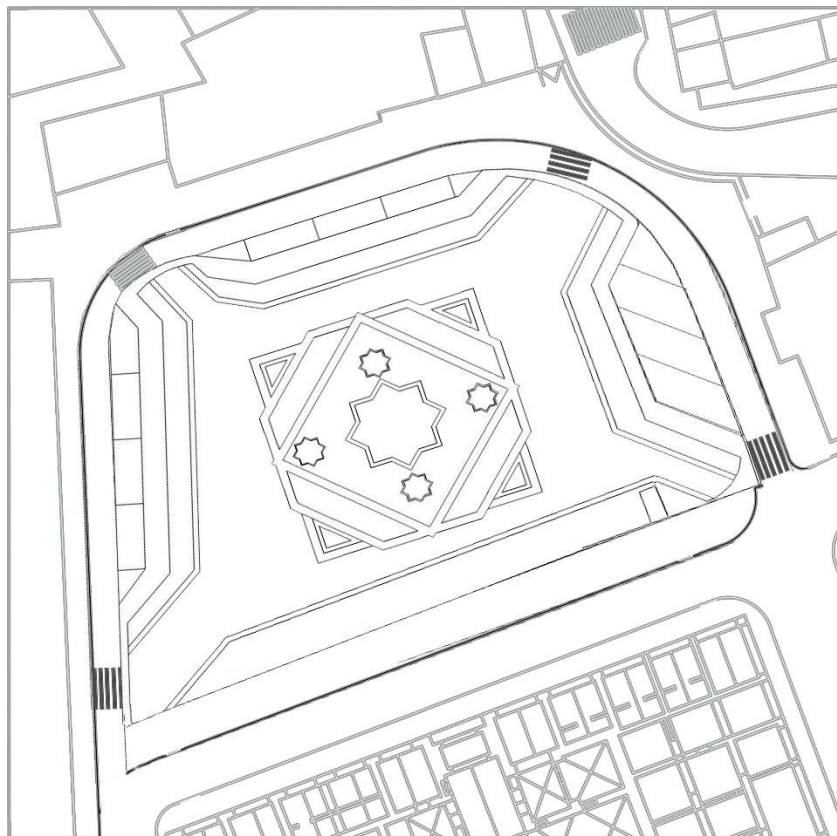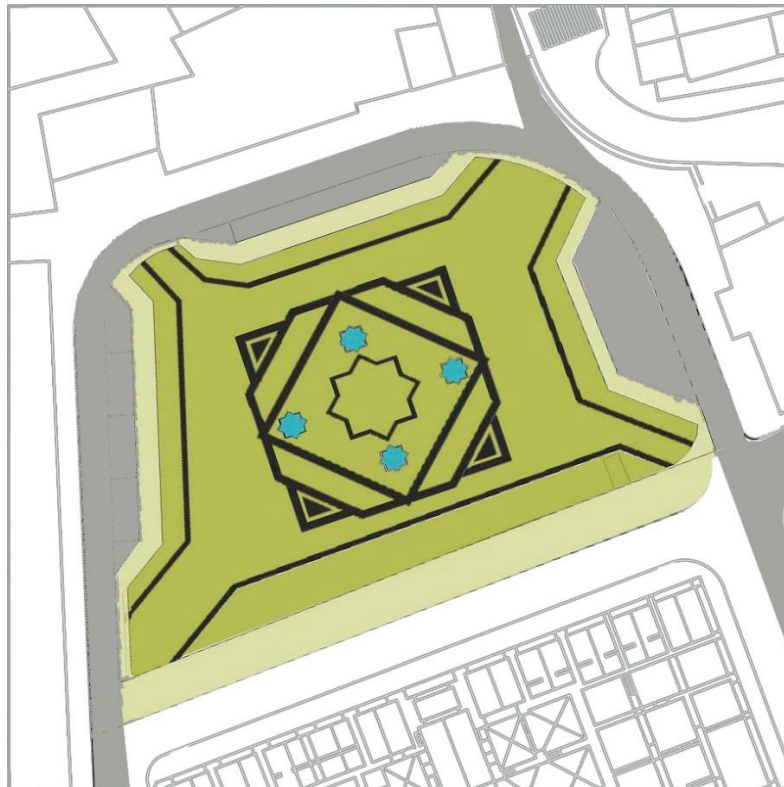
4.4.2-the shadow and sun trap effects plan:

From the site analysis we know that the sun's path is a very noticeable element of the natural landscape but there is a strong luminosity during the summer months that's why I added sun protection elements on the sunniest points also open sitting places to benefit from the sunlight in winter.

The figure shows how the sunlight comes from east side continue to the south side and end the west side.
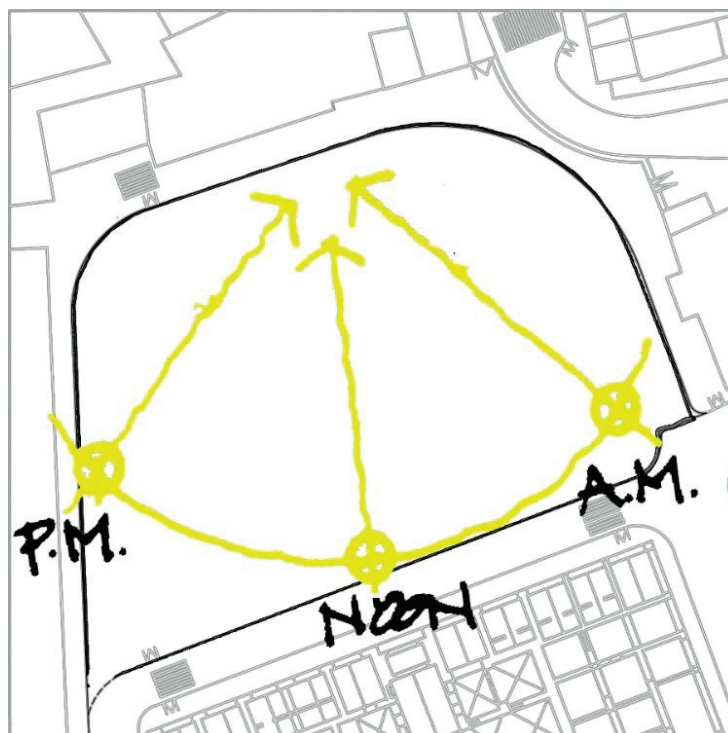
Figure shows how the sunlight in summer and winter affected with shadow on the square during the day.

In Summer		In Winter
09:00 AM		
13:00 PM		
17:00 PM		
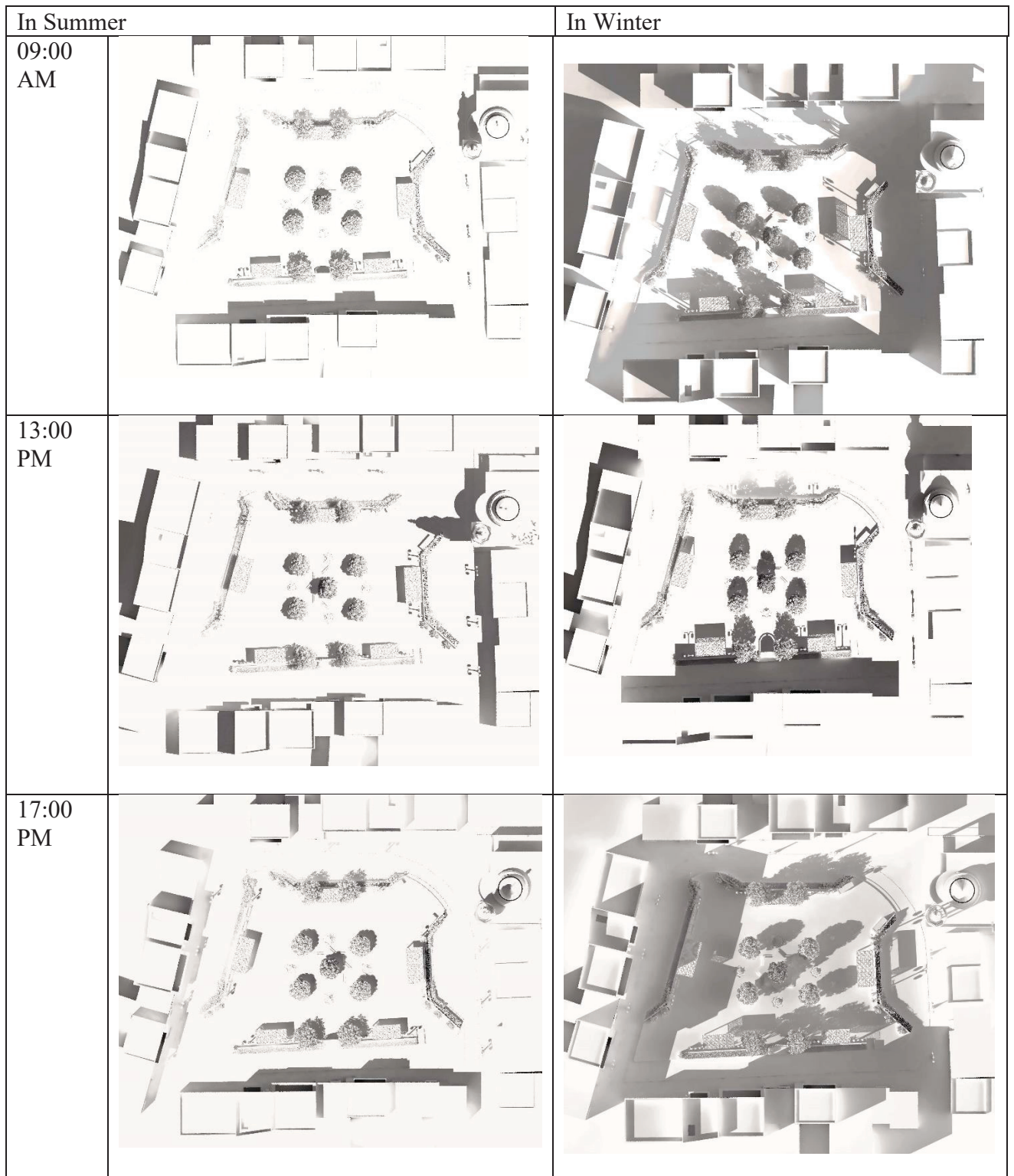
4.4.3-The new used Plants:

the general theme of the square is to enjoy the Evergreen trees like fruitful trees.
The fruits are in the square which located in the inner courtyard of old Aleppo houses which surrounded by 4 small fountains as a sign to the 4 rivers in the paradise garden (water - milk - honey- wine) that depend on what God said in his book describing the heaven in the sky.

Figure 131: bitter orange tree is an evergreen perennial tree belongs to the genus citrus and has a pleasant aromatic smell

Figure 132: the orange tree has been enchanting Islamic gardens for centuries and is quite easy to grow.

Figure 133: mulberry tree is a fast-growing tree and the fruit is edible too. As we know that fruit and leaves contain significant amounts of resveratrol.

4.4.4- the newly used materials:

a ceramic tile floor material	
Wood material for seats and shelters	
stone wall material for the boundary of the square	a ceramic tile fountain material
Stone floor material for Pedestrian paths	Metal material for the sculpture and storage box.

4.4.5- the new vision for the square: The new design will present a Combination between warm colors of lighting like yellow and orange will add greater luminosity and warmth another hands the cool material colors such as white and gray let feel more quiet, rest.

4.4.6- the new lighting effects: it is mixed between the vertical street lamp around the square and horizontal light around the sitting area and green places.
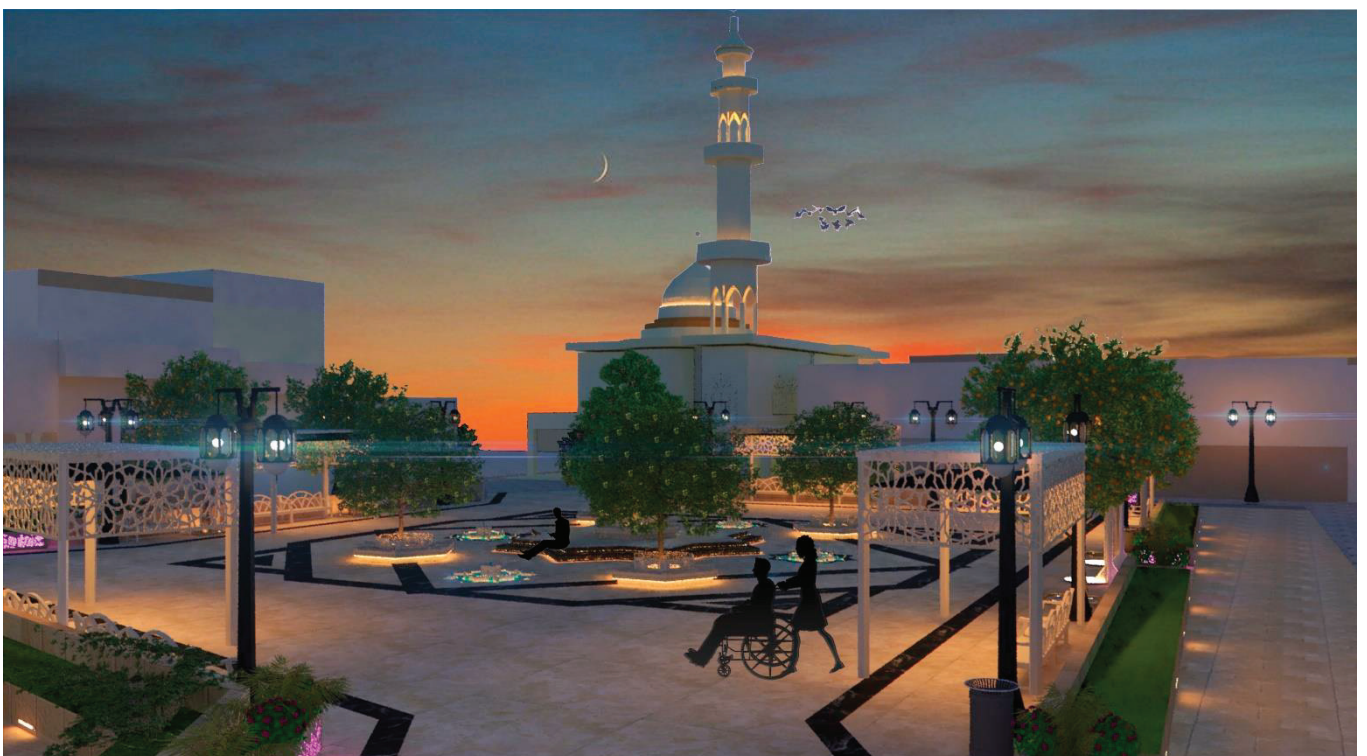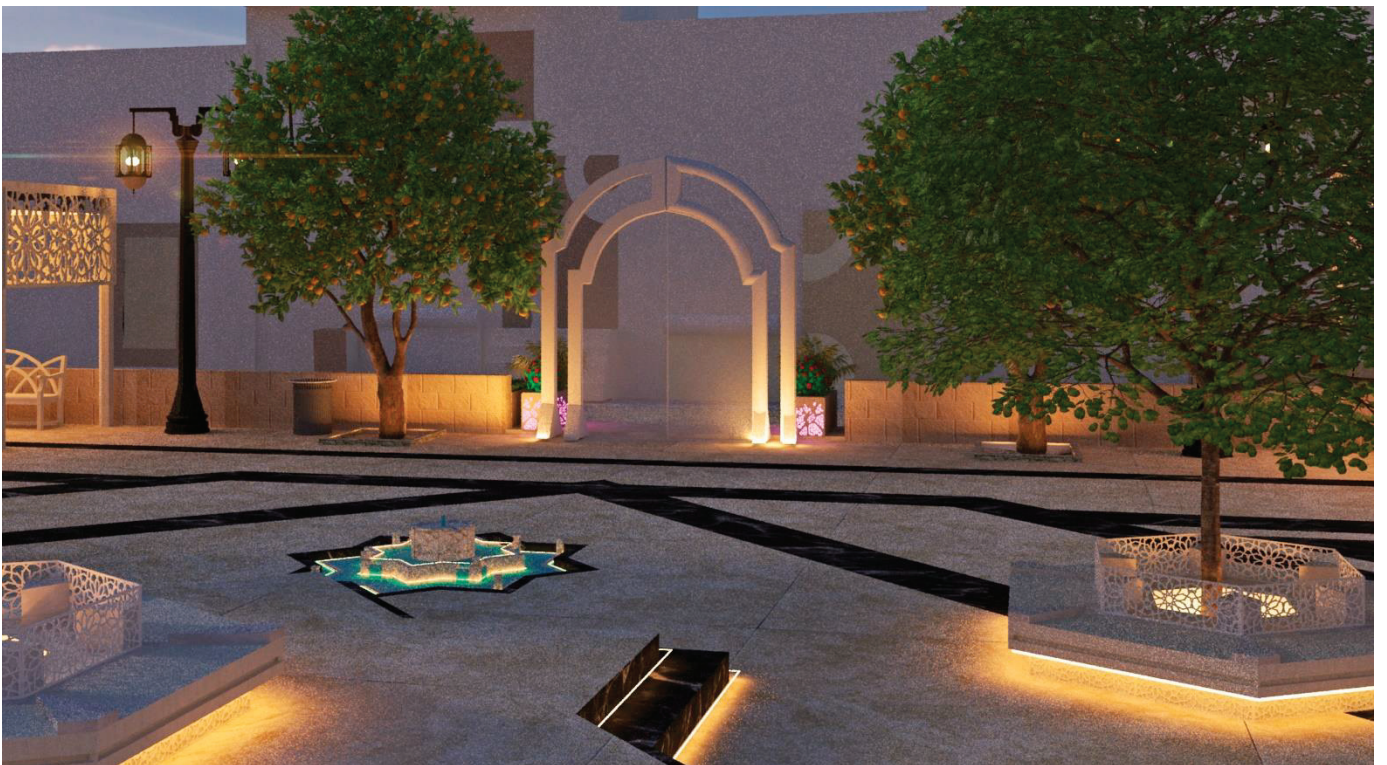
4.4.7- brief description of the history of the square on the sculpture:

with this result, the sculpture, which will be located in the middle of this path, will present the history of the square and will be the focal point for the area and its vicinity.

This sculpture will be shaped like a door as a symbol of the seven doors that surround the old city and it will look like the main gate leading to Al-jdayde neighborhood.

Oula Joukhadar
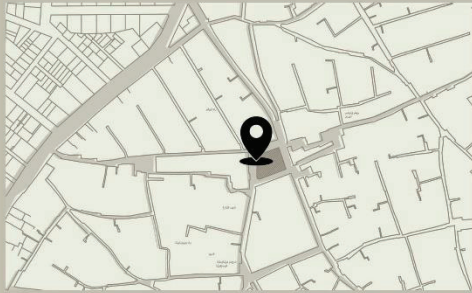
Al-Hatab Square is one of the oldest squares in Aleppo. It is located in the old Jdeydeh Quarter, outside the historic walls of the Ancient City of Aleppo. it is surrounded by a number of fifteenth-century churches and AL-Hatab square became the centers of this area.

it was home to many shops of antiques, handmade jeweler, museum (Beit Ghazaleh and Beit Achiqbash) ,hotels and historic buildings and restaurants like (Zamaria House) that made one of the best Syrian foods.
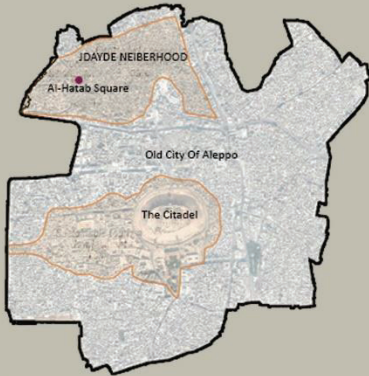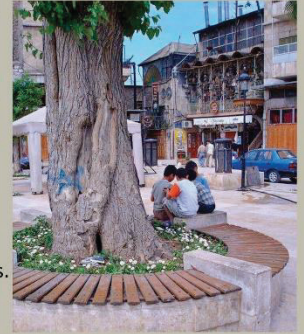
After 2010, the square was severely damaged during the war and by a series of massive underground explosions.Al-Hatab Square and its Al-Jdayde Quarter found itself on the front line from the beginning and the area, like much of the old city, remained a closed militarized zone for most of this period and was heavily damaged from fighting.

Al-Hatab Square history

the new design present islamic courtyad in a modern way with 4 fountain in the middle as asign to the 4 rivers in paradise the main concept for the trees are the fruits trees and mulberry tree

Conclusion

the intrinsic value and the original intention of this thesis was to create a successful urban public square includes functions and certain events that are now needed were lacking since it has been planned in the past.

First, the thesis addressed the issue of Public squares by Theoretical study includes Theoretical study analyzes the activities of public squares and their relationship with the surrounding atmosphere depending on different examples around the world.

Then a theoretical study of the standards and requirements, design and environmental planning in different types of public squares.

Second, the case study presents Aleppo, Syria as a field study and to know the changes in the old city before and after the war then submitted the study of Al- Hatab public square with the analysis of the reality of the square in the historic city in Al jdayde neighborhood and methods developed at all levels

The next step was the Analytical study comparing the results of the field study and theoretical study.

Finely present new Study for the development of functional and environmental reality of Al-Hatab square using traditional idea in a modern way in order to achieve square with the conditions and specifications suitable furthermore, to fit Position, nature of the use, the visitors and urban environment in order in line with the march of civilization development and achieve the flexibility, economy and the beauty.

As a result of this, in this proposed design, there is main issue that all communities should producing emotionally and physically comfortable and safe space in order to stay more. Although there are a number of visitors around the old city of Aleppo, Syria but only few opportunities to enjoy open squares are produced with limited number of events. in addition to that, the infrastructure was destroyed during the war and The character of the city has been ruined.

this design in Al-Hatab square is suggested in order to vitalize exhausted public square with improving environmental quality of city through reinterpreting the meaning of plaza, which is a key of public life, and square focused on the circulation of users and passengers by providing the appropriate amenities and environment to forget the hardships of the long years of war.

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All thoughts taken directly or indirectly from external sources are properly denoted as such.
This paper has neither been previously submitted to another authority nor has it been published yet.

Place, Date: Neubrandenburg, Germany - August 2019

Candidate: Oula Joukhadar

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 Hiermit erkläre ich an Eides Statt, dass ich die vorgelegte Masterarbeit *(Die öffentlichen Plätze)* selbstständig und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Gedanken, die aus fremden Quellen direkt oder indirekt übernommen wurden, sind als solche gekennzeichnet.
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