Islamic Garden and Urban Development in Syria.

((The role of the historical garden in the sustainable development of Latakia city urban landscape))

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‘’If there be a paradise
On the face of the earth
It's here, it's here, it's here.’’

(Jellicoe. 1975; p. 49.)
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Abstract:
The Garden as part of the broader context of the landscape design reflects a particular relationship between man and nature ¹, in the limited geographic dimensions and conditions.

Since the early Islamic settlements, the garden has played an important role in the Islamic society’s life. Its traditional pattern has embodied many symbolic meanings associated with the image of paradise as a metaphor from the Islamic religion. Its form and design reflects the character of the Islamic culture and its properties.

Nowadays many of Syria’s cities as Damascus and Latakia has many problems linked to the absence of the public green areas, public gardens and parks. They play an important role in reducing Fragmentation, spatial discontinuity of the urban plan of the city, enhancing the identity, protecting it against pollution, and conserve the community’s resources as well.

These problems are related to the impact of the socio-political factors on the urban plan of the city.

The research aims to present a scientific analytic study about the concept of the Islamic garden, the form, pattern and its architectural functional elements as a historical aspect of the traditional landscape in Syria. Besides that, it examines its role nowadays in Latakia -Syrian city, as well as its role in the future in the process of the sustainable urban development.

It is a strategy to explore the cultural heritage, factors, causes and philosophy that formed the landscape of Syria in the past.

References:
As well to the importance of the environmental role of the green areas as natural resources and the advantages of the heritage experiences and techniques to solve many environmental problems which confront Syria nowadays as the climate changes problems in the region particularly.
Introduction
The research presented an analytic study for Islamic garden, its meaning and form during the different periods of Islamic civilization and in Syria particularly.

The first chapter presents an overview study of the garden historic development at different Muslim communities.

It explains the identification of the garden according to the different resources and dictionaries, to understand its meaning and description in many cultures as well as the Arabic, and traced the evolution process of the garden form in Islamic period from the early development of Islam, and discusses the three concepts of the nature in the three civilizations that share the same geography and influence each other during this period of Islam, such as Iran, Spain and Turkey.

The chapter also presented a study of the irrigation techniques that used and employed in the Islamic landscape, as well as explore the concept of paradise that associated with Islamic religion and the four-part form garden, beside that, this part examined the historical development of the garden in Syria’s landscape particularly during the Islamic period.

It gives a detailed explanation to its main Characteristics, architectural elements and the ideology that has influenced the urban plan formulation and landscape of Syria since the 7th century.

The second chapter gives a brief overview of Syria’s history to explain better the morphology of cities, and the important factors and events that affected its urban development in general.

Thirdly, the thesis examines the historical urban development of Latakia city through ages, finds out the main factors that formulate the landscape of the city and its urban plan pattern.

The fourth chapter presents a study of the actual evolution of the gardens and green areas in Latakia City, examines the
current green areas by discussing some examples of the city
gardens, and analyze their role, characteristics as a part of the
landscape in Latakia City which is the main port on
Mediterranean Sea in Syria.

The study focuses on the Islamic period in Syria as a part of
the history of Syria since the 7th century, during this period a
symbolic form of garden has affected the historical landscape
and it has become a formal plan for the gardens in Islamic
countries that presented the Islamic ideology, and the unique
form of the garden that developed over years in the Ancient
East by different Islamic civilizations. But in Syria, this
historical element has used just in a few palaces during the
Islamic period.

The research aims to verify the Islamic garden form and
philosophy as historical elements used in Syria landscape in
target to examine its role in the new urban development, and
to explore the culture and heritage for the sustainable deve-
lopment of the urban landscape of Latakia city.
The Methodology:

The Methodology of the research has depended on different resources of the Landscape studies as architectural, historical, archaeological and mythological references that scope on the theme of Islamic garden and landscape, and used in different parts of the thesis.

The overall framework is set up through linking the landscape studies on this theme with the other mentioned disciplines as archeological and mythological ones, in order to understand better the Factors that affected the formation process of the Islamic landscape , and as a consequences to figure out the traditional characteristics and elements of the formal design of the garden in the Islamic period in the Middle East.

That will help to understand in a better way the form and its philosophy, and to study its role in the developing urban process in the Syrian landscape.

The overall methodology leans on the archive researches , thesis, articles, and studies in the field of Islamic landscape and garden, brought from the internet and the archives libraries of Rome, Germany, Syria museums and institutions (the most of the references brought from Syria in year of 2013 and before).

In the first chapter: the study depends on theoretical background of the historical evolution of the architectural form and the philosophy of the Islamic garden in the different periods of Islamic history depending on the recent historical and archaeological studies beside mythological studies on this theme.

The chapter depends also on the comparative study between different countries that played an important role in the development process of the garden as a physical form and Philosophy in the Islamic period of the Middle East.

As well as, the chapter verifies the Islamic garden as a historical form carried the ideology of Islam, and finds out the role of this garden in the future of sustainable development of the landscape in Syria and particularly in Latakia city urban plan.

The second chapter relies more on the theoretical background Of Syria's history and a general overview on the urban development of the main cities as Damascus.
The third chapter presented theoretical background of Latakia City history and urban development during history as a main Case study and according to many historical and archeological references. The chapter also depended on the Analytical study of actual evolution of the gardens and public green areas in Latakia city nowadays. Besides that, it presents analytical and comparative study for many examples of the gardens and green areas in Latakia city and examples of landscape study and urban development in different countries as Spain, Rome and Germany.
Chapter I: An overview study of the garden historic development at different Muslim communities.

1-1 The definition of garden.

The linguistic term of the concept ‘garden’ in Arabic language carries implications about its formative elements and structure.

The Arabic sources and dictionaries identify the garden as; an orchard surrounded by walls, or cultivated land with trees and flowers surrounded by a barrier or a wall (Almaany Dictionary).

And the English language (Oxford Advanced Dictionary 7th edition by (Sally Wehmeier) explains garden’s meaning as a piece of land next to or around the house for growing flowers, fruit, vegetables, etc, usually with an area of grass called a lawn. (page 639).

And Merriam Webster dictionary defines garden as a plot of ground where herbs, fruits, flowers, or vegetables are cultivated, or a public recreation area or park usually ornamented with plants and trees.

Emma Clark, explains that a garden was conceived as a walled orchard or a vineyard (As, Hadiqa, Rawda, or Riyadh) and was irrigated by a channel of water or a well.

But garden has a spiritual role; ‘the purest of human pleasures and the greatest refreshment to the spirits of man’ (Bacon 1883).

According to Hunt, gardens are; “concentrated or perfected forms of place-making” (Hunt 2000).

D. F. Ruggles also explains that gardens expressing the position of humankind with respect to the earth and cosmos, and reflecting the need to produce a food crop.
1-2 Historical development of the Islamic gardens:
Analyzing the formative process of traditional organization in the desert, and its spatial structure helps us to understand the symbolic meaning and the origin of the constitutive elements of the garden in the Islamic regions.

1-2-1 The oasis:
Islam came from the Arabian Desert, at this period of Islam in early ages of it, and in Arabia desert there were no evidence about the Islamic gardens by its four- parts or its structural geometric scheme, the garden was an oasis, it was like that until Islam conquered other countries and civilizations. 

Emma Clark refers that Oasis was a garden too for the pre-Islamic Arabs and the early Muslims, Where they were accustomed to living in a hostile environment, the smallest amount of water and the slightest indication of nature greenness was considered precious and sacred, the oasis offered mercy through water and shade.

The oasis is considered as an early development of agriculture and urban organization in an arid and semi arid areas, and it calls “garden“ in the desert areas, and a geographical areas where prevailed in the Islamic landscape, and as an exclusive area which the Availability of water in the desert transforms the place into a boom of vegetarian.

References:
³, Clark, E., The art of Islamic garden, Times offset, Malaysia, 2013.
The process of safeguard life in the desert, where the environment or matrix is poor naturally, has a clear impact on the architectural features and characteristics of the Islamic garden, and the concept of the nature in Islam in general is generated from this point of view “The impact of the place” on the architecture form and philosophy.

The human being is a result of the environment which produces and shapes man culture and social life, the desert is the place geographically where few organisms could escape unless the adapting process that could take place on.

Oasis of al Igiaz was the origin of the Islam, where it was the centre of the caliphate before its capital was moved to Damascus.

The oasis has formed urban settlements and communities developed from the presence of water in it or grew up around a sanctuary which in turn often owed its existence to the presence of a well or aquifers. The importance of these settlements lay in their role as places for rest and replenishment of food and water for the caravans that passed through them on their way from South Arabia to Egypt and the Fertile Crescent and beyond. North and Central Arabia contributed by way of merchandise to this trade in dates from the oasis; Caravans from Yemen and Hadramawt and from faraway India brought back incense or sandalwood and spices.

References:


6, Laoreano, P., *The oasis, the origin of the garden. Garden as a city*, *Journal* of the Environmental design research center, Edit by Attelio Petruccioli, Roma.
Figure 1: International trade road.  

Figure 2: In 1877 the term "Seidenstraße" (Die Seidenstrassen, literally "Silk Road") was coined by the German geographer, cartographer and explorer Ferdinand von Richthofen.  
Source: https://de.pinterest.com/pin/161918549077811875/

through oasis was also passed the Silk Road which is a network of ancient overland trade routes that extended across the Asian continent and connected China to the Mediterranean Sea and then to Europe. By this network extensive exchanges were conducted in terms of politics, culture, knowledge, ideas and economy between the various regions
and nationalities and between the Eastern and Western world.

The role of the Silk Road did not stop as being trade line between the old nations and communities, but exceeded to the other humanitarian prospects. Religions has Moved through it, and as Asia knew Buddhism, it knew Islam as well.

The trade road networks in the Arabic countries were the same trade line the overland and marine one both of them have long history that extends to pre-Islamic era which is known as Incense Rout and the commercial connection and marine connection road are known in the third millennium BC.

And this trade network was full of movement and continuity. Syria was an important station on land of the silk rout caravan which comes from china far the world overland across Asia. All the caravans’ routs met in Palmyra and then distributed to three different roads taking three years, until they meet in Palmyra with the naval caravan that comes from Japan across the ocean up to the gulf, and then Euphrates, Then distributes all these caravans toward the northwest toward Aleppo, to meet with the European ones that is coming to the mainland via a so-called overland Silk Road, And westward to meet in Latakia and Tartous with European caravans coming via the Mediterranean and called the Maritime Silk Road, and towards the south-west to meet in Damascus with caravans coming from Palestine, Egypt and the Arab countries in North Africa, and to the south to meet the caravan in Bursa with another one of winter and summer coming from the island Arab.

Each of the caravan carries its country goods as products, heritage, customs, culture and ideas, exchange with their counterparts from the caravan where it was a moving embassy, landing in Syrian boxes, which represents the meeting point in that era, so the importance of Syria on that
road because it was the meeting point of civilizations and cultures, and was not just a transit point.

![Irrigation channel in the Palmyra oasis](http://imaggeo.egu.eu/view/107/)

**Figure 3.** Irrigation channel in the Palmyra oasis, By Simon Gascoin, CESBIO, Toulouse, France. Taken on 1 July 2003.

The photo (Figure 3) shows the Main irrigation channel in the oasis of Palmyra which is located in the arid Syrian steppe (Tadmur in Arabic). Irrigation is an ancestral technique in Palmyra that is now threatened by excessive groundwater pumping.

**Reference:**

7. http://www.silkroutes.net/DefinitionHistorySilkRoad.htm


Figure 4. Palm trees in oasis and desert Palmyra, Syria

Figure 5. Palmyra, Syria
1-2-2 The Islamic Garden in, Iran, Spain, Turkey

The form of the Islamic garden in the major parts of the Middle East was determined not only by symbolism but also by climate and topography, in Iran the geographic and beliefs factors have played crucial role on its development. And while commonly attributed to Islamic origins, actually originated long before the Arab invasion and the introduction of Islam to the area. The most of physical landscape of the Ancient Persians with few exceptions was characterized by a flattish plateau bounded on three sides by mountains with height from three to five thousand feet to more than eighteen thousand feet, with the result that seventy percent of the region was uninhabitable desert.  

![Image](image_url)

**Figure 6.** Water as the main element in Persian garden, Bagh-e-Shazdeh pools and water channels (Khansari et al.1998)

**Sources:** Official Journal of the International Association for Landscape Ecology. Farahani, L., M., B, Motamed, E, Jamei, *Persian gardens, meanings, symbolism, and design*, Deakin University, 2016.

**Reference:**

The extent of the aridness had restricted cultivation to a few hidden valleys, and considering the water necessity, the nomadic peoples who had migrated into this region around 1000 BC. They settled in the valleys where there was a source of water, or an ability to collect water by a technique depended on canal.¹⁰

In the context of the hostile vastness of the desert, the form of garden available in this desert was an oasis, with little vegetation or water. It was the primary form of the garden that consists of a fertile area, and it is speculated that the garden developed in response to the effect of crop irrigation on the desert. Its pattern was probably dictated by the geometric plan of open channel irrigation. These gardens were laid out within protective walls, where the primary content was irrigation channels and trees with its shadows used to rest.

In this period of Iran history, there were no actual evidence of early Ancient Persian quadripartite design gardens, but Wilber (1978; p. 3.) mentions pots depicting a world divided into four quadrants, some of which contain a pool at their centre.¹⁰

Figure 7. Painted Vessel, 1000 BCE, Isfahan, Museum of Iranian Antiquities, Tehran, Iran.
Source: L. Halsted ,D. College ,The Perso-Islamic Garden,
April 11, 2014

Reference:

The archeological references have referred to many sites dated back to the Neolithic period in the Middle East, where the pottery works was spread on many locations in the ancient settlements in Syria and Mesopotamia, the communities deity was associated by many symbols as FirasAlsawah refers in his book “Mystery of Ashtar”. And as many sites like the site of Halaf 5400-5000 BC.  

![Halafian ware](https://en.wikipedia.org/wiki/Halaf_culture)

**Figure 8**: Halafian ware

**Source**: [https://en.wikipedia.org/wiki/Halaf_culture](https://en.wikipedia.org/wiki/Halaf_culture)

This quadripartite design was adopted as a feature of the plan of the Ancient Persian garden. It was known as a Chahar Bagh meaning ‘four gardens’. (Wilber, 1978; p. 3)

Beside the form, they also adopted the canal technique, a way of moving water to a particular area. Without exposing it to the evaporating by the high heat of the desert. This achievement was achieved by the people of the Kingdom of Urartu, (the city of Uhli, present now a day Marand, just north of Zagros) who used underground conduits to channel snowmelt to the dry plateau. These underground irrigation channels are known as a simple system, using gravity as its basic force.

**References:**


Another reference as Tom Turner in his book\textsuperscript{13}, also refers that the use of channels as garden features probably originated in Mesopotamia which relied on irrigation canals (Turner, page73).

Huge armies of people were dedicated for this work to build, maintain and derive the water from the snow-fed subterranean water at the base of the Persian mountains, directed to irrigate gardens and crops.

\textbf{Figure 9}; Diagram of a Qanat System.
\textbf{Sources}: M, C, ADLARD, \textit{The Garden as a Metaphor for Paradise}, Rhodes University, January 2001

\textbf{References}:

At the first Ancient Persian Era the Achaemenid dynasty which was established by Cyrus the Great, Adopted this system, and the use of Qantas spreads throughout the land and over the region, provides high amounts of water which helped to extend widely the agricultural landscape, this in turn led to an economic and political changes, and this formation of landscape emerge the earliest formal plan of garden which has become one of hallmarks of Islamic gardens. In Iron Age at The Achaemenid Empire (550-330 BC), which includes various civilizations and becoming the largest empire of ancient history, they have built great palaces complexes and gardens with the system of Qantas, they literally made the desert bloom.

![Simulation of Cyrus’ garden at Pasargadae exhibiting quadripartite division.](image)

Figure 10: Simulation of Cyrus’ garden at Pasargadae exhibiting quadripartite division. 

**Sources:** L. Halsted, *The Perso-Islamic Garden: A Reclassification of Iranian Garden Design after the Arab Invasion*, Davidson College, April 11, 2014.

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**Reference:****

The empire was influenced by the already well-established practices of the conquered lands and was based on the previously existing Akkadian, Assyrian and Median administration systems as well as the Egyptian\textsuperscript{15}, and the Mesopotamian influence continued until the end of the Sasanians period. It played an important role in the formation of the culture of the empire which is reflected on the form and meaning of the garden plan.

Figure 11; The Achaemenid Empire during the reign of Cyrus the Great, 559 BCE-530 BCE. Major cities are, marked and modern borders are superimposed. Source: http://www.ancient.eu/image/265/ by SG , published on 26 April 2012.

The earliest garden form used in the royal palaces, with a sophisticated irrigation system, was recorded (559-530 B.C) in the Palace area of Pasargadae\textsuperscript{16}. The location was in the southern region of the Iranian plateau, an area known today as Fars, this part participated the traditional Ancient Near East with Elam the ancient Pre Iranian civilization. As well as was part of the Fertile Crescent where most of humanity's first major crops were grown\textsuperscript{17}.

References:

\textsuperscript{15} https://en.wikipedia.org/wiki/Achaemenid_Empire


\textsuperscript{17} https://en.wikipedia.org/wiki/History_of_Iran.
The philosophical design concept of gardens based on the Zoroastrian the four sacred elements of water, wind, fire and soil of the cosmos. The other distinctive feature of Persian gardens as many of desert inhabitants, the thick brick walls, which surround the entire rectangular plan of the garden.

A. Petruccioli explained; ‘’Persia. Here a biaxial symmetry, although a third zenithal axis is always implied, is the means of drawing earth and cosmos together. Everything is organized according to this principle: the layout of architectural elements, the hierarchical organization of decorative symbols, even the practice of gardening. Sophisticated and passive’’

This form helped organizing the landscape and it was a part of the irrigation system that has been followed in the wide structured landscape, it plays a key role in the economical transformation during the empires period.

D. Ruggles refers” the classic quadric partite, cross axial form of the garden as a reflection of the agricultural landscape, and garden symbolism, as environmental, economic, and political rather than explicitly parasitic.”

The geographical features of the mountains border of the Iranian Plateau have helped The Achaemenids to use the irrigation system Quant. These subterranean tunnel systems provide water to arid areas and store it for drinking or agriculture through the gardens in stone or linear tile rills, the water was usually channeled in a square or rectangle around the perimeter of the garden. Then, by an axial rills that cut the body of the garden, to a four- parts design. These rills were flooded in order to water the garden, whose geometric and symmetrical plan allowed for equal amounts of water to reach the plants.

References

19, Halsted, L., The Perso-Islamic Garden: A Reclassification of Iranian Garden Design after the Arab Invasion, Davidson College, 2014
The form of four-part garden served as one of the easiest ways to water plants and save the water in the arid climate and usually it is more important in the large agricultural landscape.

''The gardens form was considered as a highly structured geometrical scheme, it became a powerful metaphor for the organization and domestication of the landscape, And even more this function promoted it as a symbol of political territory '' (Ruggles, 39).

Beside the practical purpose of the four- part garden design, the form carries many symbolic and cultural meanings, influenced by the ancient civilization of the Mesopotamia through its historical formation and development. This has been presented by the design of the royal palaces and its relation to the landscape and garden. The royal palace was complex characterized by the physical hierarchy which distinguished the ruler, The entire complex rises high above the surrounding area or the garden, this early development of the architectural practice carries a great deal of symbolism which connected to a religious tradition of the empire . In Achaemenids followed the Zoroastrianism religion which the ruler was considered as Ahura Mazda’s “representative on earth” and was held to great regard in a religious context, mirroring similar divine rights of kingship. The ruler reflected not only terrestrial might, but other power extend to another worlds after the death , which was perhaps best expressed by elevating him to the heavens literally with raised platforms and palaces.

References

21, Halsted, L. The Perso-Islamic Garden: A Reclassification of Iranian Garden Design after the Arab Invasion ,Davidson College , 2014.
G. SMITH explains that “linking the king to the divine life giving force of the god on the earth, is one of the world's oldest religions, and this metaphor of a god as ruler dates back to the protoliterate age and continued throughout Mesopotamian history.

The terminology of kingship and lordship which dominates the Mesopotamian literature suggests that the power and authority of the gods was an essential factor in their thinking.”

The garden—four parts became an expression of a powerful symbol for territory, possession and sovereign rule, there for it used as a palatine garden served as a metaphor, it refers to the ability of the production and economic power, which always plays crucial importance for the ruler and his control over a vast empire extends widely.

The controlling position of the properties imposes an important architectural position in the layout of the garden, in the central location or the middle of the garden; it emphasizes the superior and controlling of the landowner to view over his properties and to his powerful ability of transforming this arid land to a remarkable productive one. Organizing the landscape, increasing the natural resources and controlling the productive territories in the geography where the majority of it suffered from the desert, it is an important achievement when the agriculture has crucial importance for its wealth and continuity, and it's an act of making civilization in the history of the empires.

“The inscription of human activity on the landscape as a whole was a sign of civilization and within the palatine pleasure garden was a sign of sovereign territory.”

Ruggles

References


https://faculty.gordon.edu/hu/bi/ ted_hildebrandt/OTeSources/20-Proverbs/Text/Articles/Smith-ANEGods-TJ.pdf
This idea will continue to be presented also in the Islamic period in the different countries, from the Umayyad to Abbasside and Islamic Spain period, A. Petrucciol has referred to this idea in regard to the garden and the power;”’Despite the regional differences, Islamic anthropic processes behave according to the same rules underlying governing the culture: on one side, religious imagery and hierarchy; on the other side, the necessity (and vanity) of expressing the power of the dominator’”.

And In reference to the paradise concept and the garden, In 401 BC Xenophon (c. 431-355 BC), the Greek historian, wrote about the garden of the Achaemenian king Darius I: “…in all the districts he resides in and visits, he takes care that there are ‘paradises’ as they call them, full of all the good and beautiful things that the soil will produce….,” (King. 1979; p. 21). This is the first historical reference to the so-called paradeisos. 23

References

In the new period of Persian dynasty Sassanians, its capital is Ctesiphon, on the Tigris and in central Persia, the palace complex of the king Khusrau II Parvis (591 – 628 AD), had similar qualities. it is raised on a walled terrace with a roughly rectangular plan, and this space is in turn enclosed within a much larger walled area, clearly a ‘paradeisos’ or hunting park. Between the raised palace enclosure and the outside wall of the ‘paradeisos’ there was an immense pool, probably exactly rectangular and indicating the intention to provide vistas from the palace or from the arcades of the raised palace enclosure along the pool. (Thacker. 1979; p. 27.)

According to Edward Gibbonb, the park was immense and many exotic animals were kept and were turned loose for sport. He credits the royal stables with six thousand mules and horses, and says that nine hundred and sixty elephants were kept for the king’s use. (Thacker. 1979; p. 28.)

Philipe Pregill in his book, “landscape in history” mentioned that The earliest planned landscape including gardens towns, parks and cities appeared in Mesopotamia during the Sumerian period, Assyrian and neo-Babylonian periods, and the Assyrian who ruled Mesopotamia from 1250-612 BC, Introduced the concept of private parks into the middle east, notably the hunting parks of the various kings, These gardens contained ornamental plants brought into the region during Assyrians expeditions.

References:

24, Adlard, M, C, The Garden as a Metaphor for Paradise, Rhodes University, January 2001
And in this period the Sassanian kings actually declared themselves to be gods and they used the figurative position of superiority to look down upon their four-part gardens, the garden represents the four sacred elements they believed in.  

When the Byzantine and Persian were weakened by war between them the Islam as a new power at (637–651) conquest Persia and led to the end of the Sasanian Empire, Zoroastrian religion in Persia declined, and Islam had been the official religion of Iran since then. The previously un-Islamic Zoroastrian origins of the chahar bagh were imbued with Islamic significance. But the form of the chahar bagh was adopted by the Muslims and widely used in their later gardens, but Islam represents another meaning for the gardens form of the four parts which depend on the description of Qur’an (which Muslims believe to be the literal word of God). The four parts- garden represents the paradise concept which was mentioned in details in their holy book with its four rivers. The Koran promises believers who perform these and other righteous acts.

In Quran mentioned that:

God has promised to believers,  
Men and women, gardens  
Under which rivers flow,  
To dwell there in,  
And beautiful mansions  
In gardens of everlasting bliss.

(Koran. Surah 9: 72)

References:

26. Halsted, L. The Perso-Islamic Garden: A Reclassification of Iranian Garden Design after the Arab Invasion, Davidson College, 2014
A difference has occurred to the garden function in the Islamic period in Iran, the Iranian gardens before Islamic period have always been as places to be viewed rather than used, and it was constant in all later Ancient and Islamic Persian garden Layout. ‘the Persian garden is a place for contemplation: “Persians don’t walk in gardens as we do, but look at them from one viewpoint only,”’ writes the 16thcentury traveler and merchant Jean Chardin

In Islamic period, the gardens will be more committed to the Islamic religion practices, they became the backdrop for religious discussion, and prayer, the gardens became in the center of theological schools, alongside the mosques, and in public squares, providing ease of access to everyone and cementing them as staples of daily life. Because they were viewed as terrestrial manifestations of heaven, and the central pavilions and raised platforms were used for poets to recite their poems, and for students of theology to recite the Qur’an.

But we will find another development in the form of the Islamic gardens in Iran at the Safavid era (1301-1749), the gardens presented the cultural aspect of the Safavid era which characterized the current Iranian identity, it’s based on the two aspects of Iran history and combined them, the ancient Persian Empire and the Muslim empires that flourished in Iran after the Arab Invasion.

References:

28, Adlard, M., C., The Garden as a Metaphor for Paradise, Rhodes University, January 2001
29, Halsted, L., The Perso-Islamic Garden: A Reclassification of Iranian Garden Design after the Arab Invasion, Davidson College, 2014
The gardens in this period presented the same elements and philosophy of the previous culture of Achaemenids and Assyrian, they surveyed their domains from their palaces, saved the pavilion as a function of sovereign, and have developed with more emphasized on the pre-Islamic aspects like hierarchy order. From this period an important example of the Islamic garden is built by Shah Abbas the Great (1587-1628 AD). It’s called The Bagh-e Fin near Kashan and it is the only extant garden created by Shah Abbas on the Caspian coast. Kashan is on the edge of the great salt desert where the mountains begin, and remains the oldest living garden in Islamic Persia.

Shah Abbas built the garden to honor and glorify the season of spring.

References:

Typical of the style of the Islamic garden in general, and as with the gardens in Granada, the garden is enclosed. A high wall surrounds the Bagh-e Fin, and from the outside all that can be seen of it are the tops of the numerous trees planted within. The layout of the Bagh-e Fin displays a variation on the theme of chahar-bagh form.\textsuperscript{31}

\textbf{Figure} 14. Hierarchy of spaces in Fin Garden plan (Khansari et al. 1998)


\textemdash

Right: A plan of the Bagh-e Fin.

\textit{A} - Entrance building

\textit{B} - Garden wall with the four towers at its corners

\textit{C} - Family quarters (Andarun)

\textit{D} - Pavilion built during the Qajar period, on the foundations of a pavilion from the Safavid period

\textit{E} - Khakeh-e Karim Khan (now a museum)

\textit{F} - Bubbling basin (Howz Jushan) that receives the first water from the spring of Fin

\textit{G} - Pavilion (Talar)

\textit{H} - Bathhouse (Hammam)

\textbf{References:}

In the centre of the garden is the customary rectangle of the chahar-bagh, created in this case by a pool and immediately beyond it a pavilion. Water channels run through it on three of its four sides; it even has its own small square pool in the middle of it.

![Image of the pavilion](image)

**Figure 15.** The art of symmetry in all component of Fin Garden with view to four directions. Kashan.

**Source:** Photo by: Jakub Jerabek from Flickr.


The pavilion is a square building with an arched ceiling supported on four great pillars which, in turn, support large arches providing a view down the shady promenades and channels with running and bubbling water.

The use of water within the pavilion is a common feature. It was used to calm and cool the people and the air within it. The pavilion becomes therefore, a perfect sanctuary protecting those who sat in it from the heat and dust of the region. It was a type of ‘open air’ living room, and was in keeping with the idea of contemplating the garden, rather than walking around in it.
Figure 16: (b) A view of Fin garden central Pavilion, Kashan.

Source: Photo by: Ninara from Flickr Figure.


Kashmir, with its striking natural sites “…was to provide a new stage in the evolution of the Islamic garden, even though the traditions and strengths of the original……………..[Persian]…concept was retained. “

(Lehrman. 1980; p. 141.)

A. Figure 17. (a) Arial picture of Fin garden enclosed between walls (Khansari et al. 1998).

Another example of this period garden is Chehel Sotun garden was built in the 1640s by Safavid King, Shah Abbas II, in a 15-acre site in the heart of Isfahan plain, situated at the centre of the Iranian plateau. At the time, Isfahan was the capital of the Safavid Empire. The garden is located close to the most important square of the city, Naghsh-e Jahan Square, and was used for royal ceremonies and official receptions.

**Figure 18:** The Plan of Chehel Sotun Garden, Esfahan (Khansari et al. 1998).

The last garden is the desert isolated garden of Shahzadeh (Prince) Mahan, which is located at a point 35 km from south-eastern Kerman near a village called Mahan. The garden was built in Qajar dynasty (1850-70) in a strategic fertile land in the middle of arid and barren lands, which has turned it to one of the famous gardens of Iran. Moreover, locating near the tomb of Shah Nematollah Vali, a famous Persian poet, has increased the visitor’s attraction to this garden.  

References:

Figure 20: Shahzadeh-Mahan Garden. Kerman (Hobhouse 2003)

Despite the small differences between the Persian gardens they have evolved from the same initial structure and components. Most gardens have rectangular plans and have been divided into square or pseudo-square shapes.

The rectangular shape might slightly change in response to different climatic situations and in regard to the sites’ opportunities and limitations. The plan of Shahzadeh-Mahan Garden (in Kerman) is an extended example of chahar-bagh pattern in the shape of an elongated enclosed rectangle in which the pavilion is located in the center of the main water channels defining the north-south axis. The structure of Fin Garden (in Kashan) is also an extended form of chahar-bagh in a series of squares and rectangles with a pavilion and square basin in the center. The water axes defining the chahar-bagh include a main one which leads the user from the entrance gateway to the central pavilion and a secondary one with a turquoise-tiled water channel. The Chehelsotun Garden design also stretches to a square shape with a pavilion located at the intersection of the primary axis defined by two large pools and a secondary asymmetric axis with a smaller pool on the western side.  

Figure 21: (a): A view of Shahzade-Mahan pavilion, Kerman. 
Source: Photo by: Maite Elorza from Flickr.
Despite the Islamic period has presented one ideology for the form of cross-axis garden design depending on the Quran imaginary of paradise, and the whole Islamic landscape share the garden meaning, but the gardens in the Andalusia palaces has presented many symbolic vocabulary with manipulation of irrigation system exploiting the site features and Mediterranean climate in a new development to the Islamic gardens form. The open courts and gardens in Spain give excellent example to the supreme level of the landscape in Islamic period; When Muslim occupied North Africa and southern Europe 711-1492 A.D, they transferred the developed agricultural techniques and innovations with many new crops, trees and flowers from Syria and the Western Mediterranean into Western Europe and Al-Andalusia in the medieval period, beside the previous Roman irrigation constructions which had been renewed and developed to be used again.

This in turn led in this period of Spain to a dramatic agricultural transformation which was known as "The Green Revolution." The innovations increased the amount of water available for irrigation throughout the year and overcame the limits of previously used gravity-fed irrigation. During the height of Umayyad rule, historic sources indicate over 5,000 waterwheels were built along the Guadalquivir River alone. Watson argued that these introductions, along with an increased mechanization of agriculture and irrigation, led to major changes in economy, administration, population distribution, vegetation cover, agricultural production income, and urban growth.  

References:

The period was characterized by an expansion of trade and culture, and saw the construction of masterpieces of al-Andalusia architecture. A language of landscape developed for palace gardens that encoded a system of values in a set of visually organized objects, which presented the sovereign's ability to maintain rule and display the wealth, the stability and the power over his property.

Ruggles refers to this development: "Production in al-Andalusia increased in quantity and quality resulting in surpluses, flourishing markets, and capital investment in the countryside where farms were located, which in turn contributed to greater yields, this prosperity affected the way in which landscape was used and perceived. Because land generated wealth, elements of landscape began to be used symbolically to express that value."

Islamic gardens with its physical form and characteristics have crystallized by this development, it presented a set of visual relationships includes the architecture of the palaces and the surrounding landscape, it was a part of these whole set of constructions which becomes one whole. It reflected the system of values that organized in response to the expansion of agriculture and change in its practices as well as cultural and political reorganization according to Eastern models.

The initial meaning of the garden metaphor has continued to be presented as a paradise, it is arranged with garden paths, water streams, pavilions, and fountains in a geometric form of landscape, place full of peace and comfort, that is to present the 'earthly paradise.'

References

the cross-axial plan continued appearing in the most if not entire palatine setting as in the large agriculture landscape, but in the palaces the scale was reduced, The daily irrigation canals and wells that provided the water for the agricultural landscape were presented as a decorative water channels and fountains in palace gardens, as in the Alhambra Palaces in Granada, 1370. The Courtyard of the Lions is an oblong courtyard, 35 m in length and 20 m in width, surrounded by a low gallery supported on 124 white marble columns.

A pavilion projects into the courtyard at each extremity, with decorative walls and light domed roof, elaborately ornamented. The walls are covered 1.5 m up from the ground with a border above and below enameled blue and gold. The columns supporting the roof and gallery are irregularly placed, with a view to artistic effect; and the piers, arches and pillars are adorned by varieties of foliage, above each arch there is a large square of arabesques; and over the pillars is another square of filigree work.

In the center of the courtyard is the celebrated Fountain of Lions, a magnificent alabaster basin supported by the figures of twelve lions in white marble. The architectural pattern of the palace with the courtyard and fountain in the center was similar to the traditional palaces and court houses of Syria, beside the advanced and complex technique of the irrigation system, the palace presented the water construction that became a remarkable sign of the Andalucía palaces gardens.

The courtyard palaces used many symbols in the distinguished water constructions and canals in the lion’s courtyard with its divided four parts.

References

Its composition presents symbolic meanings, in regard to the lion statues which used previously in the courtyard house of Damascus, and originally it could be linked to the ancient history of Syria, where associated to one of the Neolithic deity, And agricultural societies beliefs and myths. It looks like an unconscious expression of the memory, carried its symbolic through the history, and by the time it lost its provenance to be used in another place and time but the meaning of this figure still refer to power and influence, some of these references could be found in the ancient sites as example Halaf site 36, this ancient culture used lion symbol in the temple of their deity.37

This symbolic vocabulary still in the unconscious of the societies of the Ancient East, and after the religions emerged as a result of the social classes as Angeles explains, most of these beliefs have disappeared and the Myths of that period of the human history has associated as the reference with the new holy books, and so Islam when entered Syria and Mesopotamia. It has contained this heritage that extended to many thousand years ago, with its new ideology and make the Quran the main references to all this Myths that have already existed in the history of the ancient Levant or in Syria and Mesopotamia legacy. Therefore, the religion presents continuity in the culture of the ancient east while it has contained many of the heritage of the ancient east and its early civilizations.

References
36. Ishtar, Goddess of fertility. And one of the important deity in Syria and Mesopotamia which was extant from the Neolithic period, until its gradual decline between the 1st and 5th centuries AD in the face of Christianity, And the lion refers to Tammuz, and known as Adon in Canaanite, and it became one of her symbol. https://en.wikipedia.org/wiki/Ishtar

37 ,Halaf site on the Euphrates river where a palace façade composed of many lion figures, its dated back to the period between 6100 and 5100 B.C.E, and the site belong to Neolithic period, and their deity was Ishtar. Now the façade of the palace became the Aleppo museum facade. https://en.wikipedia.org/wiki/Halaf_culture
Figure 22 (A), AlHambra palace, Lions courtyard

Figure 22 (B), AlHambra palace, Lions courtyard
In the Nasrid General Life summer palace in Granada, The palace and gardens were built during the reign of Muhammad III (1302–1309), the complex contains the Water-Garden Courtyard, which has a long pool framed by flowerbeds, fountains, colonnades and pavilions, and the Sultana’s Garden or Courtyard of the Cypress. The palace was linked to the Alhambra by a covered walkway across the ravine that now divides them.
Figure 23: Gardens of the Al-Hambra Palace, Granada, Spain
Source: http://www.muslimheritage.com/article/gardens-islam

Figure 24: Alhambra palace, Filippo Baratti, The Sultana, 1872, oil on canvas, Private collection. Source: http://islamic-arts.org/2011/history-of-the-nasrids-of-granada/
**Figure 25**: Panorama of the Alhambra from Mirador de San Nicolas. From left to right: Generalife, Pico del Veleta (mountain), Palacios Nazaries, Palace of Charles V, Alcazaba


**Figure 26**: Plan of the Alhambra palace with: (A) the Court of the Myrtles, (B) the Court of the Lions, (C) the Court of Daraxa.

(Brookes. 1987; p. 95)

Figure 27 (A): The Partial Garden in the General life palace.

Figure 27 (B): The Partial Garden in the General life palace.
This example of palaces gardens is considered as the best surviving example of the sophisticated and combined uses of water for symbolic decorative and practical purposes. The sample of arts and water enhancing and formulating the space and the whole context of the scenery, the Ornamental Arabic calligraphy, and all these sensual aspects that developed in a suitable way to organize a closed place and private place that belongs to the elite and caliphate properties ensuring his sovereignty and power.

D.Ruggles refers that the image of the pleasure garden in Abbasid period palaces and even in Syria Al Rusafa site, has been developed in Spain palaces.

The palaces were adorned with fountains, trellises, and plenty displays of water. In palatine environments, stunningly theatrical transformations of natural vegetation by the application of rich textiles and gems. They created living walls with smelling flowers, various sweet fruits, and singing birds. The Bayad and Riyad one of the few Andalusia manuscripts with representations of gardens shows a garden
with a pool and a domed kiosk to one side while the left a figure leans forward while grasping one of the structural supports of trellis.

‘‘trellising, irrigation, fertilisation, pruning, and grafting were necessary procedures for both agriculture and pleasure gardens, and its translation from the purely utilitarian farm to the perfumed, colorful, and exotic garden, that the expressive function of gardens lies’’. 38

Another development in the gardens function in this period in Spain has achieved in the domain of botanical science, the botanical gardens have presented in many palaces of The Umayyad caliphates, and they expressed their interests and passion of flowers and plants.

At eighth century, many of the exotic plants where transplanted into Andalusia gardens, in Rusafa, the country palace estate of Abd al –RahmanI, he procured and obtained many special plants and from another foreign parts, as well from his hometown Syria, and stocked it in Rusafa which became famous for its excellent plant varieties that presents the early interest in botany and practical agronomy. D.Ruggles referred that most of the new plants introduced to Andalusia before 1492 came from the east 38.

References
Figur28: "Bayad plays the oud to the lady", Arabic manuscript for Qissat Bayad wa Reyad tale (late 12th century)  
Source: https://en.wikipedia.org/wiki/Hadith_Bayad_wa_Riyad,  
The Bayad and Riyad manuscript is believed to be the only illustrated manuscript known to have survived from the more than eight centuries of Muslim medieval life in Spain and Portugal. The sole manuscript is in the Vatican Library, where it is catalogued as Codex Vat. Arab 368. It is a 13th-century Arabic love story. The main characters of the tale are Bayad, a merchant's son and a foreigner from Damascus, Riyad, a well-educated girl in the court of an unnamed Hajib (vizier or minister) of 'Iraq (Mesopotamia) and a "Lady" (al-sayyida).

By the tenth century, the royal gardens at Cordoba became botanical gardens, with fields for experimentation with seeds, cuttings and roots brought in from the outermost reaches of the world. Other royal gardens, in Spain and elsewhere, also became the sites of serious scientific activity as well as places of amusement.38

"gardens distilled the elements of the greater landscape, with all the attached political, economic, social and religious meanings, into a form that was intended for the pleasure as well as comprehension of an elite group of court patrons."

The new relation between gardens and the surrounding landscape as a view was developed in the places of Spain rulers in a form of mirador.
In Cordoba this new means or construction, the ‘‘mirador’’ was used in the palaces garden of Abd Al Rahman which enabled the king to hold the public views and to see over his properties. This new position brings more wide relation with the landscapes and available views from the distance.

The mirador has not only provided a place for viewing, but also has enabled the very act of vision wide landscape. This made deference from the previous experiences, as example the Umayyad palaces in Syria desert, the palaces situated in artificial oasis and plain site, the underground Qantas and irrigation made agriculture and pleasure gardens possible. But these complexes lacked elevated vantage points from which to survey the surrounding cultivations.

Figure29: The landscape with term mirador — balcony, in Spanish — implies a space of viewing. ‘‘View from the Mirador’’,

References

In Spain the mirador was part of the construction of views to naturalize social hierarchy and serve state ideology, it has became part of Islamic palace typology in Umayyad and the rest of Islamic rulers palaces in Spain and moreover, it’s transported abroad to the other Islamic countries like Maghreb. (Ruggles, P.107). Ruggles explains this shifting “The miradors and gardens of Al Hambra exemplify the shift from symbolism derived from the agricultural landscape to the symbolism of Quranic paradise, and from the worldly to the spiritual, Expressed in the visual continuities that united architecture with gardens.”  

But in Turkey there are other factors that have played a role in the garden development during Islamic period as meaning and form, the relationship between Turks and nature is considered an important factor in their long settled urban lives, extending from the Seljuk until the collapse of the Ottoman Empire.

The geographical location and features of turkey on two part of continentals, with long coastline overlooking several seas, helped to develop a new relation with the surrounding nature and territory topography, within the Islamic culture that expanded over three continents, and took place in Turkey in the 1071, where the Islamic rule replacing Byzantium when the Turks came from Central Asia.

“The Turkish world, settled in the high plains, is inspired by the wide open space of the prairies: a landscape to explore rather than contemplate. The garden becomes a resting spot in a never-ending journey. Its types and techniques, foreign to the nomadic world, had been imported from nearby Iran”.  

References:


39. Petruccioli, A., Rethinking the Islamic Garden, Islamic Environmental Design Research Centre, Como, Italy.

Turks originally were nomads. They came from Central Asia where an arid land, carrying with them their ancient traditions and searching for more fertile lands, they settled during the rule of the Seljuk Empire in Mesopotamia and continued in Anatolia. In the middle ages, when Muslim Suljuki Turks conquest central Anatolia it was ruled by the Christian Byzantines, The Turkish language and the Islamic religion were gradually prevailed, and this period marks the start of Anatolia's slow transition from predominantly Christian and Greek-speaking, to predominantly Muslim and Turkish-speaking.

This change brought along a new garden culture and urban change, Muslim Seljuk Turks developed a synthesis emanating from various lands together with different cultures that they were acquainted with, during this period, Turks created a pleasure gardens and employed luxury in their palaces, they used the quadripartite garden layout of intersecting watercourses, and that was by the contact and influence of The Persian culture, as example the Artuqid palace, in the Diyarbakir Citadel in the 13th Century, it is surrounded by gardens, rich in amenities as well as in decorative and artistic elements (such as statues. during this period there was less strict observance of ban on human representation in the early centuries of Islam) in addition to a mosaic-decorated pool and a water channel, the palace belong to dynasty of Artuqids who ruled Eastern Anatolia and Jazira in the 12th and 13th centuries. It is possibly inspired by a tradition dating back to the Umayyad palace of Khirbat al-Mafjar in Jericho, and in many other gardens like these elsewhere in Anatolia

References:

Figur30: Musical entertainment in the garden
(By Palace Museum. No: B408) permission of the Topkapi

Source, B.Alarslan, Islamic Gardens with a Special Emphasis on the
Ottoman Paradise Gardens: The Sense of Place between Imagery and
Reality, Bahcesehir University- Turkey.
http://www.ojcmt.net/articles/14/143.pdf

In this period of the thirteenth-century Anatolia, has
developed by many gardens surrounding the cities, the
Magnificent gardens reflected the wealth of the dynasty, the
might of the state, the just rule of the sultan and the ideal
landscape.
The imperial gardens have been built for the sultan in this
period out of the city, with mansion and fortified with high
walls which did not block the view surrounding outside, like
running water elements as, lakes, rivers, ponds and fountains
facing the green wetland mountains and meadows. Behind
these garden walls the kiosks stood. Garden with hierarchy
orders also used, summer palaces/pavilion and gazebos (the
kiosks built for watching were constructed. In these gardens,
fruits and vegetables were planted for nutritional needs; while
other fruit trees, cypresses and some similar plants were
planted solely for aesthetic purposes and heavenly images.
Apart from these, the hunting fields, dating back to the
Iranian Seljuk, these garden-palaces were organized usually
for the use of the sultan and the members of the court. 41 The
entertainment of the ambassadors, hunting parties, banquets

These heavenly fields were tenures of the elites. As examples were a palace estate built on top of a rocky hill which protruded towards the lake in the heavenly surroundings on the southwestern shore of Beyşehir Lake at the foot of the Anamos Mountain Chain - a branch of Toros Mountains. This palace, built by Alaeddin Keykubad in 1227, is named Kubad Abad. On the palace’s hunting field, known as the Imperial Garden” or Garden of Eden”, a dam was built utilizing the nearby fresh water. Because the springs provided much water there was a fertile coastal plain and there was a cool breeze from the lake.

But in the 15th century during the Ottoman empire this influence of the Persian tradition on the gardens have been limited, just few examples were found in Istanbul as karabali and Sultaniye gardens. 41

![Figure31: A female entertainment scene in the garden (Palace Museum. No: B408)](source)

Source [http://www.ojcmt.net/articles/14/143.pdf](http://www.ojcmt.net/articles/14/143.pdf)

References:

41 Alarslan, B., Islamic Gardens with a Special Emphasis on the Ottoman Paradise Gardens: The Sense of Place between Imagery and Reality, Bahcesehir University- Turkey. 2011

[http://www.ojcmt.net/articles/14/143.pdf](http://www.ojcmt.net/articles/14/143.pdf)
Even they were in contact with other cultures like Mesopotamia, Persian, and influenced directly by Byzantines, and Roman cultures, they have reinterpreted them to create a brand-new synthesis. Their garden’s layout has featured pools and fountains but lack the severity of formal layouts and a strict formal organization like the Iranian gardens layout. Their approach to gardens was that they should be a part of nature; in planting them with flowers and trees, their concern was only to enrich and embellish upon what nature had already provided.

The Ottomans planned their gardens to fit their environment conditions, as climate, dimensions, topography, and they took advantages of the natural aspects of the natural surroundings landscape as mountains, rivers, see views, they embellished upon what nature had already provided, preserving the natural setting, therefore they plant trees and put in flowerbeds without adhering or adapting to a particular rigid plan, fixed rules or to employ artificial layout over their landscape. They thought of the Islamic garden as a concept of natural elements presented by the trees, flowers and the beauty of the nature. While building upon the heritage of the Seljuk, the Ottomans interacted with a variety of cultures on a vast geographic scale from the inner corners of Europe to North
Africa and to India, As a Muslim state, the Ottomans created their own synthesis; neither resembling that of the other Islamic states nor being a mere western imitation. The Ottoman man, with his own conception of the world, life philosophy and the values behind these, displayed a unique character differing from other cultures (Cansever, 2010 a, pp.116-117).

The Ottoman city became an organism existing in a continuously changing, open-ended process where additions were made and the individuals preserved their supremacy without losing their individualities (Cansever, 2010b, p. 102). On the other hand, the Ottoman gardens preserved their glamour because of their natural functional qualities. The plant and vegetation elements defined a place as a garden or recreational area, along with the element of water emphasized as an indispensable factor.

The ponds and selsebils, normally placed in gardens, also could be seen in home interiors where water served the space coolness and peacefulness (Eldem, 1976, p. 292).

They planned their urban space around the water including the headwaters, sea and rivers just as it existed in the environment in its natural form. Within the course of historical development, especially during the reign of Ahmed III, typically came to be known as ‘’Tulip Era’’

Muslims value spaces that reflect peace. Peacefulness is an ideal where as paradise images are a means which could be carried from internal rather personal spaces to reality spaces; from outdoors to indoors. While trying to determine the form of architectural intervention in the city texture, people directed great care and passion towards the landscape and panoramic view.

References:

41 Alarslan, B., Islamic Gardens with a Special Emphasis on the Ottoman Paradise Gardens: The Sense of Place between Imagery and Reality, Bahcesehir University- Turkey.2011
http://www.ojcmt.net/articles/14/143.pdf
Figure 33: Sadabad in the 19th century from Fazıl Hubbanname Zennanme. In the garden where there are kosks and pavilions surrounded with fountain ponds and fountains, women are entertaining themselves. Source: İstanbul University Library T5502 78.

The original space design and the type of the interventions made to nature determined the styles for distinction and interwove, which led to its emergence as an emphasized version (Cerasi, 2001, p.228).  

Figure 34: The Waterfront houses by the Bosphorus and woods on the hills. Source: http://www.ojcmt.net/articles/14/143.pdf

Even though the pleasure gardens (Bauman, 2002, pp. 99-141) of the rich and the elite emerged as a much envied luxury, with their spiritual dimensions, they also were formed for evoking the abundant and reviving plants of Paradise.
Figure 35: A floral landscape design dominated with tulips in Emirgan Woods (by Permission of the Istanbul Metropolitan Municipality).

Le Corbusier described the Ottoman city texture by remarking that New York was like hell and quarry like whereas Istanbul was heaven on earth with fruit gardens (Le Corbusier 2001, p.188). The celebrated architect drew attention to Turks’ close relationship of nature marked with the houses surrounded by gardens (Le Corbusier, p.190). The use of the heavenly descriptions not only emphasized the beauty of the Ottoman capital located in historical Peninsula but also the character of the empire itself. The historical Peninsula was reflecting the Islamic paradise with the expressions of cypress trees, blossoming trees and flowers in the background whereas Galata was representing the non-Muslim districts with so many densely packed buildings.  

References:

41 Alarslan, B., Islamic Gardens with a Special Emphasis on the Ottoman Paradise Gardens: The Sense of Place between Imagery and Reality, Bahcesehir University- Turkey.2011
http://www.ojcmt.net/articles/14/143.pdf
1-2-3 The technique of irrigation in the Islamic landscape:

The Large part of the conquered lands by Islam was arid and semiarid landscape. The desert is the land where the irrigation system is highly important and should adapt to a new technique to save and transport water. Many difficulties impeded this function in this hot and dry climate like the quick evaporating. Desert soil has a high rate of evaporation, hence for rainfall to have an effect it must be collected and stored and distributed in a managed network. The Water was used in garden, for agricultural purpose to irrigate crops, and provide pleasure in the form of the fountains and basins that adorned the courtyards in the palaces in addition to the immersion pools in the bathouses. The skillful acquisition of obtaining and using water brought flourishment to domestic agricultural economy, stimulated productivity. Islamic communities employed many of irrigation techniques which are inherited and developed from the precedent civilizations and communities that coexist in the region. When Islam entered Syria, the region has already had a long history of agriculture practices, and irrigation techniques, as a part of the Fertile Crescent and with such sites like the Kingdom of Mari and the ancient Semitic city in Syria. One of the wonderful architectural achievements in Mari was the aquatic constructions and irrigation canals and dams that were built to allow the city to play its role successfully.

References

Mari had a large net of canals that brought water to the farthest parts of the kingdom. One of these is the Daroni canal, 120 km long, which linked the Khabour River with the Euphrates at the level of Aboukamal. Professor Jean Claude Marjeron referred to this point saying: “Mari was built according to well designed and arranged plans as its water projects and defensive walls.\textsuperscript{43} as well as the other important foundation of the Sumerian civilization.

Beside the achievements of another civilization that coexist in the middle east, as example Roman and Persian, and The economic benefits of irrigation technologies were quickly learned.

Canals and gravity were used to carry the water from a high point of collection such as cistern and lake, to a lower point to be distributed later on in an irrigation network. These techniques have been in use since the beginning of large-scale agricultural settlement in Syria.

We can find that ancient Romans built impressive aqueduct that carried water for a long distance through the landscape and into the cities such as aqueduct in Valens and In Madinat Al-Zahra. Roman aqueducts littered the Mediterranean landscape, and early Islamic civilization proved highly efficient at building and preparing these waterworks\textsuperscript{44}.

References

\textsuperscript{43} https://en.wikipedia.org/wiki/Mari,_Syria,2016

\textsuperscript{44} D. Ruggles,F., Islamic Gardens and Landscapes, University of Pennsylvania, 2008 ,page 18
Figure 36, An acequia flowing toward Granada from the spring in the village of Alfucar in the foothills of the Sierra Nevada, was first built in the 13th century and is still flowing today. 
Source: http://www.historysciencetechnology.com/articles/articles%2071.html

These systems of irrigation had migrated from Spain to other parts of the world like America where we find them still practiced in San Antonio in Texas. 45

Reference:
45 http://www.history-sciencetechnology.com ,2016/articles/articles%2071.html History of Science and Technology in Islam, PART II
Diverse irrigation methods were developed to extend cultivation in the Middle East where the lifting of the water from rivers and wells for irrigation is highly required. The means of water wheel is called the ‘‘Saqiya’’ used for lifting water for drinking and irrigation to the considerable height. There are numerous containers that hang along the length of a chain or a rope loop which is attached to a horizontal bar. The horizontal bar has cogwheel at one end that is rotated by a larger horizontal cogwheel which is turned steadily by a draft animal as a mule which walks around continual circles. The buckets tilt at the highest point and the water splashes into a raised canal and from there flows to the agricultural field, garden bed or basin.

This system is considered ideal for lifting water from a deep and confined source like a well or cistern, but the water is transported in this system in a small quantities.  

It is used widely in the Arabian Peninsula. In the eighteenth century, it had Maximum expansion in the Valencian Country. But they have been replaced by hydraulic pumps throughout the twentieth century. Today, this ancient water raising machine is found in a few farms in the northern Mexican states. Where they are reverting back to us the traditional technology of the saqiya.  

Another water lifting device was the Shaduf, consisting of a long lever with a bucket at one end, and a counterweight or a handle at the other. (Ruggles, page 20).

Reference:

/articles/articles%2071.html History of Science and Technology in Islam, PART II
This was used extensively at the ancient Egypt to raise water from the Nile River to the fields along its banks. When the water wheel were introduced from the near east. In the eighth century, it gradually replaced the Shaduf. The system is best suited for low-lying areas such as the Nile river valley where the source of the water is not far below or far away from the fields.

The na'ura (noria) is also a very significant traditional device. It consists of a large wheel made of timber and provided with paddles. The large-scale use of Nora was introduced to Spain by Syrian engineers. An installation similar to that at Hama where there fifteen of them within the city for catchment river water along the Orontes River, and seventy one in the vicinity ⁴⁸, only seventeen of the original Norias remain. They are mostly unused now and serve an aesthetic purpose.

![Figure 37, The norias of Hama on the Orontes River.](https://en.wikipedia.org/wiki/Norias_of_Hama#/media/File:Ham a-3_norias.jpg)

Reference:
⁴⁸ UNESCO, Arab muslim civilization in the mirror of the universal: philosophical perspective, united nation educational, scientific and cultural organisation, paris, 2010
The Na'ura (Noria) is set up in different parts of Al-Andalusia. Some of them in Toledo, on the Tagus until the end of the twelfth century, and in Cordoba known as "Kulaib", which stands until now, served to elevate the water of the river until the Palace of the Caliphs. Its construction was commissioned by Abd al-Rahman I, and has been reconstructed several times.  

Reference:

Many reasons make this means less effective, it is the most economical and rapid means of lifting water into irrigation system, but their effectiveness is limited because their ability to left water is connected to the diameter of the wheel itself. They lift water more in winter than the summer where the level of water becomes less. Besides that, the supply of water cannot be far from the field that it irrigates. But there is another means which can transport large amounts of water over long distance called the ‘’Canal’’.

![Figure 39: traditional irrigation systems.](image)

The Qanat

Another traditional technique was come up by ancient civilizations to create a reliable supply of water for human settlements in harsh conditions was the irrigation technique. It provides the four-parts garden of water which was used as an irrigation technique during the whole Islamic period. The ‘’Qanat’’ is a subterranean tunnel that caries water from an elevated source as mountain to a lower point that could be more than 30 km away, as example it brought the water to the residential and agriculture complex 16 km distance at Qaser al Hier west.

It has originated in Persia in the early first millennium B.C. The system is simple and basically consists of a gently sloping horizontal shaft (Qanat channel) and vertical access shafts.

![Figure 40: Qanat system.](http://maps.grida.no/go/graphic/qanat)

The first step for constructing a Qanat is finding the water. The next step is deciding on a path for the Qanat to serve (a town, village, field, Gardens, etc.). Then, more vertical shafts are added along the path. The vertical shafts serve as a way to ventilate the Qanat as well as guidance for digging the Qanat along the path. The average of a typical Qanat is
usually 6-10 miles long. The Qanat transports a large amount of water all the day hours. It was used broadly in Abbasid period; Bagdad had been suited to settlement because of canals that bring water from both Tigris and Euphrates rivers.

The Qanat system has the advantage of being resistant to natural disasters such as earthquakes and floods and to deliberate destruction in war. Furthermore, it is almost insensitive to the levels of precipitation, delivering a flow with only gradual variations from wet to dry years. From a sustainability perspective, Qantas use the force of gravity to surface up groundwater with no energy requirement and, thus, have low life cycle operation and maintenance costs once built. They are keeping the water underground and saving it from evaporation. And over the years, keeping the water underground can save millions of gallons. Qantas transfer freshwater from the mountain plateau to the lower lying plains that have a saltier soil. This helps to control the salinity of soil and prevent desertification.  

Reference:

Figure 41: Qanat network1, plan shows the remnants of a Qantas network.


Figure 42(A).

Figure 42(B): Qanat network2, Shows underground water qanat and the outlet of a qanat.
It spread westward to a number of other countries throughout the world like North Africa, Spain, and Sicily. And from Spain the Qanat technology was transferred to the New World. They have been found in Mexico, Peru, and Chile. Also in Palermo, Italy, a Qanat system from the Arab days was used to bring fresh water to the city and to irrigate its beautiful gardens. They reconstruct the Arabic Qanat and utilize it to solve the acute needs of the modern city of Palermo for potable water. Today, there are also still 37,000 Qanat in use that are providing water to millions of people in Iran.

Figure 43: Qanat network shows further distribution of water into the main settlement. 
Source: https://www.academia.edu/1861364/Origin_of_Islamic_Gardens

References:

50 http://www.historysciencetechnology.com/articles/articles%2071.html, 2016
1-2-4 The garden as metaphor of paradise:

‘‘Paradise envisioned as a garden in Muslim thought, Quran gives detailed description of it, according to many verses, that awaits the faithful, it is described as a shady garden with four orchards and four stream that burst forth from the earth, with various fruitful trees, And is presented powerful ideas of both spiritual and physical refreshment.’’\textsuperscript{51}

Islam arose in an arid land. The most of it is desert. It was a harsh environment, where there were high temperature, few sources of water, and lack of the agriculture areas. The environment has crucial impact on the human life and on the perception to the world. From this point greenery and productive nature for Arabs Muslims were considered as a miracle in their desert linked to a particular divine sanctity. Quran mentions the paradise as a garden full of greens and fruitful trees, as gardens which rivers go beyond it, and where the life is safe with no danger, and it is calm and immortal as well, and that is contradictory to the surrounding desert nature where Islam arose. The Arabic historian Iben khalidoun mentioned that the lack of the resources and the hard living in the desert led the Bedouins or the Arab nomads to live on the stealing and plundering the caravans which passed the desert, and how this poor and harsh environment had affected the life of the Arab nomads\textsuperscript{52}.

\textbf{References:}


\textsuperscript{52} Petruccioli,A, \textit{Dar al Islam architetture del territorio nei paesi islamici}, Carucci, Roma 1985
The idea of scarcity of the nature resources of greens and water in the desert is the contrast of the idea of abundant and productive green nature. In addition to that, the big difference between the well-organized landscape and the desert which is empty of life features and the endless spaces of sand which represents the unplanted space or the savage land that is not controlled. In other words, it is the wild land which forms a permanent threat of existence and continuity that is full of dangerous. This big difference has created a sanctification of the green and domesticated nature for the Muslims. Therefore, Muslims considered the aspect of the green, fruitful and irrigated nature as a marvel of God linked with an extraordinary divine unity power. And the aspect of the nature was given a clear symbolic sacredness in the Islam religion. And the aspects of nature, as the elements that make up the site: greenery, water, and shades, play the main role in evoking the heavenly theme in the Arab Muslims imagination, which Quran described. So we can find their main interest and intention of building gardens and agriculture landscape in their palaces, and within many Islamic periods, as the geographers and the traveler described.

Quranic description for the paradise is similar to the Chahar bagh Form in spite that the Chahar bagh garden form has pre-dates Islam according to the historical records, where it is associated with the Achaemenids period and some references dates back to 1000 bc.

References:

D.Ruggles referred that this detailed description is not the Chahar bagh garden, even it’s the same descriptions of parts and elements, and it is not the form that reflects specifically the Muslim conception of paradise. But rather the description of paradise that reflects a preexisting vocabulary of garden forms 53.

But Garden as a paradise was mentioned in the three Religions; Judaism, Christianity and Islam. The three religious books, mentioned the garden as the Quran did and they shared the same description of the aspects of the garden such as trees, shades and rivers. So that, the three Religions depend on a common description of the paradise in the afterlife which relates in these texts to the Aden paradise and Adam and Eve's paradise as well.

D.Ruggles refers that these concepts and forms arose in a given cultural context because they flourished in the same geographical area and the communities of the Ancient East contacted with each other and that in turn reflected on the religions.

While Emma Clark 54 explains and indicates that the idea of the garden is a very old one and it precedes the three religions where she mentioned the Sumerian period around 4000 BC and before any of the three religions.

Since the Civilization of Mesopotamia including the civilization of Sumer that had myths in which the garden was mentioned as a paradise.

References:

We find the myth of Gilgamesh, Adam and Eve have been reported, as well as the Garden of Eden, all these texts were mentioned in the first written texts in Mesopotamian and Sumerian civilization, where the legends formed an important reference as a historical text, where the beliefs and the rites of the peoples throughout the history of the long intellectual ideological evolution had written. James Franser says; that the legends has been derived from the rituals, and legends mentioned in the Qur’an in the verse: “They said the ancients legends write them down so they are dictated for him in the morning and in the afternoon”. 55

The writer Firas Asswah refers in his book about the Myth of Ishtar that the religions used the same old legendary ideas resulting from the first agricultural communities that inhabited the ancient East in Syria and Mesopotamia 55.

Is despite the appearance of symbolism associated with the Islamic garden but it is just a product of the agricultural civilization where the first human activity in the human communities during the development played a major role in the process of drafting the philosophical vocabulary and its cultural symbols.

‘The garden is often regarded as a manifestation of refined beauty and intricate symbolism, essentially as an object. In reality, it is but the aesthetic distillate of an agricultural civilization, always playing a decisive role in any anthropic process.’ 56

References:


In the archeological approach, Cauvin referred that; the emergence of agriculture was associated clearly with the emergence of the first divinities of the human societies which is an important stage of the distinctive transition at the intellectual and cultural level, that resulted of discovery of agriculture.  

‘the birth of agriculture is linked to the birth of divinities. In sum, the increased intervention in the environment associated with agriculture implies a human agency that is derived from envisaging the power of personal divinities’’  Cauvin

Due to the several factors in addition to the climatic and environmental factors led to the socio-cultural changes which considered as Cauvin refers the principal motivation for the Neolithic Revolution.’’

The Neolithic Revolution term was coined by Gordon Childe who emphasized as its key feature the beginnings of a productive economy based on agriculture and stock-breeding. And he identified the Near East as the geographical origin of this process. It was primarily because only in the Near East do the wild ancestors of our modern domestic cereals grow.

This shift causes a comprehensive change in all aspects of life, while During the Paleolithic Period, which lasts from the beginnings of human life until about 10,000 BCE, people were nomads, They lived in groups depending on their living on the hunting and gathering.

References:

The Neolithic Revolution is a major turning point in human history. The shift from hunting & gathering to agriculture and to cultivate crops which led to settle in the land and to build the first permanent settlements. The discovery of the primeval agriculture which organize the production of food and taming the cattle. This shift occurred at the ninth millennium, the beginnings of the first Neolithic revolution. Where the archaeological excavations have proved that the first human populations stable and the first built villages in the open plains were in the southern of Syria in the area of Palestine and Jordan Valley during the tenth and the ninth millennium BC.

And the first agricultural experiments had been in the interior of Syria. In the main sites Tel Mriebit in the North at the shores of Euphrates and the site of Jericho in the Jordan Valley. It was about the end of the ninth millennium and the beginning of the eighth millennium BC. Over the next two millennia the agriculture spread out from the first positions in all directions and during the sixth millennium BC to the Neolithic revolution had paid off all the old parts of the east and set off towards Asia, southern Europe. Thus, the archaeology comes to support the theory of the first civilization focus and the spread of civilization from a single center against the parallel evolution theory, and it refers to the Fertile Crescent as a home of this focus, where the stability appeared in the land followed by agriculture in the century of the Western Crescent. This transformation caused a big convulsion in the human societies structure, the establishment of social classes and the eventual rise of civilizations. This shift was led to the emergence of the first cities in the human history in Mesopotamia, with all its advanced political and religious organization; this shift was called the urban revolution.58

References:
That modern archeology suggests that revolutions Neolithic and urban happened for the first time in human history in the Ancient Near East region. The urban revolution and the emergence of the first cities have been in Sumer in the Mesopotamia Valley and from there it moved south to Egypt and eastward into India.

Establishment of social classes has led to emerge of religion⁵⁹. And during this period the reflections religious perceptions and myth of the initial human has matured, it’s The religion of the first Neolithic culture and the legends of the first wheat planter.

The first religious beliefs were expressed in symbols, and graphics, this stage considered a starting point of a specific rites and beliefs and that indicates a high degree of intellectual progress and known according to Cauvin as revolution of symbols, which began in the tenth millennium BC preceded the agricultural revolution which is in the ninth millennium BC. In such sites as Al-Khaiamie, and Al-Ahmer Jerf sites which documented the first appearance of the pictorial forms of a woman and the bull, these symbols represent the first beliefs and which they will become the slogans of the new religion as with other new religions which did not present in the first stages a complete set of symbols.⁶⁰

References:

Cauvin indicates that the area where this evolution or revolution appeared was in the middle Euphrates and then it spread radially to the north where in Anatolian was the first spread of it where a group of them was settled and imposed its culture on the others. After it spread in the east of Turkey, and had developed a culture of Neolithic to achieve an evolution at the large religious level.

Cauvin explains: this stage is considered ‘a change in collective psychology which must have preceded and engendered all the others in the matter of the process of neolithization’ (Cauvin, page 23). The factors of social, intellectual and psychological factors are considered as an introduction which led to the economic transformations that have shaped Neolithic process.

In the subsequent Neolithic era, the religion of the Neolithic man evolved in terms of agricultural and cultural Neolithic. The Neolithic era inherited the cultural data of the previous age and developed them in a way that fit the new style of life.

In the religious sphere the images of divine powers in the form of feminine, who is the grandmother of the universe, was inherited from the last rings of the Paleolithic era 30000-10000 BC, but the Paleolithic man built around this old divine form a serious structure of perceptions, beliefs and legends with a content related to agriculture, which has become the essence of his life and the basis of his political and social organizing.  

References:

The Neolithic religion was an agricultural religion which was centered on goddess, who was a woman of nature in the wild form and the new domesticated form, which the hand of the farmer involved in making and rehabilitating it. The goddess of Paleolithic era and the beginning of the Neolithic era was alone sits on the throne of the universe, but with the maturity of Neolithic culture with the completion of the new economic shape and with the increasing of the man's role when the society was motherly in its essence. We find near the great goddess her son, who the writing eras called him Tammuz or Adonis.

And in Canaanite myths named; Adon. The statues deployed at each site of the Neolithic Age sites. The social place of women and her image in the conscience of the community in those ages played an important role in shaping the first religious and metaphysical perception and the birth of the first legend.

The woman for the Paleolithic age man was as love and desires also it was the subject of fear and awe at the same time. From her body a new life arises and her chest gives the milk for life, her body shall establish a new life and its monthly follow comes from the moon cycle with her fertility, she presents the fertile nature, and when the human knew the agriculture he found in the earth a synonym for woman, she carries the seeds and gives from her womb a new implant.

References:

62, Alsswah , F , The first adventure of the mind, a study in the legends, Syria and Mesopotamia, Dar Ala Aldien, Damascus, 1996.
The religious Neolithic beliefs were shaken with the emergence of the era of writing, which took place around 4000 BC, in Sumer; this era was recognized by the emergence of big cities with large complex economic, political and civil orders. With the transition of power in society entirely for the man and the formation of the State of powerful city with the central strong power on the ruins of the simple agricultural regime.

The Matriarchal society has achieved peace sufficiency and stability, and it was closer to a Paradise climate, which the man lost by the male society that missed the peace and complacency perhaps forever.

The archaeological research has proved the existence of stable societies in the first ancient maternal in Syria since the ninth to the sixth millennium BC. The Matriarchal society passed over the phase of fluctuations which ended by the man to take the power from the woman and founding the Patriarchal society.

At the roots of all civilizations from Japan in the East to the West Indian communities, the researchers found maternal foundations which the modern male communities built on. The statues of Ishtar were the first work of art coined by man embodied the first idol, Ishtar the great mother was his God.  

References:

Ishtar prevailed first human settlements in Syria in the Paleolithic age and it was the goddess of unspoiled nature with its waters, rainfall, grasslands, trees, storms, lightings and thunders. In the Neolithic era, Ishtar turn to be the Goddess of nature which was maintained by human hand and his best contributed to direct her goals.

It's the Lady of agricultural cycle and a center of the first agricultural religion which will become a source of subsequent religions and as Ishtar was the absolute lady of the Paleolithic era as well as the Neolithic era of its first phase in the pre-pottery during the seventh and eighth millennium. We find with the beginning of the sixth millennium the God Son will begin to appear with her and start the joint works to image them together.

The archaeological excavations at sites eighth and seventh millennium gave lot of statues of the mother goddess Ishtar as in Jericho and al-Bayda in Jordan and in Palestine in Fallah Valley, Khiam, Tel Aswad, Tel Ramed, Tel Martibt in Syria and Stahl Hyuk in southern Anatolia and this indicates that worship in the ancient Near East in that period were variations on a common ground which is what we call the central religion.

During the Neolithic era, in Syria, the symbols have matured that moved with the movement of Neolithic religion to other parts. One of those symbols was the swastika and the normal Cross and they were sacred symbols of all Ishtarian religions

The Neolithic artist sketched with early pottery era these icons in decorative abstract units and with technician manner which rules still going on until the present time, starting from the civilization of Tell Halaf and Samarra, the Neolithic human invented for the first time the geometric integrated artwork with abstract units interconnected in a whole unified,

Along with the abstract symbols the major animal symbols associated with the great mother and every fine art work has
them and the most important were the dove, the snake and the bull.

These icons moved with transmission of the worship Neolithic mother to other cultures. First, they moved to Crete and from there carried by ships through the other world lands and since human learned the pottery jars industry.

![Figure 44: The Jar provided in Crete 1300 BC and And Trojan 1200 BC. Source: Alsswah, F., Mystery of Ishtar.](image)

The pottery joined the other mother goddess symbols. So that, the female body is a magical vessel in which the blood turn into milk and explodes out of the breast nozzle.
The cosmic female body is a pottery jar containing the blesses and causes of life and then released outside, and the industry of the holy jars has moved from Neolithic times, which was full of them until ages of writing. The Colorful patterns were formulated and they visualized the most important elements in the woman's body, which is the secret of tender such breasts, followed by the navel which was full of great symbolic value because the Ishtar's navel was the center of the universe and her temple was the earth navel 64.

References:

64, Alsswah, F., Mystery of Ishtar, The divine feminine and the origin of religion and the legend, Dar Alaa Al Dien, Damascus, 1985.
And later the symbol of the navel became an affair in the male religions where all the peoples saw the main temple of the God that is the navel, as well as the temple was Apollo in Delphi for Greece and the Temple of Solomon in Jerusalem for Hebrew and the Kaaba for the Arabs. 

Figure 45: Abstract inscription on pottery.
Source: Alsswah, F., Mystery of Ishtar.

References:

Here we find Ishtar herself carries many of the fees and sculptures in hand, there is a pottery jar tilted her neck forward. The statue was known as the goddess of fountain which is in Aleppo Museum in Syria, and it represented Ishtar in Mary City in Syria.

Figure 46: To the right, Water-Goddess with vase and water spouting from the vase. Stone statue, Mari kingdom 2500 B.C., National Museum, Damascus, Syria, the second to the left Its Ashtar from the Neolithic period, 9000 B.C.

Source: https://de.pinterest.com/pin/363243526166091570/

References:

64 Alsswah, F., Mystery of Ishtar. The divine feminine and the origin of religion and the legend, Dar Alaa Al Dien, Damascus, 1985.
And we find in the mind of the ancient human that Ishtar image carries many implications which refers to all the nature aspects. It is connected with fertility of the land. And any part of this universe as a whole formulates in time and space her presence and symbolizes the greatest mother, abstractions and incarnations. They are linked with the goddess ‘the mother’ so the material and the divine worlds are not separated from her.

During the history of man on earth and despite the fragmentation, which image of the major mother suffered in the scope of the official religion of the state, it has kept the old features inside Ishtar Religion Foundation in the hearts of ordinary people who worship the Gods because of fear and followed the worship of Ishtar by love.

In Sumer, which witnessed the first gathering of the males gods headed by the God of heaven who claimed for himself most of features of the first creative mother. The legends, songs and the prayers of the major mother remained to refer to high position that no one can override it. there is a prayer raised to the goddess Inanna nature, the fertile land, agriculture cycle and reproduction Says:(Our Lady of cosmic laws, O shining light, the donor of life, the humans beloved, you greater than the big god and you’re bigger than the mother who bore you, oh wise the queen of the country.)

In India, the Kajaba the Indian tribe in Colombia in South America: ((O, Lady of chants and songs, or the mother of humankind bears us from the start, the mother of all of the races and the different tribes, the Lady of thunder and rain, the mother of rivers and trees, the lady of rocks, stones, grains and every living thing, mother of the neighboring peoples, the foreigners and the outsiders, the lady of dancing and songs, the goddess of all the temples, mother of all the divine animals, the lady of the shining galaxy, we have no mother but her. Ishtar in the conscience of man through the ages)).

64
We also find in the cultures of the ancient Near East the relationship between the moon and Ishtar symbolically refers to the earth fertility and the growth of planting and trees, driven by the ideas that they inherited from the Neolithic cultures, so we find in many of the drawings that the moon and the tree united in the unit.

**Figure 47**: The tree of the moon – Babylon, 2000BC.

**Source**: Alsswah, F., Mystery of Ishtar.

In the Sumerian legend we find a reference of descending the Goddess Inanna to the inferior world, where the Sumerian mother at the legend was eager to leave her heavenly chair. Here is a metaphor for the moon and the migration of earth that she took care in the trip to the inferior world, the darkness world, passing the seven portals of death.

The connection between the moon light and the preparing of field and agriculture produces this symbolic legend. This Section represents the completion of the full moon in the middle of the lunar month, and her fallen indicates according to a detailed section for decreasing the full moon piece by piece and decline gradually from the center of the sky every day for seven days, which represents the seven degrees of death when Inanna takes off a part of her adornments represented the last seven days of the lunar month when it sets in the last days completely. The moon passes in three phases since its rise in the first month, and even it sets
completely, The ancients believed that the blessing of the moon was in the phase of complete light, so they were engaged to prepare their fields for agricultural seasons and they farmed and seeded within the days when the moon increases and they start all the work they want to have success during that period. If the moon starts to decrease that was the harbinger of all the poor as possible, they were to kick up the agricultural activities and initiate any activity hoping it to be good. So that, the lunar mother is responsible for the negative forces in the universe as well as responsible for the positive power and goodness as the responsibility for evil and responsible for life and death as well.

Figure 48: (A) The three phases of the moon - (B) The three phases of the inscription from Babylon. - The moon, Phoenician inscription. Source: Alsawah, F., Mystery of Ishtar.

The legend is a long human experience and a long history and a slow evolution, all that provide a saturated text full of difficult symbols, the text goes back to the third millennium BC, but its roots go back to the Paleolithic era when the man contemplates the strange universe features, trying to explain what is happening around him. The imagination of the Neolithic man had embodied and linked between the Goddess mother of Ishtar, who is the mother of nature and the universe, and between multiple aspects of nature. They evolved and varied due to the evolution of his consciousness of the universe and its secret. Ishtar was linked to the moon, the sun and the animals, such as the bull and the cow that their worship appeared in different parts of the geographies.
such as India. For example, they depended on the fertility and tender.

The myth represents the completion of the full moon in the middle of the lunar month, ascending at the throne of heaven, with all its glory and splendor.

Because the moon will not be completed but in order to descend decreasing during the next part of its cycle, here Ishtar puts on her adornments and wears the sovereignty and authority cloths and put the glittering gems as a preparation for landing to the inferior world.

And her fallen indicates according to a detailed section for decreasing the full moon piece by piece and decline gradually from the center of the sky every day for seven days which represent the seven degrees of death when Inanna takes off a part of her adornments represented the last seven days of the lunar month when it sets in the last days completely.

The ancient fine works showed the Three Faces of Ishtar, the Moon Lady by various symbolic means. In Syria, the Phoenicians symbolized the three phases of Ishtar by three columns of varying in length topped with a crescent or three columns which all of them take crosswise surmounted by a crescent, and the moon was painted as a circle contains three crescents where each one symbolizes a phase as it is the case in Babylonian inscriptions.

The triangulation of the moon Lady may lead to be worshiped in three forms, as the mother Brigitte, the mother of Goddess and the Lady of nature. It was also the lunar and was called Mona, a name that remained standing in the European languages to signify the moon. In Christianity these gods mingled Mary, and she was called mother of Christ. Perhaps the triangulation of the greater mother in the Arabian Peninsula was the cause to be divided into three which were Lat, Uzza and Manat, and they were the highest Arabs goddess.
And their names were mentioned during the circumambulation around the Kaaba in a known acclamation which the opening lines say: "Lat, Uzza and Manat the other three, they are great and their intercession is to be asked"Quran” has mentioned in its definition of the pre-Islamic belief of the first half of this acclamation, despite the independence of each Arab tribe to worship one of these goddess, each goddess showed clear triangulation characteristics, "The Idols" by Ibn al-Kalbi we read about the triangulation of the Greater Arab Mother: " The Uzza had been worshiped Polyphonic in three trees of rushes in a valley named Hrad.

Also the Lunar mother was worshiped through the code of blocks, the stone which is the symbol of the Earth is also a symbol of the moon, and the color of the stone where Ishtar was worshiped reflected the enlightening phase or the dark phase. The greater mother of the Arabian Peninsula has had more than sacred stone. The black stone for the goddess Mouna, which were glorified by the Arabs especially the Aws and Khazraj, and remained so until the Apostle came out of the city and sent Ali to destroy the stone. For the Lat there was a white stone in Taif which was destroyed by Al-Moughera Bin Shaabeh. In Asia Minor for the greater mother Cybele there was a sacred Black stone. The Romans transferred it in a historic celebration to chronicle the transmission of worship of Cybele to Rome.

The Canaanite Ishtar had a white stone in Byblos and other like it in Cyprus, and the shape of the stone block could turn to form an elongate shaft or conical and it appears in the monuments and sculptures and it has crescent.

Firas Al Sawah points out in his book (Ishtar mystery) ((The cross symbol seemed to be more closely associated with the greater mother in the lunar manifestation, the crossed lines of the Cross symbolize the infinite expanse of the Divine presence and to the comprehensiveness of the Great Mother, and if the cross had been found on the walls of the Neolithic temples and engraved on ceramics of Tell Halaf and
Samarra, the great mother herself has carved and depicted in the form of the cross as in Stek Hyuk settlement where the great mother was painted in a classic way known in that era, and in simple and symbolic way. In the second type the body of the Goddess formed the line of the vertical cross, while the arms paint its horizontal line, while the legs are extended to the end and crossed with the body that nothing appears from it but the navel.)

With the early writing ages the cross continued to be associated with the moon. In the pyramids of Giza they found decorative forms represent the great mother in the form of the cross on which a crescent, where the head was replaced by a Crescent. This badge was particularly used by the religious art of Egypt to signify eternal life and in all the civilizations of the Near East and the Mediterranean the Cross combined with the Crescent.

The cross symbol was not limited to the ancient civilizations and some of the world religions. Red Indians represented in California the great mother where her four limbs stretched crosswise. And other Indian tribes took the cross as a symbol the four directions, and the members of the Maori tribe put a Cross in their necks as a symbol of Lunar mother.

The Cross accompanied the Great Syrian mother man since the beginning of the major spiritual adventure and what still remains to confirm the unity of the spiritual experience of the mankind through the ages.

The movement of the moon is the only indicator for the old man of the passage of time. The passage of days was calculated as nights and the passage of months related to seeing the moon. The movement of the moon was not just simply a cosmic clock monitors the time, but it makes the movement of time. The great Lunar mother began the universe time-bound after she got out it from the first times of cytoplasm (here is a reference to the myth of the first creation
of the universe), she is its mistress who controls the continuity and flow.

They did not put a solar calendar even the late time of the history of civilization.

The Babylonians were representing the months of the lunar year by the sky twelve constellations which they called the Moon homes.

The Islamic peoples who associated the lunar months with the worship and religious events where The moon was mentioned in more than one position.

The image of Ishtar the great mother has been associated with her relationship with the fate and destiny, as the carrier of fate plates, the Lady of destinies.

The names of the Great Mother Lat, Uzza and Menah in the Arabian Peninsula indicate in the Arab dictionaries which considered Lat as feminine which means God and Uzza is from Aziz's name, while Menah means the fate, the legend continues to be active in the popular imagination after the demise of the spiritual and religious influence through the tales of children, after the disintegration of the legend Ishtar, nothing remains of the great mother only the negative dark side which is enriched by the masculine gestures legend.

The Male culture succeeded to remove Ishtar from the moon and to deny her to the planet to Venus. The Babylonians called the planet Venus as Ishtar, while the Canaanites called Ishtar, the Greece as Aphrodite and the Romans as Venus.

In fact they are the Canaanite names of Ishtar which came to Cyprus with the Phoenicians after their supremacy on the Mediterranean Sea.

For the Arabs the planet of Venus has been associated with Greater Arab mother, they worshiped it when it appeared and they called it Uzza. 64
The Eden Garden as it was mentioned in the sacred texts of the three religions. In mythology and legends the writer Firas Aswah refers in "First adventure of mind" that the legend of Delmon or the Paradise of Dilmun as it was mentioned in the Torah and the Paradise is the place for the immortals and it is a divine green paradise where the headwaters of the rivers. Some curved plates were found in Ugarit and talked about a similar paradise dating back to the period before the religions. The god Eill lives at the headwaters of the rivers as well as the case in the Delmon, The Paradise of Torah where the rivers originate Seihoun and Gihoun and the gardens of Euphrates.

The Paradise in Torah is a place which the God Eill planted in the east of Eden, a place for repose where he let Adam to live therein . It is a place where peace and tranquility as explained in the text where the man can live safely not compelled to work to make a living and where he does not know the disease, sorrow or death, this paradise lies at the headwaters of four rivers as the Canaanite paradise also where Eill the Lord of heavens lives. The author Feras Alsawah refers to the place of Aden where the Jehovah's transplant his paradise, the writer Firas Alsawah explained that the word may be a variation of the name of the Syrian god " Adon " the Lord of the plants, fertility and greenery. And the expression of the Garden of Eden is possibly derived from the gardens of Udon which is well-known in the ritual of the Old Syrian fertile.

James Fraser tells us in his book " The Golden Bough " about that by his saying that the Syrian women in the holidays of Adonis, they were making wide baskets and fill them with shallow soil and grow many kinds of flowers and plants, and then they take care of these small gardens for eight-days, till they foliate and blooms, but they eventually die as a result of the shallowness of the soil, then the women carry the Adonis gardens and attached a picture of God towards the river or the sea and throw them, and the significance of this practice is that the quick growth of plants in the baskets is a symbol of the power of fertilizing the god Adon and the death of this
plants is a symbol of the death of the young God, and the impact of that on plant life that disrupted by his death, while throwing the plants in water is intended to give the impression to rain to fall to water the nature that died. He sent Udon from his tomb. Here Mr. Fraser tells some Christian rituals similar were still in Europe. In the Mediterranean basin in the holiday of Easter and Good Friday where the women planting small tubs and put a picture of Jesus Christ instead of the image of Adonis. In the Arabic language we use and the Garden of Eden Gardens of Delight, here the similarity between the word Numan and the word bliss, Numan is one of the names of Adonis. And so the Garden of Eden (Udon) and Gardens of Delight (Numan) are two names of the same thing which is the Gardens of Adonis.

The mythological interpretation gives an explanation of the concept which the ancient societies and the first man brought to his gods. The goddess of agriculture and its symbols that spread in different regions which were the first to know the agriculture and with it the first religious beliefs formed. This cultural aspect that has determined the historical identification of the communities that settled in the ancient Levant.

References:

1-3 Historical development of the Islamic gardens in Syria traditional landscape:

1-3 Garden in the early Islamic period

“Islamic expansion out of the Arabia peninsula brought dramatic changes to the landscape which it inhabited ,With the urban system of oasis settlement that bought both of economical transformation with their agricultural products and powerful form of cultural expression .” D. Ruggle, F.

1-3-1 (Umayyad 661-750 and Abbasid period 750-1258):

Umayyad period 661-750

Figure 49: Middle East 750AD, Source: http://www.timemaps.com/history/middle-east-500ad.

The Middle East territory has seen changes radically In the 7th century where Arab tribes united under the banner of a new religion, Islam, swept outwards in a surge of conquests: Iraq, Iran, Syria, Palestine, Egypt, North Africa, and Spain, all have fallen to them. In this period, The Persian Empire vanished under the onslaught, and the Byzantine Empire lost its most valuable provinces. In their place, the Arabs established a vast empire, called the "Caliphate" ("caliph" means "successor", in this case to the Prophet Muhammed).

References:

Under the Umayyad caliphs, the seat of Islamic power was transferred from the Arabian Peninsula to Syria; Damascus was transformed into the capital of an empire that extended from the Atlantic Ocean to the Indus River.

Administratively, The Umayyad Caliphate governments based on the structure of the tribal aristocracy which had its roots in the pre-Islamic era, sometimes was influenced by political tradition and conquered territories.  

The early Islamic community was transformed into a powerful empire. Arabic became the official language and Islam the principal religion of the diverse lands unified under Umayyad rule. It is often considered the formative period in Islamic art and architecture regarding to the new cultural, social and economical changes in the region.

The landscape was formed during the period of Umayyad rule 8th-10th centuries as a result of expansion of agriculture and change in its practice as well as cultural and political organization according to eastern model.

Caliphs used to build their residences out of the urban centers in the harsh and arid environments, but these settlements, basically, played a commercial and strategic role as an intermediary location between the nomadic tribes and settled groups where is the market centers, agricultural and animal products were traded, as well as they were pleasure places where they harnessed the available water resources in the sites and territories they have conquered.

References:


Among this political and economical context, the first Islamic garden in Syria was emerged with this urban settlements which sustain communities with agricultural production and was formed with these functions of fortified residence or caravanserai, mosque, bath, farm houses and large granary.

The gardens in these settlements spaces often formed the spatial connection between two elements; the Baths and audience halls composing an architectural model in which the pleasure provided and the expression of power and dignity and testimony to the wealth of their patrons.

This kind of functional connection provided in residences of a more or less private character and became a feature in the most of the urban palaces.

There are many of these palaces were scattered in the Jordan’s deserts from the Umayyad era, as an example of the garden function and form in this period. The case of palatine complex in The Amman Citadel, Qusayr ‘Amra (711–715), was the earliest of these residences, Qasr al-Hallabat (between 800–825), the latter included cultivated areas were enclosed by walls.

These gardens ,formed with the audience hall/bathhouse one union and an independent part of the main residence, declare clearly the intimate connection between two forms of personal and social pleasure that are always found in Islamic culture ⁶⁸.

Another example is Al-Mafjar (ca. 739–43), built by the Umayyad caliph Hisham in the Jordan Valley, near Jericho. The bath gains monumental dimensions that rival those of the main residence.

References:
The mosque stands between them and as a mediating element for all three structures. There is a large garden with a free-standing pavilion (or kiosk) of sophisticated design.

The same methodology was followed in Syria desert by Umayyad Caliphs, where the trade network was continued to be controlled by their palaces which lettered in irrigated landscapes, such as Qasr al Hayr East, and Qasr al-Hayr al-Gharbi.

Qasr al –Hayr east (al-sharqi) was a medieval Islamic site and an oasis settlement, lays in the center of semi arid zone between fertile Euphrates valley and Damascus northeast of Palmyra.

It is placed at the foot of one the few mountain passes in the central Syrian Desert, built in the years (700-730),

The site consisted of an extensive walled enclosure about 7 sq meters, with permanent residences, a caravanserai for transient merchants, a mosque; olive presses, large bath, an artificially developed area for agriculture, clear evidence that the economy of the estate was passed on olive production, Fruits and seasonal crops.

Depending on the natural features of the site and the topographical characteristics, the water control system for Irrigation was achieved by trapping the rain fed seasonal stream called Al Wadi, within the low enclosure walls, at the north and south ends of the enclosure. Enormous sluices controlled the water ingress and egress.

References:
This effective system of walls and sluices ensured the maximum use of rainfall inhabitants make long periods of irrigation possible.

The site had only one canal which ran from northeast portion of the enclosure to the southwestern portion.

Figure 50(A): photo of Qasr al-Heir East

Figure 50(B): Qasr alhyr alsharqi-elevation
Another settlement of this period is Qasr al-Hayr al-Gharbi. It was constructed by the Umayyad Caliph Hisham From 724-727. It is Located about 60 kilometers west Palmyra. The site almost had similar function of desert palaces at these periods. It contained the palace, bathhouses and caravanserai stood
within rectangular enclosure, devoted to irrigate agriculture and olive trees.

The settlement features an impressive irrigation system complete with a complex network of underground canals originating at a Roman dam (Harbaqa) about ten miles to the south. There was also a seasonal stream and a semicircular stone barrage.

**Figure 52(A):** Qasr al-Hayr al-Gharbi (West), Syria (724-27)-
Floor plan of Qasr al-Hayr al-Gharbi,

**Figure 52(B):** Qasr al-Hayr al-Gharbi (West), Syria –perspective
The garden design in this formative phase of Islam in Syria was walled enclosure and cultivated area with productive trees like olive. It played an important role as an agriculture organization.

Such of these landscape has changed from one made artificially fertile through the introduction of water to one that is drier and without productivity as today and even abandoned It’s the change in the physical landscape.

Beside the social and cultural view of these settlements that was reflected on the garden function and form in this phase of Islamic civilization in Syrian territory, the importance of the worth of a landscape was measured by its degree or potential of settlement. The productive and economic aspect of vegetation was more highly valued.

Figure 52(A,B,C) Qasr al-Hayr al-Gharbi (West), Syria (724-27) -
One different example of the garden design appeared during Umayyad period is in the Rusafa residence (also known as Sergiopolis), and this because it was originally Byzantine settlement. The garden also had enclosure that can be

Figure 53(A), Rusafa location

Identified as a pleasure garden (Ulbert 1993, Ruggles1993). It was a Byzantine settlement with white gypsum walls located 180 miles east of Aleppo also in a desert landscape in Syria. During the Umayyad period it was taken and became the site for the Caliph Hisham’s palace estate between 724 and 743.

Figure 53(B), Rusafa archeological site.

The site contained an extensive residential area of mud brick walls traversed by a seasonal stream. They discovered an irregularly enclosure shape with a central pavilion which is open on each of its four sides toward the surrounding garden.

The site indicated that this pavilion was part of a palace complex. One of two built on the outskirts of Rusafa. On three of the four sides, paths with steps leading up to the pavilion, and the archaeologists speculated that there was a form relay fourth path that had since been obliterated.
This is the earliest known Islamic example of a pavilion occupying the intersecting point of the axes in a quadripartite space and as such it is of considerable importance for garden history. The four-part layout was to become a classic and ubiquitous garden type that would be repeated with variations throughout the Islamic world.

![Image of Sergiopolis (Rusafa)](http://web.mit.edu/4.611/www/L1.html)

**Figure 54**: Aerial view of the city of Sergiopolis (Rusafa)


The same name of this palace was founded by the Umayyad prince who was to become ‘Abd al-Rahman I’ when he fled from Syria to al-Andalus (the Islamic kingdom on the Iberian Peninsula) in the mid-eighth century. He built himself an estate outside of Cordoba which he named Rusafa in memory of his grandfather’s desert palace where he had spent part of his youth.

**References:**

Abbasid period: ‘750-1258’

“The love of gardens during the Abbasid period, whether in Baghdad or in Samarra, was born within the already existing cultural tradition of Mesopotamia, where the art of gardening had been perfected many centuries before”. Qasim Al-Samarrai

When the Arabs first came out of the desert of Arabia they had conquered some of the most ancient and highly developed centers of civilization known to human history. Within the confines of the Islamic domains were located the centers of the Hellenistic, Assyrian, Persian, Indian, Egyptian, and Mesopotamian civilizations.

The famous Hanging Gardens of Babylon, was located

Figure 55(A). Hanging Gardens of Babylon, 20th-century interpretation

On the Euphrates about 80 km south Baghdad. The city mentioned in the Bible was the capital of a mighty empire during the second millennium BC, but it was later destroyed by Cyrus II of Persia in 539 BC.

Notices:

Qasim Al-Samarrai, Professor of Arabic and Islamic studies alongside member of the International Advisory Board of the Foundation for Science, Technology and Civilization (FSTC).
Figure 55 (A,B): this hand-colored engraving, probably made in the 19th century after the first excavations in the Assyrian capitals, depicts the fabled Hanging Gardens, with the Tower of Babel in the background, Source: [http://en.wikipedia.org/wiki/Hanging_Gardens_of_Babylon](http://en.wikipedia.org/wiki/Hanging_Gardens_of_Babylon)

The Hanging Gardens were described as a remarkable feat of engineering; an ascending series of tiered gardens containing all manner of trees, shrubs, and vines. The gardens were said to have looked like a large green mountain constructed of mud bricks. It was built an irrigation system able to lift water from the river.

The Islamic Abbasid period is characterized by main aspects. The Islamic political and cultural life shifted eastward from Syria to Iraq. This shifting of leadership and seat of caliphate within the Islamic Empire reflected a series of fundamental transformations within evolving Islamic civilization. In this period, there was the great influence of non-Arab Muslims and the creation of a complex administration.

Reference:


Islamic civilization spread even farther under the Abbasids and witnessed significant development, from the religion of a small Arab warrior elite, Islam became a cosmopolitan and genuinely universal faith with tens of millions of adherents from Spain to the Philippine islands.  

In 762, Abbasid dynasty founded new capital to their empire was named, Baghdad, The new city soon acquired an official name: Madinat al-Salam (the city of peace) or Dar al-Salam (the abode of peace), an appellation which occurs twice in the Koran (6:127; 10:26) to mean: the Heavenly Paradise. As the Abbasid dynasty came to power through a religiously motivated movement and sought in religion the basis of unity and authority.

*Figure 56*, Baghdad 762-764 AC.  
*Source:* [http://1.bp.blogspot.com/nbSEBa2Uqow/U9g1_lBJSiI/AAAAAAAABYo/wgDR4scKSr4/s1600/Abbasid_Bagdad.jpg-2016](http://1.bp.blogspot.com/nbSEBa2Uqow/U9g1_lBJSiI/AAAAAAAABYo/wgDR4scKSr4/s1600/Abbasid_Bagdad.jpg-2016)

**Reference:**

The city was designed as a circle about 2 km (1.2 mi) in diameter, leading it to be known as the "Round City". The original design shows as single ring of residential and commercial structures along the inside of the city walls, but the final construction added another ring inside the first. Within the city there were many parks, gardens, villas, and promenades. In the center of the city lay the mosque as well as headquarters for guards.

The circular plan of the city has been used in the history of the ancient east, in Syria and around 2600 year B.C on the Euphrates River. The city of Mari has circular plan also or defined as a, "Round City". It was an Acadian-Amorite center in the middle of a Sumerian presence that covered all the Mesopotamian Peninsula, and it was constructed by the social administration /or the municipal authority at that time and was built according to a pre-planned architectural style to fulfill a historical, economical, and industrial role in that early stage of human history.

Figure 57, Mari city on Euphrates river 2600 B.C.
Source: http://earlyworldhistory.blogspot.de/2012/03/mari-mesopotamian-city.html

References:
There are many world cities that have followed this pattern as London and Paris. Later on, another city was also established in the north of Baghdad and it was called Samarra’ (an abbreviation of the sentence "He who sees it rejoices"), which replaced the capital for a brief period (836–83).

The shifts of the location of central power to the Mesopotamian area and results in a corresponding displacement of the influence of classical and Byzantine artistic and cultural standards in favor of Persian and local Mesopotamian models.

The great urban expansion in The Abbasid age was linked to a revival of the Afro-Eurasian trading network, The Abbasid domains in the west and the great Tang and Song empires in the east became the pivots of the revived commercial system. From the western Mediterranean to the South China.

The first three centuries of Abbasid rule were a golden age in which Baghdad and Samarra’ functioned as the cultural and commercial capitals of the Islamic world. Generally, the two cities were very important in the history of the Abbasid art of gardening.

During this period, a distinctive style emerged and new techniques were developed that spread throughout the Muslim realm and greatly influenced Islamic art and architecture, As well as gardens art 75.

We can find numerous allusions in literary and historical works to gardens and fountains, but there are rarely any specific references to the architectural design of an Abbasid garden.

Reference:
Evidently at the beginning the monastic art of horticulture, as it seems, was a major factor in influencing the Abbasid style, but it soon started to be transformed into under Persian influence. This was characterized by a taste for costly and glittering materials and ostentatiously displayed to impress and to present the rank, wealth and pomp of the owner. This is very much in evidence in the palaces in Samarra.

‘The wonders of Harun al-Rashid’s garden described in A Thousand and One Nights have never existed. They were fictional hyperbole. But not everything is poetry and imagination. The renowned description recalls many gardens in Dar al-Islam from Samarra to Granada, Lahore, and Isfahan.’ 76

Bagdad as a residence of Islam's Commander of the Faithful for nearly five hundred years and after the city was largely destroyed at by the Mongol Empire in 1258, it returned to rebuild by the enormous array of the caliphs’ palaces that sprang up on the east bank of the river, and practically created a town of their own, with their many edifices and gardens, all included in an encircling wall. 77

Aspects of Luxury, extravagance and Opulence have been employed in these palaces. One of the most famous places of this period was built by the reigning prince Muk’tâdôr and named the House of the Tree.

References:


77, Islamic garden design, http://www.gardenvist.com/history_theory/library_online_ebooks/ml_gothein_history_garden_art_design/islamic_garden_design
It stood in the midst of lovely gardens, and took its name from a tree made of gold and silver, standing in the centre of a great round pond, between the trees of the garden. This tree had eighteen boughs of gold and silver and innumerable branches covered with all sorts of fruits that were really precious stones. On the branches sat birds’ which were made of gold and silver and when a breeze passed through they whistled and sighed in a wonderful way. At the side of the palace, right and left of the pond, were sculptures of fifteen knights on fifteen steeds, dressed in silks and brocades and girt with swords. And this had followed later in many palaces, wherever there was a fine garden court, there was bound to be an artificial tree.

After the House of the Tree, the thing that most interested ambassadors to the Islamic court was the new, or modern, so-called Kiosk. This word (gausak = kiosk) means a pleasure-house with its gardens. In certain cases the kiosk might be strong enough to serve as a defense at need for the caliphs and for a considerable time. This "New Kiosk" had a fine garden round it. In the middle was a tank lined or filled with pewter, at that time more costly than silver, and a canal treated in the same material. The basin was thirty yards long, and twenty wide, and beside it were four grand summer-houses. Their seats were made of gold. It was surrounded by gardens, wherein grew 700 dwarf palms. These palms bore large dates, and were so trained that ripe fruit was always there, in the beds were melons and other fruits. Palms set the stamp of the desert, so to speak, on all these gardens, since for the Arab they were the venerated trees of his true home, and gave him, all in one, his cool shade, his repose, and the beauties of the natural world.  

References:
77, Islamic garden design,
http://www.gardenvisit.com/history_theory/library_online_ebooks/ml_go/them_history_garden_art_design/islamic_garden_design
Other palaces in Baghdad, Al-Mu'tadid founded two palaces Al-Taj palace (the Crown Palace) on the Tigris nearby, and palace, al-Thurayya palace (the Pleiades palace), they linked to each other with an underground passage of more than three kilometers. He surrounded it with magnificent gardens and in their middle he ordered an immense lake to be dug out and filled with water, which was brought through a canal connecting two rivers; the Musa river to the east of the palace and the Tigris to the west. He, moreover, ordered the building of a large zoo to house all sorts of animals.

In the ninth century, a son of Harun al-Rashid's has founded a new Abbasid capital, Samarra, on the Tigris which exceeded even Baghdad in luxury and Splendor. The geographer, al-Ya'qubi, writing about this city in 889 CE reports that 'the whole land was converted by al-Mu'tasim into gardens for the upper class'. In every garden there had to be a palace and herewith halls, ponds and playgrounds for riding and for the game of polo.  

In Samarra an extensive irrigation system had been built to bring water from the river. It was accomplished by digging huge underground canals some 40 km up the river, and been used the Noria (waterwheel) technology to pump the water through the town by means of smaller sub-canals, which in their turn were conducted to almost every garden and pond in the city, and the rest of the water, would end in the river again. On some gardens, waterwheels were erected and that ostriches were employed to rotate the waterwheels instead of oxen. One of al-Mutawakkil's seventeen palaces called al-Jawsaq al-Khaqani consisted of 432 acres, 172 of which were gardens with pavilions, halls and basins, the whole complex being surrounded by a wall.

References:
77, Islamic garden design, http://www.gardenvisit.com/history_theory/library_online_ebooks/ml_gothein_history_garden_art_design/islamic_garden_design
Figure 58: Plan of the Bulkawara Palace at Samarra, built in 849 AD. 
Source: http://www.gardenvisit.com/history_theory/library_online_ebooks/ml_gothein_history_garden_art_design/islamic_garden_design
The Bulkawara Palace built in 849 AD I Samarra is present an example of the chahar bagh plan. Brookes (1987; p. 36) says that this is one of the earliest examples in which the concept of the chahar-bagh can be seen in the Islamic garden. In this garden we find the influence of the Persian four –parts plan gardens which are clearly evident: the paradise, or Hunting Park, and the smaller decorative garden area have been incorporated into the plan. In this garden clearly laid out chahar-bagh form which can be seen running along the central axis of the garden from its entrance down to the Tigris River. 79

Palaces gardens in Abbasid period presented the important example of the mythic palaces of the thousand and one nights, and it is no coincidence that the architecture and the narrative tale belong to the same period. There are many historical discount them as pure fable.

They expressed the luxury, opulence and exaggerated wealth;

And they also presented many developed industrial materials like trees from gold or silver or copper machinery birds can sing and move. Gardens became more factitious and artificial.

It’s an effective device for representing economic power and the development which the Islamic state has reached in this period.

But imaginary gardens and their real life evocations can be found in all periods and palaces in Islamic history. As well as Samarra gardens this became the stuff of legend.

References:

1-3-2 Garden in the Traditional Islamic landscape in Syria, patterns and forms:

1-3-2-1 The courtyard: The house, Palace and Mosque court yard:

The courtyard is one of the important features of traditional architecture and historic urban fabric in the Islamic cities of Middle East as Aleppo, Damascus, and Fes; it is transcending regional, historical and cultural boundaries. It can be traced back to the beginning of the third millennium B.C, where it appeared in the ancient settlements of Al-sham, and those between the two rivers; the Tigris and Euphrates (Edward, page 31), where people used to build their houses around enclosure, or courtyard with water in the centre, and later on the form has been adopted and developed by different civilizations that raised and coexisted in the ancient near east. When Moslems conquered the Middle East in the seventh century, they carried the courtyard concept throughout the Mediterranean region. Then this architectural style reached Spain and after centuries later, this idea passed to Mexico. The physical form of courtyard served many different functions.

Figure 59: Réception d’une ambassade vénitienne à Damas sous les Mamelouks, Venise, vers 1511, musée du Louvre RMN-Grand Palais (musée du Louvre) / Thierry Le Mage
Source: https://www.imarabe.org/fr/decouvrir-le-monde-arabe/histoire
First, it allowed high density in ancient cities which needed to be surrounded by walls to protect against the attacks of the enemy as Bagdad, Damascus, and Aleppo. In those cramped cities, the courtyard also offered privacy and security.

In the desert climates of the Middle East, the design provided solar protection by having everything open toward this shaded courtyard.  

Figure 60: Palace plan of Mari city on Euphrates river 2500 B.C. one of the earlier examples of the physical space of the courtyard in the palaces architecture in Syria.

Source: https://www.facebook.com/BasharKhleif/?pnref=story

References:

For the Islamic culture, the courtyard had another benefit which is a sheltered place for plants and fountains, fulfilling a religious purpose as a sign of paradise in the midst of arid country. (Y. Mahgoub, 2012) 

Emma Clark explains the enclosed form in the courtyard houses; the courtyard became a miniature garden. It is inwards and upwards symbolically towards the heart and towards the God. The image of earthly paradise reflected by the symbolic courtyards plan and its celestial properties with the private interior open sky.

The physical form of the courtyard reflects the separation between the public and the private which dominates in traditional Islamic society. This distinction between public and private domains was to become one of the principles of traditional Islamic architecture, with its ‘interior” courtyard garden.

Figure 61: courtyard house in Damascus.
Source: http://muslimheritage.com/article/courtyard-houses-syria

References:
In the traditional house and palaces in Syria the Landscaping plays an important role in the courtyard. It consists of two categories, decorative planting such as climbing jasmine, and rose bushes which add color and scent to the courtyard atmosphere and citrus trees such as orange and lemon. The façade of the courtyard are highly decorated in the house and inward looking but the external façade windows are small\textsuperscript{46}. Therefore, it offered limited views, and maximum centralized on the courtyard that became the only landscape the physical form offered.

As a climatic factor, the courtyard organization is appropriate to hot dry climates because the most of it is shaded and allows the creating of a pleasant microclimate, the availability of plants and water features within the courtyard helps to cool and humidify the internal atmosphere\textsuperscript{84}.

Nowadays, By contrast, the modern house type represents the opposite, the exterior or worldly attitude which draws new relation with the city and the opened and extends landscape around. The relation with the landscape or the form of garden and dwelling has developed differently through the history by different civilizations that coexisted in the same place and influenced each other’s, the Arabs and the Turks as example have presented opposite relationships between dwelling and garden. The first based on the introverted patio-house with the garden in the center. The second based on the hall between the two gardens which is open toward them on both sides\textsuperscript{85}.

References:

In Syria there are many examples of the courtyard houses and palaces, where they formed important part of the old cities urban fabric as Damascus and Aleppo.

**Figure 62:** The fountain in Achik Bash House in Aleppo.

**Figure 63:** The Maktab Anbar in Damascus. Maktab anbar is an old house in the center of Old Damascus near the Umayyad Mosque and a short distance from the Street Called Straight. The house was built as a private residence in the mid 19th century and was later confiscated by the Ottoman government; the house is built around three courtyards.

During the Ottoman period many palaces have been constructed with court yards by the rich elite with grand area and multi courtyards with the same features of the houses. But they display richness and luxury. The courtyard gardens is used for social activities as well as for daily life uses for the families with the privacy and separation between men and women in the social life, as the palace al-Azem in Damascus. Which has simple and unadorned façade like most of the Damascene houses and palaces contrasts with its elaborated interior.

Its layout covers a wide area surrounded by a bare wall with generally no windows and has one or two doors. Its interior consists of two or three courtyards. The location is in the heart of the Old City just south of the Umayyad Mosque’s qibla wall near the Suq al-Buzuriyya. It was built in 1163/1749 by Assad al-Azem Pasha (one of the last great Ottoman governors of Syria). With (5.500 square m). It has the appearance like elite houses of the period.

![Figure 64(A): Azem Palace](http://web.mit.edu/akpia/www/AKPsite/4.239/Azem/Azam%20Palace.html)
It is divided between the public reception area (Saramlik) and the large and open paved courtyard that comprises its domestic heart (Haramlik), with baths in the northeast corner of the latter. The domestic courtyard (25 by 25 m) has a large rectangular pool at the north end which is connected by a channel to a raised fountain at the other; there are beds for flowers and trees oranges are planted there today-reserved in its handsome paved marble floors.

Surrounding the courtyard are Iwans and recessed chambers that provide shade and cushioned seating so that the residents could enjoy the brilliant colors, pleasing sounds, and fragrant scents of the garden without subjecting themselves to the sun's heat.  

Figure 64(A,B): The fountain in Al-Azem Palace in Damascus.

Also the Ass’d Pasha Al’zem Palace in Hama:
It Located in old Hama city, built by alderman of Hama city Ass’d Pasha Al’zem in (1740 AC). In (1956) the Palace was converted to a traditional Museum of Hama city.
The palace contains two parts; the old part which is built by Ass’d Pasha and contains the main gate, corridor, and the

References:

First Courtyard which is surrounded by five rooms and Iwan. The up floor contains the most important hall in the palace the (Gold Hall): it was the private wing for the family and A bode for women.
The Second part was built in 1780. In 30 years after the first part had been built, and Nasouh Pasha was the new owner who added it.
The Second part next to the private one for men and the whole last part have been kept for family and women.

Figure65(A): Ass’d Pasha Al’zem Palace in Hama ,Gold hall courtyard
Source:https://www.academia.edu/8706891/SYRIAN_PALACES_IN_O TTOMAN_STYLE
Jinblat Palace- Aleppo:
Jinblat palace is located near Victory gate of Aleppo inside the fences. It was built by the prince Jinblat during 16 century; it is the biggest house in old Aleppo city. It has an area about 2310m after it had been about 5000m Before some parts of it were destroyed .The palace contains 15 rooms, large courtyard with large rectangle fountain, great Iwan and cellar. Now Most of the rooms are located around Iwan and courtyard. Thereby, ground floor is specified for men, whereas the area is allocated for women .The height of Iwan is 15m and the width is 10.50m, it is open to the courtyard. And it takes the north direction. This Iwan is unique in Syria architecture heritage. In addition, it is very rich by plant, geometric and calligraphy marble motifs. 87

References:
In the mosques architecture, the rectangular walled courtyards with arcades has used with a surrounded walls and fountains for ritual ablutions and a pavilion like both Umayyad mosques in Damascus and in Aleppo, but there are no planted trees found or vegetation in the city’s mosques of Umayyad period in Syria. And the earliest mosque where planting is the great mosque of Cordoba, where trees were planted in the courtyard at least at early as the first decade of the ninth century. By an Umayyad prince Abed Al Rahman I in 785-87. It is provided with a planted court yard with a variety of trees and the mosque had a fountain for ritual ablutions. The water came from the rainwater stocked in an underground tank. The water was raised to ground level by an animal powered wheel and distributed via shallow channels dug in the soil to irrigate the trees planted in the courtyard. The irrigation system has developed by time periods to achieve in 991-92 larger, deeper; cisterns were dug in the courtyard floor. The trees were planted in the courtyard with fruit-bearing 88.

Cordoba was not the only Andalusia or Mediterranean mosque with a cultivated courtyard. Cairo mosque in the eleventh century had palm trees in its courtyard. The congregational mosque of Malaga and Seville in 1172-82 mosques has also courtyard with a large central fountain and it was planted with orange trees and fruit-bearing palm trees.

In regard to the vegetations and trees symbolic meaning in the courtyards in Islamic period.

The planting trees in religious setting has a very long history in the eastern Mediterranean beside Quran the Bible in psalm 92 says that ‘righteous shall flourish like tree in a courtyard of the Temple’.

References:

But not all the planting presents religious reference. In Cordoba, despite to its earlier use to the planted court yard but the Islam legal authorities didn’t interpret the trees as parasitic symbols or indication of piety. So the interpreters of religious laws in Cordoba didn’t interpret mosque garden as paradise.

The sign of paradise has represented in Umayyad mosque in Damascus. The Mosque had an extensive mosaic program depicting trees and landscape, covering the walls of its courtyard. Its free standing treasury chamber and the façade of the transept leading to the Qibla wall and Mihrab. This was in the same period of the construction of prophet’s mosque in medina between 705-715. 89

![Figure 66(A):Umayyad Mosque](http://2.bp.blogspot.com/_svAyYhspKJw/S6nJkZDhEfl/AAAAAAAAErw/D24GV9vx9J8/s1600/74105075.jpg)

**References:**

The Umayyad Mosque retained his place as the center of religious life in the city in different historic periods. Its structure returned to the Iron Age where Damascus was capital of Aramian. First, it was built as a temple for Hadad-Ramman, the god of thunderstorms and rain. The location was at the site of the present-day Umayyad Mosque. It is not known exactly how the temple looked, but it is believed to have followed the traditional Semitic-Canaanite architectural form and it resembles the Temple of Jerusalem. The site likely consisted of a walled courtyard, a small chamber for worship, and a tower-like structure typically symbolizing the "high place" of storm gods.

In 64 BCE the temple has executed under the Romans authority by the Damascus-born architect Apollodorus, for the God of thunder and Jupiter. Most of its original Semitic design was preserved; the walled courtyard was largely left
intact. In the center of the courtyard stood the cella, an image of the god which followers would honor. There was one tower at each of courtyard's four corners. The towers were used for rituals in line with ancient Semitic religious traditions where sacrifices were made on high places. And the mosque was built near an earlier Byzantine palace from which it was separated by a garden or open ground. And Umayyad mosque of Aleppo 715, was constructed in the gardens that formerly belonged to the Byzantine cathedral, Ruggles refers to the influence of the Byzantine churches on the landscaped sitting of early mosque, where at ninth century Byzantine church was surrounded by enclosed and irrigated gardens with fountains. In Ottoman Istanbul, it was common for the mosque to have adjacent gardens that served as cemeteries. Imperial Ottoman mosques began to expand to include additional services like, hospital, soup kitchen, Madrasas, and libraries an outer enclosure court planted with trees.

Figure 67: Great Mosque courtyard, with Şadirvan pavilions and minaret, Aleppo, Syria. 
Source: https://de.pinterest.com/pin/463167142901856438/

References:
In Syria during the Ottoman period, The Sultan of the Ottoman Empire, Selim II had built in Damascus a mosque complex located on the banks of the Barada River. The complex is composed of a large mosque on the southwest side of a courtyard, flanked by a single line of arcaded cells, and a soup kitchen across the courtyard to the northwest, flanked by hospice buildings. The mosque has two minarets and walls with alternating light and dark stripes. The complex was designed by the architect Sinan.\footnote{\textit{https://en.wikipedia.org/wiki/Tekkiye_Mosque}}

\textbf{Figure 68:} The mosque complex in Damascus, Syria, located on the banks of the Barada River.\hfill \\
\textbf{Source:} \url{http://new.beautifulmosque.com/PostImages/tekkiye-mosque-in-damascus-syria.jpg}

\textbf{References:}

\footnote{\textit{https://en.wikipedia.org/wiki/Tekkiye_Mosque}}
1-4 Characteristics of the Islamic garden and its architectural functional Elements:

1-4-1 Sense of unity and Privacy.

The Islamic world extends on a large geography with wide variety of cultures, and diverse social tradition and historical identities of peoples including Arabs, Berbers, Byzantine, Christians, Persians from Iran, and Turkic peoples that come from steppes of central Asia.
And the Islamic landscape is also varied with different geographic characteristics between mountains and Sahara. And contains varies climates considerably in many areas of Islamic world from North Africa to the western periphery of the Pacific Ocean and from Central Asia to sub-Saharan Africa.

But in spite all this differences the Middle East is underlain by a subtle homogeneity.
The landscape architecture historian Norman Newton (1971) discussed the similarity in ambiance between the gardens of the Alhambra, built in thirteenth-century Spain, and the Taj Mahal which is built in the sixteenth-century India;
The similarity between the two great Islamic monuments is not a matter of detailed form; it is not even an apparent physical sameness.

It is a unity of spirit that Islam has emphasized on it, by the lifestyles of Muslims, that depends on Islamic instructions stemmed from Quran and teaching of Prophet Mohammad. The idea of Al Umma as a term refers to the Muslims people with a common ideology and culture according to a divine message transmitted by the prophet to the community of Islam.

With the expansion of Islam, more Islamic communities learned Arabic from mosque and Islamic governments, as a result and in the light of such diversity, Islam raises up as a coherent culture label, a main relevant factors helped as the trade and pilgrimage Routs that passed in the Middle East from ancient times and continue under the Islamic ideology that united the different tribes under its flag and brought
societies together to enable people to exchange objects and ideas.\textsuperscript{93} One of the factors that support the homogeneity and unity in the reform of the landscape and coded it under one coherent Islamic label is the interactive process with the previous developed civilization that exists in the Middle East. For thousands of years, the Middle East was the stage of various ancient civilizations, Mesopotamia, Babylon, Egypt, Ancient Greece, the Roman Empire, Persia, and others. When Islam rose as a political and economic power and religion, it has adopted many accomplishments of contemporary cultures. This evolutionary development succeeded in blending the agricultural experiences and skills of Mesopotamia, and later on Egyptians, and the experience in irrigation systems in Persia, byzantine, and Roman Empire. They translated the scientific discoveries from the other civilizations.

One of the influential sources of design ideas was also the desert environment itself, which affects every aspect of life. The climate of the region is characterized by high average temperature, high solar impact, strong wind, and fierce sandstorms. Ultimately, the lack of sufficient water is the limiting factor in design\textsuperscript{94}. All these factors helped in producing a unity of form.

References:

\textsuperscript{93} D.Ruggles, F, \textit{Islamic Gardens and Landscapes}, university of pynnsylvania,2008.
\textsuperscript{94} Hamed, S., E., \textit{Paradise on earth: Historical gardens of the arid Middle East} \url{http://ag.arizona.edu/oals/ALN/aln36/Hamed.html}. 
Privacy is the most intangible aspect which is presented clearly by the physical form of the Islamic garden with its walls, and the closed elevation that was oriented toward the courtyard which is the available domesticated landscape.

The enclosed form is required in case of presenting the idea of paradise and its contemplative aspect, beside that it’s also a kind of responding to the environmental requirements of the place. Which is explained by Creswell (1968) that clustering of walls, buildings and tall trees as a prerequisite for the privacy needed to develop the hidden qualities of the spirit.  

Lesiuk (1980) also noted that enclosing the earthly garden with walls and buildings is a metaphoric gesture recalling its heavenly archetype.

Privacy according to Islam is required, from the religious point of view, because the idea of the earthly paradise which is a private place, hidden away from the world and from people. It is a place for prayer and contemplation.

And the courtyard house corresponds to the private interior world of the family. In Persia, as well as in the Arab countries and in India, gardens and courtyards were clearly defined spaces within the layout of the architecture.

But Turkey has developed this form of houses to exploit the surrounding natural and beautiful views that nature offers. In Spain the courtyard with its sloped location where views clearly appears from a distance, there were windows opened in the walls to view the extending natural landscape.

References:

But Arab adopted this form and maintained this characteristic because the enclosed form with its privacy provide protection from the hostile environment in the desert, also helped to protect and control the domesticated landscape in the courtyards and its quality from the vast aridity outside, and their envision paradise. The relation with landscape became closed by wall and limited view.

A.Petruccioli explains that the form reflects the culture that evolved from the influence of the environment of the desert, and from necessity based on protecting living space. So this privacy came as a reaction toward the circumstances that faced the earlier settlements in the desert. ⁹⁵

References:

‘’I wonder whether I shall ever spend a night,
With flower gardens and water pools around me,
Where green olive groves, far-famed are planted,
Where the doves sing, the warbling of birds resounds,
In the Zahir on the hights, refreshed by soft rain,
The Thurayya pointing at us, we pointing at it,
The Zahi looking at us with its round Sa`d as-suùd,
Jealous of each other, like a beloved and a lover!
All this is now hard, not easy to attain:
Yet, whatever God wishes to pass, is easy to bear!’’

The Andalusia king al-mutamid-1095- recalled with sad longing his former palaces Sahir and Thurayya halls, names for constellations, planets and its gardens.(Ruggles, Page 58)

References:
1-5 The main architectural elements of the garden:

An Islamic garden is a landscape designed according to certain ideological principles that employs certain physical elements, and focused on certain intentions. The articulation of these elements and intentions is deeply rooted in the teachings of the Islamic faith and in the culture of the Muslim people.  

The essential physical elements that define the Islamic garden are:

1-5-1 the walls (enclosure wall):

The geographical characteristics affected the primary form of the traditional Islamic garden, its formal components and physical features.

The most of the desert civilization made reference to the archetype of the fence, and many Traditional gardens were surrounded by walls. It had inward-looking composition which is interpreted as an attempt to isolate human-made order from the perceived chaos of the surrounding harsh desert, and to protect the domesticate and cultivate area.

A. Petruccioli has referred that the Islamic garden portrays an attitude toward the environment, the taming and glorification of nature enclosed within four walls juxtaposed with the hostile areas of outside world  

References:

94, Hamed, S., E., Paradise on earth: Historical gardens of the arid Middle East, http://ag.arizona.edu/oals/ALN/ALN36/Hamed.html

He referred to the concept of space in a culture evolved from the desert and the necessity of protecting living space and transforming the enclosure into an archetypal sign of distinction, not only separation between the nomadic and the sedentary, between oasis and desert, irrigated and arid land but because there is no dialog between the two. The enclosure becomes a fortress under constant attack from the desert symbolism-thirst, death, and evil spirits; therefore it was sheltered by high walls\textsuperscript{95}.

All these aspects gathered to produce this protection to the organized and domesticated landscape.

But in the case of another environment like Turkey, which has different geographical features. And this lead to another relation with the nature and another conception of the Islamic garden, even to another development to the landscape which became more open to outside space, interact with the nature features like rivers, mountains, and try to exploit this aspect and take advantage of the views in designing the gardens and the landscape.

The traditional walled gardens that inherited as in the context of the city or the relation with the rest landscape produces a fragmentation in the urban pattern that transferred the city to closed entities, isolated and separated parts, it’s the treatment in the desert or Sahara regions, but the development of cities which were surrounded by natural views should consider another planning system to employ the natural features and invest them in the urban plan development.

\textbf{Reference:}

1-5-2 The gradation and successive levels:

It’s a part of constructions of views in the Islamic gardens. It helped to view panoramically the garden and the surrounding landscape. It was used in the gardens of the Achaemenids kings which is a pre-Islamic period on a sloped site. And it was a strategically planned to control the views of the garden and the vast cultivated surrounded landscape. It’s also considered as a part of the hierarchy in the palaces complex that put the king as the representative of god on earth. This was influenced by the religion of Mesopotamia, which has been adopted by many civilizations that coexisted in the Middle East.

Later on after Islam, the same character has adopted and continued to be used in the palaces and palatine gardens of Islamic period. Umayyad, Abbasid and in Andalucia, the sloped site helped it as in Al Rummanyan’s, madinat Al-zahra places gardens where was built on a slope of a mountain west of Cordoba in order to exploit the views.\(^{96}\)

Granada gardens were set on the hillsides and they give lovely aspect, unlike the Mughol gardens in Kashmir, the hillside garden in this area was slightly irregular, and also it also differs from Seville and Cordoba. They are on a flat site; the hillside location clearly gave more scope for variation and more details. It provides a view of the nearby town or city could be seen through a pierced wall or from an open terrace brick or tile staircases would connect various levels, in contrast to Islamic gardens elsewhere. There is necessity for the use of a means to achieve visual drama. The flights of steps were often sheltered by pergolas and lined with potted plants. They were sometimes covered by bright tiles in a geometrical pattern and formed an effective contrast with the surrounding white stucco walls.

Reference:

Beside this the terraces or falling terrain also provided a great scope for the arrangement of water and its distribution. 

Ruggles also interprets this design in the palaces gardens as a social hierarchy design, and explains that this design of view from a high and vast expanse of land was an act from the ruler to signify his colossal power over the land and its inhabitants.

It served state ideology and became a part of the palace typology that presented the Sovereignty and the power of the king.

This design became one of the architectural characters of Islamic gardens.

1-5-3 Pavilions;

The Pavilion was used in the garden layout for relaxation, gazing and contemplation. It provides a shaded vantage point in which everyone could sit and view the magnificent garden and surrounding landscape and contemplate inner thoughts. It also provides a shelter from the heat of the desert.

Typically had a "rectangular platform with open porches, probably columned, added to each of its shorter sides.

In the religious context, it is mentioned in the description of paradise in Quran and also in Hadith of the prophet Muhammad.

References:

99 , Halim Ibn Muhammad Nassae As-Salafi, A., Description of Paradise In The Glorious Quran, Darussalam Publisher.
But historically, the pavilion is used in Persian gardens for the first time in the Achaemenids empire period in the king’s palaces garden before Islam, and it was used as an important centered element in the design of palaces gardens in Syria Al-Rusafa (Byzantine site) and then it belonged to the Umayyad caliphs. The pavilion was elevated and surrounded by an arcade and had an opening on each side from which three steps ran down to the garden.  

The pavilion form changed from gardens layout to another. Emma Clark refers to Mughol gardens pavilion form and its symbolism. “The pavilions at the four corners of many Mughol mausoleums including the Taj Mahal, are octagonal and the throne of God is supported by eight angels, signifying the renewed man after he has travelled through the seven heavens and regained paradise.”

But in Spanish gardens layout, it presented a distinctive feature of small bower (Glorieta). It symbolized the pearl pavilion of the Quranic paradise. It was located at the junction path. It was often formed of Cypress trees the top of which would bend or clipped to form arches. Alternatively, a light arch might be built and covered with vine.

References:


1-5-4 Shadows

Shadows serve the purpose of Islamic garden as a cool place of rest and reflection and a reminder of paradise.

It is a stark contrast between the harsh and arid landscape in most parts of the Islamic World and the gentle cool given by trees and the foliage of a garden and with a green canopy of shade.
Shadows beside the water are considered the most important aspect in the garden in Quranic text; Emma Clark explains the effect of the environment of desert on the sacredness of the Islamic elements:

*Two indispensable elements of the Islamic Gardens of Paradise are already evident here – water and shade. It is important to remember just how much more a garden means to those brought up in a hot desert climate than to those brought up in countries where rain is frequent and where the popular idea of paradise is a desert island with a palm tree* \(^{103}\).

This aspect is highly considerable in gardens features and presents a high-value environmental role in moderating climate and reducing the heat which are important factors for the environmental improvements in the landscaping study and design.

Reference:

1-5-5 Water features

‘water is the secret of the soul in many sacred traditions, its fluidity and constantly purifying aspect is the reflection of the soul’s ability to renew itself’." ¹⁰³

Water has crucial importance in every living aspect, “and we made everything alive from water” it’s a keynote in Quran refers to the role of life giving water in all of Islamic culture.

Water role was significant in the ancient Middle East, and Ancient civilizations where it’s considered a sacred element in regard to its importance and influence on the human life existence.

Figure 69: Water features in Spain.

It has made civilization possible, most of the ancient civilization settled near the water sources like rivers, and its economy depended on the water ability for irrigation and agriculture and trade, like Mari kingdom on Euphrates River in Syria or Mesopotamia and Nile River in Egypt. Therefore, water was considered a sacred element in many ancient civilizations and it is even mentioned in their myths.

Reference:
Emma klark explains that ‘’Water – cooling, cleansing and purifying – is at the centre of the garden, the courtyard and the mosque. In a traditional society there is no separation between the sacred and the profane and water is the supreme example of this.’’

In the hot arid climate where the desert water is essential to life and to survive so far it is associated with wealth and fertility. Emma Clark points out In the Epic of Gilgamesh that water has much more value to people who live in arid countries and that desert dwellers traditionally viewed water as a symbol of God's mercy. This idea is evident in numerous verses of the Quran, where water and mercy are inseparable.

In the garden the water is located in the center of the courtyards where there is a fountain from which radiate four paths. It’s placed at the heart of the garden, and playing many roles within the garden design; it is emphasizing architectural elements, masking outdoor noise, producing pleasing sounds, refreshes the eyes, cooling the body in the high temperatures and providing a space for spiritual contemplation. Irrigating plants, and soothing the dusty wind.

Water moves through the Islamic garden in many ways, it changes level over chutes and waterfalls, and spurts into the air from fountains. It sends out plums or bubbling out in sprays and swirls, filling the air with sound.

In Spain courtyard water has played a significant role in gardens as well as in other architectural spaces. Water features viewed as part of the spiritual conception of landscape, while in other spaces the absolute stillness of a large pool would created almost perfect reflections of the surrounding architecture, even more it’s played a role as divider of spaces like the courtyard of the Alhambra and The Generalife in the Patio de la Acequia.

Reference:

Clark, E., The art of Islamic garden, Times offset, Malaysia, 2010.

It has reflected and presented a high level of water irrigations developments through the recognizable water features and construction.

**Figure 70:** Alhambra palace, court of lion.

**Figure 71:** Alhambra palace, is filled with the sounds of trickling water.
1-5-6 Plants and trees

In the dry, desert climate of Arabia, where Islam originated, a lush, green, and shady garden with water presented the paradise on Earth. From this environmental background of view, plants and trees in the Islamic world have acquired sacred and symbolic meanings, but trees in the three holy books of Judaism, Christianity and Islam are prominent and beyond their utilities. They are important for the holy books as a symbol and metaphor. In the Koran, trees are most frequently cited as gifts of a beneficent Creator, shady and fruitful trees are highly valued and many trees have mentioned in the Quran as olive, fig, and pomegranate. Etc. we can find them in all and most of the Islamic garden and in different period, in the palaces of Umayyad princes or as well as court house in Damascus and Aleppo, the power of the ruler stemmed from the productivity and fertility of the landscape that bring prosperity and richness.

Agricultural economic played a crucial role in the prosperity of the Islamic civilization like Persian and Roman empires before. Beside this aspect ,as Emma Clark refers to the vegetation in Islamic gardens, that greenery is soften the ordered and geometric nature of the garden, as does the vegetation ,it contains the generous planting of chinar trees (the plane tree, Platanus orientalis) with their large, shade-giving leaves, and the cypress, the palm-tree and the olive as well as the different kinds of fruit trees: fig, cherry, peach, citrus, pomegranate, and almond, with their abundant blossom and fruit Flower-beds were most likely to be filled with fragrant varieties such as jasmine, roses, narcissus, violets and lilies 105.

Reference:
105, Clark, E., The art of Islamic garden ,Times offset, Malaysia ,2010
1-5-7 Birds and animals

Various kind of birds and animals, were introduced in the Islamic gardens to give animation to the garden and that included swans, pheasants, pigeons, ducks and singing birds. The elite people in the palaces gardens enjoy them. In the palaces gardens From Samaria to Bagdad, during Abbasid period they were used in the palaces parks, every individual palace had its own separate encircling wall with special houses attached to the palaces gardens. Various wild beasts were kept there like elephants, lions, giraffes, and leopards. These were sufficiently tamed to eat out of a visitor’s hand.

Enormous pleasure gardens in palaces of Spain were also found birds and animals. Nowadays, in many countries around the world as well as Europe, many parks contain various types of animals, and they play an important role in the wildlife preservation where landscape has been designed to accommodate and nourish wildlife population which enhances species richness. It is very important on the environmental scale and for the sustainable urban development.

References:


107, Islamic garden design, http://www.gardenvist.com/history_theory/library_online_ebooks/ml_gothein_history_garden_art_design/islamic_garden_design

1-5-8 Arabesque and ornaments

Islamic art encompasses many visual arts produced from the 7th century. But not all of these arts restricted to religious matters, but includes all the art of the rich and varied cultures of Islamic societies as well. \(^{109}\)

Ornamentation is a central feature in many of the Islamic architectural types. Islamic gardens with its enclosed form and surrounded walls has over many Islamic periods presented a kind of ornamentations and calligraphy arts. It has added an aesthetic value to the space. Geometric patterns make up one of the three non figural types of decoration in Islamic art which also include calligraphy and vegetal patterns. Whether isolated or used in combination with no figural ornamentation or figural representation, geometric patterns are popularly associated with Islamic art largely due to their anionic quality. These abstract designs not only adorn the surfaces of monumental Islamic architecture but also function as the major decorative element on a vast Array of objects of all types.

Figure 72: Interior detailing of the connecting pathway between the Mexuar and the Comares Palace, Alhambra palace.
Source: http://www.exploringcastles.com/alhambra_granada_spain.html

References:
\(^{109}\) https://en.wikipedia.org/wiki/Islamic_art
While geometric ornamentation may have reached a pinnacle in the Islamic world. Islamic art developed from many sources like Greeks, Romans, Early Christian art, Byzantine styles, and Sasanians art of pre-Islamic Persia. Islamic artists appropriated key elements from the classical tradition, then complicated and elaborated upon them in order to invent a new form of decoration that stressed the importance of unity and order. The significant intellectual contributions of Islamic mathematicians, astronomers, and scientists were essential to the creation of this unique new style.  

In the use of geometrical floral or vegetal designs there are repeated elements, and it is known as the arabesque. The arabesque in Islamic art is often used to symbolize the transcendent indivisible and infinite nature of God. Mistakes in repetitions may be intentionally introduced as a show of humility by artists who believe only God can produce perfection, although this theory is disputed.

References:

**figure 74** Stone relief with arabesques of tendrils, palmettes and half-palmettes Damascus Umayyad mosque.

**Figure 75** photo on the left side is Mosaic in the court yard facade of Umayyad mosque Damascus.-the photo in right side is ornament in Alhambra.

**Sources:**
https://www.studyblue.com/notes/note/n/chapter-7-the-islamic-world/deck/4319091

http://foter.com/f/photo/5220660302/65c08e665d/
Typically, though not entirely, Islamic art has focused on the depiction of patterns whether purely geometric or floral and Arabic calligraphy rather than on figures. Human representation for the purpose of worship is considered idolatry and is duly forbidden in Islamic law, and it is known as ‘Sharia law’. There are also many small decorative figures of animals and humans, especially if they are hunting the animals, are found on secular pieces in many media from many periods, but portraits were slow to develop.\textsuperscript{110}

Andalusia as an example has developed its ornaments with its own unique characteristics. Oleg Grabar discusses the nature of geometric arts and comments: “The areas and times that most consistently exhibit geometric ornament are at the periphery of major cultural centers or at the edges of dominating social classes.” However, he goes on to say, “…quite the opposite occurred in the Muslim world.”\textsuperscript{111}

\textbf{References:}

\textsuperscript{110}, https://en.wikipedia.org/wiki/Islamic_art

\textsuperscript{111}, https://www.khanacademy.org/humanities/art-islam/islamic-art-medieval/a/the-alhambra
Figure 76: Poèmes d’Ibn Zamrak sur les murs du palais de l’Alhambra, Grenade, XIVe siècle.
Source: https://www.imarabe.org/fr/decouvrir-le-monde-arabe/art-culture

Figure 77: Kufic calligraphy combined with floral and geometrical decoration with intersecting horseshoe arches. Plate on Cordoba Mosque façade.
Source: http://www.muslimheritage.com/article/introduction-islamic-art
1-5-9 Calligraphy on walls.

One of the decorative forms of art developed in Islamic culture is calligraphy, which consists of the use of artistic lettering. That is combined with geometrical and natural forms. As in other forms of Islamic art, Calligraphic design is omnipresent in Islamic art, where as in Europe in the Middle Ages religious exhortations including Quranic verses. It may be included in secular objects, especially coins, tiles and metalwork, and most painted miniatures include some scripts, as many buildings. Other inscriptions include verses of poetry and inscriptions that record ownership or donation. Two of the main scripts involved the symbolic kufic and naskh scripts which can be found adorning and enhancing the visual appeal of the walls and domes of buildings, the sides of minbars, and metalwork. Islamic calligraphy in the form of painting or sculptures is sometimes referred to as Quranic art.\textsuperscript{112}


\textbf{Figure 78:} Calligraphy in Andalucia palaces.


\textbf{References:}

\textsuperscript{112}[https://en.wikipedia.org/wiki/Islamic_art](https://en.wikipedia.org/wiki/Islamic_art)
1-6 Conclusion:

According to the Historical and archaeological records in addition to mythology studies on the Islamic garden theme. I found that the formal design for the garden that used during the Islamic period, the ‘‘four-parts’’ garden form with its philosophy that presented the paradise concept existed before the Islamic period. The form and its philosophy the paradise concept has developed through ages by many ancient civilizations in the Middle East, which adopted the form and used it with different interpretations and beliefs. All of these civilizations shared the same geographical area.

(Figure, the map) and all of it was a result of the agricultural Economic development and according to D.Ruggles and Alsawah, it was the reason of emergence and rising of the civilizations through the classical period in the ancient Levant (Bilad Alsham). This economical shift led to the emergence of the first cities in the human history in Mesopotamia, with all its advanced political and religious organization. This shift was called the Urban Revolution.

![Figure 79](http://www.bible.ca/maps/maps-near-east-500BC.jpg)

**Figure 79:** map of the ancient civilization in Middle East  
**Source:** http://www.bible.ca/maps/maps-near-east-500BC.jpg
That what also was explained by Angles, when he referred to the role of the first agricultural economy and classes that caused the emergence of religion as an organization.

The agro-economic is the outcome of the Neolithic revolution at 9000 BC. It emerged at the first time and according to many factors in the Fertile Crescent and particularly in Syria. Human there settled in the land after being nomads. They knew the agriculture for the first time and the domestication of the nature. They produced the food, and tame the animals as well.

Then this revolution spread radially to the north, where in Anatolian was the first spread of it. After it spread in the east of Turkey and then to other lands as Cauvin referred.

This revolution occurs as a result to the shift in beliefs of the Paleolithic man. According to Cauvin which he declares that the emergence of agriculture was associated clearly with the emergence of the first divinities of the human societies and that was in many sites in Syria.

And this change happened in 10000 BC, was the period that the human of Paleolithic period expressed his thoughts and beliefs by symbols and figures of a woman and a bull which will develop in the Neolithic area to become the belief of the societies.

Both revolutions bring to the Neolithic societies the first belief and economic power which caused as explained the urban revolution in Mesopotamia.

Agricultural economic surplus causes prosperity by supporting the trade network that was passed from ancient Neolithic time through the ancient Levant, passed many continents, and in turn this economic development leads to the emergence of the empires in the Levant.
The first formal garden four parts plan was a result to the important changes and agricultural revolution and was used in the empires period around 559-553 BC in Achaemenids palaces for the first time according to Ruggles. The drawing was common in the Neolithic sites as the mythological studies referred; they developed the form with sophisticated irrigation technique which employed it to distribute the agricultural resources.

The garden during this period was used by the kings and elite classes’ palaces that dominated the agricultural economic and political power in the societies. It expressed both powers all over this period, from the Achaemenids period to the Islamic period and all over the different countries that Islam extended over, and was associated with the palaces architecture with its ideology of paradise and technique that was employed in the agricultural landscape.

It reflects the power and Sovereignty that stemmed from the first societies organization that was built by classes through the economic development process of the societies toward civilization. Gardens in palaces were used as pleasure gardens and agricultural areas where presented the outcome of the human experiences with the nature which he has dominated and domesticated. So it presented the production of domesticated nature and the success of human being over the difficulties that faced him as a human species, and the conditions that created him. The garden so display the agricultural economic achievements from a different kind of fruitful trees, plants, flowers and even it displays the taming animal achievement. So it was used as a sample of the human being achievements over the wild nature. It reflected for him the plot or part of the wild nature that human or his species could domesticate and organized according to his needs beliefs and thoughts. And this image will be a part of the human myths and legends later on and will lead to construct his first paradise; the domesticated plot that has all what he
needs from the fertilized nature to be happy and satisfied in his life on the earth.

When Islam at the 7th century emerged as a political and economical power in the middle east, it adapted the legacy of the previous civilization, and united the different tribes under one religion and ideology, it is depended on the agriculture economic that feeds the trade and brings prosperities to the civilizations and stability, and the ancient theme of the paradise that was presented previously in the myths of the Neolithic period, was easily justified for the desert inhabitants, where the paradise is the fertile land, and also because this idea was known while the ancient trade network existed since the first Neolithic societies settled in the Levant. The archeological studies referred to that since the agriculture revolution, the trade developed between many Neolithic sites in the Levant and that was around 10000-9000 BC, also because of the pagan Pilgrimage role that helped by transporting many ideas through the lands which have crossed.

The garden form in the Middle East influenced not just by symbols and beliefs of the ancient societies or by religion, but also by the geographical factors that played a crucial role in the Middle East where the desert occupied large areas in it.

Therefore, the garden form was a response to the geographical conditions that the desert societies have employed and developed as an agricultural landscape in the desert land.

With its privacy and enclosed space and form that dominated the landscape during the Islamic period.

Nowadays, when we need to argue the use of this physical form in the current landscape in Syria, we should consider the whole factors that produced this form through the history of the region, putting in our consideration the problems that the landscape in Syria and the urban plan of its cities faced.
nowadays trying to take the advantage of what is appropriate to now a day’s situation.

And while the historical garden as an enclosed form was part of the palaces of kings and elite classes during the Islamic period, this form was used as a part of the landscape design and employed this form for distribution of the agricultural resources in the arid land where protection from the surrounding desert was required.

In Syria and particularly in Latakia city which is surrounded by agricultural lands and has moderate climate, located on the Mediterranean Sea, and has diverse natural features like rivers, lakes and forests. The differences between the geographical patterns should be reflected on the form of the landscape design and plan.

Walled gardens and privacy couldn’t be achieved in the urban green areas where these places should play a role of integration between the different components of the society. Hence the urban green areas beside its environmental role they have social and cultural role which is important for any sustainable developments.
Chapter II
A Brief History of Syria and Its urban development:

This chapter presents a brief overview of Syria’s history, its urban settlement, the main historical events and its territorial limitation in target to explain better the rules and factors that affected the city’s urban plan and its landscape over the history of the country.

The chapter focuses on studying the gardens and public green areas as a part of the Syria natural landscape in the Islamic period. In addition, the special case of Damascus is analyzed for the importance of the city as it was a center of the Islamic Umayyad caliphate and the changes that have conducted to its urban landscape.

2-1 Syria
The modern Syrian state is officially known as the Syrian Arab Republic.

Figure 80. Syria Map.
Geëncencerde provocaties voor NATO-Syrië oorlog?
Submitted by Luc DM on Fri, 08/22/2014 - 18:47
It is a country located in the central southwest region of the continent of Asia called the Middle East. Syria occupies a sensitive geopolitical region that has traditionally been a crossroads between the three continents Asia, Africa, and Europe. It is bordering the Mediterranean Sea to the west, Turkey to the north, Iraq to the east and the southeast, Jordan and Palestine to the south and Lebanon to the southwest. This region is home to diverse ancient ethnic, religious, and cultural groups, which are considered the place of coexistence of differences that still characterizes Syria as a multi-cultural country during its history.

Figure 81. Fertile Crescent Map
Source:http://global.britannica.com/EBchecked/topic/205250/Fertile-Crescent
Written by: The Editors of Encyclopedia Britannica Last Updated 10-29-2014
According to the excavations discoveries, archaeologists have demonstrated that Syria is located in one of the most ancient regions of human civilization. It was a part of the “fertile crescent “the name derived from its agricultural development and irrigation culture and the area’s shape. And since approximately 10,000 BC it was one of the centers of Neolithic culture (PPNA) where agriculture and cattle breeding appeared for the first time \(^{113}\).

This period of ancient Near East was encompassed the sites of several indigenous civilization , empires, and ancient kingdoms as Kingdom of Ebla (3500 BC), Kingdom of Mary, Ugarit(circa 1800 BC), Ramita and Dura-Europos, and other dozens of cities ,Which grew up beside the Tigris and Euphrates Rivers, or on the Mediterranean sea as Ramita.

Because of the importance of its location between the East and the West Syria became a transit country for many different and great civilizations and cultures which developed from or invaded the area, Sumerian, Akkadian, Chaldeans, the Canaanites, The Aramaeans were followed by the Assyrians, the Neo-Babylonians, Persians, and finally, Greek Roman rulers, and Byzantines. In the 7th Century of the Christian era, Damascus was the seat of the Umayyad caliphate, the capital of the Arabs and Islam.

**References:**

The Fertile Crescent:
The cultivated region of the country extends in an arc from the Jazira plain and the Euphrates River basin through northern Syria and south along the coastal plains. This area is part of the Fertile Crescent. Stretching from Mesopotamia in Iraq to the Nile Valley in Egypt, the Fertile Crescent is a swath of productive, hospitable land bordered by inhospitable desert. Endowed with precious water resources. The region has given rise to some of the world’s earliest civilizations. Today, Syria’s population remains heavily centered in pockets within the Fertile Crescent, namely the coastal plain, the historic cities of Aleppo, Damascus, and the Jazira. 

\(^{113}\), https://famdliflc.lingnet.org/products/cip/Syria/syria.pdf

\(^{114}\), http://en.wikipedia.org/wiki/Syria
Under the rule of the Umayyad dynasty, Syria blossomed as an economic, political, and Islamic center. Along the incense route from South Arabia, trade run along the Silk Road from the Far Eastern China to Syrian markets.\textsuperscript{115}

Arab-Islamic rule under various dynasties reached from India to the Pyrenees, at the end of the 11th Century Frankish Crusaders began their campaign in the region. Only 200 years later, this invasion came to an end.

And finally was under the control of The Ottomans and it does have undergone the assignment of the French between 1920 and 1946.

\textbf{References:}
\textsuperscript{115}, \url{http://www.globalresearch.ca/syria-a-historical-perspective-on-the-current-crisis/24568}
\url{http://en.wikipedia.org/wiki/History_of_Syria}
2-2 Syria’s Urban Settlement

The national capital of Syria is Damascus. Located in the southwestern corner of the country, which is considered to be one of the oldest cities in the Middle East and among the oldest continually inhabited cities in the world. It is a major cultural and religious center of the Levant. These aspects are promoted by its geographical location in the fertile plain narrated by the Barada River and many of its branches. From ancient times canals dug by the inhabitants of Damascus irrigated land on either side of the Barada which forms the Ghouta of Damascus that extends to became a green agricultural belt surrounding the city of Damascus in the south and east. Separating it from the dry grasslands bordering the Syrian Desert. It has provided its inhabitants with a variety of cereals, vegetables, and fruits for thousands of years. This in turn enabled the city since ancient times to be known as a commercial city, and played an important role as an oasis which was located on Trans desert routes and caravan, that enhanced the economical stability and made it an important cultural and commercial centre.

During the second half of the 20th century, Damascus experienced tremendous growth owing mainly to steady migration from rural areas and other cities.

In the 1980's, the urban growth and uncontrolled urbanization and industrial development, have increased the pressure on the agricultural lands, and as a result. It started to replace agricultural use with the housing and industry.

References:

117, Levant: It is historical geographical term referring to the Eastern Mediterranean, it is consisting of Syria, Lebanon, Jordan, Palestine, Cyprus and part of southern Turkey.
Aleppo is Syria’s largest city, Located on the plateau in northwestern Syria. It is an important regional hub for commerce and industry, and it’s like Damascus thought to be one of the oldest continuously populated cities in the world.\textsuperscript{119}

The Mediterranean port of Latakia is surrounded by rich agricultural regions. Yet, it is possible to find some industry there as well. Because of its seaside location as well as many important archeological sites, the city became a major center for tourism.

Different historical periods left its traces on the urban formation of the Syrian cities.

In the period of the Classical antiquity in Syria, Greek and Roman rule lasted Ten centuries their urban mark still visible in the towns of Latakia, Palmira, and Busrā al-Shām. On the other hand, After over one thousand years as the centre of Islamic empires\textsuperscript{119}, Syria’s main cities have developed along an almost straight line, north to south, following the traditional pilgrimage route to Mecca, Damascus and Aleppo, the two major centers both having been developed as chief trading stops.

The traditional urban fabric of Islam still appears clearly in the both cities, Damascus and Aleppo, the continuation of old commercial and religious interests enabled the mentioned cities to maintain their economic and cultural supremacy under the four centuries of Ottoman rule\textsuperscript{120},

Then during the French Mandate these main cities expanded and became modernized.

Afterward the independence and the period of rapid urbanization in the 1950s and ”60s, Since the mid-twentieth century, industrialization and population growth have led to rapid urbanization that strongly affects socioeconomic structures in the rural areas.

\textbf{References:}
\textsuperscript{120}, Etheredge, L., Middle east region in transition, Syria, Lebanon, and Jordan, Britannica Educational Publishing, 2011 (page13)
2-3 The urban structure of the Islamic city:

The cities of Middle East have a long urban tradition. A dramatic urban change took place in Middle Eastern cities several cities underwent a period of what was later entitled as modernization of the late Ottoman rule. It took place in the 19th and 20th century. Some cities were changed under colonial and mandate rule and others as a result of nationalist projects later.

There was strong control of the relation between the public and private realm in Islamic cities in the Middle East during the Ottoman rule. The town of Medina, for instance presents itself as a closed web of buildings, streets, lanes and active People (Bianca, 1991). The mosque was the center of the social life, Markets and commercial activities were located near the mosque and social life flourished in the area as well.122

References:


Chapter III Latakia: Case Study

Latakia is a major Syrian port situated on the Mediterranean Sea, as well as the capital of the Latakia Governorate. In addition to serving as a port, the city is a manufacturing center for surrounding agricultural towns and villages.¹²³

3-1 The historical urban development of Latakia city through ages:

3-1-1 Early History of Latakia:

The location of Latakia, the Ras Ziyarah has a long history of occupation. The Phoenician city of Ramitha was located on this site. Ramitha was the first name of the latakia city, and it started as a small village built on a rocky hill. Its cadastral survey was about one and a half hectares. It was standing in the southern basin of the old port which is thought to be one of the oldest ports in the world. Archeological artefacts indicate that the port in concern was inhabited in the Stone Age period, who inhabited Ramitha and built the ancient Canaanite city-state of Ugarit, Ramitha dates at least to the second millennium BC and was a part of the kingdom of Ugarit, Which was Syro-Phoenician kingdom a short distance north Latakia (the current name), (Ramitha name was used at Ugarit time) at what is now called Ras Shamra.¹²⁴

References:

¹²⁴ Saada, G., the governor of Latakia, the Ministry of Culture in Damascus, the series of Belanuda, 1961.
It was an important ancient sea port; it had been inhabited almost since the Neolithic period (c. 6500 BCE). And was a key economic center in the Ancient Near East, serving as a major trade center between Egypt and the major powers of Bronze Age Asia Minor and Mesopotamia.

It is a place where the first alphabet in the world came into being. The city had a fortification and a main gate in its western part. Its streets lined with two-story houses dominated on the northeastern side of the Tell by an acropolis with two temples dedicated to the gods Baal and Dagan. A large palace, built from finely dressed stones and consisting of numerous courtyards, pillared halls, and a columned entrance gate, occupied the western edge of the city. The Royal Palace was separated from the rest of the city.
**Figure 83(A)** location of Ugarit in Latakia governorate,  
Source: Wikipedia, the free encyclopedia, Ugarit

**Figure 83(B)**, a map of ancient Phoenicia with important cities.  
As Ugarit declined at the end of the second millennium BC, the better natural harbor facilities at Ramitha increased its importance. In the fourth century BC, in the Greek time, the port of Latakia was home to a huge naval fleet belonging to the Ancient Greek state.

When Greek power declined, the settlement became part of the Assyrian Empire, later falling to Persians, later to be taken by Alexander the Great in 333 BC following his victory in the Battle of Issus over the Persians.
That marked the beginning of the era of Hellenism in Syria. In 323 BC, after the death of Alexander, northern Syria fell under the control of Seleucus I Nicator who founded during 300 BC the city of Laodicea, future Latakia, which became one of the main centers of Greek culture. The Hellenistic Period lasted long in Syria nearly for two centuries and a half, and Laodicea occupied the whole head, extending into the sea, which covers an area of about 400 hectares, which constitutes a suitable terrace for building, and it is bordered by two hills from the east.

At this time, the chess design of the city was drawn and it was prevailed in the country of the Greeks and the design is saved up till now. It shows that Laodicea was from the beginning one of the important and flourishing Seleucusian cities and became a main center of Greek culture.

The city was described in Strabo's *Geographica*:

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In 64 BC, Syria has become one of the states of the Roman Empire and remained so for more than four centuries.

During this period the city flourished again as an entrepôt for East-West trade on the Mediterranean coast line.
At the end of the second century AD, the city had new four colonnaded streets that divided the city into a series of rectangles by Emperor Septimius who also built baths, a theatre, a hippodrome, numerous sanctuaries and other public buildings in the city. Rome regarded Laodicea as a key strategic seaport in the prized province of Syria\textsuperscript{125}

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{latakia_plan.png}
\caption{plan of Latakia in the antiquity with the Ugarit Square In the crossing point of the two main streets (Cardo –Decumanus) In the Roman times. \textbf{Source}: Gabriel Saada, conspectus in the history of Latakia.}
\end{figure}

\textbf{References:}

\textsuperscript{125} Saada,G.,\textit{the governor of Latakia, the Ministry of Culture in Damascus}, the series of Belanuda, 1961.
3-1-2 History of Latakia during the expansion of Islam powers,

Laodicea fell to Islam in 638 under General Abu Ubaida during the Caliph Omar Ibn al-Khattab rule. Laodicea was known to the Muslims as al Ladhiqiyah, or Latakia. Many of Latakia’s great public buildings were already in ruins by then. Afterwards, in 1097, first Crusades reached Syria. On 19 August 1097, twenty-eight ships from Cyprus occupied the city. Latakia became known as “La Liche,” covering an area of 220 hectares (0.85 sq miles) and consisting of three separate parts. The port, originally an open bay with marble quay stones, which is laid by the Romans, remained an important commercial center. The town prospered, and the previous continuous line of fortifications vanished. Twin castles, which dominated the town, stood on two hills. In the Crusades times, a sizable Muslim population the same as some Franks and a large Greek Orthodox community lived together. Two Greek Orthodox churches remained intact: the Church of the Virgin Lady and the Church of St Nicholas. Later, the town was devastated by earthquakes of 1157 and 1170. Although the city in the time of the Crusade was unstable and was always a battle field. In 1188, Saladin arrived before the walls of Latakia and forced the Crusaders to capitulate two days later. 126

References:

3-1-3 Latakia during the Ottoman Rule

Latakia came under Ottoman control after 1516. It was part of so-called Ottoman Syria. It lost its prominence as an important city. The city continued to decline in the sixteenth century when it gradually became a small dependent village. The general type of houses was built with stone. They had two floors with an exterior staircase and courtyard. Everything was destroyed because of the earthquakes with the exception of some mosques, churches, several khans and covered markets.

In the early eighteenth century Latakia was subjected to the Sanjak of Tripoli. This period marked the city by several endowments; only few of these survived until this day like the Al Jadid Mosque. It was erected by the Ottoman Governor of Damascus between 1733 and 1743. The earthquake of 1823 caused serious damage to the city of Damascus as well as in the other coastal areas of Syria. The Ottomans did not pay much attention to the quality of residential housing, only to mosques, Hamams (public bath) and khans (caravanserai); this explains why so little preserved from the Ottoman period. (Ring, 1994:454).

One of the significant buildings that were built in the Ottoman period survived and was later transformed into the National Museum of Latakia which was built in 1886 near the seafront of the city. It formerly housed the residence of the Governor of the Alawite State. It was originally a 16th-century Ottoman khan, known as Khan Al-Dukhan, meaning “The Khan of Smoke,” as it served the trade with tobacco. Although Latakia was not important for Ottomans, and they let the city decline, the port itself remained extremely active and economically valuable. After Beirut State was established in 1888, Latakia became part of it as its northern town. This new position did not increase the importance of Latakia. When it comes to urban history of the period, Latakia is largely omitted. Authors tend to focus on important cities, like Aleppo and Damascus. By doing so, they confirm its secondary position in the Ottoman province.
Figure 85. The National Museum of Latakia
Source: http://www.lattakiaonline.com/arabic/in%20lattakia/museum.htm

Figure 86. Port of Latakia-Luigi Mayer (1755–1803).
Source: Website: Syrian researchers.com
Dating back to the year 1795AD, an Italian artist Luigi Mayer (1755–1803) had drawn the port of Latakia in time the castle was still erect, but after that, it was destroyed by the devastating earthquake that hit the Syrian coast.

References:

3-1-4 The French Mandate period (1920-1947)

At the beginning of the twentieth century, Latakia was a small town with a population of 7,000. It was ruled from Beirut. After the defeat of the Ottoman Empire in World War I, under the French mandate in 1920, Latakia became the capital of the autonomous territory of the Alawite, with a government under the authority of the mandatory French administration. In 1922, this territory, composed of Latakia and the city of Tartus, became the State of Alawites and was integrated into the Federations of states. (Ring, 1994:455)

**Figure 87**, Latakia, 1924-1928, **Source**: website Latakia and history.

In December 1924, the French General announced the secession of the State of Alawite, which was proclaimed independent in the following year. In 1930, a fundamental law created the government of Latakia. After that the city began to grow. By 1931, its population reached 20,000 inhabitants. In addition, in 1932, a plan for a new deep-water harbor was proposed. (Ring, 1994:455)

The urban transformation in Latakia was achieved during the French Mandate period, by major regional roads that connected Latakia with other centers like Beirut or Alexandretta were constructed.

**Figure 88**: Latakia 1953, **Source**: website Latakia and history.
And they dried up the marshy area in the vicinity of the town and focused on the modernization of the layout of the whole city. The city was embellished with a major thoroughfare, a public garden, a tourist hotel, well-conceived houses and streets with planted trees (Acikgoz, 2008:86). In 1939, Latakia again became the capital of the autonomous territory of the Alawites, only for several years. And it was integrated again in June 1944 following the Proclamation of Syrian Unity, which was confirmed in 1947 by the Proclamation of Independence.

Figure 89; City’s plan of Latakia - The French Mandate period.

Figure 90: Latakia view 1930s, Latakia, French Mandate (1930 – 1936)
Source: http://www.destamps.com/?p=5562

Figure 91: Latakia 1932.
Source: web page: Musée Photographique de la Syrie.
Figure 92. Saint Batarni Public Garden
Source: https://www.facebook.com/Latakia.and.History?fref=ts

Figure 93. Hotel Casino and Al Batarni Garden, 1935
Figure 94, Latakia view1, Source: website Latakia and history

Figure 95, Neighborhood of Sheikh Dahir (center of the city) appear on the left of the picture Gul Jammal School. Figure: Latakia view 1930s, Latakia, French Mandate (1930 – 1936)

Source: http://www.dcstamps.com/?p=5562
The total population was 25000 inhabitants

**Source:** https://www.facebook.com/Latakia.and.History?fref=ts

The photo is showing the centralization of the urban area on the eastern part of the head, and far from the sea, the area occupied by orchards.

**Figure 96.** Latakia map in the French mandatory period-1927

**Figure 97.** Latakia plan 1944

The estimated area of the city in 1944 with 120 hectares.

**Source:** the report of the general organizational plan. prepared by Arabic group Engineering Consultants
Figure 98. Latakia map during the French Mandate

Figure 99. Map of the West Coast of Latakia and AlBatarni Garden during the French Mandate period.
Source: Nantes Archive carton 1AE/118
3-1-5 The Early Independence Period (1947-1970)
When the independent state was established, most of the urbanization work in Latakia was carried out in the field of transportation and trade. Accordingly, an extensive port project was proposed in 1948, and the port handled an increasing amount of Syria's overseas trade. Moreover, a new highway was built to link Latakia and Aleppo and the Euphrates valley in 1968. Furthermore, it was supplemented by the great railway line to Homs.

![Figure 100](image1.png)

**Figure 100.** Latakia city at the middle of the last century: 1952, An aerial view of the old port and the city.
*Source*: National geographic latakia website

![Figure 101(A)](image2.png)

**Figure 101(A).** new extension project of Latakia city port-latakia commercial port. *Source* Google map.com
Figure 101(B), new port of Latakia, Source: website Latakia and history

Figure 102, Extension sides of Latakia 1968, Source: the geographical dictionary, prepared by Military Studies Center, Damascus, 1993
3-1-6 Latakia during the Period of Big Urban Changes (1970-2010)

The period of 1970-2010 was a time of political stability. In those years Latakia witnessed a remarkable urban transformation. The whole image of the city changed and became more promising. The port gained even bigger importance after 1975 because of the troubled situation in Lebanon and the decline of both Beirut and Tripoli ports. This big urban change turned Latakia from a port city to a more cultural and touristic city. Moreover, it affected the city’s growth, people’s social life and the nature of Public spaces. In the early seventies of the last century, real steps began to encourage tourism activities in Syria by establishing tourist’s facilities. Several resorts constructed on the beach in Latakia in 1981 such as: Le Meridian, Côte d'Azur resort.

Figure 103, photo of sport city

In 1987, Latakia was chosen to host the Mediterranean Games and for this reason great sport facilities were built in the north of the city called Latakia Sports City complex. The sport city includes an Olympic-size stadium beside others different sport constructions. It also includes many outdoor grassy areas with some trees. As a result of the population growth and the rising interest in education, the University of Latakia was founded in 1971.
University cultural life was one source of the transformational power. It helped transform people through experience and knowledge and it had a deep impact on society in general. It helped bring a new dimension to the social life by offering new functions and activities, and by creating more public places.

From the beginning of the twenty first century more urban transformation of Latakia was caused by infrastructure and transportation beside the urban sprawling which has played a dominant role in the city’s morphological change. There was a shift from the closed urban fabric to the fragmented urban fabric which diminished the production of public spaces and open green areas in the city. Starting in 2002, there was a big change in the general view in Latakia. This change reflected on the infrastructure as the transportation and road system as building a new tunnel and bridges and an urban sprawling inside the city and its extension sides and because the unwise urban planning. The city plan became more fragmented. It needs to reconsider new strategic methods for developing the urban plan of the city with taking into consideration the major role of the urban open green areas and integrate the nature into the context of the city.

Figure 104. The View of the city, harbor and coastal strip

Source: (National geographic of latakia city web site)
Figure 105. The main parts of Latakia city.
3-2 Analytical study of actual evolution of the gardens and green areas in Latakia city nowadays.

Since Latakia city has expanded out of its fortified walls. The construction of new buildings and a new urban pattern has took place in the layout of the city due to the growth of the population. The city was surrounded by orchards and agricultural lands, even from the seaside, where during various periods of the city history the people used to flee into when the earthquake has struck. But the urbanism process in different periods increased of the consuming of the green areas and agricultural lands such as the orchards area between the seashore and the city, which have consumed during the urban development in Ottoman period. The courtyard houses pattern notably have presented in the ancient layout of the city which were prevailed as a form of traditional houses, but in the end of nineteenth century (Ring, 451) a modern pattern of houses started to take place in the city, that replaced the previous style with its attached garden. It is called a private enclosed garden or walled landscape. It has vanished by the time. The modern life that changed the houses form also affected the whole urban system of the city, presented a network of streets with blocks of buildings and with limited green areas, which presented more fragmentation and discontinuity in the city urban plan. And During this period, there was no presence of an organizational chart to analyze the absence of the green areas and its sequences in the future, and no present for urban landscape studies and plans that connect the city with the natural aspects as forest, sea, rivers that surrounded the city.

The earliest recorded development out of the city walls was the Al Sheikh Daher center, which nowadays considered the main center of the city. And the central neighborhood of ancient city is focused on Sheikh Daher main plaza. Its extending in all directions for a number of blocks and streets, borders Al Maghreb al Arabi street from the north, from the
east Abu firas al Hamadani, Al Quwatli street, Gamal abed al Nasser street from the west, and Al Quuds street from the south. The center witnessed many political and cultural events that promoted it to play a public role in the city life. It served as a cemetery which was the first development out of the boundary of the ancient city during Ottoman period, and then was planned to be a park at the French mandate period\textsuperscript{132}, but it lost this function and transferred to the monumental construction in the period of hosting the Mediterranean Games in 1987. And then this event gave the square its current form.

Al Sheikh Daher center now presents a monument construction of concrete with water fountains on the two sides. The whole center level rose by few stairs which enable the maintained services to run under the construction, the design lacks the agricultural green areas that were before, and lost its function as an open green area.

Figure 106(A), Sheikhdaher square 1950
Source: National geographic latakia website

References:

Figure 106(B): 1958, Al Sheikh Daher Square

Figure 106(C), Alsheikh Daher Square 1950, in the center is the Jouljamal school, the square was planted, and to the left the old neighborhoods. We can see the orchards surrounded the city, even extended till the sea side.

Figure 106(D), Square of Sheikh Daher nowadays. And scarceness of green areas in the center of the city. Source: Google map 2013.
The city center area is considered a crowded and a high density area. Therefore, we do not find green public spaces such as gardens, but one of the nearest available garden is MarTaqla garden. It is located since early twentieth-century in a residential area next to the city center with an access to the sea in the west. It is surrounded with residential buildings. The current Municipality building is close to the west. It has a big area with Saint Taqla holy shrine in the middle which gave the garden and the neighborhood its name. 127
Figure 107: The photo of Mar Taqla garden and the municipality garden. 
Source: Google map, 2016

References:

The site is surrounded by traffic from all sides. This causes a lot of noise and limits its accessibility for pedestrians, and the attached garden which should be maintain and renovate to enhance the quality of the place, it has been neglected during the time and it lost its function as an urban open green area. It lacks the basic study and design of garden with its basic elements except some old trees.

The general plan of the garden needs a regeneration process take into consideration the relation between the infrastructure and the architectural constructions.

The new plan should solve many issues linked to the site of the garden and the church location like the parking and traffic problems. And the fundamental matter is the relation with nature and environment which should be sustained and enhanced, in regard to the ecological importance of the city.

Figure108, Martaqla garden
Source:https://www.facebook.com/LatakiaHistory/photos/a.514684498618523.1073741849.512822625471377/1121480701272230/?type=3&the ater
This could involve a study which considered multi layers or levels of constructions because of the limited area. And multi-functional ecological armatures, the natural aspect of landscape as soil and vegetation cover, play an important role as resources in the sustainable development of the city.\textsuperscript{128}

In Rome, Italy the green areas and gardens for some areas cover the metro station and the car parking.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure109a.png}
\caption{garden in Rome, green areas different kind of trees, shadows, and many areas for activities.}
\textbf{Source:} personal camera
\end{figure}

\textbf{Reference:}

\textsuperscript{128}De Cesaris, A., ‘Il progetto del suolo-sottosuolo’, Gangemi, Roma, 2012
There is also green area opposite the Taqla garden and it is near the seaside. The garden is near the Municipality building and it has some old trees and some games, beside some seats, but it lacks the convenient landscape study that contains vegetation cover, flowers, plants, and water courses. It has lost its function as a garden for relaxing, contemplating, and social activities since it is neglected and it wasn't maintained for a long time.

Along the Jamal Abed Alnaser Street, which is on the western seaside, we find Saint Batarny Public Garden. This garden was constructed in the French mandate period. The garden has tomb of Mamluk soldier and a Mosque. It is planted with trees and design to be used with seats and some paved roads, but it lacks many of the origin aspects of flowers plants, water courses, and birds. It is used usually to host the local flowers festival in the city. It is actually the nearest public garden to the current museum building.
Figure 110 (A): The mid of the last century, albatarny gardens with the tomb of the Batarny which still reserved in the garden area till today. 
Source: https://www.facebook.com/LatakiaHistory/photos/a.514684498618523.1073741849.512822625471377/1121480701272230/?type=3&the ater.

Figure 110 (B): The plan shows Batarny garden location to the western side with Alsheikh daher center to the right. 
Source: Google map
Figure 110(C) Batarny garden,
*Source:* [https://www.google.com/search?q=%D8%AD%D8](https://www.google.com/search?q=%D8%AD%D8)

The northern part of Latakia city is considered an important direction of the expansion trend that took place in the city.

Figure 111(A), Latakia city map
Figure 111(B), Latakia city map
The direction of the north region (tourist center & archaeological areas)
And the picture shows the urban sprawl, and the shrinking green area.
Source: (Google map).

Figure 112, Burj Islam. Latakia
Latakia, burj slam, on the northern part of Latakia city,
Source website (National geographic Latakia).
It has a major touristic center and rich archaeological areas which are located on this part and played a crucial economic and cultural role in the development process of the city.

*Figure 113(A-B-C)*. The northern part of Latakia city.

*Source*: personal camera, 2013

In regard to the main land uses in this area, the urban expansion started to have obvious impact on the agricultural lands and the amount of natural soil that occupied the major part of this area. This process of informal settlements caused of consuming the fertile lands without the appropriate compen-
sation, there is a lack of organization and effective mechanism to adjust the irregularities and monitor the implementation of organizational charts. The importance of reconstructing the general plan of this region meets the functional requirements that corresponded to the growth of the residential and tourist areas, within a concept of sustainable architecture that takes into account the economic, social, cultural and environmental factors.

The urban plan design should Integrate nature into the general framework of the city and green public spaces as parks and gardens which play an important role in reducing uncontrolled expansion that affects the city of Latakia, enhancing its identity, protecting the city against pollution caused by carbon dioxide, and conserves the agricultural resources (such as soil) 128.

Nowadays, many countries in all over the world confront the problem of urban expansion, but there are many procedures that have taken to maintain the natural resources. As example Heiligenhafen is a town situated on the Baltic Sea coast in Germany, a new regenerating to the seaside project has been done which employ the green areas with many functions that were considered a part of the green urban public area.

The project plays role in enhancing the city's urban plan and its touristic function on the Baltic Sea.

Reference:

A) Playing areas for children

B) Park along the sea side, passage of wooden construction

C) Wooden deck for sitting and contemplation, sea view and forest.
D) Park along the sea side.

E) Status for the king of the sea, art piece from the metal, it belongs to the tradition of the country and its ancient stories which evoke the memories and enhance the identity of the place.

**Figure114**: Photos for the Park along the sea side of Heiligenhafen city, Germany.

The northern direction and the southern side of Latakia city have been affected by the urban expansion which caused many environmental problems with the informal urban expanding. It is clear there is lack to the suitable design landscape that takes advantage of the natural resources and views to involve it in the urban plan development, beside the absence of the organizational chart that Controls this process of urban expansion.

Figure 115, Grand North River
Source: http://tishreen.news.sy/tishreen/public/read/116241

The north Grand River is the longest coastal river. Its length is (80 km), (56 km) of them are within Syria. It receives many tributaries. The abundant one is AL Kesh River. Large amounts of its water have been gone to the sea.
Figure 116: plan of the North grand river-Latakia city
Sources: Google map

The river is surrounded by agricultural lands, but it is also threat by the current urban expansion. It can play an important role in the regeneration process of the urban landscape, as an element of nature, as example the Manzanares River Park, in Madrid City, in Spain. It aimed to work as a corridor connects the new river and the city, transforming the historic perception of the river and its neighboring areas as barrier into an experience of the river and its neighboring areas as conduit or connective tissue that links together disjointed parts of the city.

Figure 117(A), Project of Manzanares River Park Development.
The project proposed relocating one of the most important roads into the centre of Madrid underground and providing underground parking for 1,000 vehicles.

![Image](image1.png)

**Figure 117(B),** Project of Development, Underground parking.

It was possible to convert the space into a garden to benefit local residents. It was embellished with Cherry trees and cherry motif, the result is the creation of an extremely popular public space.

![Image](image2.png)

**Figure 117(C),** Project of Manzanares River Park Development

Nowadays, the most of the livable cities are known for their open spaces and green areas as they are for their culture. Green open spaces in urban environments provide many advantages, formal and informal sport and preservation of natural environments. These areas could involve many ecological aspects of the city natural elements, like rivers, sea panoramic views and forest. They implement them in an urban landscape plan serve for resolving many problems that faces now the city with the continued expanding, and in the same time save the natural resources as a soil and vegetation cover which are considered an essential factor in the sustainable development of the city.
As example In Siegen city, in Germany, we find the urban transformation for the private garden belongs to the historical palace in the city. The garden opened to the public use with great planted areas of different kind of trees, flowers, art features as statues and artistic construction belong to German artists. The place provides quite beautiful and comfortable area for relaxing and contemplation.

Figure118 (A) Siegen city, Germany, palace gardens. Flowers area

Figure118(B); Palace garden- Siegen
Figure 118 (C): Palace garden- Siegen, different kind of plants and flowers

Figure 118 (D): vegetation area, trees, shadows, flowers and plants.

Figure 118 (E): Palace garden German artist. Art construction - Siegen, Source: personal photo
Discussion of the problems:

Gardens as a public area in Latakia city occupy fewer areas than before. There are many factors caused these problems. They are considered high important aspects for the environmental development of the city.

In fact, many climatic problems as the high temperatures are taking place in the provinces and this refer to the role of the organizational charts which ignored the green spaces. Especially in certain neighborhoods and areas where the population growth is increasingly notable. We can see this problem has included many cities in Syria as Damascus Latakia and the countryside city. Perhaps the absence of the principle of parity between existing parks, green spaces, and the actual need of the population of city and its countryside is due, to many experts in this field to the wrong technical policies accumulated over time, most notably the adoption of urbanization system horizontally rather than vertically expansion, in addition to the fact that the city councils and municipalities have neglected codes and standers of the international planning system that are universally applicable.

It also ignored the other facts, which were the lack of adoption of organizational charts for decades, it encouraged the constructions and contractors to encroach on agricultural land and on state property, and convert them to irregular residential areas as a random area which are difficult to be settled after that turned into concrete neighborhoods based on land inhabited by thousands of families.

So far, large areas in the city of Latakia for example are supposed to turn into green spaces as parks and public gardens. As an example of that are the northern part and the southern part of the city. These strategies will create good opportunity for reviving the city and overcoming many climatic and environmental problems.
Figure 119, Two photos of the same street present two different periods of the city, the left one present the city before the urbanization process that took over, and consuming the most of the green areas. Second one present the same street nowadays with the problem of traffic and high density of urbanization.

Figure 120, the location of the street, Bagdad Street,
Source: https://www.facebook.com/LatakiaHistory?fref=ts
In the "national report forward-looking 2025 Syria Project", a study has the support of the United Nations Office of Development to conceptualize the actual state of the environmental, economic and demographic conditions in Syria for year 2025 the framework of the topic that summarize the transformations of the vegetative cover, it was referred that Damascus and the around populated areas are expanding in urban-scale first consuming the agricultural area, and in the wider second scale , consuming and expanding over the forest ,fallow land plateau and mountainous areas, and the outcome of both expansions caused negative effects agriculturally and environmentally, because the quality of green areas and forests that are lost in this process of urbanization, and if we add to this the sustainability factors that gain of the main agricultural component for the which is irrigated crops and vegetables from groundwater sources, we come to the conclusion that the description "negative outcome" is not enough to portray the situation, and that the alarm environmental hazard beats in
Syria and its provinces, and if we take in our consideration the current expansion of the city latakia during the next two decades, the character of urbanization as, buildings, factories and facilities without trees or greenery, the image Prospective take a picture toward more warming, desertification, and environmental suffocation actually integration Sahara, in the report of the Damascus city per capita came to less than 0.60 cm of green cover area. In recent years, there were many attempts to overcome this problem of lacking green areas, by the acts a forestation. As example the province of Damascus began establishing festivals popular to encourage replanting some of the plants that has been associated with its name in Damascus such as jasmine and roses Shami and some trees Kalnaranj, olives, etc., and in the bisectors of streets and slopes of Mount Qassioun. But it is not enough compared with the population growth and massive expansion great urban. Existing trees is not vegetative cover.
Chapter IV, Conclusion and Final Recommendations:

The importance of the green public areas based on their social, cultural, environmental and economic values. Green spaces must offer diversity, and meets the needs of the local community. Basic elements are; built structures (such as paths, water features, buildings and arts features), in addition to vegetation cover, different kind of trees, flowers and plants.

In Syria, the recent decades have witnessed high urban expanding that caused the consuming of these areas, and inside the city many gardens and green areas are neglected, exposed to be abandoned without care and maintain.

Therefore, the current gardens need to be reorganized and to be renewed in addition to the use of the vegetation cover, different types of trees, and water features, beside the art workings and constructions which enhance the identity of the place and the culture of the societies.

In the expansion areas, the organization chart for the city should consider the green areas as a part of the neighborhoods design and enhance the relation between the nature and the city by constructing parks and public gardens.

It could also involve the natural resources as forest, water sources, rivers, and sea in the landscape development process, which employ the nature aspect and elements in the design, and take advantage of the views and surrounding natural elements.

Gardens and parks could have a strategic role in employ the renewable energy that helps in the sustainable development of the city on many scales.
Bibliographies:

1-The book: Dar al Islam architetture Del territorio nei paesi Islamic. 
By Attilio Petruccioli:

The book represented different components of themes and important analytical historical studies about the Islamic countries, and their urban heritage to understand the tools, the perception of Muslims and their interactive process with geographical and physical environment. It analyzed the concept of nature in Islam and Quran, and the impact of the desert on the nomadic life of Muslim from the beginning of Islam with Hejaz. Its psychological and physical interpretation is based on the geographical determinism, Ibn Khaldoun philosophy and theory. The study also traced the evolution of this relation between Muslim and his/her landscape in different Islamic civilizations, Iran, North Africa, India and Spain. It presented the development of the agriculture, the spontaneous architecture and the techniques which are used, and they developed irrigation systems in the arid climate. In the last part, it presented a study about the Islamic garden and its evolution from the original pattern into other Islamic countries and cities, and it discussed the components and the properties of the garden form in each geography.

2-The book: "Gardens,Landscape and vision in the palaces of Islamic Spain .
By D.Fairachild Ruggles
The book presents a detailed study on the palaces gardens and landscape and the developments of the gardens elements during the Islamic period in Spain, the study merges architectural with environmental history which presented the garden with its whole architectural context. It explains the garden form and meaning and the historical development of the
landscape in Spain between the Roman legacy and the Islamic affection or influence.
The book also explores the textual records of the agriculture practiced in the landscape which was the context for palace gardens. The book contains many palaces descriptions. Besides that, the book discussed the theme of paradise.

3-The book: The first adventure of the mind (translated from the Arabic) by Firas Al Sawah:
The book presents a study for the ancient mythologies of Syria and Mesopotamia civilization, gives a detailed explanation of the Sumerian and Babylonian myths, considering them as an intellectual, psychological and historical production that had contributed to the establishment of the religion, and culture of the societies in the entire world. In addition to the ancient texts of creation legends of the Canaanite, the flood, Sumer and Babylon. It provides a study of the legends as the Epic of Gilgamesh, a Sumerian paradise, and Babylonian, depending on the historical and archeological records and other specialist studies in mythologies.

4-’Naissance des Divinite`s Naissance de l`agriculture, La re`volution des symbols au Neolithique”.
Author, archaeological researcher” Mr. Jacques Kauvin.

The book is translated to Arabic language by the Ministry of Culture in Damascus; Moses Depp Khouri, and reviewed by the Sultan Muheisen, 1999.

The book raises the serious and complex issue that became known as the "agricultural revolution". Researchers have agreed that this revolution took place in the area between the basin Euphrates north, through Damascus Ghouta and even the Jordan Valley to the south and since about the tenth millennium BC and before anywhere else in The world.

However, the correspondence is still far about the reasons and motives that led to this shift. There are some inquiries that
talked about climatic, environmental and Geographical motives, while others bring it back to the population demographic or compositional reasons, while other see the motives of intellectual and social reasons.

Debate still rages without access to crucial answer on the subject.

Jacques Cauvin presented the results of his theory depending on his exploratory work especially in Almaribit site in the Syrian Euphrates basin; He addresses the time, place, the mechanism of occurrence and the sequence evidence, and analyzes deeply its motives.

He submits his theory based on the vast amount of archaeological discoveries that came from the ancient Orient and Syria, in particular, such as Corning Ware pottery and stone tools and weapons and the arts, and the environment, including data directories of plants and animals and pointed to the age of each of them.

Jacques Cauvin built his hypothesis on social, intellectual and psychological reasons and factors, which in turn led to the “agricultural revolution” and as a result caused important Economical transformations. The book sheds light on the Syrian discoveries in the emergence of agricultural civilization and it’s Evolution.

5-Book of 'Islamic Gardens and Landscapes' by D. Fairchild Ruggles:

The book presents various topics concerned with the theme of garden and cultivated landscape in the Islamic region, and extends from the pre-Islamic period to the seventh century until twentieth century. It provides sites and geographical regions of Islamic gardens for its historical importance.

It explained the concept of the place in the Islamic memory, the factors that structured or authorized to this relation with the place in Islamic world, and how the societies brought
together in spite of the diverse regions territories and cultures. It discussed in details the objects that create this association to the place and allowed the Islamic landscape throughout the centuries to live in presence and memory in one time.

Presents an important study on the prototypes that are brought by Islam to the landscape, it also mentioned the traditional irrigation technology and systems knowledge, techniques for producing a bountiful crop that is used and maintained in the Islamic regions.

In science of Gardening, the third chapter of the book demonstrated the changes and transformation of the Islamic landscape during eighth and ninth centuries and the role of the government administration in land management of the agronomic. The progress that was achieved led to brisk economy, and presented references of botanical manuscripts and its origins.

The book discussed the concept of the garden as paradise in Islamic regions comparing this imaginary with the other civilizations and religious thoughts that coexisted with Islam in the same area.

A Garden in Landscape as the Taj Mahal focuses on this single site examines its response to specific elements, and its own landscape context and the way that it reflects previous experience of garden design in very different landscapes elsewhere in South Asia.

The book also looks at the adoption of Islamic Garden culture by non-Muslims and asks the question of how to explain the meaning, and context of gardens built by non-Muslims using a clearly "Islamic" set of forms.
6- The book of Engels and the Origins of Human Society by Chris Harman:
The study has presented intensive thoughts about the evolutionary emergence of distinctively human social organization,

An important topic intertwined with other science as evolutionary biology, anthropology, and prehistory and Paleolithic archaeology.

The theory had discussed various topics related to the primitive communism, the first agriculture, the origins of agriculture and the first class societies,

In the study they saw human beings as products of the natural, biological world, and history as a part of natural history. And they pointed out to the human’s ability to react back on the circumstances that had created them, changing both those circumstances and themselves in the process.

The book Indicates to the role of the production system which differs from community to another in different Geographies.

In the part of the first agriculturalists, they refer to the Neolithic revolution (new stone age), and the change that began about 10,000 years ago and had lead to construct the stable villages and communities which also brought new tools and changes in the system of production which in turn had led to the first class societies.

7- The book of Asian Gardens: History, Beliefs and Design by Tom Turner :
The book consists of four parts demonstrate the theme of gardens history across Asia from Turkey, Syria, through Iran, India, China, to Japan, from the very beginnings of garden making to the present day.

The book explores the development of the Asian gardens and the influence of belief systems of this region on the garden
design. And the main factors that produce the gardens characteristic forms and functions.

It Traces the development of the Asia gardens and designed landscape through fifty centuries.

And the study has provided many drawings and photographs and detailed information about north, west, south and East Asia gardens.

8-The book, “Il progetto del suolo-sottosuolo”
by :Prof. Alessandra De Cesaris.

The book contains fourteen thematic chapters. It presents an investigation study on the possibilities and problems of a project of soil-ground in the contemporary city and shed the light on the urbanization process effects on the soil and explains the important urban process that considers the role of the soil, not just as an abstract two-dimensional plan with which many urban projects still till today confronted. But as a three-dimensional aspect where in the course of the centuries, has accumulated a series of traces, memories, and materials, and has shaped by many traditional and experiments of human work until it has taken shape over time. It is therefore an essential element of urban form, economic and environmental resource.

It serves as a platform for human activity and landscape as an archive of heritage and plays an environmental role and socioeconomic effect in the urban development.

Today can play an important role in defining and re-training of the contemporary city landscapes.

The book demonstrates many urban projects that take advantage of the soil project as an environmental aspect contributed to the urban and infrastructure projects sustainable developments.
9- **The book, ‘infrastutture e paesaggio urbano’**
by: Prof. Alessandra De Cesaris.

The book presented many topics that discussed the increasing role of the infrastructure as a part of the urban landscape project, and its role in the panorama of the contemporary cities, in order to improve the lives of the community, improving the mobility and retraining at the same time drawing of the metropolitan landscape.

10- **The book, ‘Mystery of Feminine divinity and the origin of the religion and the legend.’**
By: Firas Alsawah, (translated from the Arabic language):

The book presented a detailed study about the first religious beliefs expressed in symbols and graphics. This stage was considered a starting point of specific rites and beliefs In the Paleolithic era. Beside that the book presented also the theory of the centrality of the origin of belief and its developments in the Neolithic periods in many countries and civilizations. It’s the detailed study of the agricultural religion which was centered on the goddess, who was a woman of nature in the wild form and the new domesticated form, which the hand of the farmer involved in making and rehabilitating it.
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