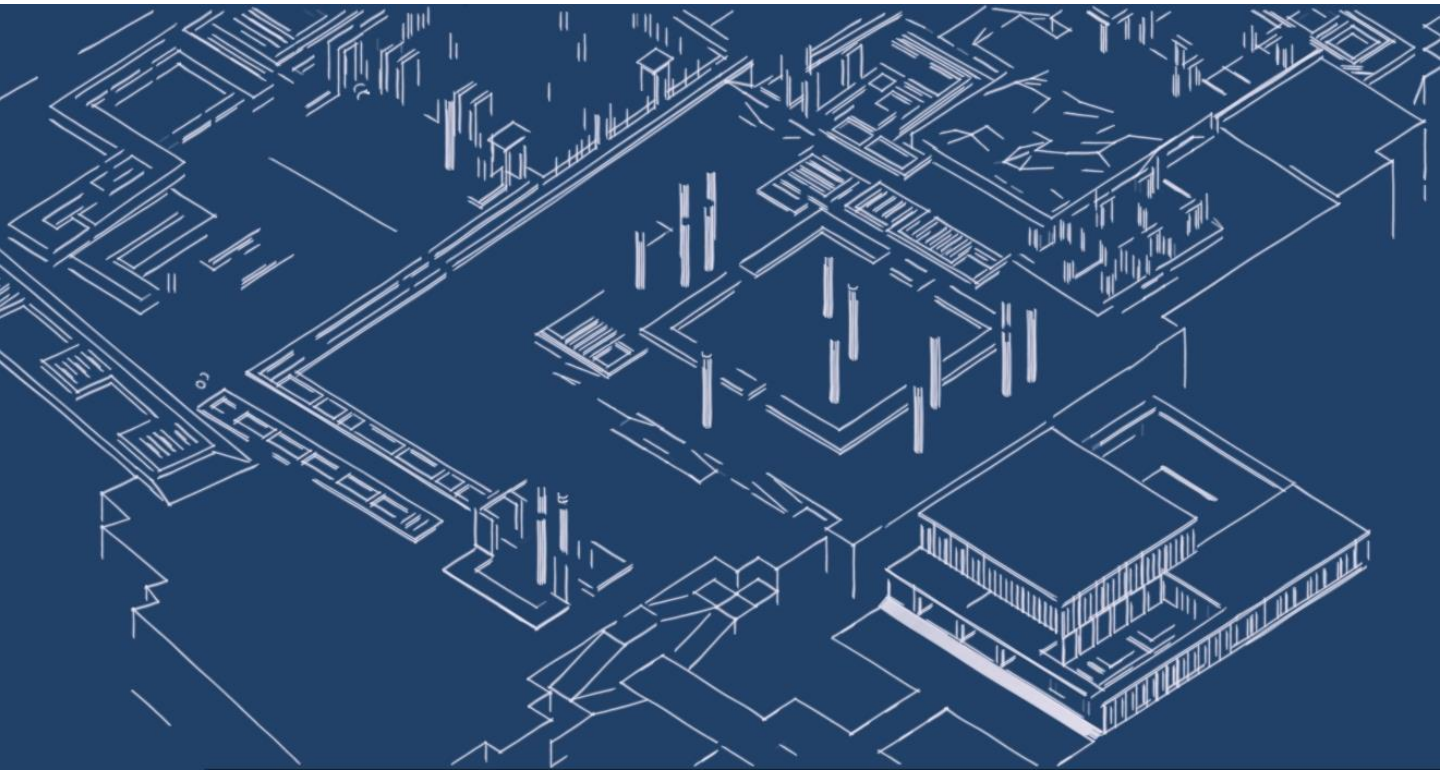

URBAN MORPHOLOGIES IN THE EM.ME Region between IDENTITY, Emergency, Migrancy.
(Shiraz)

POLITECNICO DI TORINO

Msc. in ARCHITECTURE AND CONSTRUCTION CITY

URBAN MORPHOLOGIES IN THE EM.ME Region between IDENTITY, Emergency, Migrancy. (Shiraz)

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Abstract

The challenge for professionals in urban heritage lies in striking a balance between maintaining the historical significance and adapting urban areas for contemporary purposes. Most Iranian cities face an even bigger problem, due to their rich historical heritage, in implementing new construction while maintaining the authenticity of the current buildings. This process often meets opposition, especially when trying to incorporate contemporary infrastructure into the older, historic areas. Yet the crucial challenge with such urban areas is not only to adapt them to contemporary needs but also to preserve all the cultural and architectural features of those areas.

Such an issue can be clearly faced by the central part of Shiraz, especially along the Zandieh axis. Recent development has caused huge damage to the historical fabric of this city. The changes take place without a systematic approach grounded on evidence, thus creating a loss in the levels of cultural and architectural integrity. Shiraz has a typical urban design in which the social, cultural, and economic aspects are very much entwined, thus representing an important case to review how the historical urban areas can change without losing their historical values.

To intervene effectively in these kinds of environments, a prior knowledge of the historic city context is necessary; then a selection of suitable methods shall be adopted, giving attention to a holistic approach that is concerned with environmental, social, and cultural problems. It is especially vital in such cities as Shiraz, where these approaches have almost always been denied. This careful analysis forms the core basis on which interventions could be done, lest one may cause damages to architectural identity and cultural heritage.

The heart of Shiraz, formed by the dialectical interaction of local architectural traditions and nature, is a perfect case study for studying the issue of how new urban elements answered a historical context. The aim of this work is to investigate how the heritage fabric of the city could be retained, in the process of bringing in required modern features. The following article examines the urban layout of Shiraz in order to determine how new interventions can be integrated naturally into the overall plan of this city, filling the gaps without modifying the architectural vocabulary. Conclusively, the results will provide guidelines toward urban development at historic sites, ensuring that new methods meet modern needs without losing the essence of the surrounding environment.

This project considers the interplay between identity and the role of archaeology in the understanding of history. How do ancient ruins provide us with connections? How can their relevance be sustained in today's world?

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PART ONE: The project (Persepolis: A Symbolic Journey Through a Museum)

Project Introduction

UNESCO World Heritage Site in the Fars Province of Iran, near the city of Shiraz, that symbolizes the riches of Persian brilliant achievements and imperial successes. Even so, the site has suffered from tourism and bad management, slowly fading away. The project examines the questions of identity concerning how the archaeological remains assist us in the understanding of the past. It aims to stress heritage and bring it closer to the present audience by incorporating the museum within the archaeological site instead of being considered an independent supplement. The design process is aligned with the architectural and geometrical peculiarities of Persepolis, including ruins of the old with modern construction to allow continuity from past to present. This incorporation of the museum into the site gives the visitors a dynamic experience of history rather than that restricted to static exhibits. Thus, this project stands on two pillars: one is continuity, which guarantees an historical dialogue between the old and new, while another is dynamic experience that transforms the museum into a living immersive link to cultural heritage. The museum has been envisioned to catalyze much more than a passive display of objects for the development of visitor appreciation of Persepolis itself. The aim is such that, when experiencing the ruins as part of the museum, the meaning of the site and the understanding of its significance will become deeper for the visitors. Hence, the ultimate goal of the museum is to utilize what is left from the past to illuminate modern cultures and to keep Persepolis as a bridge connecting ancient history to modernity.

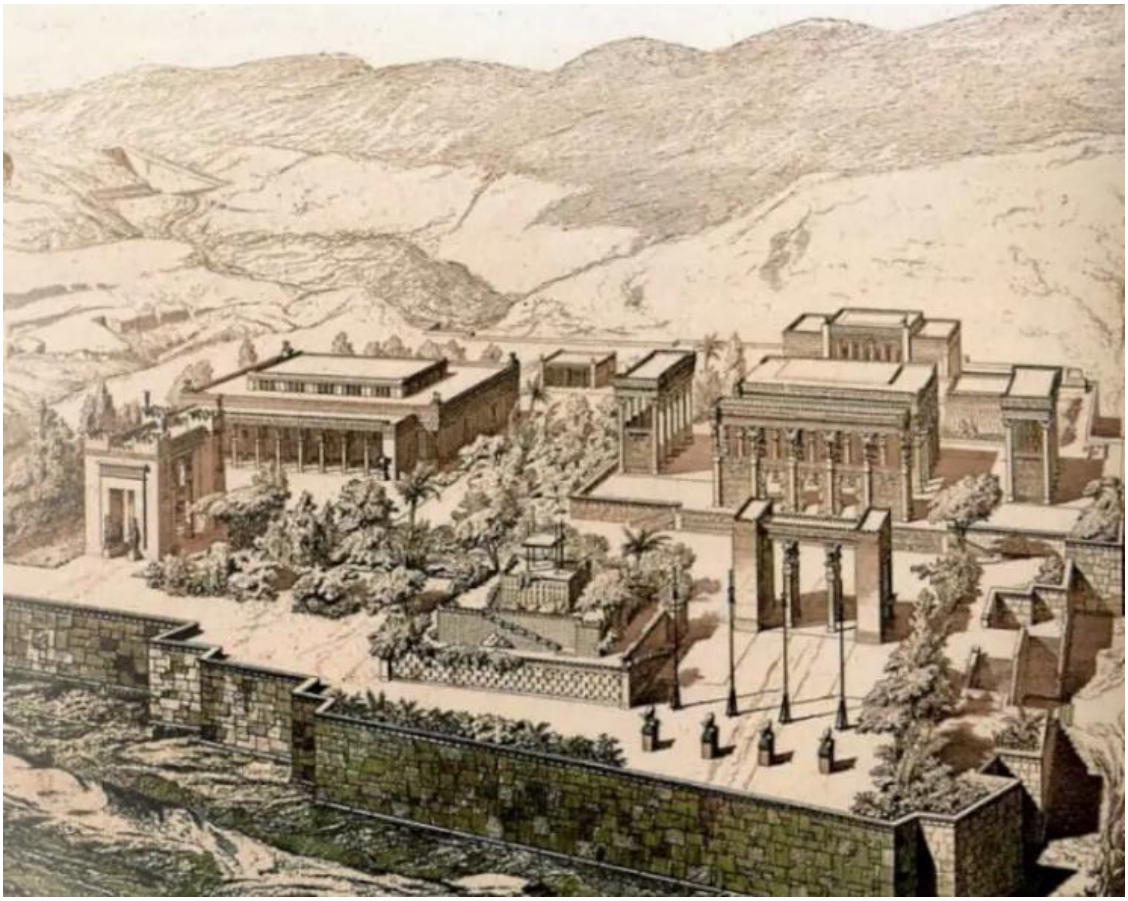

Fig.1. 3D Representation of Persepolis By Nita Gleimius, BA Ancient Near Eastern Cultures & Biblical Archaeology

History of Persepolis and analysis

Introduction

Persepolis, known as "Takht-e Jamshid" in Persian, is not just one of Iran's major monuments; it also serves as a testament to the splendor of one of the ancient world's most powerful empires. Located in Fars Province, northeast of the modern city of Shiraz, Persepolis exemplifies the pinnacle of Achaemenid Persian architecture, culture, and imperial strength. Under the rule of Darius the Great, it became the ceremonial capital of the Achaemenid Empire, a significant site in ancient Persian history where political authority and immense beauty converged. Darius I, or Darius the Great, initiated the construction of Persepolis in the late 6th century BCE, with his successors, particularly his son Xerxes I and grandson Artaxerxes I, completing the project. The city's ceremonial and administrative roles were highlighted through grand events, festivals, and rituals that showcased the power and wealth of the Achaemenid Empire. The ruins of Persepolis are situated over 40 miles northeast of Shiraz on the Mervdasht plain, at the confluence of the Bandamir and Pulvar rivers, nestled against the Kuh-i-Rahmet mountain. The royal tombs can be found across the valley on Husein Kuh, while remnants of the ancient town lie along the Pulvar River, not far from the historic city of Istakhr. To the northeast, about 20 miles in a straight line but roughly 40 miles along the winding river, is Pasargadae, the first royal capital of the Persian Empire, established by its founder, Cyrus the Great.

Curiously, the denomination ‘’Persepolis’’ only figured in historical records well after the fall of the city to ‘’Alexander the Great’’ in 330 BCE. While ‘’Herodotus’’, one of Greece's most celebrated historians, almost certainly knew about it, there is no direct reference to Persepolis. In fact, the term "Persepolis," an anglicization of the Greek name Περσέπολις, appears to have come into favor as a descriptive term only well after Alexander's notorious sacking and burning of the city.

Fig.2.Geographical Location of Persepolis on the Map of Iran

Between Splendor and Debate: Revisiting the Architectural and Historical Legacy of Persepolis

Of these, the Greek form was utilized by such classical sources as ‘’Diodorus’’, ‘’Arrian’’, ‘’Ptolemy’’, and ‘’Athenaeus’’, although ‘’Strabo’’ mentioned a form ‘’Περσαίπολις’’. The Roman historian ‘’Plutarch’’ commonly referred to the district itself as ‘’Περσίς’’. In Old Persian the name of the city was k’’Pārsa’’, also designating the greater region, from which comes the modern name "Fārs". In the ancient inscriptions, the term "Pārsa" occurs rarely; most notably in the ‘’Behistun Inscription’’ of Darius, where both the singular and the genitive form of the word occur.Unlike other ancient cities , which developed with successive stages of occupation,

Persepolis lacks the characteristic multi-layered stratification of centuries of continuous occupation. Its main historical importance, therefore, falls within a relatively brief period, extending from about 520 to 330 BCE. This condensed timescale, although short compared to that of many other ancient sites, nevertheless played a critical role in the formation and identity of the Persian Empire.

We must give some attention first to Pasargadae, the earlier royal capital, built around 550 BCE by Cyrus the Great. Having defeated the Median king Astyages, Cyrus created there a center of royal power that included palaces, towers, courtyards, columned halls, and artificial lakes set within a lush, green park-like landscape. Unlike most other ancient cities, Pasargadae had no fortification since it was planned as a refuge for the king, not for military purposes. According to Strabo, the city was intended to function as a kind of paradise and haven, and such a concept was to reappear in both form and function later on in Persepolis.

The administrative complexity of the Achaemenid Empire was reflected in its multi-capital structure. Key administrative capitals included Susa (modern Shush), Ecbatana (modern Hamadan), and Babylon, that was conquered by the Persians in 538 BCE. Darius the Great had to suppress many rebellions during the first years of his kingship in this enormous empire, as witnessed on the trilingual inscriptions on Behistun. Only when he was fully in control did work on Persepolis probably get under way. Consequently, the most likely date for the start of the construction is around 520 BCE, after stabilization had set in for the empire.

Little doubt exists that Persepolis was magnificent. From the elevated platform of the royal complex, one can see an extensive semicircular plain to the east against a backdrop of steep hills to the west. This high spot, some couple of thousand meters above sea level, gave not only a cool and healthier climate compared to the lowlands but also plenty of fresh water from the nearby rivers. The Mervdasht plain, in ancient times, was famous for its fertile soil, sustained an intense agricultural economy, adding to the prosperity of the region. Isolation added to the natural defenses provided by the surrounding hills, as this was a fairly secure location away from most invasions that had harassed other parts of the empire.

Conclusion: Persepolis is the embodiment of the richness, artistic achievement, and imperial authority of the Achaemenid Empire, from its architectural novelties to its role as a ceremonial center. It epitomizes Ancient Persia at the height of its power. Although it served for a relatively short period as a fully functioning capital, its continuing attraction for historians, archaeologists, and visitors provides a glimpse into the genius of one of the ancient world's most powerful empires.

These imaginary borders were initially established to save Persepolis and its surroundings from the danger criminal activities had posed. However, these good intentions have not borne fruit because such buffering has neither managed to stop the deterioration of the site nor helped the archaeologists significantly in further excavations without proper field research. These boundaries thus buried the ancient extension of Parse and created a misleading database that has been used for surrounding infrastructure planning and development, such as areas for camping, hotels, car parks, and agricultural schemes. These caused the destruction of the lands around Persepolis and resulted in serious environmental challenges. The latter has been even more intensified by a nonsystematic growth of tourists, absence of multi-disciplinary research, and too narrow attention to the central platform only.

The construction of roads, buildings, and other tourism-related facilities has ruined the majority of Persepolis' natural features . With all the emphasis on the many

architectural wonders of Persepolis, some of the more fundamental aspects of the structure, like whether or not it had surrounding towers and walls, have received scant attention and debate by archaeologists despite the considerable amount. Determining one way or another, Mary Koch, 1996, a renowned archaeologist, has provided evidence through clay boards and other forms of documentation that suggest Persepolis would have, in fact had a wall for defense purposes. In her discussion, Koch refers to the satellite image of the folded Zagros and points to the work of Aminzadeh and Samani (2006), who suggest that the Achaemenian treasury and storage of the archives had been located within the Royal Palace-sofa-, hence such a treasury should have been protected by a fortified wall.

After further consultations with numerous archaeological specialists, Koch finally confirmed that Persepolis had been secured by a huge wall fitted with many watchtowers. For her hypothesis, she has the support of Babylonian records too, which discuss the restorations of walls and watchtowers dated between 522-488 BC (Koch, 1996). Yet, all archaeologists do not agree on this estimation. As an example of this fact, one finds the late André Godard, one of the biggest authorities in Iranian archaeology, opposing walls and towers around Persepolis. Godard used the very concept of Achaemenian architectural expression-which focused on spaciousness and openness-to prove that such form of protection did not exist. These oppositional opinions, however, have failed to be corroborated or nullified by excavation to date in the proof of walls and watchtowers around Persepolis.

The currently available records and maps do not enable a comprehensive understanding of the whole heritage site, especially in regard to the Farvardin Plain. Aerial photographs and satellite images have shown extensive building, unauthorized excavations, and land use that has been changed in areas that ought to have been preserved. Fragments of walls have been found north of Persepolis and along the northwest ridge, suggesting that the site may have been fortified. The most important feature of the investigation has been and continues to be the attempt to establish if this complex had a defensive enclosure wall; in which case, new evidence on the design of the city and its guarding installations could be obtained.

With its intricate carvings and palatial grandeur, Persepolis is an architecturally remarkable specimen due to its strategic placing. The palace complex rests upon a rocky outcrop projecting outward from the base of Kuh-i-Rahmet, and in places, this platform has been artificially extended. In general, the site takes the form of an irregular rectangle, roughly 500 by 300 yards in dimension, though the edges of the platform are not exactly symmetrical. This platform was built upon walls made of locally quarried, greyish-brown limestone blocks. The blocks were fitted together with extraordinary precision without mortar, held in place by metal clamps, testifying to the advanced engineering skills of the Achaemenid builders. The height of the platform is anywhere from 10 to 40 feet depending upon the contours of the ground in which it is situated, which further illustrates the complex integration of man-made and natural elements in the construction of this extraordinary site. In the end, however, despite Persepolis's more general acceptance as one of the greatest architectural and cultural monuments of all time, most of the fundamentals regarding its design and history-to say nothing of a fortification that would presumably guard it-are not well investigated. As research continues, it is hoped that further excavation and an interdisciplinary approach will reveal for the first time in history the actual extent and layout of this ancient work of genius, still well-guarded by its impressive ruins.

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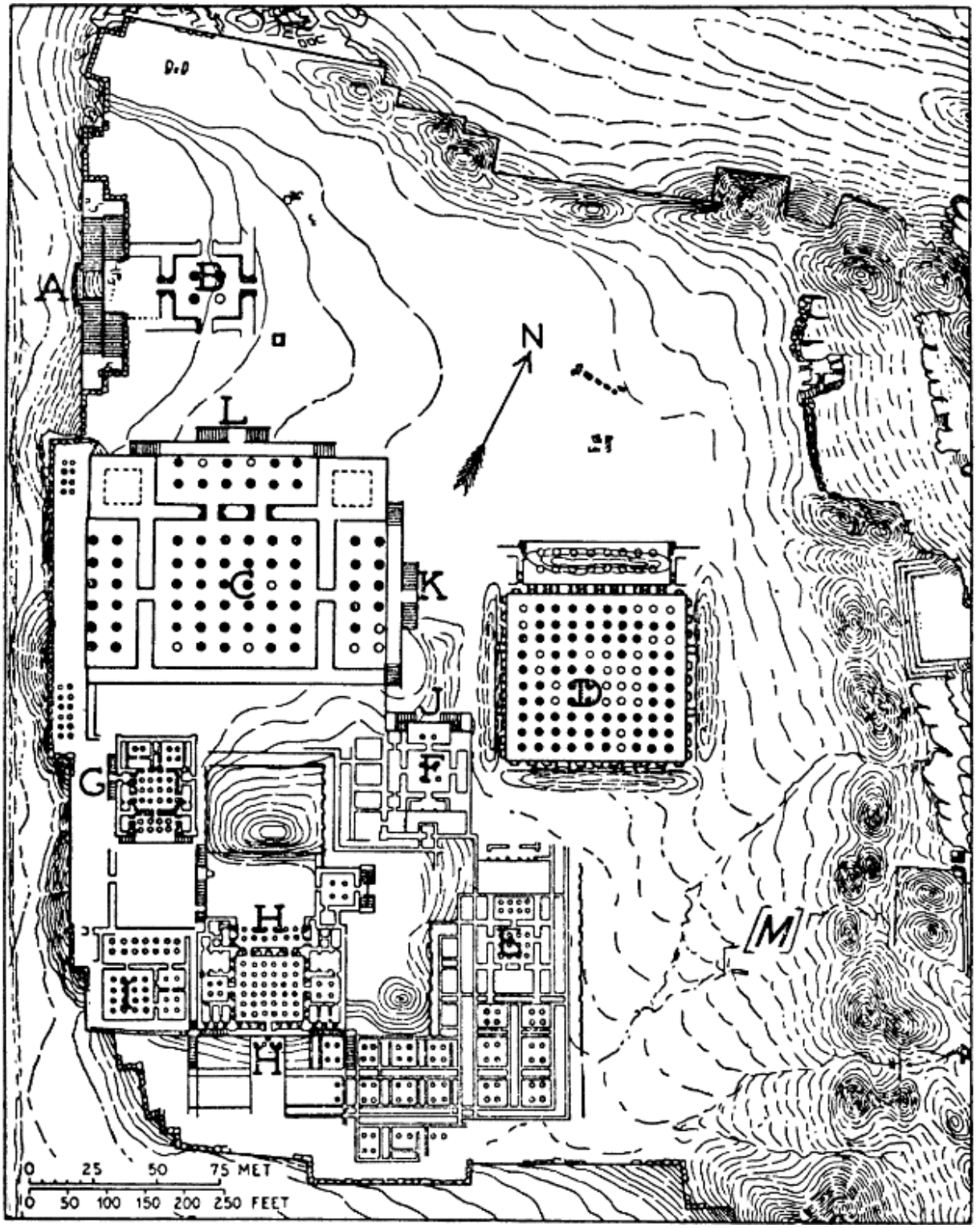

Fig.3.Persepolis ,PLAN OF THE PALACE AREA

By courtesy of The Oriental Institute of Chicago

A, Stairway of main entrance. B, Gate of Xerxes. C, 'Apadana'. D. Hall of the Hundred Columns. E, Harem. F, 'Tetrapylon'; entrance gate to living- quarters. G, Winter Palace of Darius. H, Palace of Xerxes. I, Palace of Ataxerxes III. J, K, L, Grand Stairways. [M] Newly discovered building with courtyard.A, Stairway of main entrance. B, Gate of Xerxes. C, 'Apadana'. D. Hall of the Hundred Columns. E, Harem. F, 'Tetrapylon'; entrance gate to living- quarters. G, Winter Palace of Darius. H, Palace of Xerxes. I, Palace of Ataxerxes III. J, K, L, Grand Stairways. [M] Newly discovered building with courtyard.

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Access to the magnificent complex of Persepolis was facilitated by a grand and imposing stairway intricately set into the western supporting wall. This monumental stairway is characterized by a double flight design, featuring a central landing, with

two such combinations strategically positioned to enhance both the aesthetic appeal and functional accessibility of the site. Each of the 200 steps was constructed with remarkable attention to detail, exhibiting a shallow rise that allows for a comfortable ascent; the tread of these steps measures less than four inches, which is indicative of the thoughtful engineering employed by the Achaemenid architects.

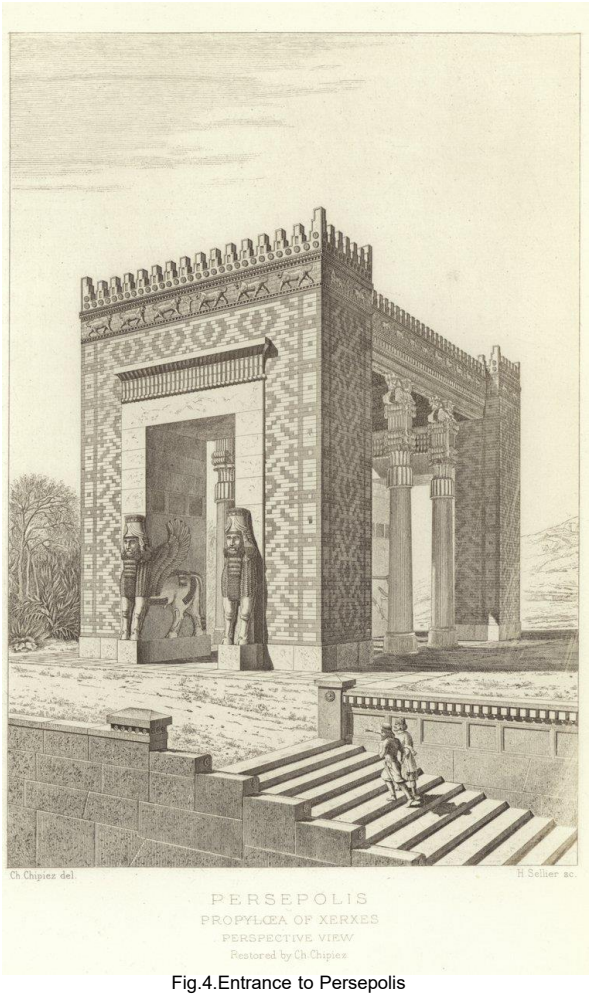

Fig.4.Entrance to Persepolis

Existence of guard wall and watchtower

On the slopes of Rahmat Mountain, there is a curvilinear ruin that some regard as the remains of a wall that once stood tall and enclosed either the Persepolis complex or the city of Parse. These remains consist of clay, gravel, rock boulders, and mortar-all calling for further investigation. By analyzing satellite data and aerial photography, researchers have attempted to trace the possible extent of this ancient wall, which has revealed new insights into the environmental and structural reclamations of the area. The employment of satellite imagery was extremely helpful in detecting the location of these ancient ruins. The reflected sunlight from the Earth's surface delivers critical information concerning land composition, which enables the discernment of not only natural features but also signs of human activity in the past, such as agricultural development or construction. Variation in reflection of infrared radiation by various materials-such as sand, cultivated soil, vegetation, ruins, and other types of rock-allows the identification of particular patterns that the researchers look for. This becomes possible through advanced imaging techniques which surpass the human eye's capability of capturing a wider range of electromagnetic radiation.

Studies by Ben-Dor et al. (1999) and Ustin et al. (1999) concluded that differences within this emitted radiation from these surfaces might be related to some underlying geological or historical processes. Interpretation of this information, the researchers employed ENVI image analysis program that allowed unsupervised classification of the disparate materials and features present. This approach had a great level of detail in the geologic interpretation of the landscape around Persepolis. To characterize landscape features accurately in an image, data abstraction must be done in several phases. This will include isolating relevant similarities of features while minimizing irrelevant differences. A single-band image is, in its very basic abstraction, represented by a tone depicted by a shade of gray for each pixel in relation to its given brightness value-any number between 0 to 256. The texture of the image, defined by frequency and organization, requires the tone changes that help the researchers identify patterns . Other information on the landscape is

conveyed by the spectral properties of a pixel, defined by its changes in tone across the different bands.

Landscapes, in particular most archaeological contexts, are typified by topography and surface characteristics along with land cover that has often been altered or manipulated in different ways through human action over several centuries. These changes in tone or colour may denote variations in water content, elevation, or mineral composition and should appear as a consequence of the collapse of ancient structures or walls. In the case of Persepolis, it was the subtle variation in soil tone that was detected by the processing of ETM images and black-and-white photography. It would appear that this shift in the soil tone was probably the result of slight elevations of topography and deposit of collapsed building material on top of subsurface structure. The resulting patterns are faint, but linear anomalies disrupted by chaotic textures in some areas may be indicative of the remains of guard towers along the perimeter of the palace walls. These linear anomalies appear to align with sections of mountainside on the northern boundary of the site.

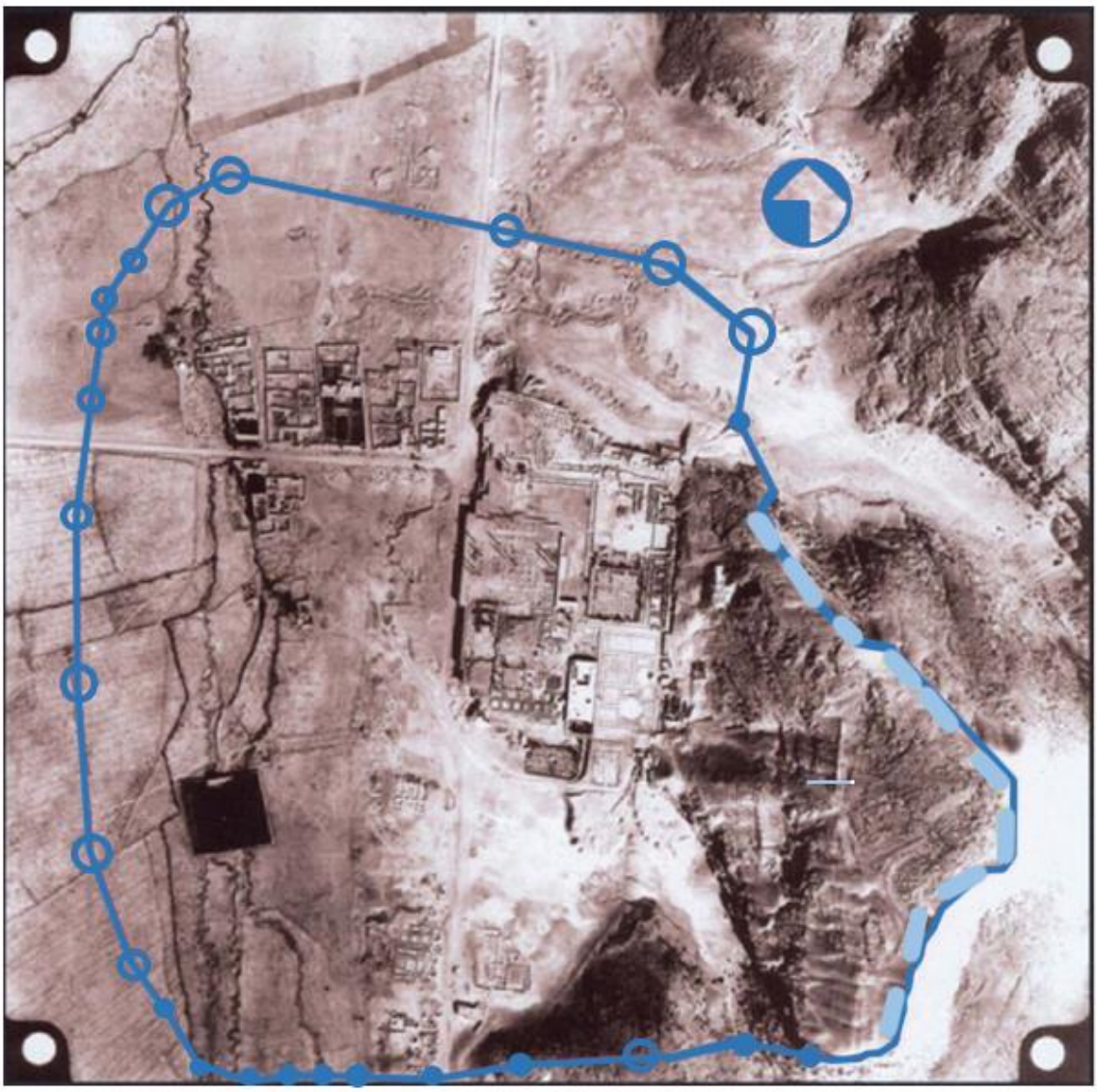

Fig.5.Remnants of guard wall and watchtowers

Purposed of guard wall and watchtowers

Persepolis and the city of Parse are located within the Farvardin plain, marked by rich alluvial soil and broad systems of agriculture feeding off both natural and artificial irrigation. It was a plain that has long formed the heart of the agrarian activity of the area, its historical landscape largely covered with high biomass content. Due to this fact, accordingly, the ruins of the ancient structures, including those of Persepolis, have been masked by the agricultural activities and heavy vegetation. Heavy agricultural cover represented through high-intensity electromagnetic radiation (EMR) recorded in different ETM+ bands has hampered identification and further analysis of the ruins. Advanced satellite imagery, joined for the first time with infrared spectral analysis and ground-level research, has unraveled some aspects of the Persepolis landscape previously hidden since ancient times.

Perhaps most exciting among these areas of inquiry, the curvilinear ruin on Rahmat Mountain may help others explain further the wider architectural and defensive structure of the ancient city. Natural and artificial features intertwine in this plain of Farvardin, a very complicated site with indications of human activity marking the landscape for millennia. With further study and technological advancement, it is in this vein that more of Persepolis' secreted history might see the light of day, and our understanding of this monumental site further enhanced.

Fig.6.1.Persepolis 2. Purposed guard wall and watch towers surrounding Persepolis

Exploring the Architectural Splendor and Royal Legacy of Persepolis

Standing at the top of the monumental staircase through which access was gained to the whole Persepolis complex was the magnificent ruin of a ceremonial gateway, the remains of a structure once most grand. Originally ornamented and clad, this gateway was flanked on either side by four high wall sections, each bearing colossal guardian figures made in the Assyrian manner. At the gate stood two magnificent winged bulls, their heads eroded by time; two additional winged bulls adorned with human faces faced east, enhancing the grandeur of the entrance. The doorway was flanked by four central columns, each inscribed with the same proclamation: "Xerxes the Great King says: By the grace of God, I have made this portal." Although it has been leveled multiple times throughout history, the Persepolis platform still preserves much of the natural irregularity of the ground it was built upon.

It is an access point to the establishments lying south of the Apadana, which stands on a much higher platform. An imposing monumental double staircase was recently found here to add further architectural complexity to the site. The building south of the Apadana-a perfect square-boasts gateways in the shape of a rectangle, made from three enormous stones. The jambs of the structure are decorated with reliefs of the king entering or leaving the palace. Side rooms and a veranda confirm that this building, known as the winter residence of Darius, was indeed a royal residence. A series of inscriptions on the walls and doorways record that Darius began the construction, which was finished by Xerxes, and that Artaxerxes III added the western staircase.

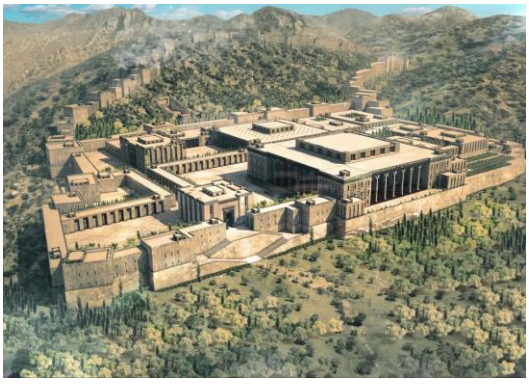

Fig.7. 3D Representation of Persepolis
Fig.8.1.Farvardin Plain
2.Marvdasht
3.Rahmat Mountain
4.Persepolis
5.Hossein Moutain

Continuing further south, one reaches a smaller palace, perhaps built by Artaxerxes III, and then another larger square building with thirty-six columns and attached smaller rooms, which may have been baths and latrines. A staircase to the south provides the only access to the lower terrace, that was never built upon and perhaps served as a garden area, thereby further completing the rich and thoughtfully designed residential sections of the palace complex. The Harem palace housing the residential elements of the royal life is considered to be a recently discovered large rectangular building adjacent to this area.

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Particularly impressive is the advanced drainage system that exists beneath the foundations levels, reflecting an outstanding insight and engineering skills on the part of the Achaemenid builders. There was also a high wall that enclosed the entire complex and ran right up the side of the mountain behind, reinforcing the defense even more effectively. This is not to say that the palace buildings were solid stone; although the uprights, gates, and most column bases were, in fact, stone, the walls were actually filled in with sun-dried bricks. The roofs were of wood beams, laid across and surfaced with a hard-packed stratum of earth. It is said that cedar wood was used extensively in the building of these structures, and remains of coniferous species can still be seen among the ruins.

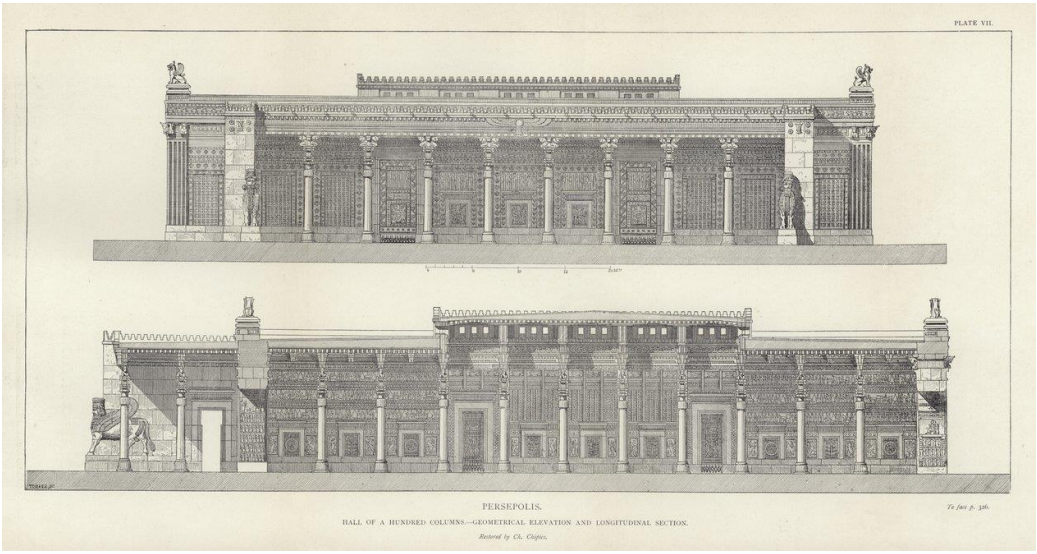


Fig.9. Ch Chipiez reconstructed the Hall of a Hundred Columns at Persepolis, featuring a geometric elevation and a longitudinal section

The columns of the structure are decidedly slender in proportion to their height when compared with Greek Doric columns, fluted, and set upon circular bases elaborately carved in relief with sculptured subjects. The capitals are carved out of a single block and have two facing bulls or, more rarely, horned lions supporting the architrave; the crossbeam lies between them. The bulls stand on a square base with scroll-like volutes at each side, the whole being supported by a block capital in the form of a conventionalized palm frond.

One of the salient features of Persepolitan architecture is the use of double staircases, favored by the Persian architects in preference to the so-called 'rampe' so common in Greek architecture. These staircases have easy and gentle slopes. Crenellations crown each wall in the shape of acute-angled triangles; it has four steps on each side and a flat top. The sides of the stairways are ornamented with friezes representing exquisitely carved figures of men and animals. The great staircases of the Apadana present in three tiers processions of tribute-bearers and rows of soldiers , among them the celebrated Ten Thousand Immortals . Between

these figures, stylized cypress trees intervene, divided by rows of twelve-petaled rosettes. The craftsmanship is detailed enough to show the different ethnicities of the figures represented, which can be correlated with depictions on the various royal tombs that label the different nations. Most impressive is the representation of the people from Arachosia, in southern modern Afghanistan, who are clothed in what looks like a variation of contemporary Afghan dress: flowing shirts, loose trousers, and belts.

The geometric nature of the staircase designs leaves triangular spaces that are very often filled by a continuous image of a lion in leap attacking a bull, which a number of scholars believe acts as a heraldic device . Curzon mentioned in 1890 that 1,240

Fig.10. Current Condition of Persepolis

sculpted figures were observed with countless more found through subsequent excavations. Perhaps most striking about the sculptures, however, is the complete lack of women, one of the more intriguing facets of the aesthetic choices made by Achaemenid craftsmen. Many of the buildings at Persepolis also bear trilingual cuneiform inscriptions in Old Persian, Elamite, and Babylonian, reinforcing this multilingual nature of the empire.

Carved into the cliff face of Kuh-i-Rahmet, behind Persepolis, lie two completed royal tombs and one unfinished. About three miles distant, at Naqsh-i-Rustam, four other tombs were carved in the face of the stern grey cliffs of Husein Kuh - aligned north and south, their openings facing east. Each was carved in the exact form of a huge flat cross, the centre portion forming the front of an Achaemenid building. The crossing is decorated with a horizontal beam bearing a cornice on four semi-attached columns with double-bull capitals at the head, while a rectangular doorway opens into the burial chamber where stone coffins are kept. These four tombs have been ascribed to different kings like Xerxes I, Darius the Great, Artaxerxes I, and Darius II, and the second is known with certainty to be Darius the Great from the inscription.

Three tombs behind Persepolis resemble those at Husein Kuh but have an open approach with a frieze of lions along the cornice. These have been identified as the tombs of Artaxerxes II, Artaxerxes III, and Darius III, oriented in a line running from north to south. The first two tombs reveal empty stone sarcophagi inside, while the third is unfinished. Naqsh-i-Rustam Necropolis is a dramatically arresting sight: the somber, towering cliffs cast their shade over the royal resting places, creating an atmosphere of stark grandeur. The vultures wheel sentinel-like overhead, and a sense of sinister quiet instills a marked effect on the beholder.

Historical records of the fall and the sack of Persepolis are by Diodorus, Arrian, Strabo, Plutarch, and Quintus Curtius, but the most colorful and graphic account is given by Curtius. Pressing on from Susa to Persepolis in a southwest direction, Alexander undoubtedly passed through the narrow pass called the "Susian Gates." Diodorus and Curtius preserve a horrific story of how Alexander was attacked, as he neared the city, by Greek prisoners who had been mutilated and were led by the Athenian Theaetetus. Meanwhile, the Persian satrap of Persepolis, Tiridates, was in urgent correspondence with Alexander begging him to come as soon as possible, since he could hardly restrain those who were ready to plunge into the treasures of the city. All sources allow that what happened next was on a titanic scale and represented a turning point in the history of both the Achaemenid Empire and the ancient world.

Perched against the towering bulk of Kuh-i-Rahmet, a mountain behind the magnificent palaces of Persepolis, there perch two finished and one unfinished royal tomb. Some three miles away across the valley is Naqsh-i-Rustam, where four more tombs are exquisitely cut into the face of steep, grey cliffs of Husein Kuh. These tombs, aligned on an axis, are oriented to the east. Each is cut into the unique shape of a large, flat cross, its middle part representing the front of an Achaemenid building. The cross's crossbeam is relieved with a cornice resting on four attached half-columns, each surmounted by an elaborately worked double-bull capital. A rectangular entrance in the centre opens onto the burial chamber inside that contained stone sarcophagi. The four tombs at Naqsh-i-Rustam have been ascribed to various kings of the Achaemenid dynasty, in order: Xerxes I in the northernmost tomb; Darius the Great; Artaxerxes I; and finally, Darius II. The second tomb is that of Darius the Great, so an inscription confirms. Above the cornice is a relief with a grand throne, flanked by two rows of fourteen figures, hands raised reverently, as the king stands facing a "fire" altar and the symbolic figure of Ahuramazda.

The three tombs behind Persepolis are similar to those at Husein Kuh but have an open approach exalted by an open cornice frieze of lions. Known to be the tombs of Artaxerxes II and Artaxerxes III and Darius III, these structures proceed from north to south, with the first two having empty stone sarcophagi in them while the third one is unfinished. Dramatically imposing, the naqsh-i-Rustam necropolis is a sight to behold: the dark, towering cliffs casting shadows over the royal resting places instill an aura of quiet grandeur where vultures circle slowly overhead and an atmosphere of eerie stillness predominates, leaving a profound impact on every visitor.

This fact has been documented by several historians like Diodorus, Arrian, Strabo, Plutarch, and Quintus Curtius, the last of whom gave the most graphic and sensationalized account of the fall and destruction of Persepolis. As Alexander the Great approached Persepolis from Susa, probably by the hazardous southwestern route through the "Susian Gates," both Diodorus and Curtius report a pathetic incident in which Greek prisoners, mutilated and under the lead of the Athenian Theaetetus, accosted Alexander as he approached the city. Meanwhile, Tiridates, the Persian governor of Persepolis, besought Alexander to come as speedily as possible, lest he have a crowd of avid people commencing the work of plunder, now that the treasure was full in their view and within their reach. All ancient writers exaggerate the vast size of this conflagration.

Persepolis was a city of immense wealth, filled with golden and silver artifacts, as well as beautiful vessels and garments embellished with gold and gemstones. Soon after, chaos erupted, marked by widespread killings and looting. Greek soldiers began to fight over the spoils, seizing the treasures for themselves. Thousands of pack animals, including mules and camels brought from Babylon, were employed to carry the plunder. Plutarch notes that Alexander stayed in Persepolis for about four months. During this time, as Curtius recounts, he engaged in a grueling month-long campaign and occasionally stayed within the city limits. Historians Diodorus, Plutarch, and Curtius all mention that Alexander hosted extravagant banquets in Persepolis, largely inspired by the Athenian hetaira Thaïs. It is said that she urged Alexander to set fire to the palaces as revenge for the desecration of Greek temples by the Persians around 150 years earlier. Initially, Alexander lit his torch, and the flammable wood of the palace ceilings quickly ignited. This act appeared to be impulsive rather than premeditated; at first, the Greeks thought the fire was accidental and tried to put it out, but they soon joined in the destruction, realizing Alexander's true intentions. Only Parmenion had the bravery to advise against such an act. Arrian suggests that Alexander was not entirely in control of his faculties during this incident, while Curtius notes that he later felt regret for his actions.

The Achaemenid Period Arts and Architecture The Achaemenid period arts and architecture reflected the vast empire that synthesized Assyrian, Babylonian, and Egyptian influence into a unique style. The buildings in Persepolis are uniform in square plan, symmetrical, and colossal in scale with monumental staircases and column rows that have no parallel. Indeed, the carvings on the reliefs show an extraordinary delicacy of detail; the modeling of the human body, however, is often clumsy and rarely gains freedom from a rigid symmetry. The series of figures display the same postures and completely clothed warriors lacking the energy emissions shown by the moving figures on the Parthenon frieze in Athens. As F. Sarre, in spite of the difference in scenes and sculptures, there is a single artistic mentality found in Persepolis, which reflected the peculiar way of vision of the Achaemenid Persians.

The central subject of Persepolis talks eloquently about the excess of power and the

imperial greatness attributed to the "King of Kings."The inspiration for such architectural wonders and art could well be questioned to have flowed from the Greeks. History has it that Persian kings employed an overwhelming number of foreign craftsmen. Among their choices were Greek sculptors, whom they favored most. Thus, for example, Telephanes of Phocaea was commissioned first by Darius and then by Xerxes, while Xerxes famously plundered the statues of Harmodius and Aristogeiton from Athens. Excavations at Persepolis have recently turned up exquisitely rendered Greek-form torso of a woman. The volutes on the capitals hint at an Ionian design inspiration, but the rosette with twelve petals that appears everywhere at Persepolis is indeed borrowed from the Minoans, Mycenaeans, and even the Pericleans before them. However, Herzfeld is of the opinion that the sculptures of Persepolis have little to do with Greek influence because the themes themselves-an orderly rhythm, elaborate processions, and solemn figures-are characteristically Persian and express an original utterance of the Achaemenid dynasty.

Surprisingly, Time has not managed to ruin the artistic heritage of Persepolis. In contemporary Iran, most of the architectural motifs in Persepolis are reproduced in modern buildings, like the new bank buildings and police headquarters in Tehran. Several thousand years of pounding by frost and rain, not to mention earthquakes and human interference-from the destructive fire set by Alexander to graffiti left by H.M. Stanley-appear to have had relatively little damaging effect on much of the site. This is due chiefly to a stratum of decomposed brickwork that has covered the lower portions of the buildings from beneath the feet of rubbish.

Major excavations at Persepolis began in 1931, headed by Chicago's Oriental Institute under the supervision of Dr. E. Herzfeld and then Dr. E. F. Schmidt. Their work unearthed many other important buildings that had lain buried for several centuries. Among them are the eastern stairway of the Apadana, a smaller staircase up to the 'Tetrapylon, the Harem, and several structures to the east. The Harem is a square building with well-conserved walls showing reliefs representing a petitioner before the king. Excavations unearthed nearly 29,000 inscribed tablets that may contain historical records related to Persepolis and its conflicts with Greece. Gold and silver deposits were laid in the floor of the Apadana; these were made up of thin, square sheets inscribed with Darius' name and the boundaries of the empire. The Harem, which has been restored to act as the base of the excavation team, consists of its northern end supported by modern wooden columns with bull-head capitals, emulating their ancient predecessors, and a roof of compacted clay faithful to the techniques followed in the original building.

These palatial edifices, built by Darius and Xerxes-kings famous for their cruelty and arrogance, and for their farsighted imagination and administrative skill,constitute the epicenter of an empire that was vast and complex, far beyond any previously known civilisation in scope and governance.

Project Goals

This project is not about mere preservation or recreation of Persepolis, and from the first glance, one would not notice what the design is really meant to represent. A deeper exploration of the design reveals an immersive experience into the grandeur, symbolism, and architectural brilliance of Persepolis as it existed during its peak in the Achaemenid era. This project aims to transform an area for interaction and learning into an experience of what Persepolis is to its modern viewers.

In the very early process, further development of the existing structure within the boundaries of Persepolis was ruled out because any added volume would disrupt the delicate harmony of the site's historic landscape. In the same way, an underground facility was discarded due to the archaeological sensitivity of the area, in addition to implications on the structural and environmental fronts.

Gradually, the concept of designing a museum outside the immediate Persepolis complex began to take shape. This solution addresses a number of critical goals: first, to preserve artifacts-most of them fragile stone carvings and architectural fragments-in controlled microclimatic conditions; second, to reimagine the presentation of the existing collection, creating a narrative that does justice to Persepolis's grandeur; and third, to incorporate a wider array of objects currently in storage, allowing visitors to experience a more comprehensive view of the site's history and significance.It thus testifies to a profound respect for the integrity of Persepolis as a UNESCO World Heritage Site while embracing the need for a facility that secures its treasures and makes them more accessible for coming generations.

The key concept in this proposed museum at Persepolis is that of a sanctuary-a protective ark for antiquities. This design will be of a discreet and low-key building dedicated to the very best indoor air quality and a stable environment in order to preserve its precious contents for future generations. This conception adheres to the old concept of archaeological museums being a preservative device of treasures dug out from beneath the ground and primarily serving the purposes of conservation and research rather than those of public exposure.

In Iran, as in many countries with rich archaeological heritages, museums have traditionally acted as introspective institutions concerned with the protection and study of antiquities rather than with their wider communication to the public. This approach, very much engrained in centralized heritage management practices, has often led to museums being regarded as depositories rather than as dynamic cultural spaces. Yet, the changing museological landscape puts the emphasis on a need to reach audiences and engage them in a dialogue about cultural heritage.

Whereas the museum in Persepolis will continue to protect and study the antiquities, this proposal looks to incorporate more inclusive, visitor-oriented features. It balances its role as a shelter for antiquities with strategies for enhanced accessibility and interpretation in order to honor the legacy of Persepolis while inviting a broader audience to its profound historical and cultural narratives.

The main task at hand is designing and creating an area where the public can feel the distinctiveness of the features and the structure that was contained within Persepolis. It is in this way that the space turns into a living museum-a connecting point between ancient history and today's understanding of the subject. Visitors will be able to navigate Persepolis at length, from the monumental gates to the grand halls, furthering their knowledge not only about the ingenuity behind it but also about the rich cultural values it represents.

Following is the list of certain objectives that this project tends to cover:

Recreating the Architectural Legacy:

The design incorporates certain features and symbolic motives for which Persepolis will always be remembered and also pays homage to its architectural glory. Be it the perfect layout of Persepolis or the minute carvings, space bears evidences of the heights to which Achaemenidian Engineers and artists had risen.

Scholastic Exposure

By providing visitors with detailed exhibits, guided tours, and interactive displays, they will acquire a full understanding of what Persepolis meant historically, culturally, and politically. The artifacts shown in the museum would explain not only the people and their ceremonies but also their inventions that defined this site.

The columnar hall was one of the features that could be seen in Achaemenid architecture and came in many different designs, reflecting the vast influence of the empire. Most notable were the columns with bell-shaped bases and their capitals with back-to-back bull figures. These did not only appear in Persian cities but also in Achaemenid sites like Georgia, Azerbaijan, and Armenia-regions within the great reach of the empire. Achaemenid architects applied geometric proportions with extreme preciseness, so the following question arises: whether such architectural principles as observed at Persepolis were also reproduced in these far-flung sites. The identification of such parallels would imply that there was a single, coherent architectural policy and a consequent central control throughout the empire, reflecting the Achaemenids' ability to bring together under a coherent cultural and administrative framework such very disparate regions.

Connecting with the Past:

It seeks to provide an immersive experience between the visitor and Persepolis, developing a close relationship. As the visitor walks through the structures and spaces created, he develops a tangible attachment with the ancient world and cultivates much-appreciated respect for its continuing legacy.

Preserving and Raising Awareness:

The project will highlight the fragility of cultural heritage and stress the need to preserve not only Persepolis but also all historical sites around the world. It will make people more aware and encourage responsibility among visitors for the protection and care of such treasures.

Persian Gardens as Part of the Project:

The major objective of this project is to revive and display the spirit of traditional Persian gardens, which are closely tied to the architectural and cultural history of Iran. The Persian gardens, with their beauty, design, and symbolism, have come to form a major component in displaying the greater architectural features of Iranian buildings. This project will embed these gardens for the holistic understanding of Iranian architectural principles of integrating nature and built environments, as has been central to Persian culture for centuries.

The Persian garden is a very symbolic place. They symbolize the four elements of nature—water, earth, air, and fire—that are so central to Persian cosmology. Water is especially crucial in most of them, running through channels to create an atmosphere of serenity. By designing a Persian garden, the project will be imbued with the deep spiritual and cultural meanings associated with Iranian architecture and heritage, thus offering visitors deeper insights into the role of nature in ancient Persian life.

Natural Light and ventilation

Natural light and ventilation in Persepolis were among the major precepts in the design and functionality of its architectural spaces, especially in the grand palaces and public structures . Like many other ancient civilizations, the ancient Persians

They realize how critical a concern environmental comfort is, which makes them design natural factors that utilize light and air in their monumental buildings. Most of the very minute architectural schemes there are little primary evidence while extant structure ruins at Persepolis and research regarding old Persian construction methods reveal certain important things in how they might work together in designing a building structure.

Natural Light:

The positioning of strategic windows and openings provided a means whereby most natural light was exploited to the fullest. In large open rooms such as the Apadana Palace with huge columns, natural lighting would come from strategically positioned windows and other openings in the walls. Quite often, windows were set very high up the walls, admitting light into interior rooms and helping to avoid too much midday sunlight. This would have resulted in soft, diffused lighting in the palaces.

Building Orientation: Most likely, the building layouts were planned with orientations according to the movement of the sun during the day. The palaces were so planned that they should receive light either in the early morning or late afternoon at cooler parts of the day and shade off from harsh daytime heat. This concern meant comfort for the people indoors while bringing out the architectural features during their different times of the day.

Use of Courtyards and Open Spaces: Many buildings in Persepolis had central courtyards acting as light wells. This allowed light to enter through the open spaces into the surrounding rooms. These open spaces were the transitional zones that connected the palace complex**. These open courtyards must have also helped in natural ventilation.**

Fig.11.Interior views of the Harem of Xerxes. Computers visualization by N. Shitukhina, 2016

Ventilation:

Air flow through open spaces: Also, buildings in the main platform and open spaces were located to create favorable conditions for natural ventilation. The open courtyards, porticos , and large colonnaded halls promoted air flow through

buildings, so crucially required in the hot arid climate of Persepolis. The height of the buildings, especially with their raised platforms and huge open spaces, allowed the free flow of air to cool down the interiors.

Skylights: Palaces, especially those facing the Apadana, were designed in such a way that they allow hot air out via either open roofs or skylights. Opening serves as the balancing element against inner temperature, when cold air is blown on the lower floors, while hot air rises upwards to leave out through a skylight. This form of natural ventilation would be more critical during the summer period as temperatures might have gone to an extreme.

Building Materials and Design: The type of building materials used, such as limestone and mudbrick, likely factored into interior temperature and ventilation. These materials are known for their thermal mass, which absorbs heat during the day and releases it at night during cooler hours, evening out interior temperatures accordingly.

Light and Air Integrated into Persepolis' Layout:

The architecture of Persepolis was designed to integrate natural light and ventilation for practicality and aesthetic appeal. Large, expansive spaces with high ceilings were designed to create a feeling of grandeur and openness. These architectural features concurrently allowed air and light to pass through the building, enhancing its comfort and aesthetic appeal.

Indeed, the ancient Persians from Persepolis were really advanced in the art of utilizing natural light and ventilation to get pleasing, practical, and artistically appealing interiors. Correctly placed apertures, courtyards, and orientation of buildings created ideal lighting and ventilation that made the palaces of Persepolis impressive but comfortable places to stay in the harsh ancient Iranian environment.

Fig.12.Interior views of the Harem of Xerxes. Computers visualization by N. Shitukhina, 2016

Design strategy

The strategy of this project is deeply rooted in the very principle of paying respect to the rich architectural and cultural heritage of Persepolis, adding to it modern design

elements that will enrich not only the visitor experience but also sustainability. In this perspective, the contribution to the historical value of Persepolis is intended by reflecting the greatness of Ancient Persian architecture while creating a useful and educational environment for today's society. The design of a museum at Persepolis should focus on highlighting the site's rich historical and cultural importance while also appealing to both local residents and international visitors. It is essential to adopt a thoughtful approach that integrates the museum with its natural and historical environment, honoring the legacy of Persepolis and improving its surroundings. Engaging in thorough research and working closely with local stakeholders, including archaeologists, cultural experts, and community members, will be crucial in developing a museum that not only preserves artifacts but also serves as a valuable resource for the community.

The design of the museum is based on the flexibility and adaptability of spaces, considering that it should be able to hold different types of exhibitions, events, and educational activities. It has been designed with specific attention to visual and cultural sensitivity for its link with the site of Persepolis, in that the building itself will also highlight the historical context within which it sits. It also insinuates that the museum does not only save items from the old Persian Empire but also merges into the local population to instill pride and knowledge.

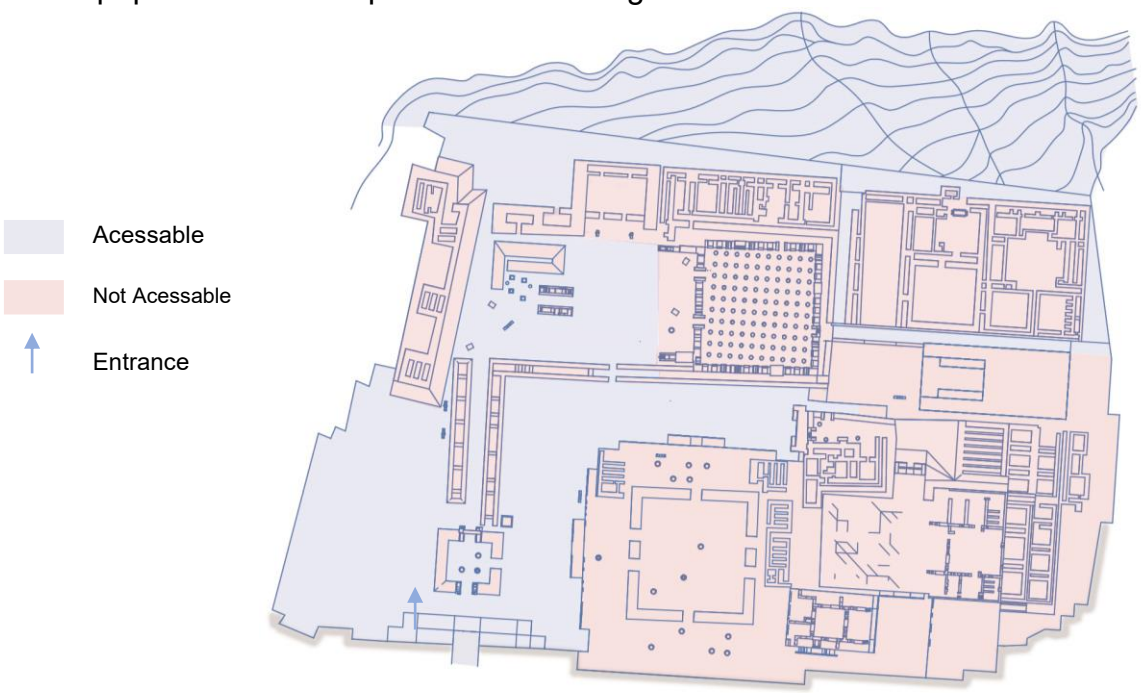


Fig.13.Site plan

It is in this respect that the proposal balances the historical importance of Persepolis with the needs of the larger community toward the creation of a museum space: not just a building, but a place of cultural exchange, learning, and interaction. The respect of the design to the site and its tradition, how functional the museum will be, and the contribution it will provide to society all speak to the truth of this design. The aim is to connect the past with the present through using the museum as a venue for the local community and tourists to gather and be inspired by Persepolis's rich cultural heritage.

The following basic principles define the design approach:
1. Integration of Persepolitan Architecture:

The design will draw inspiration from a number of famous architectural elements synonymous with Persepolis: huge columns, monumental staircases, and reliefs. In this project, these elements are reworked to preserve the visual character of Persepolis while incorporating modern materials and techniques. The plan would be based on the inclusion of some traditional Persian architectural features, such as geometric symmetry, axial alignment, and water features, to create a design reminiscent of the old site's spatial grandeur.

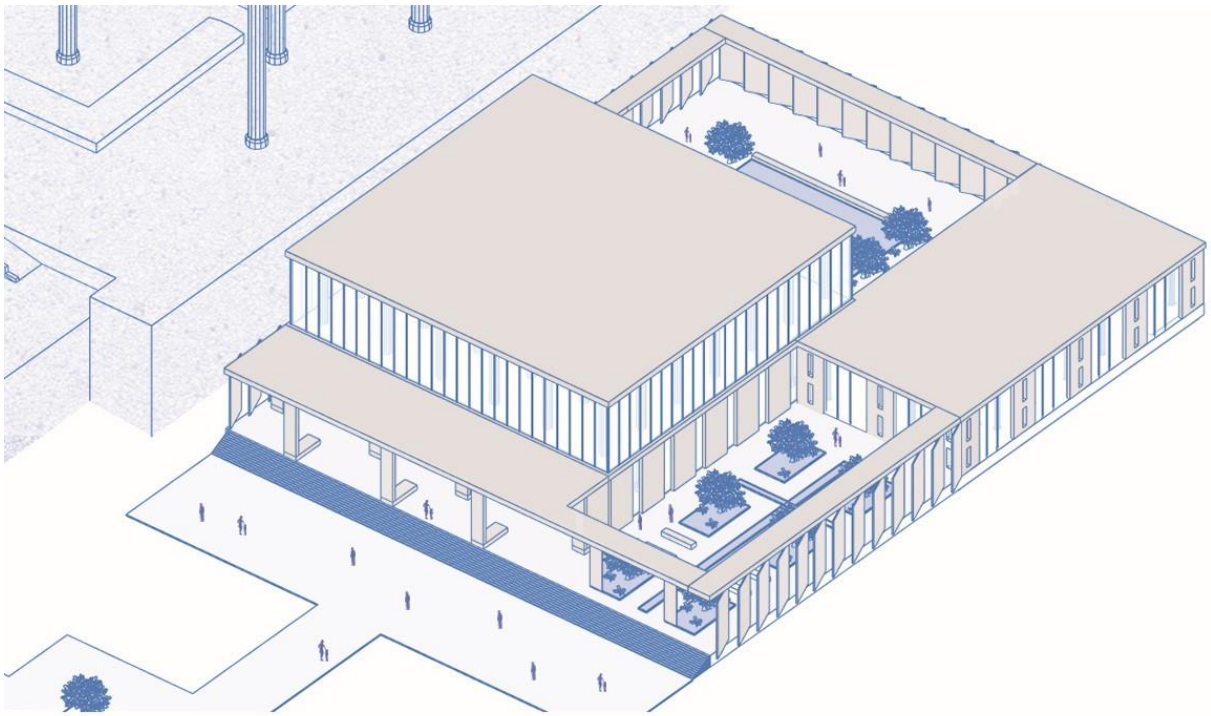


Fig.14.Perspective 1

2. Landscape contextual fit or harmony:

It will be planned considering the historical and natural surroundings of Persepolis, combining respect for the past with modernity.. It should melt into the landscape without disturbing the views of the Marvdasht plain and Mount Rahmat, while maintaining a strong relationship with its original site. Outdoor spaces typical of Persian gardens will be intertwined with the building, creating a smooth passage from the built environment to the natural environment. The centerpiece will be made up of landscaping and green spaces inspired by natural qualities and architectural features of Persepolis. This should represent the inclusion of indigenous plants and trees resistant to a dry climate that would help improve environmental sustainability, biodiversity conservation, and ecological balance in the region.It is also enhancing appearance and other sensational experiences while building a better relation with the site's cultural and natural heritage through the museum.

There will be the integration of courtyards and open areas, taking their inspiration from historical Persian architecture. Such open areas will stimulate community interaction, reflection, and calmness through thoughtfully designed tranquil settings that mimic the social and spiritual functions of such gaps in the past. Such spaces will, in turn, become vibrant venues for gathering and participation. Among these the symbolic focus could be a cypress or other native Persian tree serving as a living symbol of this connection. This tree will provide shade and aesthetic value

It will also function as a powerful allegory for growth, survival, and sustenance-qualities mirroring the continuing relevance of Persepolis. The integration of Persian culture with a sustainable design will make the museum foster a real affinity between the visitor and the environment and the spirit of the place. The project achieves this, respecting the principles associated with the conservation of this heritage property. The museum would want this to continue and keep fostering good relationships with the locals and other tourists from different countries.

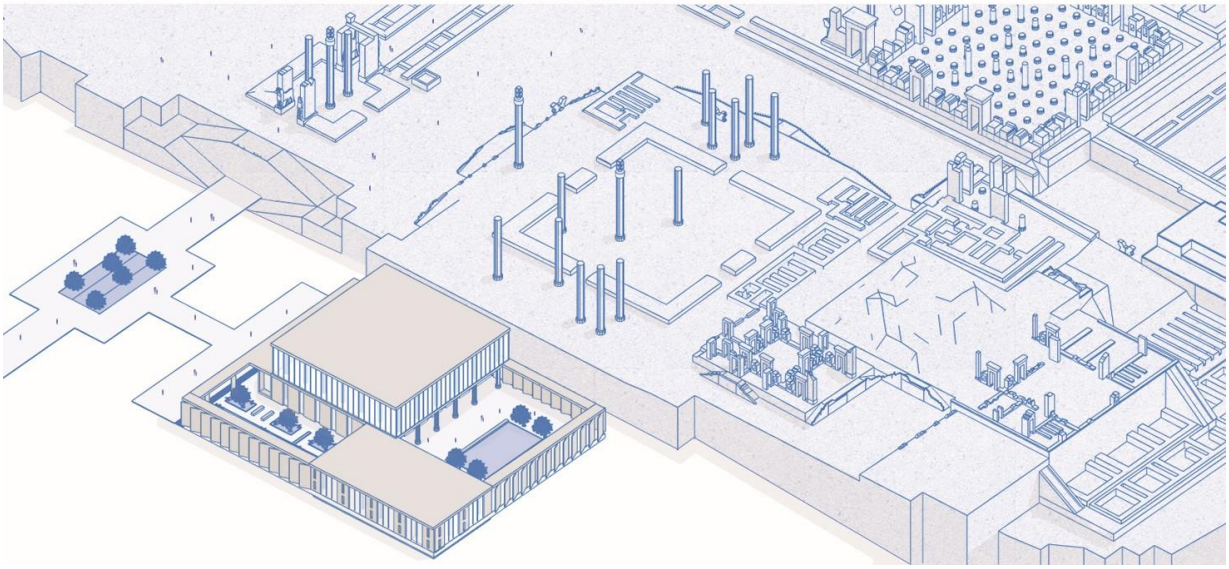


Fig.15.Perspective 2

3. Sustainability and Modern Innovation:

This museum will make sustainability one of the major tenets of the design, employing energy-efficient technologies, eco-friendly materials, and creative building techniques that guarantee a low environmental impact. Ancient Persian customs of integrating building with landscape shall inspire a design that incorporates water saving, natural lighting, and passive cooling. Not only will such a strategy be in accord with environmental and cultural values within Iran, but also with international initiatives that are leading to more sustainable practices.

It would involve the utilization of solar photovoltaic panels in harnessing this rich resource in the area as part of the approach to renewable energy utilization. Such solar panels reduce dependency on conventional sources of energy by converting sunshine into electricity which runs all the activities of the museum. This reinforces the independence of the museum and gives value to clean, renewable energy.

Additionally, a number of passive strategies will be integrated into the design to allow the building to have a better relationship with the outdoors. Thoughtful shading systems, architectural orientation, and natural ventilation and daylighting may minimize the need for artificial heating, cooling, and lighting. These moves will render the area energy-efficient and ecologically friendly, thus ideally suiting the arid climate of Persepolis.

By incorporating these green design principles, the museum will showcase environmental responsibility in a building that celebrates the cultural and natural heritage of Persepolis. The resultant space will indeed pay homage to the legacy of this iconic site while being forward-looking, pulling together ecological stewardship with historical reverence. It is a holistic approach wherein the museum will stand as a beacon of sustainability, self-sufficiency, and pride in culture.climate, incorporating modern technologies along with sustainability has been ensured for the project.

Fig.16.Perspective 3

4. Educational and Interactive Visitor Experience:

The museum aims to cultivate a dynamic and informative environment. Through the implementation of interactive exhibits, multimedia displays and virtual reality technology, visitors will have the opportunity to engage with the history, architecture and culture of Persepolis in novel ways. However, the museum will also incorporate both physical artifacts and digital tools, thus providing a comprehensive understanding of Persepolis. This approach ensures accessibility and engagement for a diverse audience, although some might find the integration of technology overwhelming.

5. Preservation and Conservation

The design strategy shall include careful planning for the preservation of the site and its artifacts. Climate control systems, secure display areas, and restoration efforts will provide protection to delicate relics and structures. The layout will prioritize areas for conservation research and educational programs while minimizing impacts on the ancient site.

6. Cultural and Community Engagement

The museum at Persepolis will be an active cultural hub, having both local and international participation. It is designed in such a way that it will inspire a deep connection with Persian heritage through exhibitions, cultural events, and spaces for public engagement. By involving local communities in its development and management, the project will not only create job opportunities but also contribute to the socio-economic growth of the region.

The project will bring together the eternal elegance of Persepolis and contemporary, sustainable design in an immersive experience that educates, inspires,and preserves

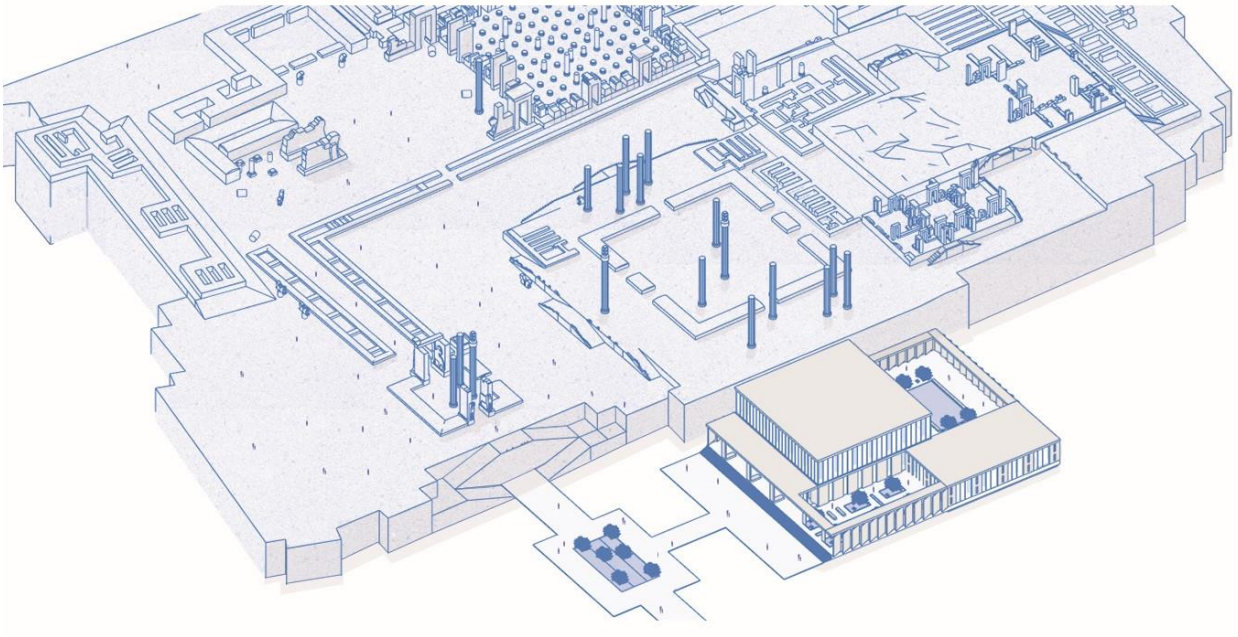


Fig.17.Perspective 4

This will mean this cultural jewel can be passed on for years to come. It will also instill deep cultural reference into the identity of this museum within its local environment. The museum, both locally and internationally, will resound with facades of Iran's rich history and custom in its structure, thus situating it within its larger cultural legacy.

One of the major approaches in design will be to take inspiration from the architectural features of ancient Persian and Achaemenid design. This might include monumental columns and decorative friezes, emulating the grandeur and craftsmanship of Persepolis. Such elements connect the museum to the classical architectural language of the Persian Empire. The application of a traditional Persian theme and materials would provide the depth and personality to designs. This might mean, for instance, geometric patterns or elaborated tile work. In public areas, maybe some decorative tiling of scenes showing ancient palaces and temples in Persia could display, visually bringing together the museum and creative heritage of Persepolis.

Fig.18.Perspective 5

Besides, the reliefs and inscriptions in stone inspired by Achaemenid expressions will draw out continuity from the ancient to the modern and enhance the identity of this museum. Such an intelligent inclusion of historical features will guarantee that the museum preserves not only the legacy of Persepolis but also reinforces its cultural relevance. Such a combination will make the museum a monument to the past, presenting the modernity of today with immersion.Community engagement in the design will be crucial to reflect the Iranian context. Full involvement of the local community in the design process will provide rich information on the preferences, aspirations, and cultural values of the people. This collaboration underlines a number of key considerations in the Iranian context, with particular reference to Persepolis.

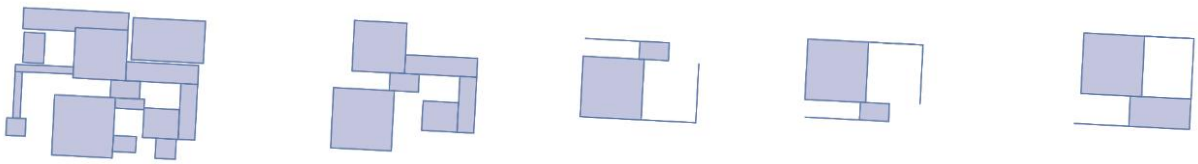


Fig.19.Design process diagram

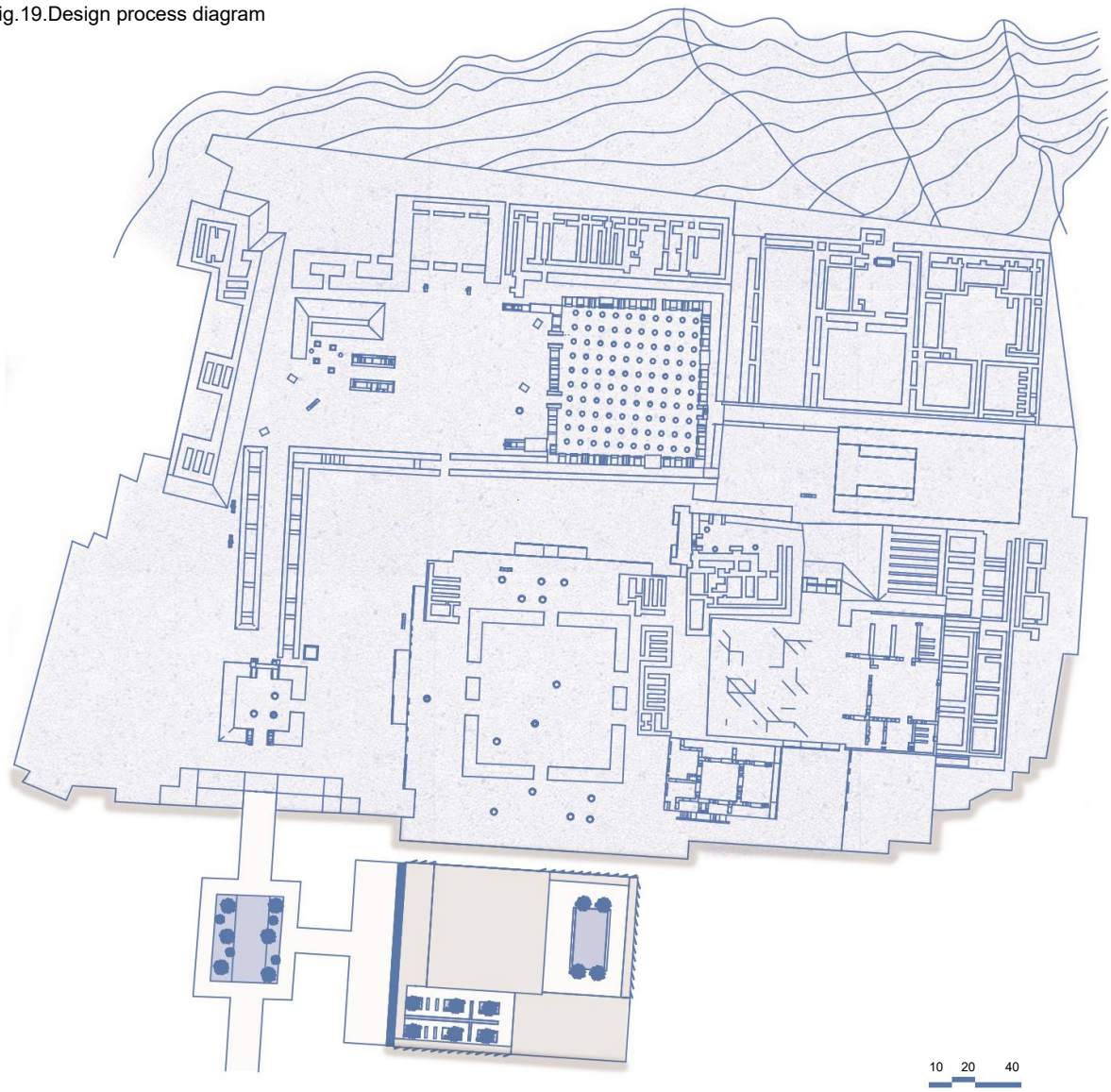


Fig.20.Site plan

Iranian families are also highly varied in structure and, for that reason, call for flexibility and adaptability in design. Involvement with the community reveals the need of the people for spaces accommodating varying family dynamics and functional requirements. Of equal importance is the cultural reliance on communal gatherings and social interactions. These traditions speak to a well-planned outdoor space, which allows for community involvement and strengthens the ties to the past and culture of the area.

The biggest goals for the project will be sustainability and cultural preservation through environmental resiliency, historic preservation by using energy-efficient technology, green construction methods, and design elements inspired by the rich architectural history of Iran. It would be great to tell a story about Iranian identity in a way that makes the museum even more appealing, with specific elements like courtyards, water features, and intricate patterns from Persian architecture earlier on.

Fig.21.North facade

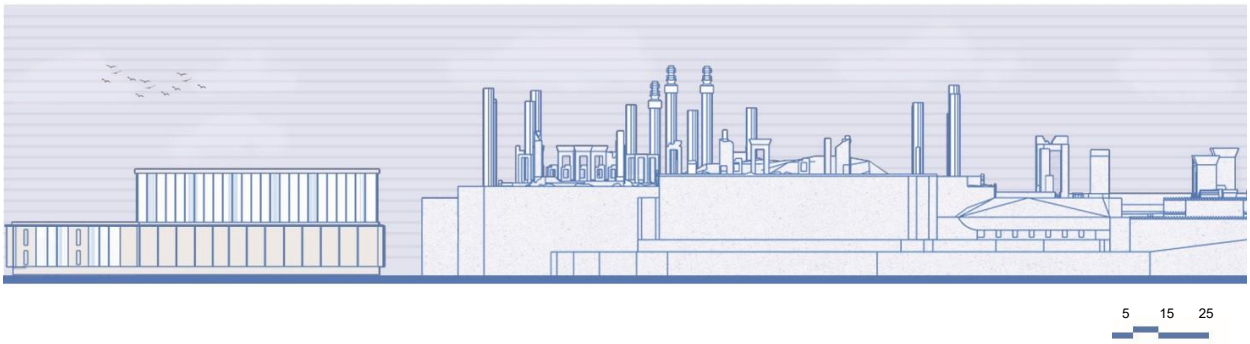


Fig.22.South facade

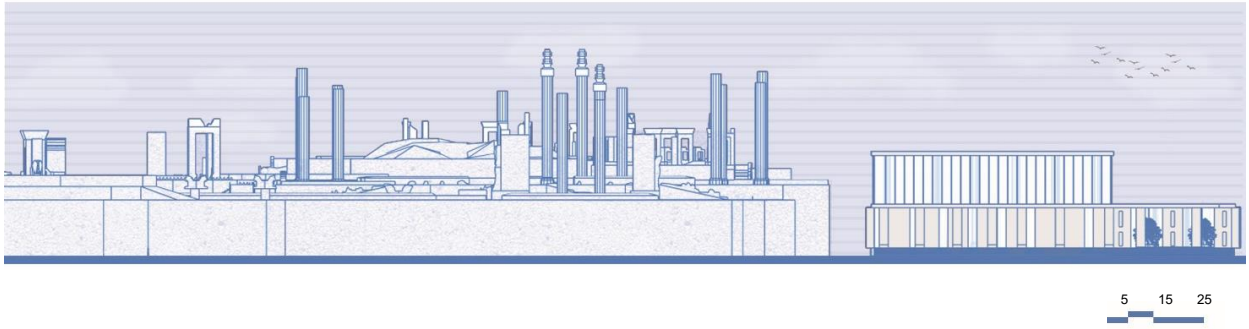
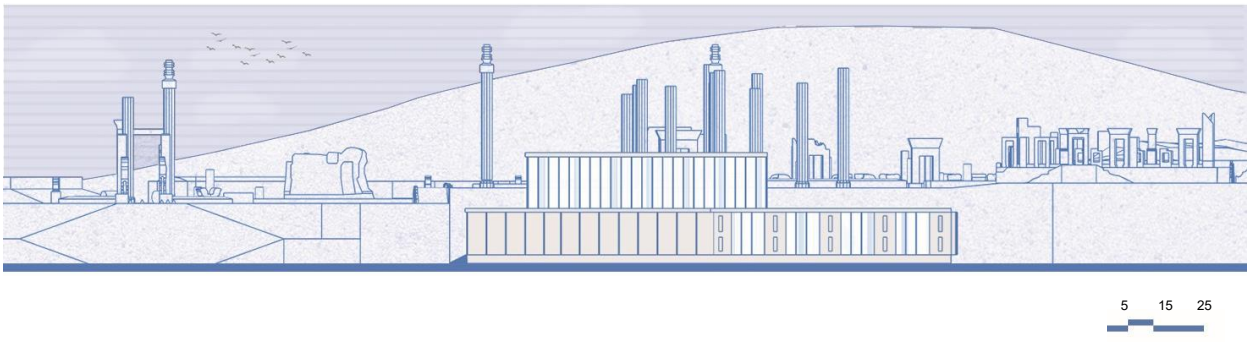


Fig.23.East Facade



In that respect, the museum will instill pride and ownership in the community by blending cultural, functional, and environmental considerations. This design approach is one that authentically captures the spirit of Iranian heritage while addressing the modern aspirations of the region, creating a transformative space that unites history, culture, and innovation..

For this project, I am stepping away from the main site to create a distinctive and independent point of view that substantially enhances its visual and experiential value. In the center of the drawing, there is a two-story building, taking inspiration from the rich architectural history of Persepolis. The columns follow the peculiar heartbeat of Persepolis in both higher levels of order. These are not only serving the purpose of supporting the structural part but are also reminding us about the glory and pride that stood tall in ancient Persian architecture. The duality of purpose is a blend of form and function into one space that is robust and pleasingly captivating.

Anchoring the top of the structure is the 360-degree panoramic view intended to give views, as well as an immersive sense, of the surroundings. It adds an extra layer of life to the experience of coming here, making the site more than just a use-based place but, instead, a destination unto itself. Through integration, the project aims at combining historical inspirations and modern functionality, developing a site that is deeply connected to the roots of cultural significance while very unique in engaging its visitors.

Fig.24.Section

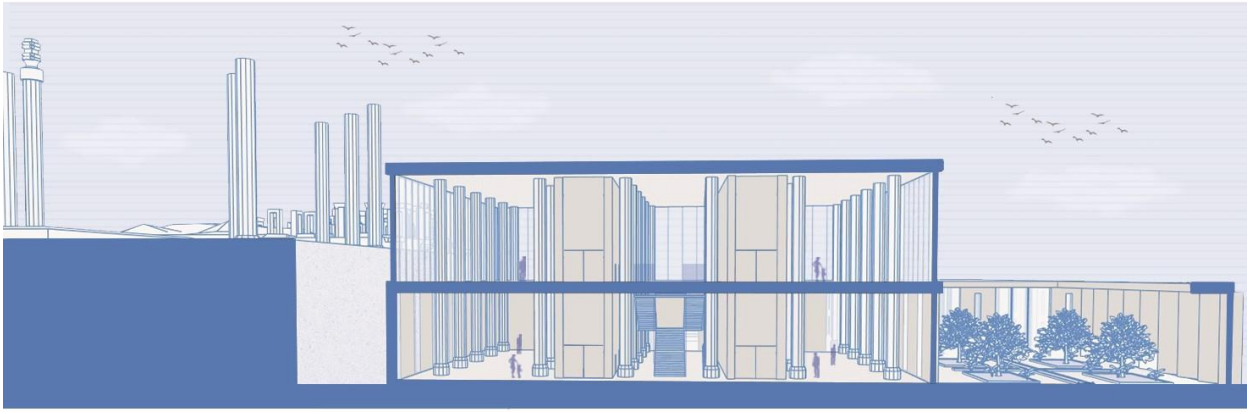


Fig.25.Perspective 6

Fig.26.Ground floor plan

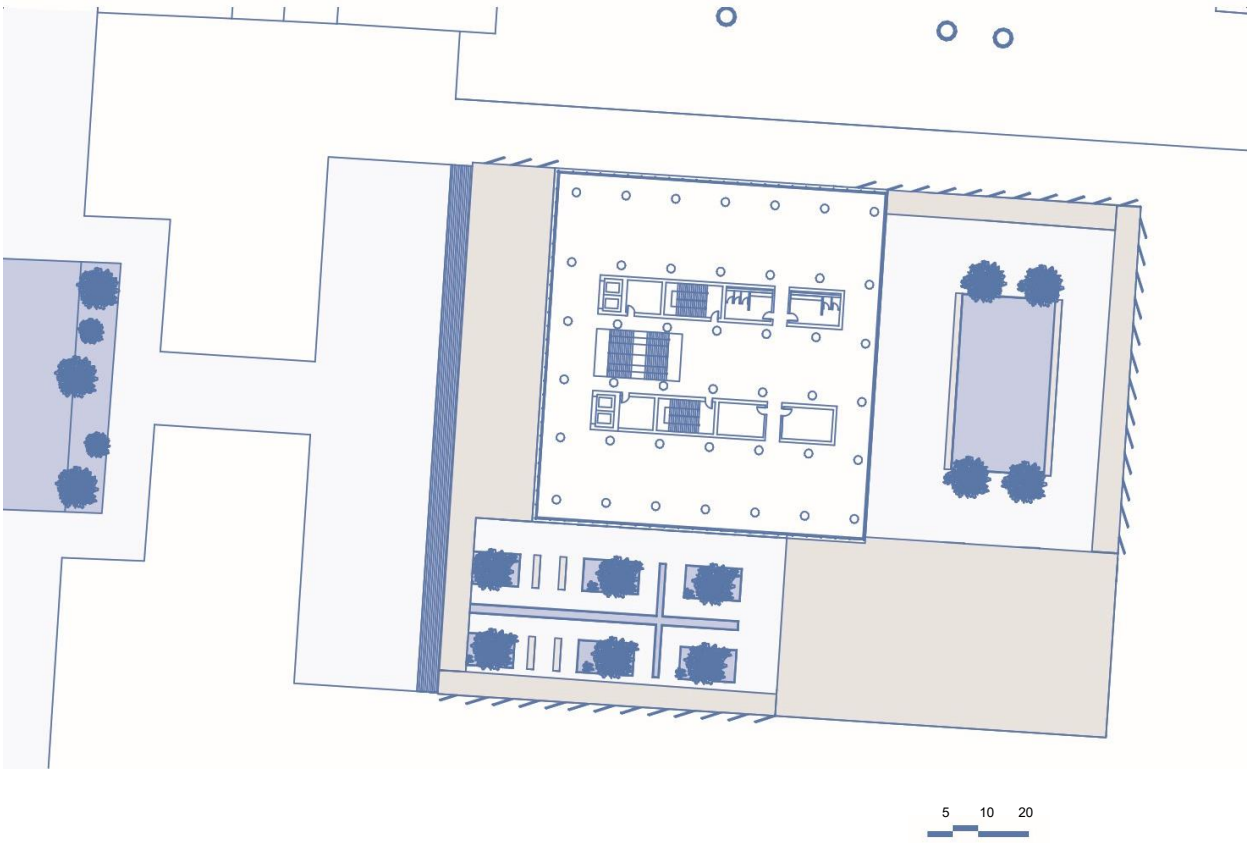


Fig.27.First floor plan

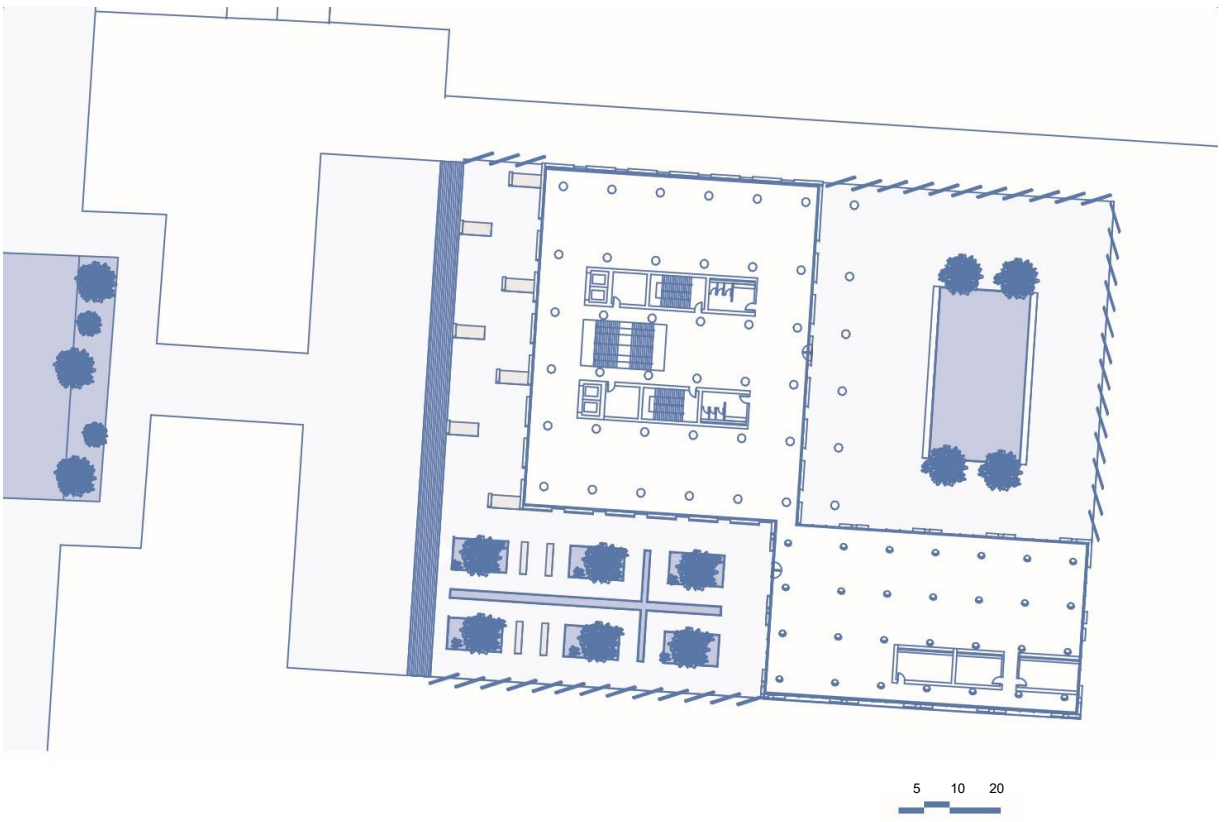
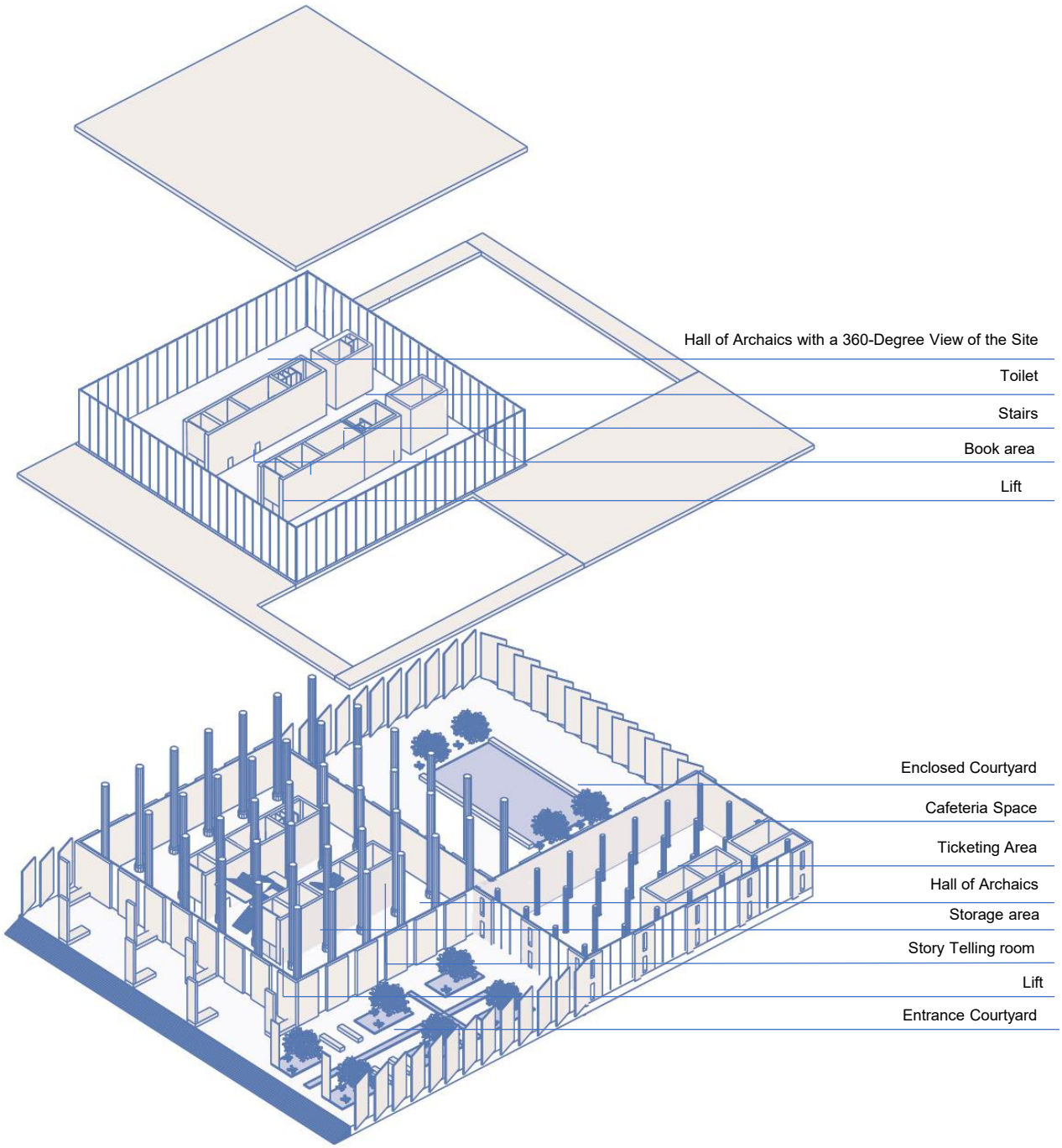


Fig.28.Diagram of the area



PART TWO: Research Framework: Historical City Development

Introduction

Within every urban landscape, there is an individual story created by the architecture, street system, and natural features. Capturing that particular identity is a way for planners and designers to create meaningful spaces-that is, meaningful places-which matter both to residents and to visitors alike. Cities are forever reinvented by new and different socially, culturally, and functionally created needs, and city squares become dynamic focal points in civic life.This paper interprets the concept of "urban character" by analyzing Shiraz's multilayered spatial composition: natural surroundings, cultural tradition, and historical depth. An accomplished urban growth-on both the consolidated historical center and the expanding edge-means harmoniously incorporating the new within the continuity of the existing fabric so that traditional features can be combined with contemporary materials, forms, and technologies.

The balanced approach is what has become a necessity in modern urban design-forward movement with a link to preserve the essence of the past.Today, with emerging environmental consciousness and restricted resources, the new architects increasingly resort to a re-stitching of the urban landscape: reflective, subtle insertions knitting new urbanity into historical integrity. Iranian Architecture has drawn international interest because of its progressive attitude to reusing historic buildings and infilling the urban fabric. This thesis will represent a selected selection of architectural interventions that manifest the inventive and sensitive contextual solutions most strongly applicable to cities like Shiraz.This paper discusses how traditional methods could be adapted for contemporary construction with minimal intervention impacts through case studies of Shiraz's historic city center. It tries to outline principles that could help in preserving the cultural heritage while allowing development and transformation to meet demands arising from the current use. The exploration of these adaptive design strategies will provide information to the study regarding how cities sustain their character through sustainable urban development.

The Purposes for the research

It will also define and explain the character of the modern city, which is a necessary step towards the explanation of various complex issues that today's metropolis presents. It provides the clarity needed for urban planners and designers to more clearly recognize unique challenges or opportunities confronting the urban setting in this day and age. A more complete understanding of urban identity enables more cross-comparisons between cities, as the unique characteristics of each context come to light, enabling the derivation of more specific solutions with regard to future urban growth.Historically, the dynamics of change in towns before the advent of the industrial era were rooted in cultural behavior and evolved slowly and autonomously from technological changes. Changes were subtle and did not interfere with the continuity of the spatial and architectural forms of the city. However, with the advent of the industrial age in the early 20th century, things started changing rapidly. Technological advancement acted as a catalyst for artistic creativity in urban planning, and thus the face of cities started taking a different turn. While changes were made to support an increasingly larger population and changing urban lives, the implications these had for inequitable infrastructure and resource distribution brought great change to the face of urban centers.The latter research advocates for an integrated approach to construction in historical city contexts, balancing two crucial

dimensions : software-development guidelines and strategic planning-"hardware"-the actual, functional, culturally sensitive intervention. Based on this detailed analysis, the study will elaborate a methodology of urban intervention which may contribute to the preservation of a historical site and prevent unnecessary building constructions, keeping the area alive and contemporary without allowing it to decay or become abandoned.

This study looks at both the physical and cultural aspects of city spaces paving the way for city growth that honors the past while meeting today's needs. It offers a hands-on approach to guide work in old cities like Shiraz aiming to guard and breathe new life into what makes them special while helping them grow.

Research Question

This research attempts to develop an integrated understanding of a contemporary city by relating the latter's physical form to its social dynamics, considering both the historical and natural context. The most general questions this study tries to answer are the following:

1. How are urban morphology and identity defined and expressed in Iranian cities?
2. 2. Shiraz throughout the ages: What has changed?

3. What are the dominant elements that shape the specific characteristics of Shiraz?

The reason for this is that most historic areas within cities have, over time, degraded due to aged infrastructure and a general lack of modern facilities that support contemporary urban life. Therefore, "building in built areas" has become the main strategy for adapting these historical urban contexts to modern-day demands. It highlights the urgent need to integrate modern concepts and functions into the old urban spaces while allowing them to grow without losing their historic identity. Most Iranian cities have a historical core in their center, and the main challenge is posed by how to harmonize new building with the existing historical morphology, hence the need to clearly articulate the principles of intervention.

Effectively intervening in these spaces requires deep knowledge of both the cultural and historical value of the area, and the relationship between modern architecture and its historical environs. Europe began the restoration of historical monuments in the early 19th century; however, the notion to reconstruct an entire urban space for modern use started comparatively recently. Unfortunately, research within the field of urban interventions is indeed much more focused on single buildings and not holistic in terms of citywide restoration and adaptation.

Despite the plurality of historically rich cities in Iran, there is a serious lack of systematic research with regard to urban management and coordinated restoration efforts in these areas. Although some research has considered the implementation of structural and strategic interventions in regard to the architectural and cultural integrity of the historical urban space, Shiraz is a metropolis with millennia of history. In contrast, the Zandieh cultural historical axis, similar to other uncoordinated development projects, has failed to align with the historical texture of this city, both physically and functionally. These interventions often take no consideration of the real needs of the community and damage the historical fibre of a city.

The present study shall, therefore, try to develop detailed guidelines for interventions in historic urban areas based on local and international examples. In view of the historical background and the developing needs of these areas, it attempts to outline general principles that can be used universally for " development in built-up areas ". It should aim at encouraging projects which conserve not only the cultural and historic spirit of such cities but also allow them to grow and adapt themselves to modern life.

Study Assumption

As a spatial structure, the city in this research is of most importance because it provides the most evident and accessible way to explore interaction between social life and the built environment.History and nature in an ancient city like Shiraz are basic elements of thousands of years.Shiraz represents urban areas that are characterized by distinctive layering, much of which is dictated by the culture of the city and the social mores of its citizens, as seen in its famous gardens and tombs.

Methods of Research

For the understanding and evaluation of the historical background of the city, one should take contemporary cities as the starting point. This is because cities have been an evolving entity built up over centuries. The eventual form taken up by cities reflects years of acquired experience and intuitive feeling regarding human needs and scale. The growth of traditional cities was organic, but with industrialization, the process of urbanization came to be dominated by machines displacing human skills and the transformation of public life. Though it is immensely unworkable to return to previous strategies of urban development, we certainly can draw a lot from the past and thus not forget how our cities came into being. Cities were, in fact, planned for human needs and experiences, having the relation of life and space quite interlinked. But with modernization, this organic growth process was altered much.

The second part of the project relates to my city today and focuses on two issues: morphological and social studies of urban spaces. In the analysis of urban form, it has been possible to delineate those elements that most lend themselves to the physical spatial dimensions but at the same time address the issue of ideologies about their design. This makes it possible to bridge the gap between social dynamics and the physical aspects of the spaces.

The approach above is important in situating urban form to the relationship between the intents of urban planners and architects on one hand and the eventual resultant of the creation in the city's development. How these elements were formed provides relevant inputs for future urban intervention; further, it will also help in judging and re-developing the current state of the city (Cortes, 2009). However, as Jan Gehl points out, in this form and space—while the focal point of architects and planners alike—the other important ingredient, *life*, which concerns the use and people interacting with these spaces, is often forgotten. Maybe this is because the form may be more accessible for analysis and communication, and life can become more transient and difficult to grasp (Gehl, 2013). The present study attempts to bring both these aspects together: the urban spaces and life within those spaces.

Describe Shiraz from an urbanistic point of view. The research started with a preliminary scan regarding its spatial structure and known identity, then focused on the current city, dividing the discussion into two main sections. The first section is an overall review of the urban landscape, interpreted through morphological studies. The second part involves the urban spaces of the city, and it endeavours to portray public life, within the framework of four basic questions: who, what, where, and when. Such questions relate to the demographics of users, like age and gender, type of activities happening, specific locations of interest, and time.These questions are further complemented by a survey of 100 randomly selected citizens and direct observation. This study represents a comprehensive account of Shiraz's current character and thereby offers valuable insights into future decisions on urban planning as the city seeks to be more efficient and sustainable.

- **PART THREE:** URBAN MORPHOLOGY AND IDENTITY IN IRAN

- **Introduction**

Urban morphology and identity could be expressed in many ways. There does not need to be a single perspective in approaching the city. Approaching the study of cities concerning physical structure and form may be performed by considering all the relevant definitions that would help understand urban morphology.

shape. In other words, rather than academic definitions put forth by philosophers and scientists, it is the conduct of the citizens and inhabitants that forms and builds up the city. The form and structure of individual architectural single-beads embedded within urban textures point out that the DNA of the city as a whole has formed it into an organism.The condition has been assessed in detail in chapter two of the study.

- **Cities as Interconnected Systems: Contrasting the Historic and Contemporary Urban LandscapeThe Idea of "Old City Texture" in Iran**

The city might be understood as a multilayered, interlinked system wherein social, economic, environmental, and cultural layers interact dynamically with one another and their contexts to propagate and support life in an organized and coherent way. This befits an organic or organismal understanding of cities, emanating from the idea of the city as a living organism made up of subsystems. Each of these subsystems, while divisible into smaller units, interacts integrally with the whole in a coherent, interdependent system. Such is the mode of thought underlying a systemic worldview of an urban environment, one which underlines the integrity and the essentiality of the city as an emergent from the interaction of its manifold parts.

The organismal view of the city is rooted in history, going as far back as Hegel and Spencer, who at the beginning of the 19th century popularised the notion of the city as an organism. From this originate other urban planning theories, such as New Urbanism, where organic, cooperative development is contrasted with competitive expansion. Cities are like living organisms that grow in size and complexity through dynamic, interrelated processes while maintaining their internal balance and systemic integrity. The evolution of cities shows rhythms and cycles that reflect natural biological rhythms: growth, adaptation, balance between energy taken and expended.In this systemic framework, cities are perceived not merely as an accumulation of buildings or infrastructures, but as organisms where each layer has its crucial role: social, political, economic, cultural, and environmental. Each layer dynamically interacts with others to form an ever-changing urban morphology due to historical context, social patterns, and changing needs. The values and changing interactions that take place in structures and spaces mirror the development and growth of a city.

This organic model has been influential in the development of modern urban planning movements like New Urbanism, Garden City planning, and the design of Green Belt cities in the United States and Europe. Approach towards this model has emerged from the fact that each urban unit or neighborhood is somewhat different social and spatial organism, somewhat autonomous, yet linked with the larger urban fabric. This model propels co-operation, harmony and growth together rather than competitive or market-oriented expansion. The model towns of Bedford Park and Hampstead Garden in Britain, or the American cousins of Radburn and Chatham Village, reflect such thinking: self-contained viable communities that weigh social aspirations against ecological and spatial constraints.

The systemic perspective also shapes the physical configuration and form of cities. It is the design of access networks, activity centers, pathways, green spaces, and borders that interact with each other as an integral part of a city's landscape. These elements, if they fall in order hierarchically, help shape the overall image and functionality of the city. Ancient cities, especially in countries like Iran, demonstrate this systemic approach whereby the interior and the exterior of a city became so harmoniously interrelated that it is hard to establish any clear boundary. For example, the entrances of old Iranian cities mostly dissolve into their environmental surroundings and take the form of gardens, green belts, or embankments, which blur their limits.

The organic or systemic view of the city also rhymes with what was called urban morphology-study of the physical form and structure of cities. Urban morphology is not solely based on rigid academic definitions but relies also on the way the city and its form are experienced by its inhabitants. It is the continuous influence of the citizens' behaviors and customs in general and the cultural practices in particular that mold the course of development the architecture and public spaces take in the city. The city in this respect is very much the physical manifestation of its people, wherein the overlay of different historical periods, societal values, and cultural expressions come together to form a living, dynamic organism.

Architecture, in this context, is much more than the construction of buildings. It plays the basic role of weaving together those different layers of urban life-social, cultural, historical, and economic-into a meaningful whole. The architectural form of a city reflects the continuity of its past and the aspirations of its future, acting as a medium through which urban identity is expressed. City buildings are not objects in a vacuum but exist within the urban tissue, where form and function are inextricably linked. Above all, this vision emphasizes learning about how the parts of an urban organism function in relation to each other and about the ways such interactions produce a holistic system-what may be described as alive.

Among them, historical urban textures, in particular, reveal how cities change with time. Their architectural and spatial forms provide a physical record of social, cultural, and political transformations. The definition of historical texture differs within different regions. The historical texture in Iran can be defined as those parts of the city which were developed before the modern transformations, usually pre-Qajar or pre-Pahlavi era. Iranian scholars Mohammad Mansour Falamaki and Mohammad Hasan Talebian define historical texture differently but agree on the importance of such urban fabrics that emerged before modernity reshaped urban landscapes. Areas with narrow alleys, specific orientations of buildings, and distinct spatial relationships are evocative of the social and cultural life of pre-industrial societies and often challenge modern urban developments, such as the integration of motor vehicles.

It was at the international level that definitions of what constituted historic cities and how they should be preserved were identified, through charters such as UNESCO's 1976 International Charter, in which the conservation of the historical area is viewed as a continuing human settlement, not just monuments. Focus was to be given to maintaining physical structures with the vibrant cultural life that animated these spaces. Historic urban textures are not confined to architectural heritage but also encompass social and cultural practices of its inhabitants, relationships between public spaces and private life, customs, beliefs, and rituals that define urban life.

This model views the organism of the town as something ever-evolving. The balance of its internal mechanisms needs to be flexibly in line with cultural, technological, and

environmental changes. Whereas in the case of a living city, growth is necessary to strike a balance between the emerging challenges-from preserving its historic texture to embracing modernity. Growth should be measured and reflective so as not to overstretch the city's resources and undermine its healthy and vibrant conditions. Modest growth, as preached by thinkers like Plato, acknowledges the risks of unbridled urban growth-that imbalance in energy and environmental viability. Cities must grow, but like any organism, it needs to grow in such a way as not to disturb the general health and stability of the system.Conclusion: A city is a dynamic and complex organism. It takes shape and form from the interaction of its social, cultural, economic, and environmental layers. It grows and changes with time; each of these layers adds to the form and identity of the city. Traditional urban textures show how cities were developed with influences of the past cultures and practice; while on the other hand, recent planning theories such as New Urbanism are focused on sustaining growth principles with cooperation. At the core, the city is a living system that reflects the values, interactions, and aspirations of its inhabitants. The system-wide and organizational understanding of the city permits an appreciation of how, as a matter of fact, urban spaces function, develop, and reproduce life over time.

Spatial Dynamics of Traditional Iranian Urban Textures: District Formation, Walkable Transit Networks, and Organic Architectural Geometry

In modern architecture and planning, the term texture has increasingly served to describe city texture, which is a concept finding considerable resonance both among experts and the general public. The term texture, borrowed from biological terminology, eloquently expresses the living, evolving, and dynamic nature of the urban environment. It refers to the physical configuration of the built and open spaces, their dimensions, and distances between them. It also signifies the ramified street and path network, location of the various activities in space, and succession of different growths and developments experienced by cities during a period.The urban texture is not static; it is a dynamic developing system under the influence of differential factors such as population, economic and social order, technology, and nature. It is seen that the continuous process of transformation of cities makes it necessary to reconsider their structures and spaces continuously, trying to meet the everchanging demands of urban life. During this context, according to the Supreme Council for Urbanism and Architecture of Iran, "context" might be defined as an integrated area created gradually, having different morphologies, being continuous, and uniform under the urban fabric. This concept knits together buildings, streets, public spaces, and infrastructure into an integral, interrelated entity. The physical and spatial growth of urban areas could be conceptualized as separate layers of this texture that provide insight into the historical and functional evolution of city growth..

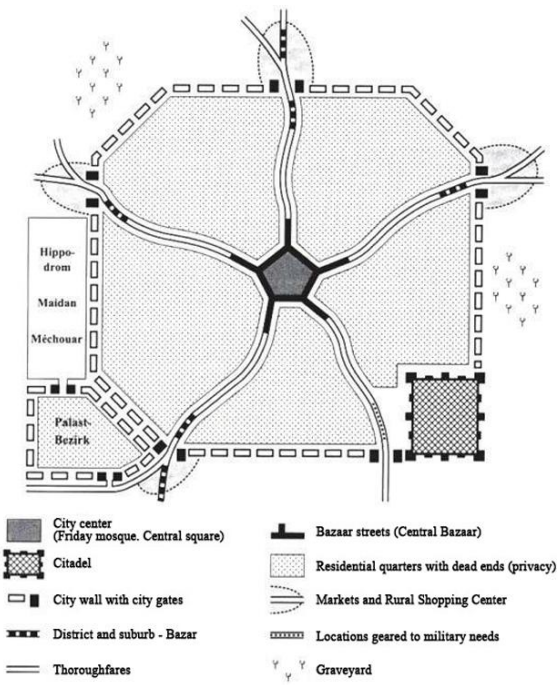


Fig.29.A common layout of an Iranian trading city during the Islamic era

Traditional urban textures of Iranian cities consist of districts, each representing one of the fundamental units of a city that are quite homogeneous. These have built up very little interconnectedness throughout history on the basis of ethnicity, religion, profession, or territory. Maintaining their identity and authenticity through time, these act almost as "cells" of the city where their specific tribes, religions, or professions had great internal bonding along with social cohesion.Such structuring of urban quarters in cities of Iran often resulted from common social, cultural, and economic features. Larger cities, with more complex populations.

usually divided quarters into religious or ethnic lines and thus built a neighborhood that would reflect the complexity of their communities. Smaller towns would base their divisions on occupational distinctions, a base of determination of the character and identity of their urban quarters. These were designed such that centers of social and economic activity were at comfortable walking distances from one another. This is reflected in the physical structure of the city, determined by pedestrian movement within the city. Such principles in design create an atmosphere where the forces of community interaction are easily harnessed, allowing for residents to be integrated into society.

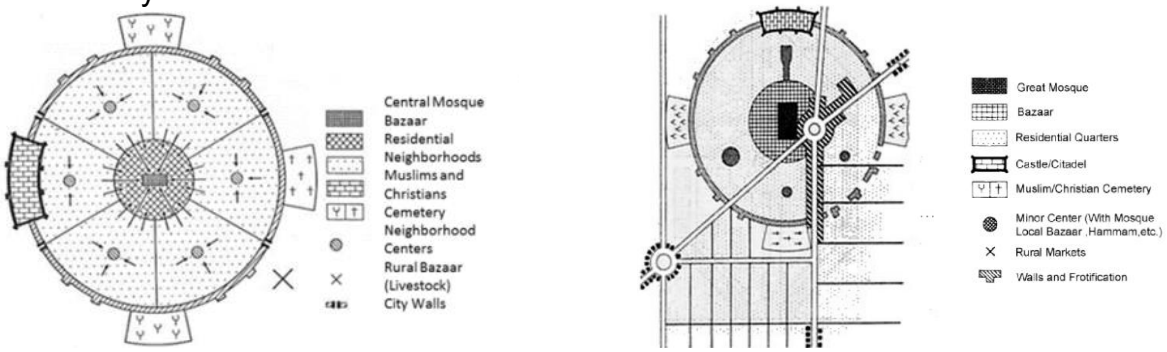


Fig.30. Common features of the structure of Islamic urban centers are closely related to architectural and spatial patterns found in Iranian cities. Reference: Eckart Ehlers, Willem Floor, "Transformations in Iran, 1920-1941."

Traditional Iranian cities were made up of narrow, winding alleyways, serving purposes related to both social and defensive ends. These spaces were not meant for the movement of vehicles; instead, they developed a sense of community interaction and binding between neighbours-a reflection of the times when modes of modern transportation were not required. The organic forms of these cities developed from community habits and cultural attitudes and not from pressures of rapid growth or demands from outside. Historical cities developed according to the material and spiritual needs of the community and evolved over periods of time to grow with society.

Such cities have geometries dominated by fluid organic forms, eschewing repetitive shapes to create a well-endowed urban experience. This diversity is glued together with a communal spirit representative of prevailing architectural tendencies and cultural influences in the metropolitan building process. The development of such cities is collectively carried out, with the people often enjoying an active role in shaping their own built environment. It was a participatory approach wherein organically formed geometries resonated with the community's identity and values, thus allowing growth of cities in tune with the people inhabiting them.

To put it in a nutshell, city texture is a very important framework by which one learns about and understands the multi-dimensional nature of a given urban environment. One can appreciate the richness of urban life if one examines the interplay between complex physical configurations, social dynamics , and cultural influences. The traditional urban textures of Iranian cities bear evidence to the fact that historical

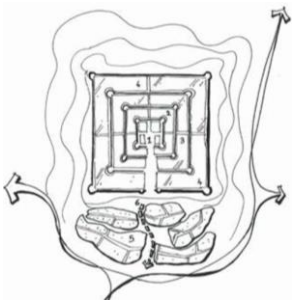


Fig.31. The structure of a typical city(678 BC–549 BC). 1: palace, 2: treasury and storehouses, 3. Residence of royal family, 4. Barracks, 5:Residential areas, 6: Bazaar. Drawn by author after (Habibi 1996)

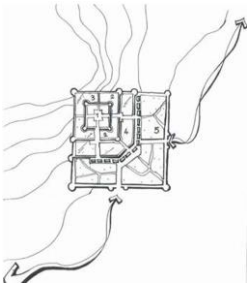


Fig.32. The schematic structure of Achaemenid city (550 BC–330 BC). 1: palace, 2: Barracks, 3.treasury and storehouses, 4. Residence of royal family, 5:Residential areas, 6: Bazaar. Drawn by author after (Habibi 1996)

Fig.33. The schematic structure of a Parthian city (247 BC–224 AD). 1: palace, 2: Barracks and treasury
3. Royalty residence 4. Residential districts 5. Bazaar. Drawn by author after (Habibi 1996)

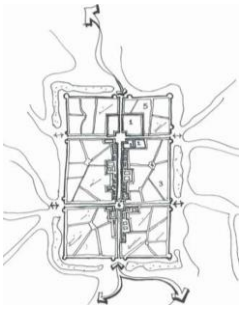


Fig.34. The schematic structure of an Islamic city. 1: Palace 2. Court, 3. Residential areas 4. Neighbourhood centres 5. The royal family's residence, 6: The main market area located in front of the Jame Mosque. Illustrated by the author based on (Habibi 1996)

context and participation of communities in development necessarily determine the growth of a city's space. Comprehension of the importance of texture will contribute to more inclusive and sustainable environments-developing toward one reflecting the diverse needs of their inhabitants-in the further developments found within the cities. It is a holistic understanding of the urban life that fosters in the mind the idea of deeper appreciation of the complexity brought about by urban life and How community plays a critical part in developing the cities of tomorrow.

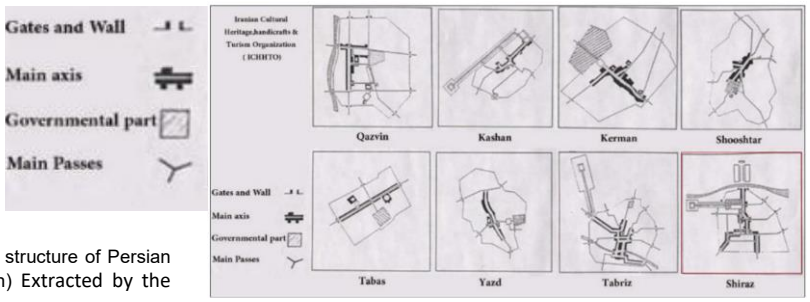


Fig.35.The development of the fundamental structure of Persian cities (Iranian Cultural Heritage Organization) Extracted by the author.

Balancing Scales, Proportions, and Visual Unity: Axes Activation and Structuring of Public Spaces by Social Interactions

The micro-scale urban environment, which is mainly dominated by low-rise buildings, constitutes the old texture of Iranian cities, emphasizing central courtyards. In fact, such courtyards dominate the built structure while acting like "negative" or hollow space that outlines them, forming an interplay of building shells rather than presenting a volume of solid building construction. This architecture creates a special spatial experience; the inner courtyard becomes an important shared space for its residents, fostering interaction and community spirit.The employment of local material-mud-brick and cob-further helped create a coherent aesthetic in the urban landscape, especially in central and southern Iran. The common colors and textures of the buildings gave the structure a consistent architectural language that unified the cultural character of these towns. For example, historical records indicate that there existed a set of mutual concepts on the construction of public and private buildings. The communal agreements controlled specific concepts such as the situation of main doors, internal routes, and service roads besides the division of light and water. It extended further to encompass building heights regulations, which made sure that no building cast its shadow over the neighboring one, hence giving rise to a sense of equality and balance in the urban fabric.

The urban structure of the old Iranian cities was organized around one or a few central nuclei along a linear axis which usually took the form of a bazaar serving as the main circulation route linking the various parts of the city. As a result, over time, these cores developed in a slow growth process, adding new building layers atop the older ones without removing those older layers. This layering process produced a rich tapestry of architectural history, where successive cores remained partly preserved along with new developments, allowing for a bridge between past and present.

Key points along this linear axis featured central squares that hosted the essential building stock of government, religious, and commercial buildings that were to become primary focal points within the urban environment. These squares thus offered vibrant public open areas whereby the public can come together and relate to each other. However, other than these main centers, there existed another hierarchy of centers on a neighborhood scale, addressing other needs and smaller scales, which functioned as a neighborhood center for the community. These are those very secondary centers that allow the concept of spatial diversity within the urban fabric to have all manner of needs addressed within the compass of a neighborhood.This was done by making sure that the district centers and the central axis were connected using routes in a straight line extending to city gates , a factor that enhances cohesion within the city, and the access to moving around it. This brought about interweaving, making for a coherent, integral urban structure where movement and interaction by all inhabitants within it are made easy. What makes a city a city is that the basic unit of urban space is dynamic because of the never-ending cultural, economic, and political activities in the community shaping its destiny. The urban space is never static; it reflects fluxes occurring in society through constant responses to the many forces that come into play because of migration, changes in economic fortunes, and social evolution.

Essentially, the town acts as a home for human beings, where people can experience the mobility and social interaction that are so essential to growth and continuation of life. All these processes, moving along complicated paths through social, cultural, economic, and spatial dimensions, interact with one another and with all aspects of city life. Their positioning of these diverse urban locations in correct relationship to one another had the intention of satisfying the socio-spatial needs of the resident population within the context of cultural and environmental circumstances of the region. The strong connection of human activities with urban design underlines the role of responsive community-oriented planning in Iranian city development. Architectural coherence, social interaction, and collective decision-making practices are historical features that continue to find their place in contemporary discussions over urban planning, which emphasizes the need for integrating traditional wisdom with modern challenges. Ultimately, the texture of such cities represents a complex combination of historical layers, cultural values, and growing needs for its inhabitants-a rich urban landscape that reflects in itself the very essence of Iranian heritage.

- **Physical Characteristics, Functional Components, and Contemporary Changes in the Spatial Structure of Historic Islamic-Iranian Cities**

Overview: Evolution of the Islamic-Iranian Urban Spaces

In Islamic-Iranian urbanism, historical context, socio-cultural needs, and architectural evolution together create a triangle that is influential towards changing urban texture.

The core in every structure of the city is essentially a constituent element called urban space, which keeps getting altered with regards to the paradigm of living. It is this fluidity that animates the city, while cultural, economic, and political activities conspire toward determining its fate. The nature of urban space is inherently one of dynamism since there is brought about a continuous process of change in society and the varied forces operating upon it. Not merely a physical habitat, it forms the arena for social interaction and expansion which conveys the complexities of life along social, cultural, economic, and spatial dimensions.

Traditionally, urban areas were defined from one another through relations and interactions among community members, in light of functional demands of everyday life. Therefore, they were designed with regard to socio-spatial needs but by considering the cultural and environmental contextualism of the area. The physical form of the ancient Iranian cities was a result of centuries of interaction among socio-cultural and economic factors. Emerging as a result, the environment turned out to be harmonious and thus very well served for human needs. More correctly, the city developed due to continuous , constructive interaction between people and their surroundings, wherein each generation built upon the successes of the previous one and improved the urban landscape further.

This process of urban transformation was typified by continuous change and dynamism. Indeed, pre-Industrial Revolution cities flourished in forms of physical-spatial articulation of positive socio-cultural and economic dynamics. The rapid transformation precipitated by the industrialization processes resulted in a disruption of this harmony, developing crises in the relationship between the urban spaces and the activities of human life. Indeed, the physical-spatial and socio-cultural articulation that hitherto characterized such cities began to break down, giving way to new urban pathologies.

During the post-Islamic period, Iranian cities remained with their essential composition-Kohandazh (citadel), Sharestan (central urban area), and Rabaz (suburb)-while modernizing. Suburbs, first populated during the Sassanian period by immigrants and villagers, gradually developed to become important constituents of urban life.

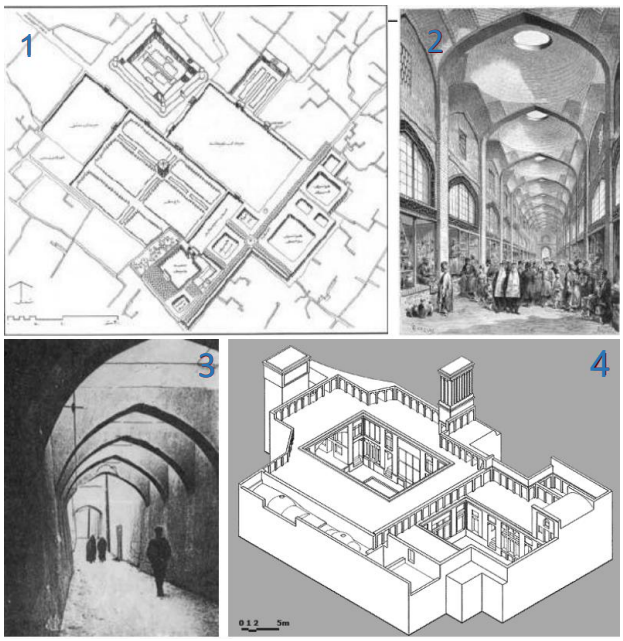


Fig.36. 1.City centre with all public facilities and governmental buildings (Nasr, 1998). 2. Axis of the marketplace or bazaar (Jane Dieulafoy, 1881). 3. Narrow alleys (Pirnia, 2013). 4. A sample of Iranian house (Razaghi, 2011).

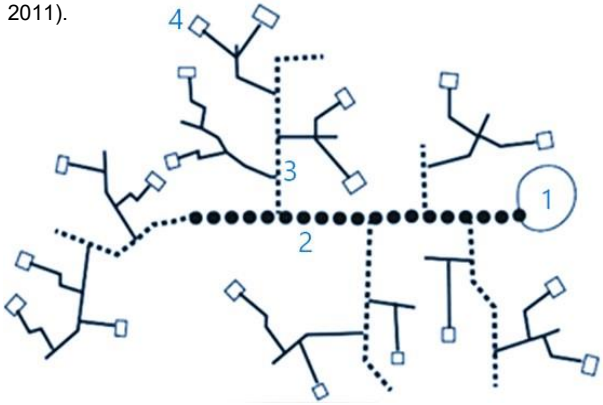


Fig.37. Urban hierarchy in Persian cities. It begins in the main public area and transitions into the houses, creating a completely private realm. The bazaar plays the most powerful role in collecting and connecting).

The bazaars initially developed around city gates became extensive economic routes and turned into economic focal points of the city. Each quarter of this bazaar specialized in the selling of certain goods, supported by inns and warehouses that began to supply the emerging urban needs. The mosques-most importantly, the Grand Mosque-were placed right next to the bazaar and the citadel, making them a focal point of the community's life.

The roads that branched from these bazaars became the structural arteries between this cities structural backbones, chock full of grain silos, coffee shops, bathhouses, schools and water pools and other critical urban infrastructure. Every day, living the structured cycle simplified life and pushed me towards social being in daily living. Mosque defined the social and spiritual heart of urban life along with fortress as well that made important parts which separate the Islamic city from the countryside, beside market.

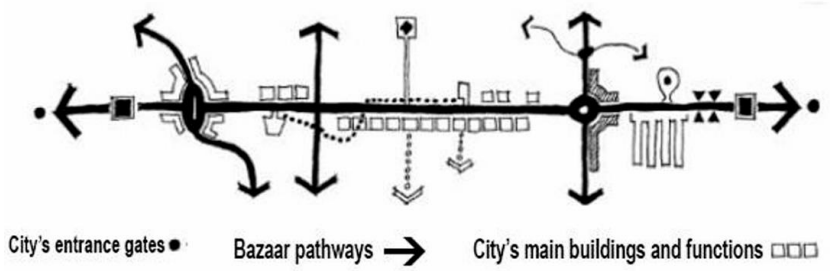


Fig.38. A schematic representation of the Bazaar situation in Persian cities. .(M. Habibi. From City to City : An exploration of the historical development of the city and its architectural characteristics. Tehran. University of Tehran Press. 2001)

The alleys that took off from the bazaars were essentially the structural bones of these cities, carrying along vital urban installations such as water storage, coffeehouses, baths, schools, and grain storage. This patterned structure eased living and enforced social bonding within daily life. The mosque, along with the bazaar and citadel, offered the prime components that distinguished the Islamic city from the countryside, expressing the spiritual and social heart of urban life.

- Bazaar (Market) : It was an economic and social source flowing around the mosque and educational facilities. The bazaar represented commerce but also meant a space for social interaction-a characteristic of the urban life style.

Fig.39.Vakil Bazaar: The Timeless Heart of Shiraz's Commerce and Culture

Residential Areas and Districts: These are cohesive residential areas, spatially speaking, with a great amount of networks of passageways and alleys to house community identity. Every district has something special that adds to the overall urban texture.

Street Network , External Wall, and External View: Organic growth in street network favored pedestrian access, communication, and interaction. The city was mainly enclosed by walls with clear gates showing various quarters and enhancing a huge sense of community identity.

Identification: The identity of the Islamic city is inextricably linked with its historical context and thus unifying forces that give cohesion to its residents, while the mosque, bazaar, and separated quarters echo a way of life manifested in the physical expression of the city itself.

The formation of Islamic-Iranian urban space endows the forces of history, culture, and socio-economic dynamics with rich interaction. It includes within itself the core elements: citadel, grand mosque, bazaar, residential quarters, and streets that all harmoniously fit together to make up a uniform urban fabric, and as such, express the sense of identity and values held by the community. While these cities have moved and continue to move through the processes of growth and modernization, they have remained attached to their historical beginnings, allowing the essence of Islamic urbanism to persist into today's world.

Fig.40. Narrow alleys

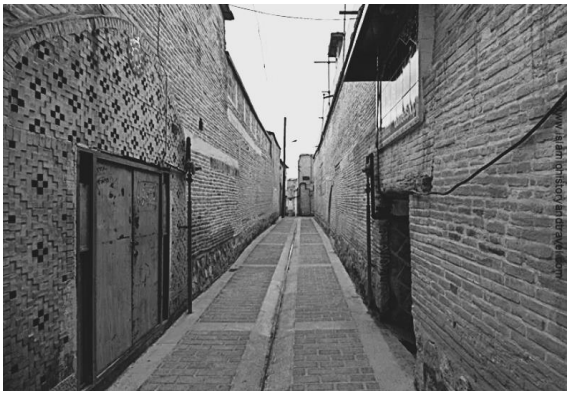


Fig.41. Narrow alleys

- **Current Urban Dynamics**

Adapting Public Spaces to the Challenges of Urban Vehicle Growth

Many modern urban critics believe that the potential of city spaces to develop qualities of social interaction has been lost through a type of forced co-presence, which does not lead to any positive social relations between residents. The traditional public squares where decisions and debates about community issues used to be decided upon seem to have disappeared. The trend toward digital communication networks has generated results similar to the displacement of community interaction with a sense of individual isolation. These improvements in communication and transportation have allowed people to move away from natural settings and change the way they perceive urban areas. "One perceives the urban areas through their means of transport rather than by direct human experience," which has lessened day-to-day personal exchanges and increased solitude, justified through automation and a modern style of communication. More precisely, this has to do with the increase in vehicle reliance whereby urban settings have been retooled into what they currently are.

Cities have had to adapt to the demands of car travel through parking facilities, highway construction, and car-reserved corridors. This transit-oriented design has repositioned the function of open spaces from dynamic cultural spaces into car-dominated areas. As a result, much of the social importance has disappeared from the streets; the management of the flow of vehicles is under consideration, and not the guarantee of experiences for pedestrians. Due to this fact, the public life has lost all its vividness and is illustrative of the given priority to vehicles in front of social functions of city areas.

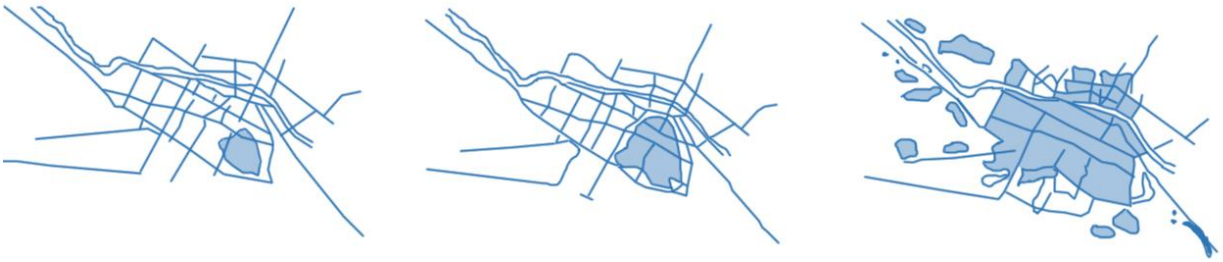


Fig.42. The evolution of Shiraz from a traditional urban layout to a modern city.

- **Policies for Urban Renewal: Balancing Open and Closed Spaces in Iranian Cities**

Many, if not most, urban renewal initiatives fail to embrace social dynamics and simultaneously interlinked spatial developments. Hence, they have very often uprooted historically precious urban precincts-destroying those social interactions that once fostered a resilient community spirit. Since these projects often stress long-term zoning regulations, rigidly separating residential from commercial areas, they have destroyed the integrated fabric of city life. The focus upon functional order has cost cities their intended spaces of social interaction-reducing a city to divided and separate zones, devoid of the diversity and vibrancy essential to urban living.

Moreover, while all of this pushes the communal space underneath, the rise of private development has further deterred the case of public space in contemporary urban planning. Unlike in the earlier times, wherein public space was joined with private development, contemporary planning does not have concurrent coordination between public and private realms. This discord has resulted in the fragmented urban landscapes with minimal regard for public space maintenance and concern. This deterioration has been an affliction on both the aesthetics and the structural integrity of cities. Fixing it will involve a balanced incorporation of interests from both public and private parties to tackle the ever-growing urban crisis.

In contrast, traditional Iranian architecture emphasizes a harmonious integration of open and closed spaces, creating environments that are both visually appealing and accessible. In this architectural tradition, open areas like courtyards are not treated as leftover spaces between buildings—common in modern Western designs—but as integral parts of the overall design. This thoughtful integration of spaces ensures balance and tranquility , blending interior and exterior

Fig.43.the difference between new and old texture of Shiraz city (Google earth), extracted by the author.

Because of colossal changes going on in these big areas, semi-open and semi-closed spaces connect them, which reflect an underlying design philosophy that bridges larger urban squares and smaller residential courtyards. In fact, the fine-tuned method of transition between open and closed environments is one of the distinguishing characters of Iranian architecture, characterizing not only individual buildings but the larger urban environment.

The modernist penchant is for expansive open space.

Influenced by the modernist ideals, contemporary architects and urban planners moved away from traditional principles and human-oriented design. High-rise buildings usually stood in large, undefined spaces, placed with or without order, without focusing too much attention on what happens between them. The streets, which were spaces of social interaction and leisure, also lost their functions and public spaces started to be used less. Where modernist architecture has placed a focus on pure forms, and elements such as light, air, and open park-like settings, it has produced buildings that are in a way isolated from each other, with neither social interaction nor community incorporation.These modern structures, with form prioritized over function, do not successfully fit into their surroundings within an urban environment. A public space could be created but then is set on its own, without much relevance or involvement to the life of the city. Christian Norberg-Schulz blames this trend for the failure of urban spaces, saying that this is the direct result of a lack of concern about the necessity for protection and enclosure. No longer could the housing units be spatially compact and cohesive but were individualistic free-standing structures to be set in open, park-like settings. The streets and squares are composed of dispersed buildings that, according to theorist Cité, are reproduced everywhere as if mass-produced under this label of "modern" design.

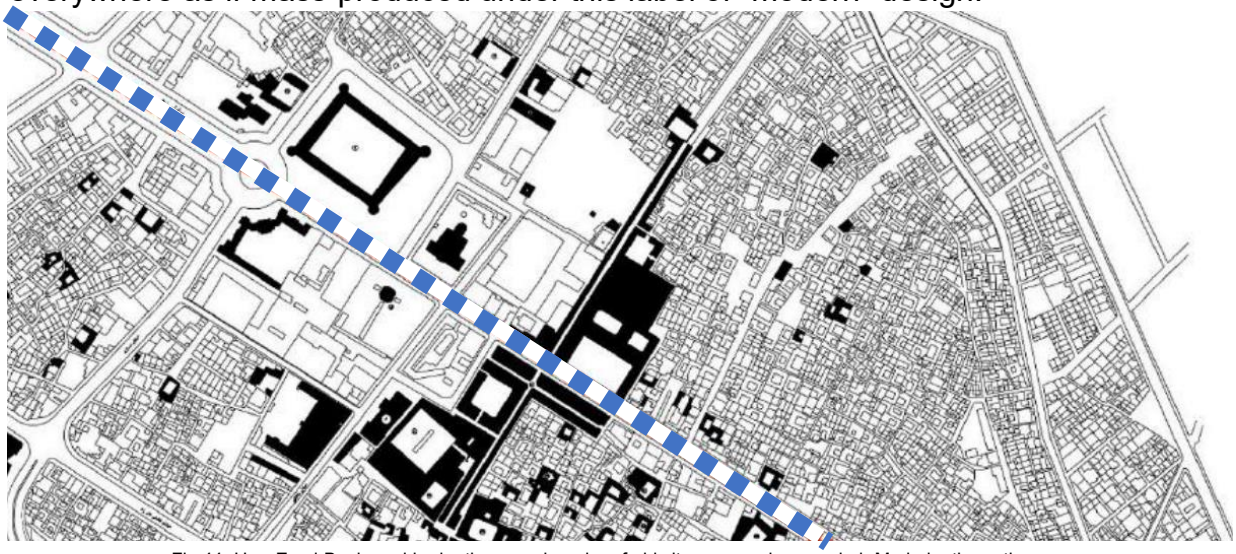


Fig.44. How Zand Boulevard broke the organic order of old city as a modern symbol. Made by the author.

Urban Patterns and Architectural Identity in Iran

Symmetry is an essential design characteristic, with closeness to balance, centrality, and order. The viewer can understand a space more fluently when it has a certain amount of symmetry; yet if it seems to be used without reasons, it will look dull. According to the Iranian architectural understanding, symmetry can be classified as bi-linear (if elements are arranged along a line-axial) and radial symmetry (if elements are arranged around a certain center).

Axes serve as the primary organizing tools in architecture, guiding movement and enhancing symmetry . In Iranian architecture, the use of axes has evolved from

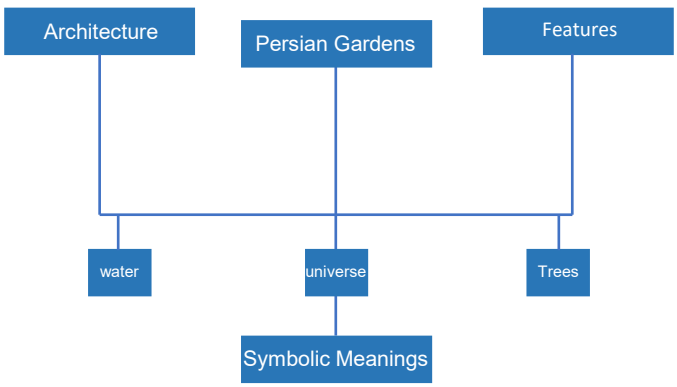
horizontal to vertical, creating fluid and dynamic spaces.**Entrances** act as transitions between indoor and outdoor spaces, often arranged with intermediate areas in a hierarchical manner. In Iranian architecture, entrances also introduce the spatial organization of a building, with elements designed to invite, guide, and distribute movement.

Organization of space and Proximity of Volumes

The space organization in architecture involves interior, portico, and corridors that provide the circulation from one space to another, especially from outdoors to indoors. These features put together sometimes make a building look better, even when buildings are modest. The knowledge of architectural composition demands the recognition of similarities and differences among spaces for progression towards a well-defined organization.

It could further be elaborated that cities were gatherings of architectural units spatially organized in numerous forms, which may be in circular, polygonal, or square forms. In the system of central spatial organization, the focus is towards the inside and it most often creates courtyards. Simple geometric forms, which might be in the shape of a circle or spiral, have facilities for movement and view. Iranian architecture has adopted a principle where simple volumes are combined to create more complex forms and balances function with aesthetics. Badly designed volumes disrupt the surrounding environment.When spaces are integrated, the elements maintain their independence and harmony.

An open space can pervade the closed area for transparency, just like a closed space can enclose an open area, such as the courtyards. The cities are hierarchical systems in which the identity is determined by the architectural elements. The traditional city planning with its organic structures and continuity has been interrupted by the modern road building, which compromised the integrity of the city both visually and socially. The prevailing patterns are linear and central spatial organizations, with an emphasis on motion, continuity, and orientation towards the exterior.



Persian Garden (History and Philosophy)

It is necessary to learn more about Iran's climate and culture in order to comprehend the Persian garden. The majority of Iran's geography is made up of deserts and dry regions with little rainfall each year. Water thus becomes the most valuable component in this .The most desirable dream is one of area and green places. Iranian culture views humans as an intrinsic component of nature and does not distinguish them from other aspects of the natural world. In fact, humans are known with other elements of the natural world. The ancient Iranians worshipped a goddess called "Oraza" who was angry at those who harmed the environment and plant life.

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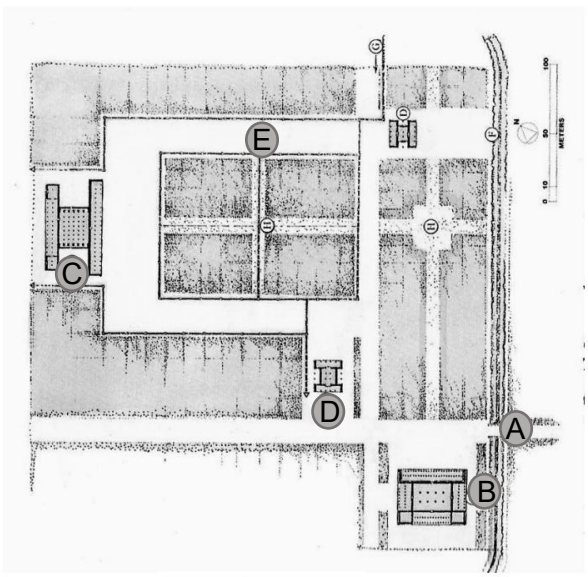
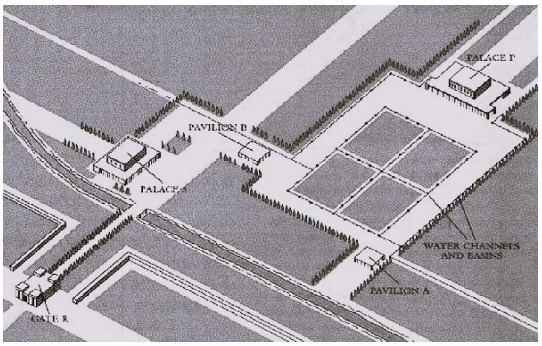
Iranian architecture and art firmly embrace the natural world. Man and nature are perfectly attuned to one another in the Garden. A garden is a peaceful area to reflect or have philosophical conversations. It is customary to find a Persian garden with a calm, comfortable ambiance and a natural look. The garden area is a mysterious place for poetic thought. Iranian culture and nature are intertwined. One key indicator of this assertion is the celebration of the New Year (Norooz) at the start of spring, which is the evangel of nature's rebirth. Every Persian garden was built in ancient, high ancient times to provide a contrast to the hard and arid climate of the Iranian Plateau. Gardens in dry, warm climates are symbolic of delicateness and freshness. These serve as illustrations of earthly paradises. The construction of Persian gardens as rebirth mirrors of Paradise for the terrestrial life was an attempt at philosophical construction.





A. Main Entrance
B. Visiting Palace
C. Palace of Residence
D. Pavilion
E. Canals

Fig.45. Pasargadae: The Birthplace of the Persian Garden Tradition

The Garden of Cyrus at Pasargadae is the first Persian garden and is referred to be the Archetype of the Persian Garden. The observations of Greek General Lisandre are linked to the earliest documented record that describes the geometric structure of this garden. However, some researchers have a different perspective. For example, Tom Turner believes that it is unknown where Persian gardens originated (Turner, 2005: 86), or Donald Wilber has claimed that the Sassanid era (2–6A. D) is when the archetypal Persian garden was built.

He has just mentioned the ancient terracotta bowl without giving any evidence that proves it. In fact, with historical accounts such as of Xenophon along with an archaeological excavation by David Stronach at Pasargadae Garden, the garden is one of the best-documented Persian gardens and is considered as the model for gardens to come. According to Elizabeth Moynihan, Cyrus's construction at Pasargadae is said to have been a relatively simple design serving as the model for all Persian garden designs created to that point Moynihan, 1980: 15. Moreover, David Stronach thought that all Persian gardens were a continuation of the Pasargadae Garden, which he regarded as the prototype of Persian gardens. The original Pasargadae Garden was projected in the sixth century BC as one of the very important Achaemenid inventions in monumental garden design. Examples include the Khosrow palaces of the Sassanid period, the Balkavara palace in Syria, the Timurid gardens in Herat, and Safavid gardens in Isfahan (Stronach, 1994: 59).

What was unique about Pasargadae Garden was the interaction between the architectural form and landscape as structures became part of the landscape. gardens which contain pavilions (Mozaffari, 2014:5). Besides, unique features of Pasargadae Garden continued in the later Persian gardens, particularly in all post-Islamic gardens in Iran and India, such the symmetrical pavilions and stone waterways (Stronach, 1994: 62-3).

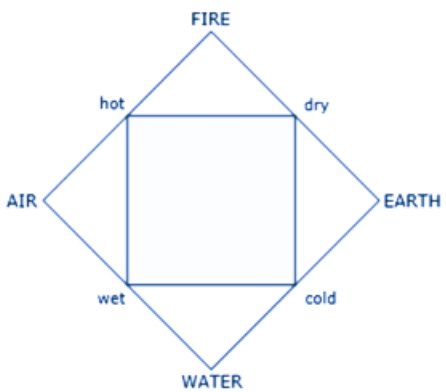
Persian Gardens and Their Symbolism: The green color, in the Iranian culture, means joy, life, newness, and a paradise. The cypress, which is a holy tree before and after Islam, means sophistication and newness, while the pine means strength. After the advent of Islam, the sycamore and palmtrees became quite popular. The fifth holy number of Iranians is symbolized by the sycamore's leaf. Another holy element that contributes to the spiritual ambiance of a Persian garden is water, since its movement, music, and reflection present each other. In fact, the materialization of garden offerings is present throughout all the other arts. Paintings on ancient chinaware show the great love of Iranians for gardens and nature. Persians created gardens on rugs to bring the outdoor world inside, or, in cases of small spaces, to create more romance. The garden in pre-Islamic architecture becomes the representative index-that is, the hill, for example, within the garden-Persepolis represents the intellectual zenith in garden design prior to the Islamic period. It is the rocky garden with the holy trees carved on it. The shapes of the plants were even used in the tiles of mosques after Islam.

Persian gardens primary components :

land, water, plants, and space.

Persian garden sub-elements:

Decorative components- Pools - Walls - Edges



LAND One of the key components of a Persian garden is land. The Persian Garden can be effectively designed using a variety of site attributes, including as shape, general location, soil properties, slope and level variations, fertility, and irrigation capacity. It is possible to construct the Persian garden on soil that slopes gently or steeply. Typically, a garden with a steep slope is constructed on multiple levels. A waterfall is conceivable in this situation. Similar to this, one of the primary justifications for creating gardens on steep terrain is to permit the water to flow naturally through the space, as figure 2.11 illustrates.

Water: The Persian Garden incorporates water in three ways: conceptually, practically, and aesthetically. When looking for information on water in a Persian garden, one should take into account a number of factors, such as the type of water present, the movement and Water flow quality, sources of water, and irrigation in the garden. Waterways and springs were typically the primary sources of water supply. Water from subterranean aqueducts flows in orderly, narrow streams that connect to secondary creeks and streams after passing through the main creek. The size of the garden is typically determined by the quantity of water and the ways in which it is shared and managed. Water is made to pour down several steps with the sound of rushing water in many Persian gardens.

Fig.46. Eram Garden, 1908. Photo by E.B. Bradley


Fig.47. Eram Garden, 2013 (makanbin.com)

In other contexts, a kareez has been regarded as a canal, an irrigation system that finds application in hot, dry, and semi-arid regions and serves as a reliable water source for human settlements. These aqueducts helped bring life to the dry region by converting uninhabited territory into an oasis in the desert. They brought water from the mountains, thus allowing life to survive in these deserted areas.

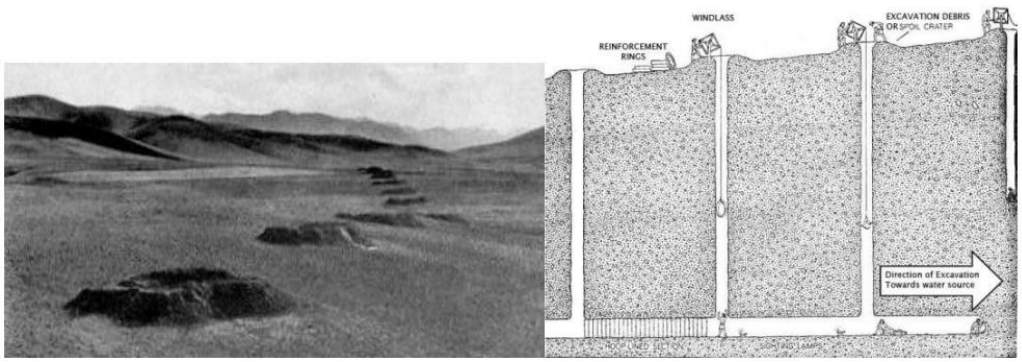


Fig.48. When an uphill water source has been discovered, a qanat's excavation begins at the low end. In support of tunneling in loose soil tile hoops are pushed around the excavation, that is normally unlined except at the inlet where it gets structural support. 50 yards apart ventilation shafts remove debris and assure fresh air, oil lamps light lines augering and warn of bad air; Surface miners claim headwell is dry before breakthrough (Image: CAIS)

Plant:both beauty and protecting the garden from natural disasters. Persian gardens are known for their productivity , which is why fruit trees make up the majority of thegardens. Less important are shady trees, attractive plants occupying smaller places. The placing of every tree and plant follows a certain logic. Cypress, Cedar trees, and plants are planted by both sides of streams on both the main roads.

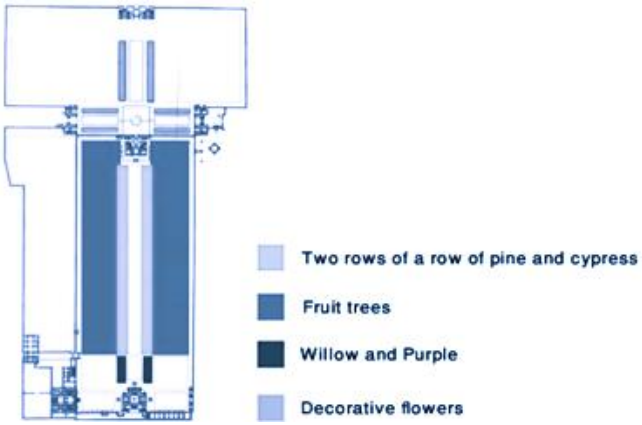


Fig.49.Plan of Iranian garden

Along the pool are maple, willow, and Judas trees. In the garden plot along the street, the planting of young fruit trees is done. The vine tree is planted in the corner plot, while the jujube tree is at the side of the wall of the garden. In the middle of the plots of the garden covering the view of the building landscape, instead of tall plants or trees, are alfalfa and grass planted. Flowers are of great importance in a Persian garden. Aromatic flowers are planted in front of the building, around trees, and at times in lieu of the building pool.Spaces and Walls: Through various aspects of landscape design pertaining to soil, water, plants and buildings, the arrangements of structures and inner areas in gardens and landscaping generate a distinct architectural space. The Persian garden, however, does not separate the indoor structures from the outdoors; instead, it integrates them within the outdoor landscapes. In numerous instances (1), the flow of water traverses directly through the heart of the structures, creating a seamless connection. Although this design approach is effective, it also poses challenges for maintenance and functionality.

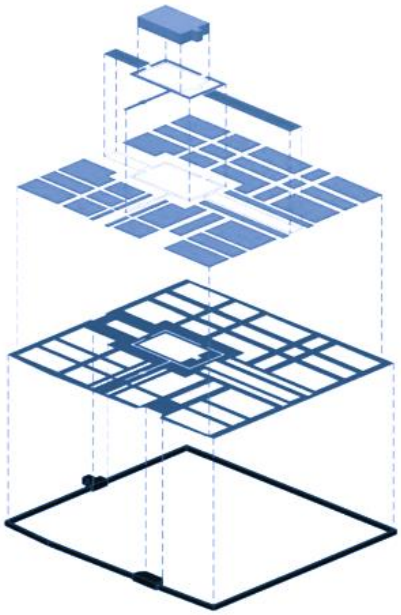


Fig.50. Diagram pattern of Iranian garden

Garden Pavilion (small palace)

There are various sites for garden pavilions in Persian gardens. In other words, it will be exactly in the middle of the garden either from four or from that side along with the main line of the garden. Basic inspirations in Persian garden layout:

Hierarchy - Symmetry - Centrality - Rhythm - Independence of the spaces - Diversity in unity, unity in diversity

Other general features of Persian Gardens are:

- Sloped ground - Straight line application

It is walled and divided into four quarters. The immediate central part or knoll of the garden is occupied by a building;

- Water running through the garden shall murmur an agreeable soft sound; - Large tanks serve as mirrors.

- Using many types of ornamental plants and medical ones - Having umbrage trees

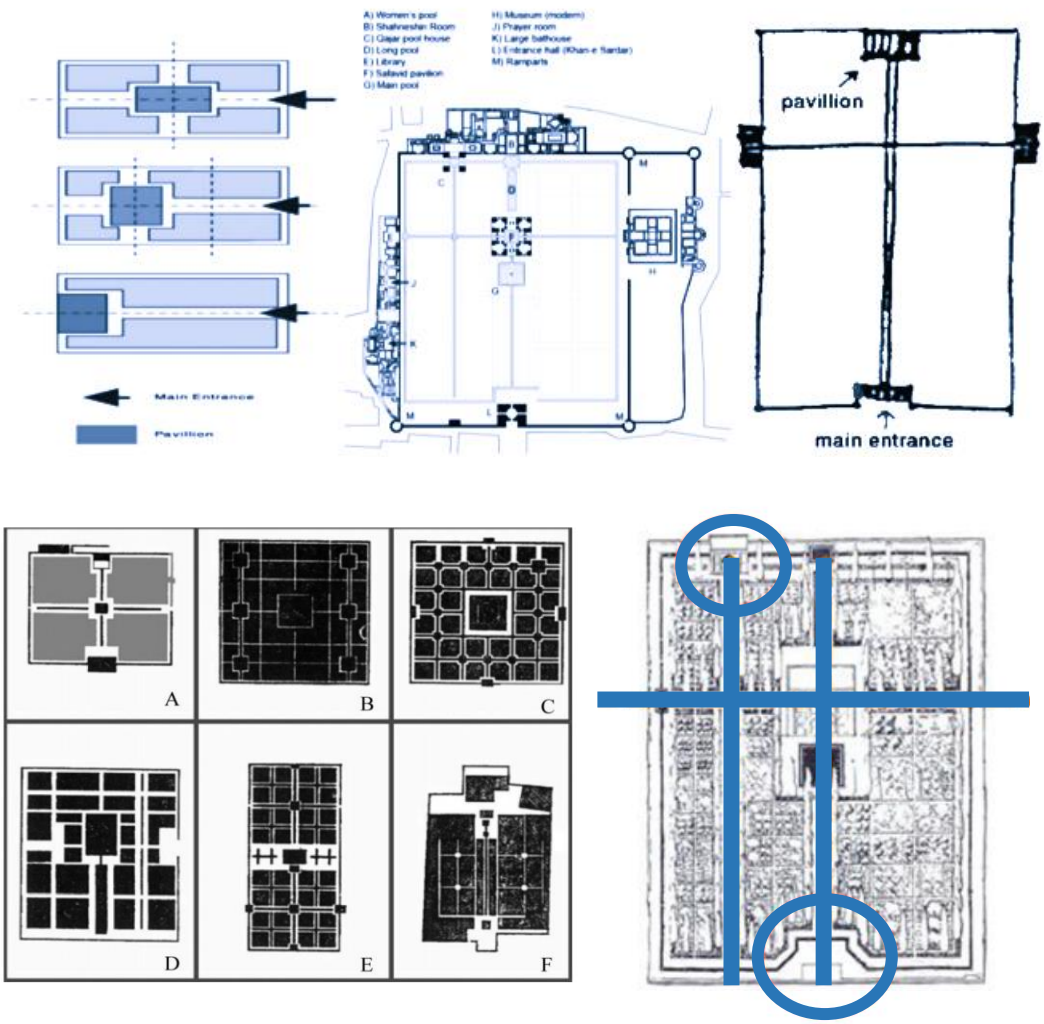


Fig.51.Different geometry pattern of Iranian garden

- **Iran's urbanization process during the ancient era and its empires**

The history of Iran, as Persia was then known, is conventionally divisible into an ancient period which began around the 19th century BC and concluded about AD with the 7th century, there being considerable growth of cities as such and their gradual conversion into separate units. It is thus possible to subdivide this age further into five historical periods by basing divisions upon the five successive regimes. The Median Empire, which flourished between the 9th and 7th centuries BC, may be regarded as the start of Iranian civilization. Further, the Achaemenid Empire ruled the region from the 7th to the 4th century BC, and the Seleucid replaced the Achaemenid in the 3rd century BC. As Iran continued to develop, the area was held by the Parthians from the 3rd century BC into the 3rd century AD. By the time the Muslims invaded in the 7th century AD, the cities of Iran had already been affected by the Sassanian Empire.

Under the rule of the Sassanian Empire, the pattern for ancient Iranian cities, since the age of the Achaemenid Empire, became more systematized in general and consisted of two major parts: the state citadel and the "Shar" or main city. As such, the citadel, later termed "Kohndzh" or "Qahandeh" during the time of Islamic rule, represented a fortified area housing political and military functions of the whole urban ecosystem: the residential quarters of the ruler, military barracks, treasuries, temples, among other key buildings. The citadel stood on high grounds in the middle of a city and attained its purpose as a strong defence against internal and external aggressions.The general population lived in the "Shar," or main city, which was an area that formed the foundation for urban zoning. During the Islamic period, this area came to be known as "Shaarestan" and contained houses, temples, bazaars, and other defensive installations. In some cases, the "Shar" was further divided into the inner and outer parts, corresponding to social stratification and class differences within the city.

Another characteristic of the urban growth during this time was a well-defined functional separation. The cities were divided into separate zones: administrative, military, trading, religious, agricultural, and residential. And the citadels, bazaars, temples, houses, farms, and workshops were all placed deliberately in different parts of the city to avoid any type of conflict among them. This functional segregation was governed by performance needs and is one of the earliest principles of urban planning. The idea of keeping uses that are incompatible from being next to one another remains one of the most rudimentary ideas even in present-day urban development.

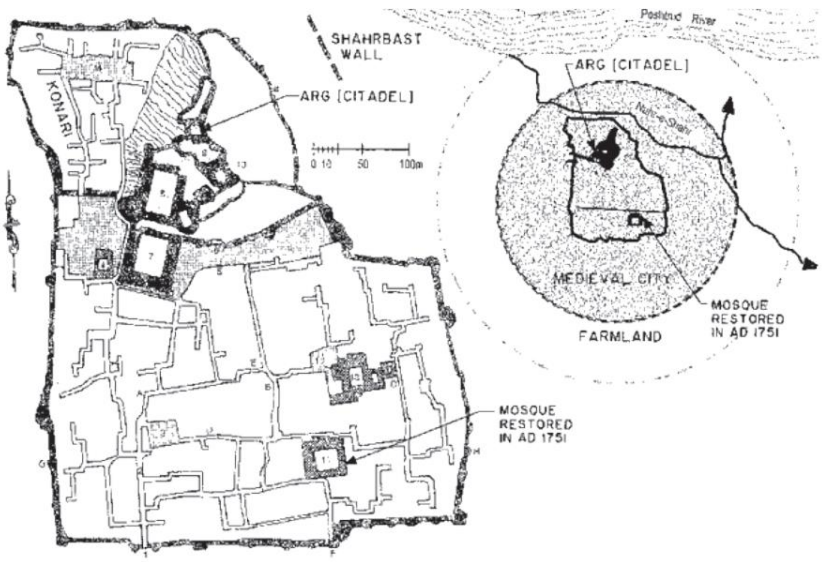


Fig.52.ARG-e-BAM(Bam Citadel) south of Iran

Principles and conceptions are determined spatially through spatial structure

Research into the spatial foundations and urban morphology of ancient Persia shows ample evidence of early principles in town planning. It is apparent in the structure and organization of urban spaces, much of which has been lost due to climate, political, and historic challenges. Consequently, all of the minute details of urban development in Iran cannot be entirely reconstructed. The vestiges standing today do provide an insight into traditional Iranian urban planning.

While there is a limitation in historical records and physical evidence, it would appear that ideas of urban planning were present and manifested in several aspects in the physical structure of ancient Persian cities. These first showed up in monuments and individual elements of an urban nature, such as temples, evolving into larger complexes and finally complete models of cities. This evolution marks, to a degree, the shift from abstract ideas into their physical manifestation in urban areas.

The Three Eras of Architectural and Urban Transformation in Iran

Ancient urban development in Iran can be viewed as falling into three broad historical periods, with a relationship between them based on the spatial and conceptual progress of the previous one. Each represents both continuity with the past and the introduction of new, time-specific concepts that make each stage unique for the contribution it makes to the urbanization process.

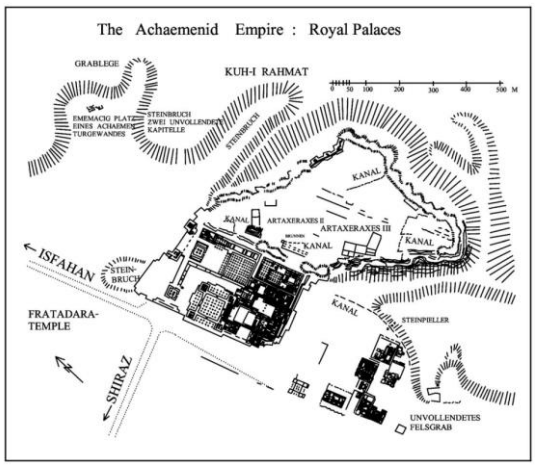
The first period of urbanization, from the 9th to the 4th century B.C., covers six centuries of ancient Persia. These were under the rule of the Median and Achaemenid dynasties. During this era, the development of urban cities and towns was influenced by cultural exchanges and social interactions with more advanced urban civilizations of the Mesopotamian Plain, coupled with developments within Median and Achaemenid territories.

The Median period urbanistic concept deeply inherited a defensive and military feature-especially in building Hegmataneh (Ecbatana). It also influenced the site and physical structure of the city, opening the way to fortified military and castle cities, one of the most distinguishing features of Iranian urban typology. At the beginning, cities were built as strongholds on hills or other strategic positions, and their growth was predominantly determined by defense strategies.Here, the governmental citadel was actually a castle with defense potentialities, an element designed and planned most crucially to serve as the nucleus of urban life. Other urban components such as bazaars, districts, and SHARESTAN (the main city) still remained in their embryonic stages of development without much significance.While the ideas of town-planning procedure passed into the Achaemenid period, they changed to fit the needs of their time. The Median military-castle cities were replaced by Persian military-commercial and agricultural ones. For the first time, the development of urban planning was gradually able to break away from its bondage with military needs and acquire a more varied spatial organization that corresponded to the spirit of Achaemenid principles.

The Achaemenid approach to this entailed the division of land and territory on a macro level by systematic regional, clan, village, and house divisions alongside local initiatives for the organization of urban spaces. In this regard, cities were considered

the central nodes in which social classification and spatial arrangement had become distinctly marked.Achaemenid cities were introduced with a triadic division in the spatial organization of urban space: the governmental citadel, the central SHAR, and the outer SHAR. In fact, this triadic division laid the foundation for all spatial organization during the ancient period. The bazaar also started playing an important role in the urban fabric, becoming part of the city's economic dynamics.

All these developments and evolutions of the Median and Achaemenid cities, usually spoken of as the Persian style or method of urban development, came to an end with Alexander the Great's conquest in the 3rd century B.C., and this marked the transition to the next phase in ancient urban development.



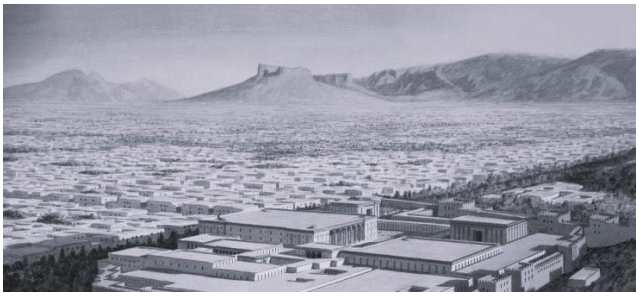


Fig.53.Reconstruction of persepolis, the 2500-year-old ceremonial capital of ancient Persians. Persepolis was the crown jewel of Persian Empire.

The second period represents the very merge of Iranian and Greek urban development, marking the emergence of autocratic cities modeled from Greek political entities yet tailored to Iranian specifics. This phase, initiated by Alexander the Great's invasion in the 3rd century B.C., ran parallel with the Seleucid dynasty's short rule over Iran. By this time, the principles of Medes and Achaemenids urban planning, which had developed from the roots in Mesopotamia, were already subject to influences of Greek methods of building cities, hence they had already lost so much of their earlier cohesion.

The physical and spatial features of the cities also changed, reflecting new trends in urban development. One of the characteristic features of the Seleucid urban politics can be found in the foundation of new cities according to the Greek model; many of them were of the Hippodamian type, promoting commerce and strategic connections easily. Large numbers of earlier urban centers and even ancient villages were also rebuilt by Greek principles since Alexander and his successors worked hard to restructure and adapt older cities for their purpose.

Among others, places that became focal points for this change included Kermanshah, Borujerd, and Hamedan. Renovations also took place in the ancient city of Hegmataneh, while other places were Susa and Fasa.A very significant innovation is constituted by the public space, above all the agora, as an indispensable element of the urban texture. In spite of their brief history of less than a century, the Seleucids thus witnessed a gradual evolution in urban development from an exclusively indigenous Iranian type to a hybrid approach that may best be described as "Parsi-Helleny." It was this blending of influences, both in the spatial organization and in the physical structure, that gave the cities a new phase in Iran's urban history.

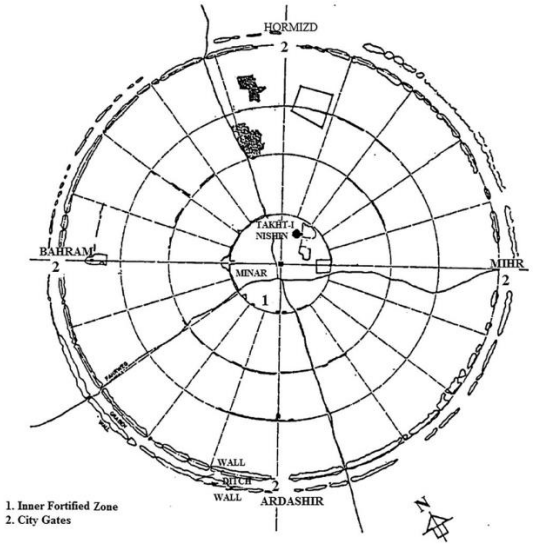


Fig.54.Map of Ardašīr-Xwarrah. Reference: adapted from Huff, 1987a.

Fig.55. The aerial perspective showcases the circular design of Ardašīr-Xwarrah Source: Copyright by Estate Georg Gerster, Switzerland www.GeorgGerster.com.

The third period, which indicated the grand era of city growth and expansion, paralleled the Parthian and Sassanid dynasties between the 3rd century B.C. and the 7th century A.D., which marked the apex of urban development in ancient Iran. During this period, a specific style of urbanism, called the Parthian style, was developed and completed with the invasion of the Muslim Arabs in the 1st century A.H.While that national territory was organized by means of cities, they passed from isolation and symbolism of the power of the ruling dynasty to a great network of integrated cities with varied functions. This represents the zenith in urbanism, symbolizing what essentially could be taken as ancient Iranian cities, which we can know today.

The Parthians emphasized the city center, granting the states and cities much autonomy. In urban architecture, they established a new kind of city design-known as circular cities-with their peculiar defense architecture telling about the insecurity of the time. So far, historical records have been able to show that this form of design was influenced by ancient West Asian urban principles and possibly the design of Assyrian military camps.This period in architectural history was marked by new developments within castle architecture and the new development of defensive fortresses. Following which, there were a series of new cities, usually known as "Shah's cities" developed mainly under the strong rule of Ardeshir, Shapur, and Ghobad kings. In fact, this particular era contributed to the view that most of the traditional and more important cities came into being or were heavily expanded during Sassanid rule.

Notably, the Sassanids also built port cities such as Rishahar and Siraf to extend the frontiers of sea trade. The relationship that existed between national economy and urban economies in this regard was an important one whereby towns were trading and commercial centres hence influencing government functions.The last stage of ancient urbanization was reached, when the criteria and regulations of city planning were at their fullest development. The morphological features characterizing the spatial structure of the cities can be summarized as follows:Separation of Urban Space: Each city was distinctly divided into three main areas: the citadel, the central town, and the outer city.Importance of the Governmental Citadel: The governmental citadel was considered as the central point in urban designing in both the Parthian and Sassanid urban plans.

The styles of urban developments developed by the Parthians and Sassanids have been combined and referred to as the "Parthi" approach. This method involved planned urbanization as building structures were developed with a pre-planned intention and implementation. Archaeological evidence and historical research prove that this is so because most of the cities were designed in the form of a rectangular grid with the main streets crossing each other at right angles to form a cross. This is perfectly demonstrated by the Bam Citadel, ARG-e-BAM, which serves as a typical example of the systematic approach to the design of the cities in this period.

Fig.56. The citadel of Bam (Iran)

In Conclusion These studies reveal that, within the development of traditional Iranian urban areas, one is dealing with a series of non-written criteria and regulations, impelled by economic, environmental, and philosophical considerations. Water management, methods of defense, functional unity, and different types of spatial and functional segregation have been the major elements guiding this development.

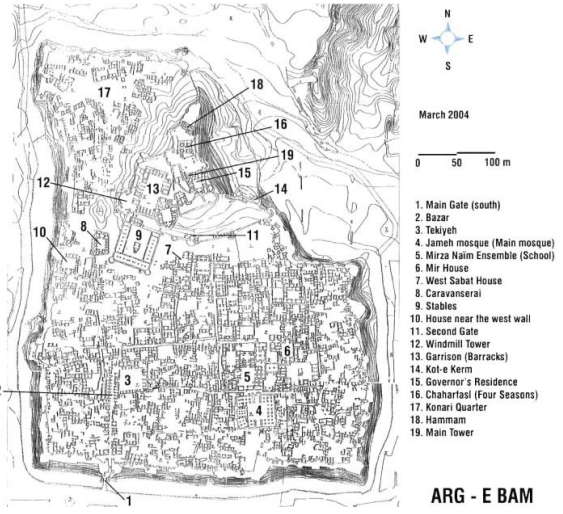


Fig.57. Plan of the Arg-e-Bam (ICHO, 2004)

The remains of median to Sassanid urban structures-despite the limitations-manifest the growth of these basic concepts into physical forms. Study of these traditional planning concepts shows their applicability in contemporary process of urban development, thereby showing principles valid in modern conditions.

Urban development is basically dynamic, with a starting base in historical evolutions toward future transformations. However, one of the important challenges of modern urban development in Iran is the disconnection from their historic background and thus presenting a fragmented form and irregularities. The push toward modernization resulted in severe changes in both traditional urban concepts and the physical view of the cities because of this disconnect.

Fig.58.castle or citadel of Bam

PART FOUR: Urban morphology and identity in Shiraz

Introduction

The precise principles and processes governing the growth of Iranian cities are, however, indeterminable because of the total lack of sufficient historical evidence and because the limited number of studies made when considerable remains of their original nuclei still existed. And any such indeterminism would equally be applicable to Shiraz. While it is difficult, it has been fairly easy to outline the process of the formation of Shiraz in its historical context by research into the urban morphology of its historic fabric. This chapter examines the trajectory taken by Shiraz in formation, using historical texts, documents, and information available to analyze the key factors that influenced such factors as climate, social dynamics, defense needs, and religious influences.

More than that, this chapter chronicles the development of Shiraz, outlining step by step its evolution through the use of historical maps and documents. Further, the research goes into details as regards the structure and morphology of the urban quarters, the symbolic urban centers and their contribution to setting the course for the construction of the city, and suburbanization patterns in historical context. Basically, it is the study of these elements that provides insight into how Shiraz gained its historical texture over time and further helps in recognizing the different periods of time a city undergoes in regard to its structural formation.

Where is the case study?

Iran has an area of 1,648,198 square kilometers, out of which approximately 0.7% is water. The country of Iran is located in Western Asia, standing between the Middle East, Central Asia, and the Caucasus. Its northern borders are shared by Armenia, Azerbaijan (with the Nakhchivan enclave), and Turkmenistan; its eastern borders by Afghanistan and Pakistan; and its western borders by Iraq and Turkey. Iran also shares an extensive coastline boundary in the Persian Gulf with Kuwait, Iraq, Saudi Arabia, Bahrain, Oman, Qatar, and the United Arab Emirates. Its southern coast is wholly edged by the Persian Gulf and the Gulf of Oman.

The total land boundaries amount to 5,170 km, while the combined length of sea boundaries in the north and south are 2,510 km. Geographically, the country is located between 25°03' and 39°47' north latitude, and 44°05' and 63°18' east longitude, with the central coordinate approximately 32.4279° N, 53.6880° E.

As one of the oldest countries in the world, Iran has a very foundational role in early human civilizations. It's among the five top countries in terms of climate and biodiversity and among the top ten in terms of cultural and historic heritage. Iran is thus a land of considerable tourism importance, boasting a multitude of attractions and historical sites.

Fig.59. map of Persian (IRAN) Empire 1747 ((The Library of Congress).

Fig.60. Shiraz,Iran(IRNA)

SHIRAZ

Shiraz is one of the greatest cities in Iran and the centre of Fars Province.Shiraz is located at an elevation of 1,486 meters above sea level within the Zagros Mountains. The city has a moderate climate. Geographically, it extends westward to Drake Mountain and northward to the Bamou, Sabzpooshan, Chehelmabam, and Babakohi mountains, covering an area of 1,268 square kilometers. According to the latest administrative partitioning, Shiraz is divided into nine city districts. The total area constitutes 178,891 square kilometers.

It was referred to in the annals of history as "Tirizis," "Shirazis," and simply "Shiraz." The old city had the designation of Qaṣr-i-Abu Naṣr, and Shiraz, as it appears today, was a fort prior to Islam, and even prior to the Sassanid era. After the village of Estakhr-the then-capital city of the province of Fars--began crumbling apart, it transferred to this place, its present location, under Umayyads. As the capital throughout much history within both the Safavid, Buyid and the Zand Dynasties' rule in all of Iran respectively, yes it also led this country under them.

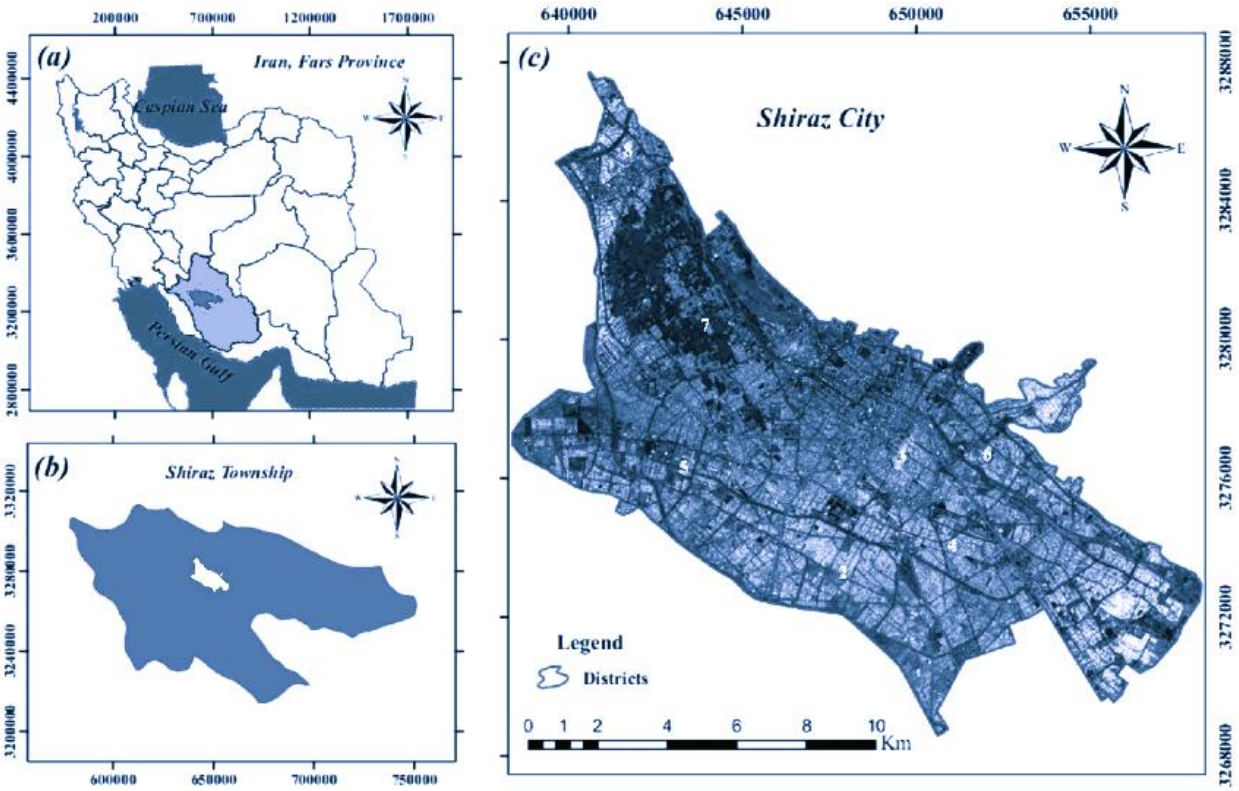


Fig.61. Location of Shiraz City in Fars Province, Iran.

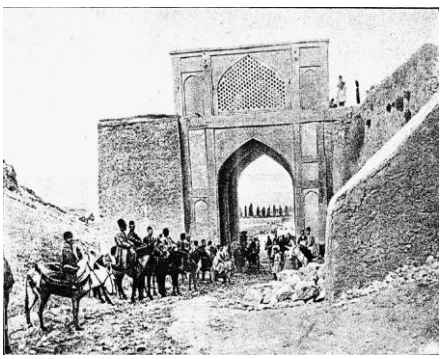


Fig.62.Tang and Allah-o-Akbar Gate in 1888

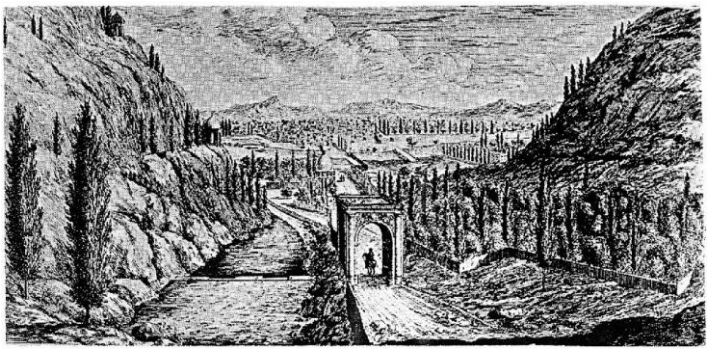


Fig.63.Shiraz in 1671; by Andre Daulier, Homāyun,

- **Development of Shiraz City Core Through Historical Eras**
- **The Establishment and Early Development of Shiraz: From Its Founding (693) to the Buyid Dynasty (932-1055)**

Shiraz dates back to almost 2000 B.C. Evidence for this was extracted from some ancient Elamite clay inscriptions that were found during the 1970 excavations. They referred to it as "Tiras." The modern city of Shiraz began to take shape in 693 A.D. when it was established by Hojaj ibn al-Thaqafi. Following the Islamic conquest of Persia in 651 A.D., it took on radical changes, losing much of its old glory as Zoroastrianism gave way to Islam. Inhabitants shifted, and slowly but surely, Shiraz came to be shaped as a new flourishing city of culture and administration.

In the ninth century Shiraz acquired consequential buildings such as the great mosque, especially under the Saffarid dynasty who declared it their capital. During this period, the town was walled, with each quarter possessing its own gates. The main entrance was toward the mountains along a big qanat, and by a covered bazaar conducted guests to the very center of the city, which comprised a state fortress, public establishments, and a square. It is the bazaar that constituted the economic backbone of the city from which small alleys branched to reach the residential area, giving rise to a very characteristic form of urban organization in which each district had its own center and services.

Fig.64.Shiraz map, 1765 (Carsten Niebuhr, Niebuhr Itinerary, p. 255).

When the city of Istakhr was devastated by an Arab assault in the tenth century, its inhabitants relocated to Shiraz. Shiraz was chosen as the province capital, which increased the city's importance. Shiraz's first and oldest religious structure was constructed during that time18.. It is the "Atigh" mosque, which is still standing in the ancient area. Around Shiraz, a barrier with eight gates surrounds the city. The mosque's northern entry gate was connected to Shiraz Bazaar. About 1500 stairs and 8 gates have been used to ascend the Shiraz area. Shiraz Bazaar was established next to the front gate, split into two sections, and continued there. A mosque, residential area, and the ruler's home were built beside the bazaar. a mosque It is located on the bazaar's left flank was constructed at this time.; it dates back several centuries. Shiraz, one of Iran's major cities, was mentioned. Shiraz needed a variety of amenities, including caravanserais, bazaars, schools, gardens, and other urban areas because of its advantageous location between southern Iran's link roadways. This Buyid Dynasty from 932 to 1055 A.D. was the period of rapid urbanization, and Azd al-Dawlah Deylami built a town by the name of Kurd Fanna Khusraw, where his troops were housed. So, it shows that by this time, the city was very much urbanized, and trade was in full swing with the presence of a palace, a big library besides the lake.

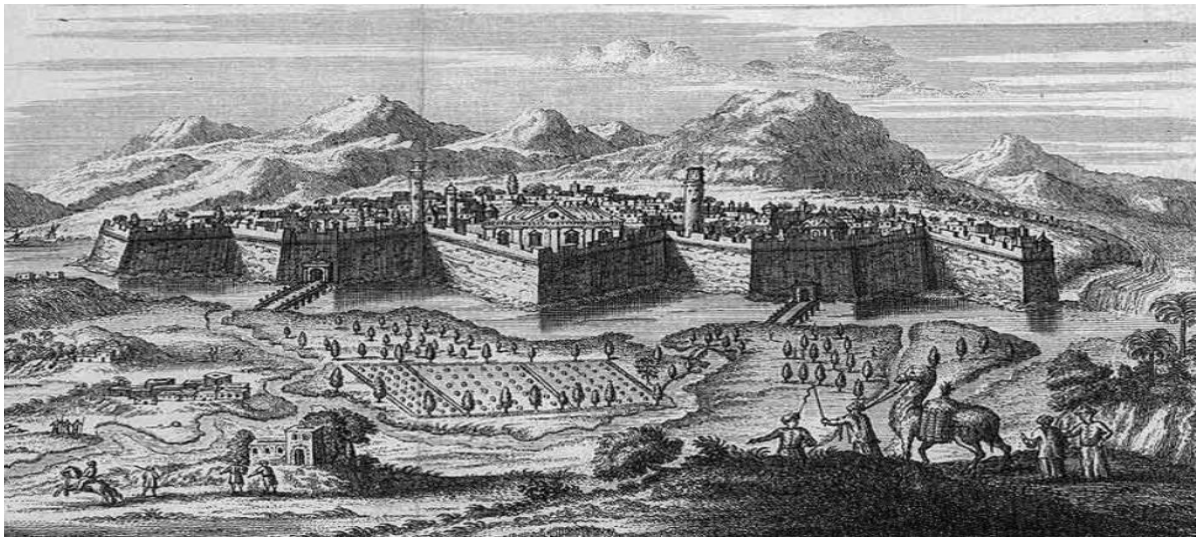


Fig.65.Shiraz in 1674 (Jean Chardin, European documents from Iran).

The Great Salghurids Dynasty (1155-1337), The Safavid Dynasty (1501-1722), The Zand Dynasty (1750-1796), The Qajar Dynasty (1779-1924) , The Pahlavi Dynasty (1924-1979), The Islamic Republic of Iran (1979-Present)

strategically located along qanats and flowing rivers for full utilization of topography.In the Buyids' time, there was a complete separation between the governmental and religious center, which, in the aftermath, shaped the format of this city and influenced access from Darvazeh-Eestakhr toward the governmental center. It is these two axes that supported the different evolution of the bazaar as a distinguishing factor in Shiraz's urban structure. Amir Abu Kalanjar Deylami built defensive walls for the first time in 940 A.D. The bazaar continued to be central to this town's life and trading. The region was ruled from 1148 to 1285 A.D. by the Fars Salghurids, who did not make significant changes in the urban construction except for schools and monuments which carried the architectural features of the Buyid period. The succeeding rulers of Atabak continued to shape the urban feature of the city westward and constructed new places of worship thus giving significance to the continuous development of Shiraz

During the Safavid dynasty, the city retained its previous form as a city but added some new features like gardens and public squares. Most of the magnificent buildings that reflected this era were washed away by natural calamities and invasions. These reflected the sensitivity of urban centers to forces from outside.

Its rapid growth resulted in the formation of two quarters, Moordestan, and Darbe Shazde. During the Zandiyeh period, only Karim Khan himself did large-scale building work like repairing the city walls and making the ditches for defense in front of the city. It was in this age that the new urban organization began within the already existing framework of Shiraz.There was a revival of the main axis, which was reserved for government areas, perpendicular to the major lines of communication and the bazaar. Basically, this axis repeated the current structure of the city, since it had been laid down during the reign of Karim Khan. The governmental buildings were then rearranged according to this newly defined axis.

Besides that, a few new buildings were constructed where the Safavid monuments, gardens, and buildings had been washed away by flooding. The Vakil Bazaar, covering an important part of the city, replaced Haji Bazaar. Having acted like the spine of the city, it had several important urban monuments to both north and south,

flanked on each side by many caravanserais or inns.Next to the Vakil Mosque, a school was also built. The building during this period adhered to the precedent set by the building of earlier times and left an area between the religious structure accommodating the public assembly and the government officials' residence, placing the bazaar judiciously between these two points.

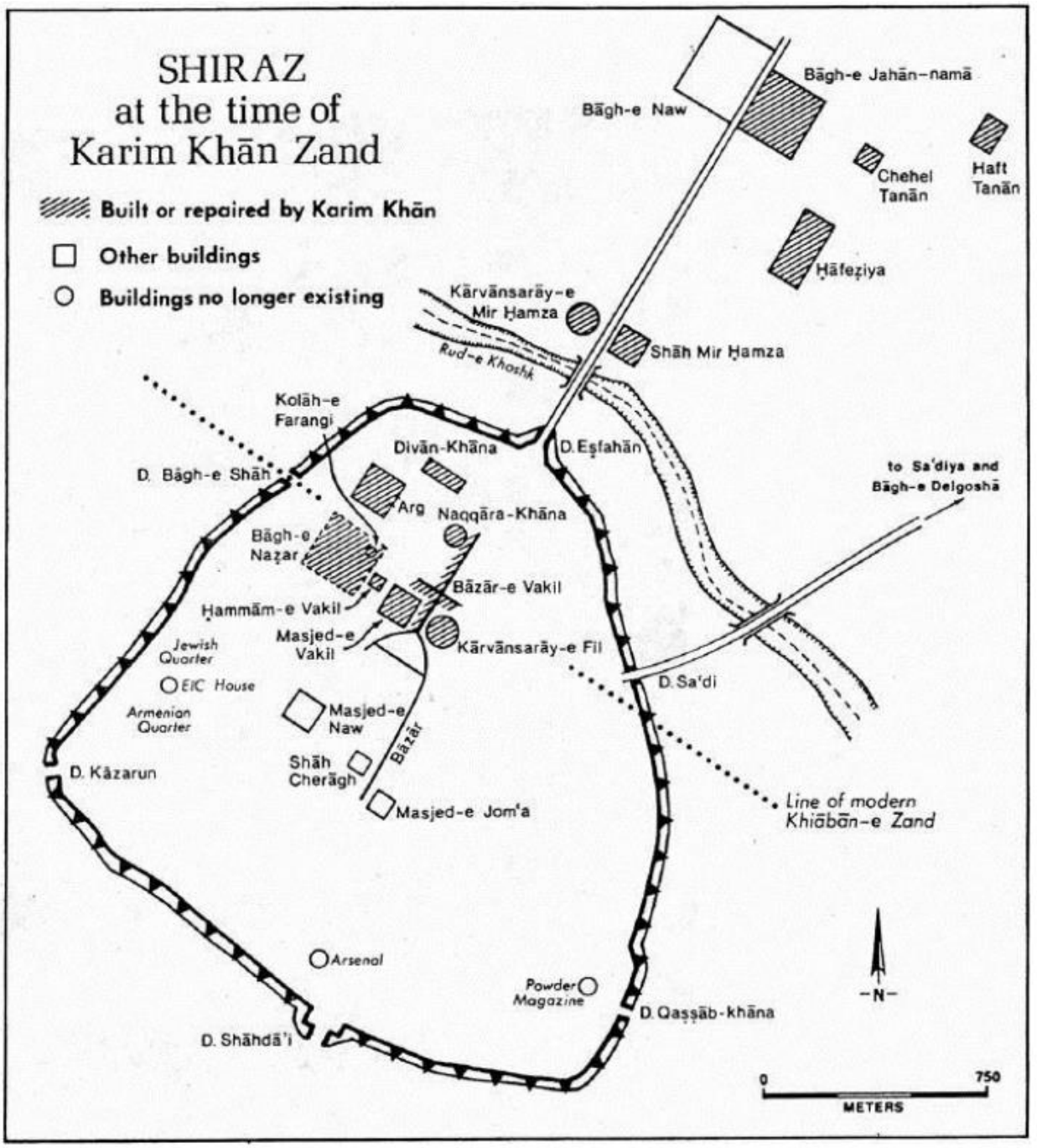


Fig.66.The Qajar dynasty, 1779 to 1924 A.D., again saw the decline in importance of Shiraz. The shift of the capital to Tehran plunged the city into a state of urban decay, where its walls also started showing signs of deterioration. This decaying state was further worsened by severe earthquakes.

From 1924 to 1979, Shiraz was quite drastically altered by the Pahlavi era centralized government. Modernization brought in wide avenues and highways that cut through traditional neighborhoods, displacing so much of the historic texture of the city. The modern infrastructure, public space, and transportation networks implemented reflect modernist Western urban planning principles. These changes were made at the cost of much of the historic character of the city, with only fragments of the old core preserving anything of its heritage. Following the Islamic Revolution in 1979, urban growth gained rapid momentum, often at the expense of the architectural and cultural heritage of Shiraz.

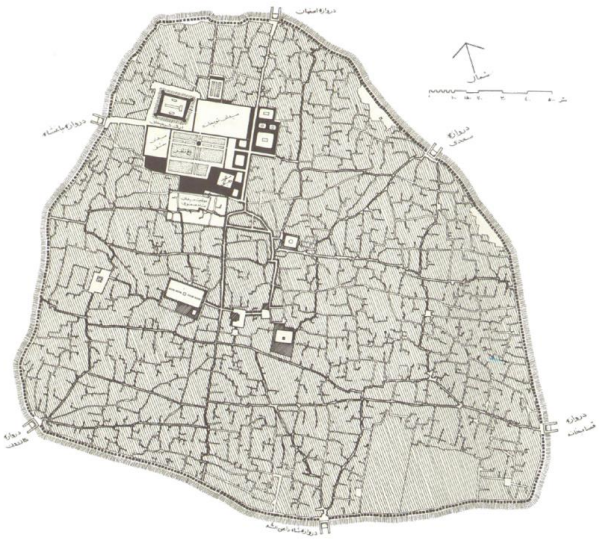


Fig.67.Shiraz, the spatial structure of the city 18th century

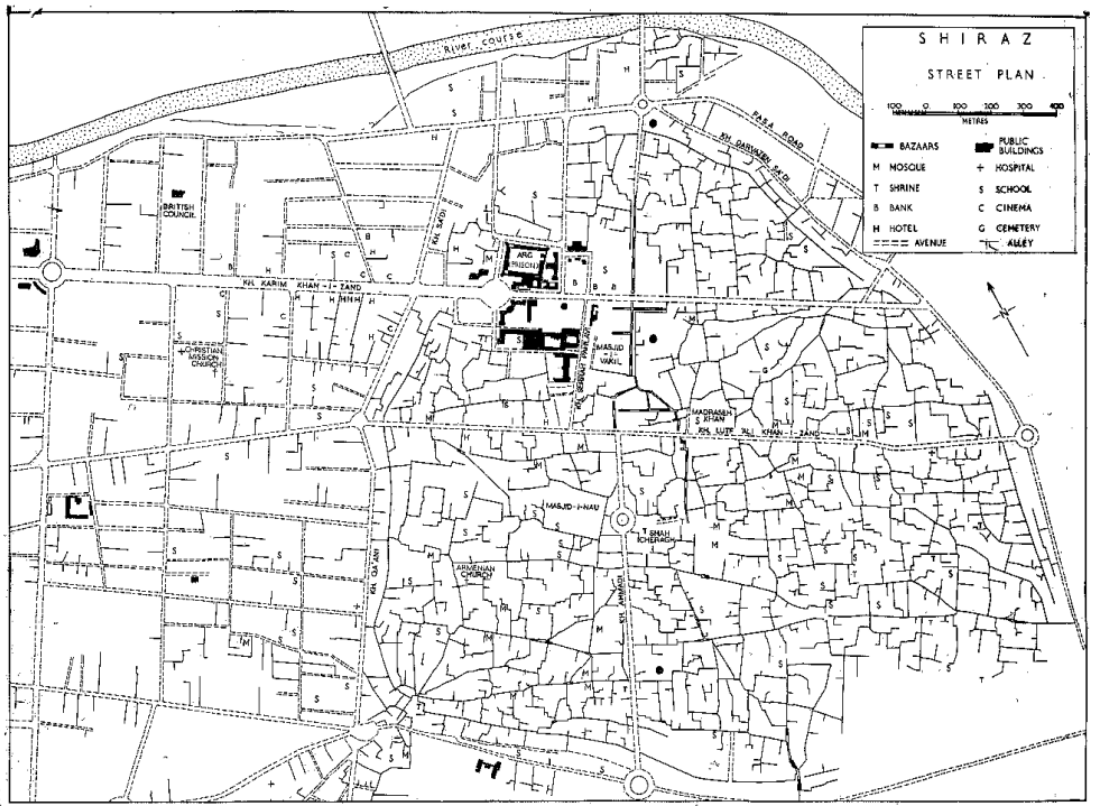


Fig.68. The Street Plan of Shiraz. The contrast between the morphology of the old city (on the right) and the new expansions along with its street network (on the left) is clearly visible. Source: (Clarke 1963, p 19)

This is the city that has taken a huge leap into rapid development, and modern roads, huge buildings, and residential complexes increasingly dot Shiraz's landscape. The urban growth nurtured by needs to solve the growing population and modernization of facilities has metamorphosed much of Shiraz's historic landscape, reflecting the tension between preservation and progress that defines the city's evolution.

Shiraz Through Time: Tracing the City's Evolution and Urban Design

The various cities of Iran have reflected variations in layout and structure throughout their history. Most of them, however are hierarchical in organization. Examples of such cities, whose historic hearts have been the result of organic growth, include Shiraz, Esfahan, Kashan, Yazd, Tabriz, and Mashhad. These city forms reflect environmental pressures, cultural traditions, societal demands, military necessities, and political fortunes. During the Achaemenid period, Assyrian-influenced planning laid much stress on fortification with cities usually circular in form, such as those at Darabgard and Shahr-e-Goor. Contemporary with these fortified cities, a number of cities were built on high, easily defensible ground and used topography for natural defense. In many cases these towns joined elevated, secure areas to lower extensive areas. The combination of spontaneous expansion and intentional design created the characteristic urban structure common to Iranian cities.

In the Parthian-Arsacid period of Iran, the cities were designed and built according to the Greek urban model; among them, the Hippodamus grid system was predominant. Geometrical patterns of this form of city planning dominated the developments in all cities of Iran during ancient times. However, with the growing needs over time, the geometrical pattern of urban development loosened its tight structure and adapted to the requirements. Bishapur is one of the finest examples of building a city with the design of Hippodamus.

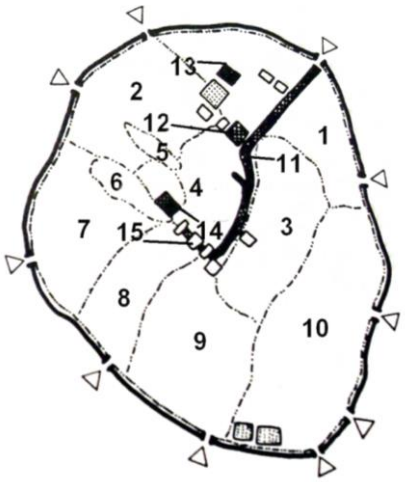
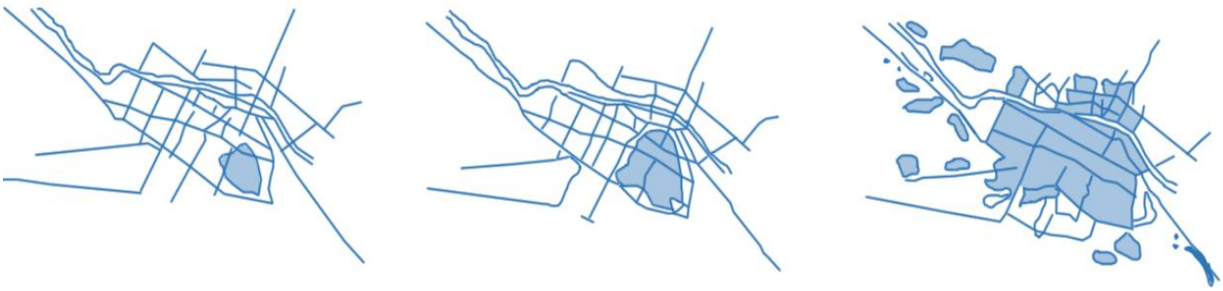


Fig.70. The old city of Shiraz is divided into 10 neighborhoods (Soltanzadeh, 2006, 32). Extracted by the author.



Shiraz City Expansion Process

Fig.71.The development and growth of Shiraz city within the framework of urban morphology involved the gradual expansion of its original core. Initially, the city expanded westward, followed by further growth toward the northwest.

Abun-Nasr, the town wherein Shiraz's earliest core was established, was also typical of this Iranian urban morphology. Similar to many other cities of the time, Abu Nasr expressed not only the general tendencies of Iranian city planning but combined elements of both Hippodamus' layout with more traditional Iranian designs.

The Genesis: Before the advent of the Aryan race, the people that had originally

lived in Persia used to be generally primitive, black indigenous beings inhabiting mountainous regions. One can still trace their evidences in ancient Iranian museums and other sites like Persepolis and Pars. According to scholars, the Aryans came onto the Iranian plateau between 1000 and 1400 BCE.

The Pasargadae were one of the ten tribes that the ancient Greek historian Herodotus said that the Aryans or Persians were divided into. The Pasargadae came to be based at Istakhr after they had first established themselves in the town of Pasargadae. That the Shiraz plain was originally settled by is not known, but it is known that after Pasargadae was devastated following Alexander the Great's attack it was transferred to Istakhr. Shiraz was founded on the Shiraz plain when, after the Arab invasion, a large number of the people who had originally lived in Istakhr were moved to what was to become the town of Shiraz.

Historical knowledge relating to Shiraz City before the advent of Islam is pretty limited partly because of the lack of detailed records from that time. Much of the available historical documentation regarding Shiraz has come from Islamic historians, many of whom only focused on what was happening after the spread of Islam in the region. Most of these sources emphasize the developments of the Islamic era and rarely go into elaborate detail about the earlier history of the city. As a result, the details of the ancient stature, importance, and exact boundaries that Shiraz had during the pre-Islamic period are for the most part unknown or unrecorded.

Few historical texts give an account of what Shiraz looked like prior to Islamic influence. They do not describe the culture of the city during its pre-Islamic time, nor the architecture or its position within the region. This lack of records has created a gap in the understanding of the early existence and the status of the city before it became an important Islamic urban center. How Shiraz functioned, or what the layout and structure of the city were, is not known from those earlier periods, since such information was not a priority for the later chroniclers who were more concerned with the Islamic transformations of the city and its surrounding region.

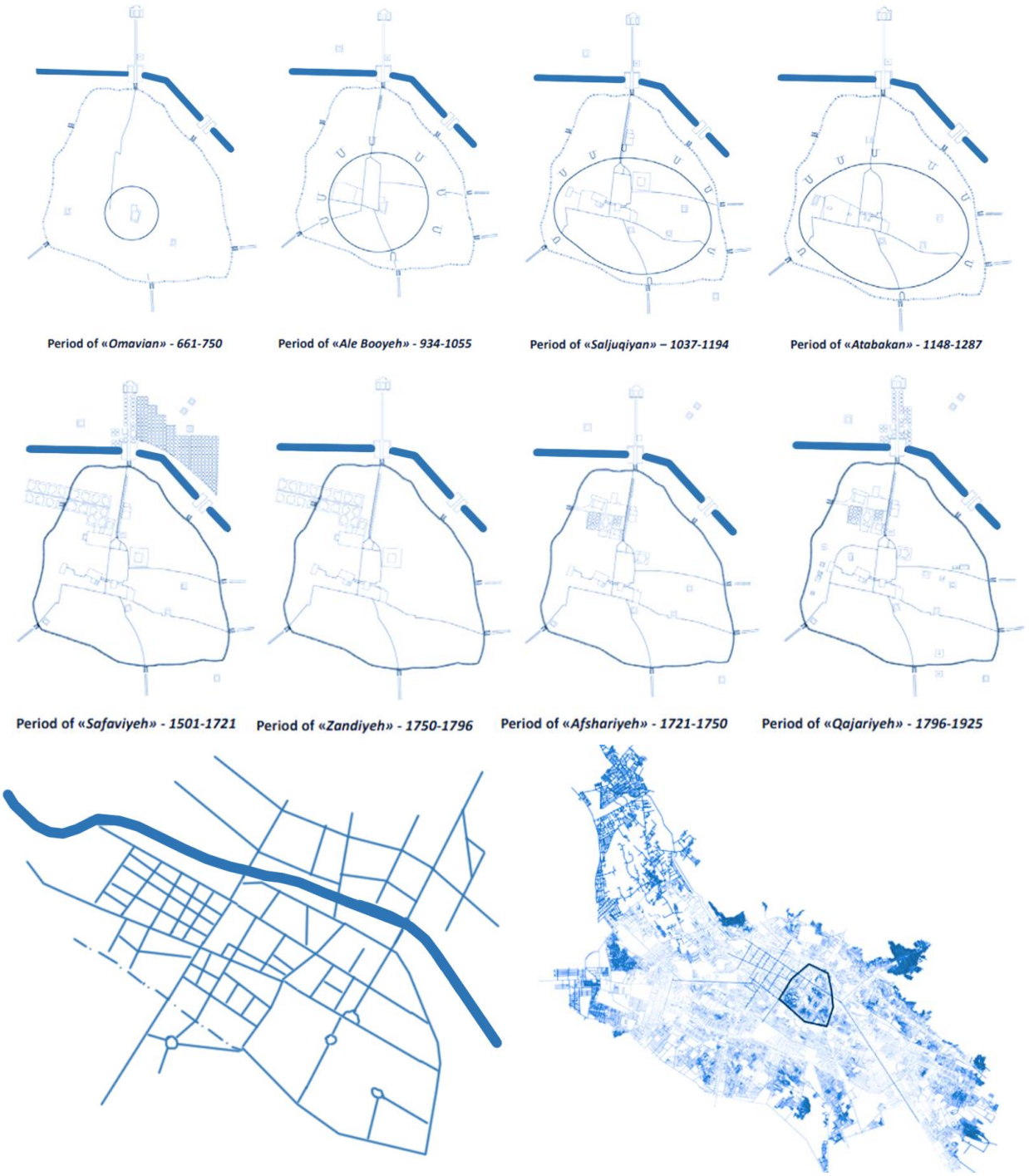
According to some texts, the foundation of Shiraz dates back to the year 76 AH / 696 AD.As such, the historian Ibn Balkhi identifies the city or fortress of Abu Nasr-what is now called Qasr-i Abu Nasr-as the location from where Shiraz originally came. Since Qasr-i Abu Nasr has been regarded as an origin of the city according to the prevailing proofs, that location may be considered to be its eastern origin. In Ibn Balkhi's text, the six kilometres between Qasr-i Abu Nasr and modern Shiraz represent the route of Shiraz's westward relocation.

Historical maps of Shiraz from early in the Islamic period reveal this westward pattern which has continued through the centuries to the present. Shiraz has been constantly developing to the west; today the municipality is continuing in this pattern by developing the city to the west.

The urban development of Shiraz can be interpreted as having taken an east-west direction, which is reflected in the current cityscape. This westward development seems to be closely related to the physiography and climate of the region. Physiographically, it can be seen that rainfall is heavy in the northwestern highlands, with water flowing from west to east down towards Lake Maharlou. This permanent water supply, for a long time, gave a preferable advantage to the western parts of the city, which were easy to access. In this context, the eastern areas of Shiraz grew as a response to such geographical and hydrological dynamics, influenced by natural features that have varied over time.

After the Arab conquest of Iran and the fall of Istakhr, a great number of its inhabitants seem to have settled in Shiraz. The historical sources of the Islamic period, which form the main basis for the early history of Shiraz, ascribe the founding of the city to 74 AH (694 AD), by Muhammad ibn Yusuf al-Thaqafi, governor of the province on behalf of the Umayyad caliph Abd al-Malik ibn Marwan. Historically, Shiraz did not have defensive walls, but in the course of time, fortifications and a water-filled moat were added. The first known wall around the town dates to 639 AH, which is 1242 AD. They were then regularly restored until it obtained its present circular shape. It has been ruined by an earthquake in 1339 AH, corresponding to 1921 AD, and has never since been repaired.

Fig.72.Shiraz City Expansion Process



The periods of flourishing and development of Shiraz are almost entirely contemporaneous with those when it was the capital or was otherwise significant for any reason, which indicates the importance of this city in the course of Iranian history.

Shiraz developed historically from its bazaar and the four main axes that intersected and surrounded the different urban elements. Each of these axes represents a different stage of development in the city, reflecting the needs of that time but developing and refining the structure by building on past experiences. In this respect, similarities can be noted in how the urban elements were laid out along the axes through different ages, such as:

Posing of urban elements on infiltration galleries and sources of flowing water, clear segregation of functions between religious, governmental, and commercial functions. The existence of interface spaces and functional intersections.

Based on the Aqiq Grand Mosque, the first urban area accommodating Muslims was formed upon its formation by Amr-i Laith Saffari. Later on, other important centers like New Mosque, Shah Safavid Square, and Toopkhaneh Square made Shiraz always include urban space from the first step of formation to modern times.

Shiraz City Formation Steps:

The first stage in the structural development of Shiraz occurred during the Al-Buyah period in the 4th century AH, or the 10th century AD. Before that time, the Atiq Grand Mosque had already been built, and the bazaar stretched from the mosque to the Istakhr city gate. During the mentioned period, the Al-Buyah era, the urban elements developed along the route of the Azodi Qanat. Governmental buildings were placed on the west side, while the religious buildings were set in the middle towards the east of the bazaar axis. This basic format allowed the construction and building expansion of the main body of the city during subsequent periods.

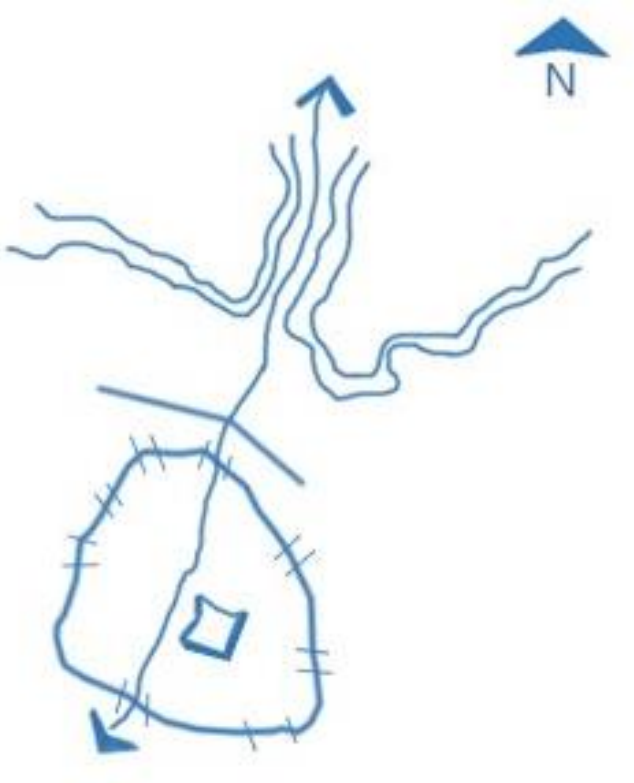


Fig.73.The first step of the formation of Shiraz

The further development of Shiraz took place during the Fars Atabakan period. It was during this time when the divergence of urban functions began along a new axis that paralleled the Azodi Qanat. Various areas got intervened by different zones, providing intervening spaces within the structure of the urban functions.

In the Safavid era, Shiraz experienced an important phase of urban renovation, based on earlier structural novelties. The authorities adopted a conscious policy to underpin the growing needs of the city by building a major avenue connecting the Khan School in the east to the central Daoud Khan Bazaar. This commercial center linked important routes that converged at Shah Safavi Square, flanked by main buildings like the royal complex, a hospital, and the Safavid mosque. Further, a main street, Chahar Bagh, led from Darvaze Isfahan to Tange-ye Allah Akbar. Notwithstanding these developments, the city sustained massive losses due to devastating floods in 1669 AD (1079 AH), an Afghan invasion, and the neglect of the later rulers. These events tore down much of the era's architectural development, leaving only traces that speak to the period's historic significance.The Safavid era, with all its vicissitudes, is considered a milestone in Iranian urbanization since the Islamic conquest. Indeed, Shiraz became as fully developed and differentiated urbanistically at that time as it would not again until the Qajar period.

Fig.74.The second stage of the formation of Shiraz

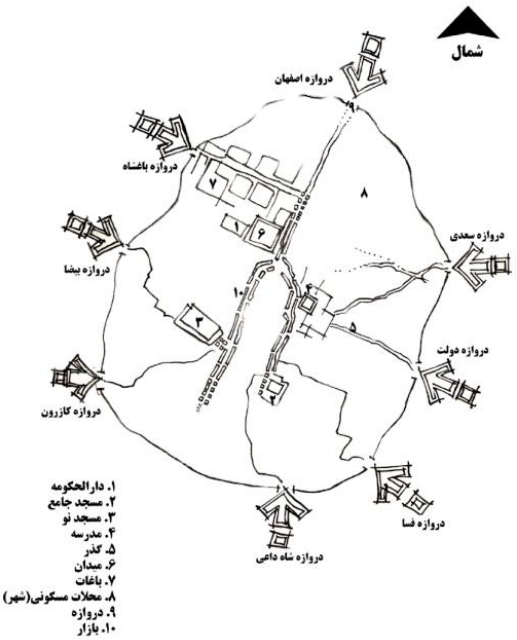
Fig.75.The third stage of the formation of Shiraz

During the Zand dynasty, however, the transformative phase of Shiraz entered its history. Having flushed the Afghans out, Karim Khan Zand identified Shiraz as his capital and began a series of wholesale renovation works in 1767 AD or 1180 AH. These ranged over buildings housing administrative and ceremonial spaces into which Bāgh-e Shāh lies while previously erasing most Safavid monuments and gardens.

Zand-era architecture was robust yet refined in design, showcasing the enduring principles of Iranian craftsmanship. However, urban planning in this period was less focused on aesthetic balance. The intentional arrangement and compression of buildings along the central axis reflect a deliberate approach to rectify the fragmented nature of the city's pre-existing framework and to introduce Shiraz to a new era of urbanism.

The historical periodization plans of Shiraz demonstrate that during the Saffarid era, by constructing Atiq Grand Mosque in 894 AD (281 AH), the core structure of the city started to take shape. This mosque, placed at the northwest edge of the city, then signaled the backbone for the early development of Shiraz urban. Shiraz was one of the cities devoid of a defensive wall during this period, according to Istakhri. The city's elite resided here, alongside the political and religious hub of the mosque. However, during the Deylamian period, this was an era that saw the separation of political and religious powers. The state palace moved away from the mosque as the governmental headquarters were kept separate from the religious center of the city. In this respect, the Grand Mosque was located near the Bazar and was kept out of the way from Dar-al Emareh, while the governmental buildings were constructed around a river which was flowing from the palace of Adud al-Dawla and the Grand Mosque to the outskirts of the city.

Fig.76.Abu Ishaq Ibrahim ibn Muhammad al-Farisi al-Istakhri was a 10th-century geographer and travel writer, renowned for his detailed Arabic accounts of the various Muslim regions he visited during the Abbasid period of the Islamic Golden Age. His origins remain unclear, with some sources identifying him as Persian and others suggesting he was Arab.
- Bolshakov, O. G. (1998). “ESTAKRI, ABU ESHAQ EBRAHIM.” *Encyclopaedia Iranica*, Vol. VIII, Fasc. 6, pp. 646–647.



The unification of the government center also created a principal thoroughfare that connected Darvaze Istakhr, or modern Darvaze Isfahan, with the administrative center. The city's central Bazar began at the north gate of the Grand Mosque and branched further into several lanes, with individual trades assigned to each. Furthermore, the development of mercantile function along the road from Darvaze Istakhr to the government center created another major Bazar.Thus, the two main features of Shiraz urban morphology at the time of Deylamians were:Separation of religious and governmental areas and Parallel development of axes at Bazar.

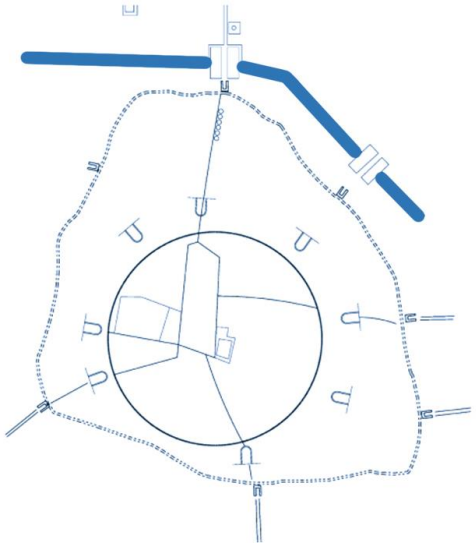


Fig.77.The initial phase of the city's main structural formation can be traced to its prosperity during the Al-Buwayhids' rule in the 4th century AH, or the 10th century AD.

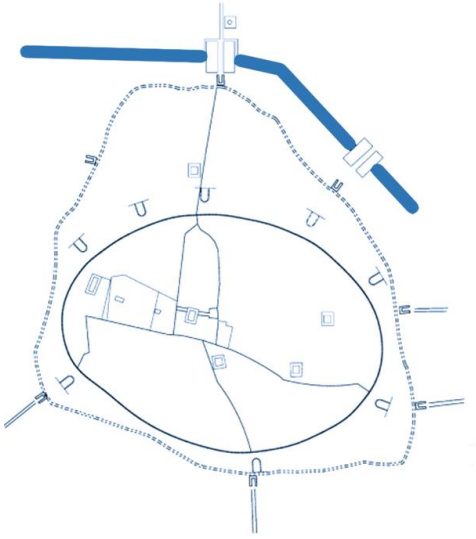


Fig.78. The second phase of the city's historical development took place during the time of the Fars Atabakan.

In this period, the big marketplace of the city, which was extended from the original big bazaar in the Deylamian period, began from the northwest corner of the Grand Mosque and extended northward. Today, this historic bazaar, the oldest in Shiraz, is called Haji Bazaar. Moreover, an extremely beautiful market area was developed between the monuments of Ahmad ibn Musa and Muhammad ibn Musa, both constructed around the same period. In its middle square, it had an octagonal fountain that the stream ran through in the middle of the marketplace. This was called Sare Houz Agha Bazaar, which was to be destroyed by the modern renovations joining the courtyards across the Imamzadeh shrines. Four other bazaars were constructed in this period as well, which, taken together, were known as Sar-e Chaharrah. These linked the Shahcheragh courtyard to the newly constructed Grand Mosque, which was founded in 614 AH (1218 AD). These, however, having delineated the Bazare Morgh and Sare Dozak districts, were destroyed following the construction of Ahmadi Street and its square.Historical maps show that the above-mentioned major urban features of the Atabakan period, including the Atabakan Garden, the new Atabaki Mosque, the Sar-e Chaharrah Mall, The Shahcheragh Courtyard, Sare Houz Agha Mall, and the Courtyard of Seyed Mir Hossein's monument are situated along the Azodi Qanat axis.

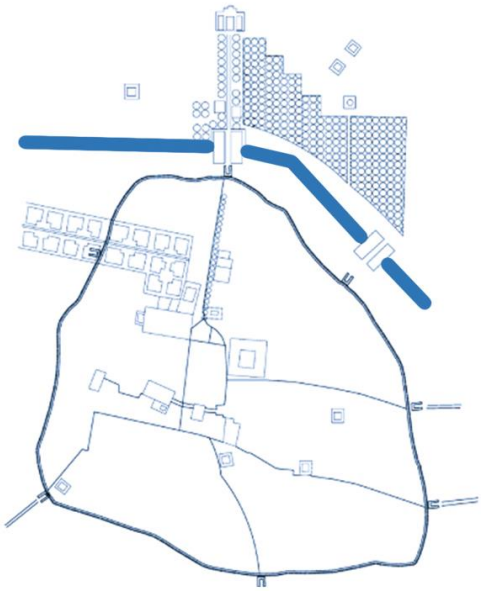


Fig.79.The third phase of the city's evolution took place during the Safavid period, introducing distinctive urban design elements to accommodate the city's evolving needs.

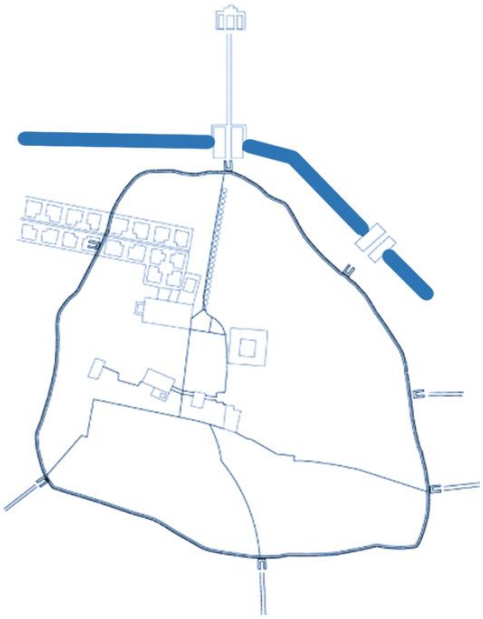


Fig.80. The physical layout of Shiraz during the Zandieh era

The most important of them all was the new mosque, which combined religious pilgrimage with a government-based element. Its extensive courtyard was one type of open urban space used for not only religious functions but also social, recreational, and political purposes. Before the creation of Ahmadi Square and the removal of Sar-e Chaharrah Mall, the new mosque counted as one of the liveliest urban spaces in Iran.However, with the disappearance of the marketplace, along with far-reaching changes to the surrounding urban fabric, its status diminished. The general structure of the town at the time of the Atabaki was just as it had been at the time of the Deylamian. One of the distinctive features of those periods was the segregation of religious-agricultural and political-government districts in which major buildings were oriented along an axis at right angles to the bazaar. From the end of the Atabakan period to the beginning of the Safavid era, few changes had been made to city structure amidst the political situation and conflicts among the short-lived dynasties.

During this period, the structure of the city remained almost intact. During the Safavid period, however-known as the heyday of the urban development of the city-the city's central spine changed significantly. This great bazaar, which must have stood where Vakil Bazaar and the new bazaar are now situated, ran from the old main bazaar to Darvaze Isfahan. Under Karim Khan, this bazaar was renovated, extended, and changed in form some time later. During the Safavid era, the Safavid family introduced their own urban model but with respect to the already existent urban structure and with the preservation of key elements. This new layout followed an axis which paralleled previous eras and resembled them. Along this axis, starting from the beginning with Madrese-Khan and continued through Davood Khan Bazaar to reach Shah Square or Gheisariyeh, the key structures were aligned. This square was surrounded by such major buildings as a mosque and the Safavid palace, and buildings such as the Imamzadeh Seyed Abdollah and the Dar ol-Shafa. None of these buildings remain today with the square and palace, but still the area bears the name Sah Square district.

Behind the Safavid palace, there was a governmental garden which had its northern boundary along a passage that continued further north to Bagh Shah. The town's prominent personages had laid out more gardens on both sides of this passage. Though historical records are silent about any water features or trees, the garden performed similar functions as the more famous Chahar Bagh of Isfahan.

Fig.81.Period of «Afshariyeh» - 1721-1750

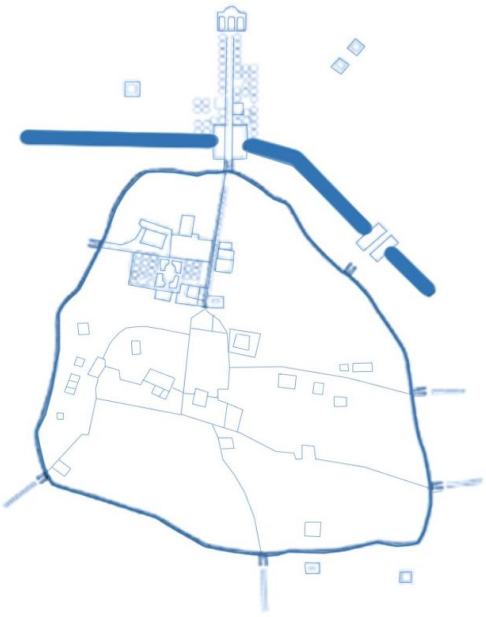


Fig.82.Period of «Qajariyeh» - 1796-1925

However, in the 100 years that intervened between the end of the Safavid era and the rise of Karim Khan Zand in 1767 AD (1180 AH), Shiraz was in decline. It had lost its earlier brilliance, many of its old buildings had been destroyed, and it lacked security and peace.Various evidence left behind from the Zandieh era puts forward the topography of Shiraz in that period. The Vakil Bazaar, which was reconstructed at this time, became conspicuous while entering the town from Darvazeh Isfahan. There was a big open space west of the bazaar which contained Naghare Khaneh Square to the east and Toopkhane Square to the west. The Naghare Khaneh and Divan Khaneh buildings were located on the northern side of this space, while the grand Arg fortress was constructed on its western side.

South of this square Karim Khan built a new garden, the so-called Bagh-e Nazar. The Vakil Mosque was situated a bit to the east, nestled between the market and Bagh-e Nazar, directly opposite Naghare Khaneh Square. The Vakil Bath and a cistern lay to the west of the mosque, separated from it by an alleyway. On the qiblah side of the mosque, foundations were laid for a school; at Karim Khan's death, it remained unfinished.

The status of Shiraz degraded bit by bit during the Qajar period from an important cit y to an unimportant and peripheral place. This was due to factors such as extensive destruction from the wars following the death of Karim Khan, the shift of the capital to Tehran, continuous political turmoil, and opening of sea routes via Khuzestan and the Karun River. To these was added destruction by Agha Mohammad Khan . However, in spite of all this, some expansion and development of the cities took place . Other important additions were the Mirazyusefi Bazaar next to the Vakil Bazaar; the Farman Farma Building in the northwestern corner of Bagh-e Nazar; and the Nasir-ol-Molk Mosque together with its related bath and house in the Ghavam neighborhood of the town. Other developments included the Hosseinieh Mosque and Moshir House at Sange Siah, and the Moshir Mall, Bazaar and Arcade adjacent to the Vakil Bazaar's southern gate. The Ilkhani Mosque, together with several gardens, bathhouses, and Hosseiniehs around the Shah Square, also marked this period of architectural change.

In the Pahlavi period, Shiraz's urban structure altered much as did those of most other large cities in Iran. While the city continued to rely on the historic heart of the urban area, focused on the Zand axis, this period saw new developments and a serious reworking of the residential quarters. Public spaces and major infrastructure were reorganized around the Zand axis, while residential development came to be more planned in character, with a much clearer distinction between public and private. New governmental buildings such as the municipality, Ministry of Justice, police headquarters, and banks were built around the old squares of Mashgh and Toopkhaneh Squares. However, after this period, the rapid growth caused a fragmented urban structure; the absence of any cohesive development policies resulted in losing the integrity of the city's main layout.

While Shiraz was developing and expanding, huge commercial centers cropped up in the city center and reduced the role of smaller traditional markets. New districts failed to continue the old traditions of marketplace creation, and the urban planning of this period often contributed to the structural disarray of the city. The fast construction and fluid development patterns brought about further fragmentation of the city's main framework, which was incoherent.By the end of the Qajar era, Shiraz's surrounding wall had been gradually destroyed and allowed its expansion to be continued in the northwest during the Pahlavi era. A more regular urban texture has occurred along newly built streets , and the Zand Street became

Fig.83. Shiraz introduced its Master Plan in 1988

the backbone of the modern city. This street would become the main axis of the contemporary urban activity, and from which the city expanded. By 1947, Lotf Ali Khan Street was under construction and marked the growing footprint of the city. Shiraz's comparison in the early 20th century up to 1974 reveals a sharp and explosive increase of the urban population, which drastically changed the very core of the city. However, the historic core, once occupying the whole Shiraz, had shrunk to a small area of about 350 hectares in the heart of the much larger modern city, where its pressure for new urban changes was impossible to avoid.

- **Key Factors Shaping the Development of Iranian Cities**

The Influence of Water Resources and Governance on Urban Development

Some of the most important elements that determine the site and pattern of growth of the cities of Iran are available water, commerce, government, and lines of communication and transportation. In addition to these key factors, the traditional ways of life and technology help explain the origin and morphology of Iran's cities. The plan of a city is generally determined by its access to a watercourse or fertile soil. The scarcity of water greatly influenced urban planning, and many cities depended exclusively on wells and qanats, or underground channels, for obtaining water. Thus, in such desert cities as Yazd and Kashan, public cisterns became the very center around which the structure of a city was often formed.

A good example of how the existence of rivers influenced city layout is Isfahan with the Zayandeh Rood; water channels separated various quarters. In comparison with European ones, Iranian cities were relatively small and since their growth was directly related to available water, they grew in a linear way. Historic towns established themselves around watercourses and the transport network—which was largely based on pedestrians—further limited expansion.

Along with natural resources, the influence of the central government was an important factor in urban growth. When a city became an administrative center, it often inspired development and growth in the surrounding region. For example, Tabriz and Maragheh had a particularly important role to play in medieval Iranian history because of their roles as capitals. Governmental power made cities segregate; thus, there appeared separate areas of state activity that were often physically separated from the rest of the city.

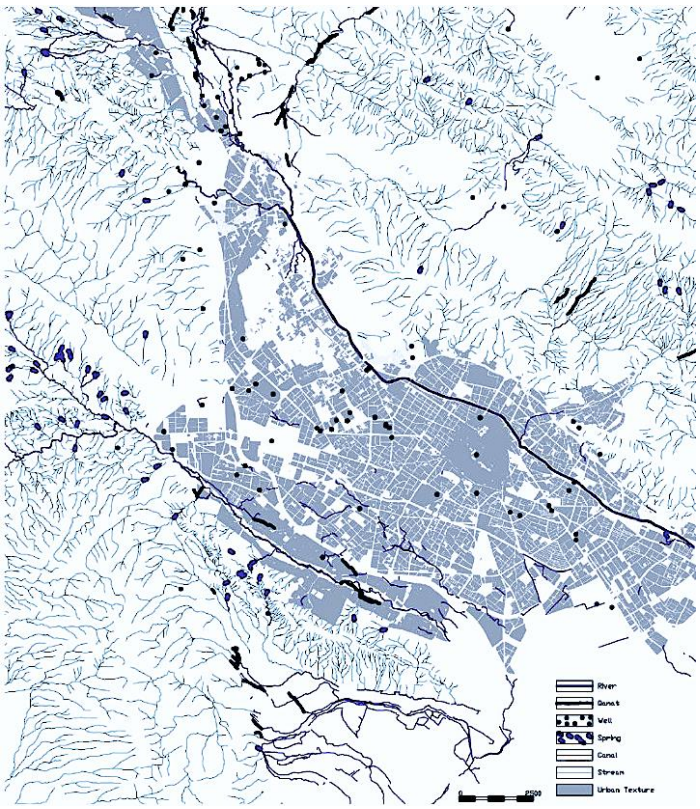


Fig.84.Hydrological map of Shiraz, created by the author.

Trade and Transportation Networks as Key Drivers of Urban Growth and Planning

Most of the cities in Iran have grown and developed significantly owing to trade, which is still a trend followed in many countries from the Middle East. Geographical settings are shaping the nature of such regions. Tabriz, Bushehr, and Damghan form examples of such cities that owe their growth to inns, trade routes, and local marketplaces, facilitated right from historical times. Although local, national, and international trade does not provide the decisive driving element in the economies of most Iranian towns and cities, they are nevertheless an important indication of urban growth. Since water, rest, safety, and business dealings were inescapable needs for each caravan, towns developed inns or caravansarais to cater to caravans, as well as warehouses and protective facilities. These needs were concentrated in the bazaars, which played the role of a town's commercial center.

Fig.85.Road infrastructure layout of Shiraz, designed by the author.

The historical framework of the caravan trade has to be looked at in the background of commerce in the Middle East during this period. Two great events reformed trade relations between 492 and 1500 AD: the Mongol invasions opened up the east to trade and the Ottoman campaigns consolidated stability from the west, Iran acted as a buffer between various trading empires. Trade was excellent in the Safavid period, especially under Shah Abbas, but the building of the towns was essentially to safeguard the caravan routes. For this reason, many villages became thriving urban centers, and the streets and main squares were a dedication to commerce and hospitality. Normally, there was a circular wall surrounding these cities for security, which further gave rise to the increase in population within their confines.

The significance of the bazaar as a trading center took the Iranian urban form to a further stage of definition. Rather than being simply a place of commerce, the bazaar acted as a sort of communal axis, joining sections of a city together. Many cities in Iran were aligned at the junction of major routes and, thus, their positioning was tied to their success as commercial centers. The character of the landscape here demanded that the patterning of villages, agricultural space, and town populations in a larger sense reflect the relationship between trade and urban structure. Some specific cities, such as Tabriz, Shiraz, Isfahan, Tehran, Qom, and Mashhad, all sprang from government or religious significance and, not coincidentally, often grew in conjunction with such roles.

Trade and governance, of course, but equally constituent to the formation of cities has been the placement of high roads. A good example of this would be the Shahi Road, ordered by Darius the Great during the Achaemenid period. It was 2,699 kilometers long and connected vital cities such as Persepolis and Pasargadae, with rest stops every 24 kilometers amounting to 111 in all. It constitutes one of the earliest known highways in Iran and is treated as a precursor to international trade routes; thus, it draws attention to the role of transportation infrastructure in shaping urban development in Iran.

Formation of Shiraz City Based on Key Influencing Factors

The Role of Defense in Urban Structuring

Through history, the ancient Iranian governments have faced threats from internal and external forces. The invaders included other regimes that sought to expand their territories and tribes identified by their culture of "invasion and plunder." Oftentimes, such groups were mobile with formidable cultural identities hence posing a strong threat. For this reason, defense became important in protecting the cities and their citizens hence the center of urban development in Iran.

The imperatives of defense dictated urban planning and design; thus, cities contained a series of fortified structures. In other words, this need for protection translated into peculiar architectural features: battlements, thick walls, narrow and zigzag alleys, small doors and windows, and the incorporation of defensive tools in residential designs. Such prevalence of defensive characteristics testifies to the important role taken by military considerations in the course of the development of the ancient Iranian cities.

This thinking about cities as a defensive and military base seems to have come into view as an essential framework for understanding the origin and growth of urban centers in Iran as indeed in other parts of the world, where factors such as religion, water supply, commerce, and warfare have been advanced as influencing its development. Among all these factors, however, the aspect of defense has been especially pronounced in Iran as indeed in other parts of the world.

This may be illustrated more concretely by the case of Shiraz, which came into being after Istakhr had been abandoned. In 694 AD, people moved from Istakhr to Abu

Nasr Qasr-i Abu Nasr) on the orders of Muhammad ibn Yusuf al-Thaqafi. According to historians, Shiraz was first walled in 1242 AD, about 600 years after it was established. This length of time shows just how important defense was in the decision as to where Shiraz should be located.

Examination of the historical context of Shiraz will show that the development of its defense strategies from a passively defensive structure to an "active defense" was necessitated by the constant threat of invasion as dangers presented by various tribes and nations across the time continuum grew stronger and required a more fitting form of protection.

The Impact of Water Resources on City Development

It is from access to water supply and distribution that this has played an important role in the location and development of urban settlements in Iran. The generation of urban planners then realized how much urban progress depended on assured water for drinking, agriculture, and defense.The foundation of numerous ancient cities near water reflects a conscious approach to the founding of the said cities. Taking into consideration the various sites of these towns, it would be fair to say that the majority of them are either on the banks of rivers or have rivers running through them. For example, two very important places in history, the old capitals of Shush and Ekbatan, were built on the Karkheh River. In parallel with developing ways to exploit surface water supplies, early town planners in this region gradually developed methods of extracting and storing subterranean water. One of the most vital water supply innovations, the qanat system, originally appeared in the Achaemenid period and over time became much more vital in the arid regions of Iran.

The hydrographic schemes of Shiraz would outline the impact of the water resources on the emergence of the city. Located at the bottom level compared to the surrounding plateaus and in a highly favorable topographic position, Shiraz had every possibility for implementing greenery. It would then be indicated by the fact that many streams and springs existed, including the Azodi Stream, Saadi Qanat, Kheir Abbad Qanat, and Ab Zangi Spring, respectively. These already demonstrate that there was a great amount of water supply in this region. Further indication of the fertility of the landscape of the region is evidenced by historical gardens known by the names of Ilkhani, Salary, Ghatlagh, Toghi, Atabak, Khandagh, and Behjat Abbad, most of which still exist today.

Hydrographical maps of Shiraz show that at least four kārīz supplied water to the town. The Kheirabad and Roknabad kārīz are those that supplied a major part of the water requirements of the town emanating from the Shiraz Mountains northwest and west respectively. The topography of Shiraz is generally flat with a difference of about 15 m between the high and low points; it can, therefore, be effectively drained with good management.

Despite the crucial role of this underground water supply system in the development of Shiraz's urban fabric, there is a serious lack of archaeological evidence and research concerning the location of specific underground canals. The remainder of this ancient water supply system consists of some cisterns serving as sources of drinking water. Local reports state that reservoirs were supplied by aqueducts and supplemented by collected rainwater during the winter months.

The field investigations in the historic areas of Shiraz show that large land use and changes in urban structure have masked any evidence of underground canals.

Further, a number of earthquakes during the past decades have also destroyed much of the underground structure. Therefore, analysis of the Shiraz water supply system and how it influenced urban morphology of the city depends upon the available documents and historic maps.Whereas the whole general features of Shiraz's historical pattern were predetermined by its aqueducts, separate quarters could be formed around the water accumulator reservoirs and other specially adapted water intake areas.

Zoning and Land Allocation as Influential Factors

From the morphological perspective of city building in Iran, two factors are dominant: religion and trade/economic activities. Urban planning interacts with a city's social, economic, and physical bases in several ways, striving for balance and harmony in an urban environment. This could be achieved through principles of segregation and segregation within the city's physical plan or through incorporation and accessibility within that very structure.

Traditionally, spatial and physical layouts of the city have been embodiments of separation and division, revealing important signs of planning philosophies and practices of the time. According to social geography, such separations are what is usually termed class segregation, while relating to the concepts of zoning in urban development quite closely. The issue of such divisions has been handled by urban planners from a number of approaches, including:

1.Spatial Segregation: It is about the separation of the different physical spaces in a city in such a manner that each of them will serve a specific and distinct area for various functions and activities.

2.Operational Segmentation: It means partitioning the functions performed by the city, through which different kinds of activities are assigned to different locations in order to avoid potential conflicts between uses incompatible with one another.

3. Social and Class Segregation: It means the division of different classes in an urban area into various zones or quarters to be used by the people of different socio-economic statuses.

In all, these parameters give evidence that Iranian urban planning has adapted to the balance between various aspects of urban life in line with religious practices and economic pursuits.

Religious Influence on Urban Formation

When Islam arrived in Iran in 651 AD, the latter's architectural and urban development features had to be basically transformed. The Islamic view had to be inculcated into the urban physiognomy, where everything was interconnected by means of architecture.

The inclusion of dead-end alleys with a view to privacy was another significant change that made the city safer. In these modifications, house developments at the dead ends of alleys gave a notion of ownership of property and thus increased security in that portion of the urban fabric. This trend toward safer and more private residential quarters is further underlined by naming dead-end streets after important local figures.

Besides, the orientation of houses was changed to conform with the Qiblah orientation-that is, the direction towards the Kaaba in Mecca-an indication of the extended influence of religion on town planning. Another determining factor that came into consideration is the place of the mosque within a town, determining the form taken by urban organization.

The internal and external courtyards are other outstanding architectural designs in Iranian houses during the Islamic period, adapting to Islamic values on privacy and modesty, hijab. Adaptation along this line shows how Iranian towns rearranged their configuration of space and structural forms in compliance with the religious teachings that gave rise to the individuality of the urban character that signals their identity to Islamic values.

Trade and Economic Activities as Drivers of Urban Growth

A parameter of trade has historically been an essential determinant for choosing locations to establish cities. Urban centers at the crossroads of major or significant trade routes grew considerably and reached prosperity. Such cities, also called commercial cities, were those that did not only thrive economically from the exchanges between different regions but also became the dynamic center of cultural and social interaction for various populations emanating from other various cities, ethnicities, and tribes.

Many cities located on important routes of trade flow developed distinct quarters representing the amalgamation of cultures, ethnicity, and religions. Often these quarters were at the centre of the formation of a city's structure and character. Certain crafts demonstrated an ability to thrive only in certain towns. For the most part, this led to the formation of separate quarters that often completely altered urban physiognomy and spatial arrangement. For example, Bazare Morgh is a quarter of buying and selling chickens and birds only.

These historical records and urban plans show that the development of Shiraz was indeed very much a function of trade. The location along an intersection of roads coming from Darab, Kazeroon, Isfahan, and Firoozabad contributed much to this rich cultural and commercial transit. This advantageous positioning was probably a reason for dividing the city into distinct neighborhoods, reflecting unique social, cultural, or religious identities. Of the 11 known districts, Balakeft, Labe Ab, Sange Siah, Darbe Shazdeh, and the Jewish quarter were each significant parts of Shiraz's urban life and diversity.

Urban Expansion and Its Impact on the Historical Fabric of Shiraz: A Study of Pre- and Post-Modernization Developments

The two major elements that go to make up contemporary Iranian cities are the traditional and the modern. There is definitely an aspect of urbanism which reflects two different kinds: whereas the modern part contains planned suburbs for the rich and informal districts for the poor and immigrant classes, the traditional part continued the development in pre-modern and post-modern phases with historic architecture up to the 1300s.

Iranian Cities Before Modernization

Before the 1300s Iranian cities reflected classic Middle Eastern urban design. Most were surrounded with defensive walls, guarding against invaders and regulating the town's climate. Cemeteries lay outside the walls. At the center of town two interrelated structures—the Grand Mosque and the bazaar—stood at the heart of the city. The Grand Mosque, usually the highest building, was used not only for prayer but also for judicial and learning purposes, while the bazaar was where commerce was conducted. Very often, a citadel near these focal points also contained strongholds where the inhabitants could hold out for nourishment during sieges.

From this core, residential quarters, or mahalle, emanated, each quarter having minor mosques, baths, and marketplaces. Narrow, winding streets normally ended in the bazaar or in cul-de-sac manner and were amenable to local traffic within each district. The wealthier residents were found in accommodation near the town center, while poorer citizens and minority groups were normally located on the outskirts. The security and privacy of the city in design were paramount, and additional protection was afforded to the residents by the presence of walls. Building materials used were mostly local, and mud and clay stood as the standards, with brick for those of means. Simple homes did not have separate rooms; the larger middle and upper-class houses had distinct living and private quarters.

Iran Cities in the Post-modern Era

While the political and economic developments were underway, the social changes also found their reflection in new settlements, vibrancy, and rapid growth of the urban cities. The cities started to expand, and a new urban fabric started to take shape. As the population began to grow, and rural migration, urban renewal policies, as well as centralized governance, started to take place, the traditional neighborhood structures lost their significance. Instead, the urban areas began to be divided according to the principles of economic and social class rather than on the basis of ethnic or racial identity.Within this period, the Iranian-Islamic city took on its three-tier structure: i) modified traditional areas, ii) newly planned districts, and iii) marginalized outskirts. The latter district followed governmental urban planning regulations, including modern principles of urban setting instead of the traditional Iranian-Islamic pattern. These quarters developed according to the Western models of urban growth which took place mainly in the outskirts of the city or even in villages that gradually became engulfed by the town.

Modernization on a large scale was accompanied by dramatic changes in the role and components of cities. New technology, along with changes in political and economic conditions, made it possible to create new forms of urban features. Narrow, curving streets were replaced by straighter and wider avenues once automobiles became commonplace . As modern business districts were created,

, bazaars no longer served as the traditional hubs; similarly, universities became the center for higher learning, replacing religious schools. The introduction of indoor plumbing made the public baths superfluous, and these traditional districts were disrupted, fragmenting the areas.

With greater military technological progress, city walls and fortifications now served little purpose and were destroyed. City centers also changed with the addition of cinemas, hotels, banking facilities, and contemporary office buildings. All this changed and dislodged the demographic when wealthier denizens left their homes, making changes in socioeconomic status that entrench the traditional areas of these towns and cities.

The significant growth of cities due to rural migration and government investments in economic policies, including land reform and oil wealth, resulted in the development of marginal districts on the outskirts. These informal communities became home to the most impoverished residents, underscoring the social and economic disparities within the expanding urban landscape.

Physical Features of Shiraz before Modernization-up to the 1300s S.H.

Shiraz derived its vitality from three major elements throughout history: the flourishing commercial life, its political centrality, and enduring role of this city in the development of Iran's cultural panorama. The strategic importance of that city was very much due to its location along one of the most important trade routes of the ancient world-the so-called Silk Road. Starting from the borders of China, crossing the Iranian plateau and Mesopotamia, the Silk Road reached the Mediterranean port of Antakya. At Rey City, an essential branch took a path via Isfahan and Shiraz toward the ancient port of Siraf.

The three elements mentioned earlier had a significant impact on the physical landscape of Shiraz, especially during the Zand period. The city boasted a large and vibrant bazaar that served as its commercial hub, while key political and military institutions, such as the grand tribunal or Divankhaneh and the military barracks or Sarbazkhaneh, were situated around the center. These features highlight Shiraz not only as a center of power but also as a crucial location along the ancient trade routes that connected Iran to the wider world.

Physical Structure of Shiraz following Modernization, i.e., from the 1300s S.H. onwards

Shiraz had been walled at various times and at a rough perimeter corresponding to its historic and cultural core, until its growth well outwards saw those walls torn down and reconstructed further outward in what is largely the Pahlavi period, which really transformed major structures into modern broad and straight highways. The drive for modernity, often symbolized by speed and accessibility, took precedence over preservation. This was to continue in one form or another through successive periods, completely changing the city's aspect and erasing much of its original character.

Shiraz was confined to its historical area until 1949, as is confirmed by town maps from that period. In successive governmental periods, there had been different

administrative, political, and religious centers in the city, the last one being that of the Zand dynasty. Some new administrative centers such as the courthouse and municipal offices were built within the same historic area in the 1930s at the beginning of the reign of Reza Shah Pahlavi. Some important squares, like Mashgh and Toopkhaneh, were destroyed to give a place for these buildings. The construction of Karim Khan Zand Boulevard was another critical step taken to weaken the political and conservative influence of the traditional bazaar and modernize the town in consequence of the historic Chahar Bagh passage, later to be extended to the west by the above-mentioned boulevard.By 1976, during Mohammad Reza Pahlavi's time, the extension of Industrial, military, and service sectors was taking place quite a long way from the city's historic center. One of the most important streets that formed during this period is Hafez Street; it appeared to the west of the historical texture near Karim Khan Zand and Lotf Ali Khan streets. It shows a very regular, modern grid system. This westward development of Shiraz continued during the subsequent decades and changed it into a metropolis comprising eight zones. Nowadays, the historical-cultural core of the city coincides with District 8 of the municipality.Since the expansion of the city-and even more so, the rise of extra muros unplanned constructions-the residential areas have widely spread without respect for traditional urban morphology or architectural typology. For this reason, modern unauthorized building has invaded the historical texture and strongly damaged its appearance and cohesion. In fact, it has been shown that new constructions most of the time come up without regard to the architectural language or the urban structure of an area, most of the time with a view to increasing profits while building standards and space allocations are trodden underfoot.

Structural Transformations and the Evolution of the Historical Framework

Due to this unexpected development, the urban texture of Shiraz, especially in its historic areas, was fragmented in such a way that tracing the traditional pattern of architecture became quite hard to find. Most of these new constructions did not pay any attention to the traditions of Iranian architecture and therefore disturbed the organic flow of the city's old streets and passages.

Key changes during this period include the following: Demarcation of roads and pathways which were earlier accessible by pedestrians, disrupted the historical context.

Changes in the balance between public and private spaces by the creation of new vacant spaces, emerging out of new construction.

Alteration in the microclimates of the districts, affecting the standards of residences.

Deterioration of the privacy of historic texture as non-local influences due to economic interests began to infiltrate the area.

Fig.86.Shiraz, 1956: In the 1960s (Solar Hijri calendar), the communication network surrounding the Bazaar and the Citadel was significantly enhanced, creating a clear separation between these areas and the surrounding residential zones.

as non-local influences due to economic interests began to infiltrate the area.

Change in street networks and district structures disrupts the flow in pedestrian movements.

It promotes the environmental degradation with the use of non-traditional building materials, adding to air quality and the visual landscape of the city.

These developments are reflective of wider transformations in the urban structure of Shiraz in the contemporary era, which have been modernization, but at the cost of its historical and cultural identity.

Shiraz in 1949

The first phase of the urban development of Shiraz began during the 1930s, with the purpose of easy access to the central marketplace, Bazar. Some important streets and boulevards were built at this period for that purpose. However, the southern part of the city is wholly residential and thus uncared for in the matter. The main works of the period are as follows:

Construction of Karim Khan Boulevard
Construction of Piroozi Street
Taleghani Street Construction
Creation of the Lotf Ali Khan Zand Axis

Fig.87.Shiraz, 1971: Beginning in 1971, the historical structure of the inner city network took on the form it largely retains today.

Shiraz in 1956

In the 1960s, a clear system of thoroughfares was laid out, linking the central marketplace and the Karim Khan fortification, and effectively isolating these commercial and administrative centers from surrounding residential areas. The most significant construction projects of this period were the Ahmadi Axis and the square before the Shah Cheragh shrine, which finally stabilized it as a major pilgrim center. Other major renovations included extending the system of transportation around the central market and the fortress area, the creation of the Ahmadi Axis and its square, and the extension of Lotf Ali Khan Street for easier access and connection.

Shiraz in 1971

The Shiraz historical network has gained its present form gradually from 1971 up to today. Some of the major urban development plans in this period played a leading role in reorganizing the internal texture of the city. The most important measures included:

Linking Hazrati Passage to the bypass route Completing transport routes near Karim Khan Citadel. Establishing the Teymoori neighborhood and green spaces. Expanding infrastructure in the eastern city area. Finalizing urban growth in the western section

Upgrading Shah Cheragh as a key religious hub. Linking Astaneh and Hosseini passages

Access improving for Mir Alaeddin Hossein shrine. Extending Shah Daei Street for better accessibility

Renovating the Toopkhaneh Square as the main plaza.Constructing modern residential areas in the Moor-destan neighborhood

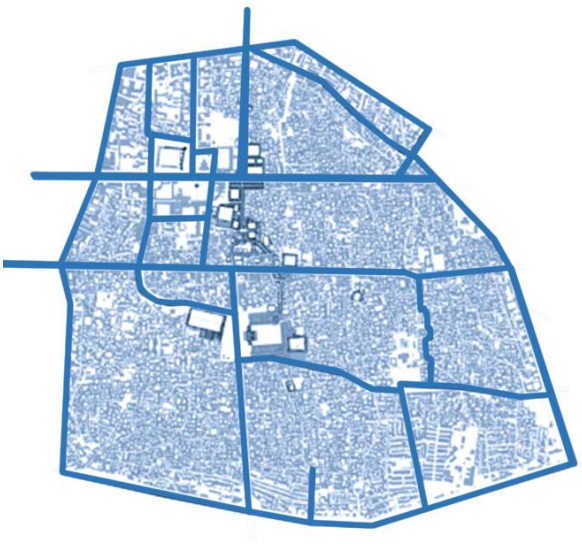


Fig.88.Contemporary Structure Since the 1950s: From the 1950s onward, the focus has been on developing the outer and peripheral routes surrounding the historical core. Emphasis was placed on constructing and completing a ring road around the historic district and enhancing the surrounding streets.

The Structural Evolution of the City's Fabric from the 1950s Onward

In this period, however, the expansion of the urban area has overshot the traditional boundary of the city's historic core and has concentrated attention on the outer traffic ring and peripheral zones. This will prevent congestion and make access easier by shifting development to areas outside of the historic district. With this scheme, there was a major bypass route, which, for the purpose of taking the burden of traffic flow away from the historic center and streets, could preserve its integrity and character by improving circulation elsewhere. During this period of expansion, major infrastructure developments focused on main streets and boulevards such as Teymoori Street, Shahid Dastgheib Boulevard, Sheikh Roozbehan Avenue, Sibuyeh Boulevard, and Zeinabiyeh Street. Of these, each avenue was highly altered to start integrating into the structure system of streets within the city.Thus, the accommodation of the old structures was one of the key driving factors for these urban interventions, enabling easier access to the historical areas. In this respect, one approach pursued by authorities in return was the selected demolition of a few of the existing and older enclosures, replacing them with new ones in order to accommodate modern commercial investments along with public use. This strategy also made access to the historic district far easier and created an urban landscape that could attract business investment, thereby contributing to economic development in previously less accessible zones.The main purposes pursued in this stage of development had been manifold:

Expanding commercial spaces by removing older enclosures,

Boosting construction efforts within the historic district,

Fostering investment in business-focused areas, and

Increasing public facilities, with particular attention to sites around places of worship.

- **Impact on the Passage Network Structure within the Historical Texture**

This adaptation of the modern network to the historical layout of the city has resulted in significant fragmentation and destruction of many traditional passageways. In

addition to changes in Shiraz's physical structure, great changes have taken place in the functionality and role that these formerly vital routes played. The demand to use these passageways has decreased, and those that had served as important connecting elements between the main city entrances and public spaces have been scaled down to mere local access roads. Two major effects brought about by the modern network of passageways onto the old urban structure include:Lost Origins and Destinations: A number of the original city gates and significant public open spaces that once were part of community life have been lost, or their significance has been lost. Community meeting places that were normally used associal congregation points have been eradicated or minimized due to the addition of new roads.

Fig.89.Map of Shiraz's Historical Passageways (Prior to Passage Demolition and New Street Construction)

Fig.90.Map of Shiraz's Historical Passageways (Following Passage Demolition and New Street Development)

Integration with New Routes: The ancient passageways have been partly integrated into the modern network. Traces of their contribution, though, are still vivid in the internal relation of the city. Actually, these routes have lost their original connectivity and character, thus disturbing the traditional flow between different areas of the city.

Thus, the new grid-like street pattern, stiffer and more regular, interrupted the organic patterns of Shiraz. It did not only alter its physical makeup, but also the pattern of social life.

Impact on Ancient Districts

New axes through the city have completely ruined the boundaries of the ancient districts. Some of the districts, including Darbe Masjid and Kalimiha, have been totally destroyed, while others, such as Balakaft, Shah Square, and Sare Dozak, have been fragmented into small pieces. This has totally altered the urban fabric of the traditional city and also broken the continuity and identity of those historic areas.

Influence on Public Arenas

Public spaces, at first located along main passageways and around leading buildings, were once important places where groups of people could come together

and interact with each other. These public spaces have disappeared due to the construction of new roads and redevelopments within their path. This leaves little evidence of their existence and function to have once been a part of the city, such that social spaces, which played an important role in the social life of Shiraz, have become extinct.

- **Interpreting Historical Fabric as a Design Framework**

It means analysis and understanding of morphology, construction kinds, and architectural language in determining how to intervene in historical urban fabrics that need the introduction of a new architectural element. The consideration for understanding urban structure where any modification of the structure will take place involves maintaining existing urban fabric in shaping the development of the city. These include key indicators such as form, location, and density, the proportion of fixed-use areas to block size, the ratio between the largest block and average block sizes, and the difference in building heights-each being a critical determinant in assessing the historical urban texture.

The urban fabric of every city is an ever-evolving entity that mirrors the growth and development of the city over time. It defines the spatial distribution of built and open areas, their relations, proximity, and disposition. Besides, the urban fabric has shown the communication network, access pattern, and characteristics of streets and alleys. Through the texture analysis, one may determine the main and secondary pathways to understand the disposition of buildings in relationship with each other in the net of roads in the city, as modified by environmental factors.

Although urban texture classification is tailored for specific purposes in design, architecture, and development, over ten key factors have been considered in differentiating and classifying urban textures. These include the time of formation, the rate of urbanization, land-use patterns, the spatial arrangement of urban functions, physical cohesion, structure of communication networks, environmental harmony, and population and building densities.

The city texture at each step in development encompasses the historic identity and evolution of a city. These textures need to be preserved amidst organization through urban planning. This way, it would be easier for strategists to fit their work, since understanding the specifics of each texture will save the historical elements along with the urban identity. In that respect, the determination and analysis of such textures are essentially vital for an urban development planning considering aspects of size and quality, and its urban value to preserve the various layers of the city.

The characteristics and limitations of historical urban settings need to be realized for effective urban development. These findings provide a foundation for developing more holistic and feasible development strategies. Much research into the urban structure of Iranian cities has been done, but most of the works are in theoretical dimensions and do not present real solutions to real problems. A very good example is the 2007 "Framework for Identifying and Addressing Declining Urban Areas," issued by the Supreme Council for Urban Development and Architecture in Iran. Although this framework described the process of identifying deteriorating zones, it failed to provide concrete advice on how to address these issues; thus, creating disconnections between academic analysis and effective urban interventions

Urban Fabric of Shiraz (The Ancient Fabric, The Transitional Fabric, The Modern Fabric, The Outlying Fabric, The Satellite Zones ,The Semi-Rural Areas)

As a principle, Shiraz urban texture is divided into six separate textures, including old, middle, new, peripheral, satellite, and semi-rural texture. Here's an elaboration on each:

The Ancient Fabric: Having its roots related to 1921 (1300 SH), this old texture includes residential units from the 13th century. This area is placed around Zeinabiyeh, Sibouyeh, Qaani, Saadi, Ferdowsi, and Keshavarz streets, within the last defensive walls of the city. This texture has been enclosed by battlements with six gates in the past, and its central parts are older. This area was divided by major roads like Karim Khan Zand and Lotf Ali Khan Zand, with smaller roads further fragmenting the landscape. It meant it damaged the intact structure of the area that was supported through a few key buildings and traditional routes-an imperfect yet coherent urban organization. The texture of the old one is characterized by narrow main streets, 3 to 4 meters wide, and secondary roads that are even narrower at 2 to 3 meters. Commercial centers thus evolved overtime, pushing out residential use. Lack of investment in renovation has meant that most buildings are one or two stories tall, with some four-story buildings along main roads. The plot sizes in this texture range from 100 to 300 square meters, and the area is primarily inhabited by lower-income groups.

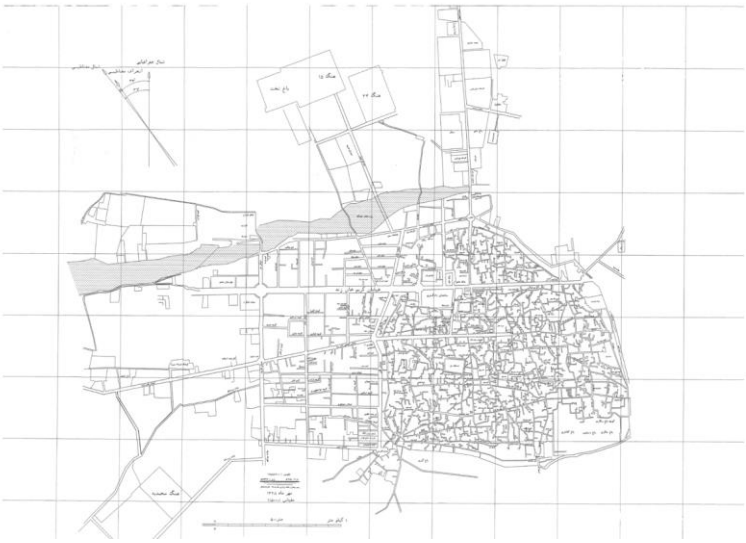


Fig.91.Development of Shiraz's middle texture in the western and northwestern areas

The Transitional Fabric: This texture was developed during the first few decades of the 20th century when Shiraz started expanding out of its old boundaries. With rapid urbanization impelled by population growth, this middle texture developed to house the overflow from the old city. From 1921 to 1961, parallel to new street constructions, the urban texture of the city further changed into more modern forms.

This texture occurred mainly in western and northwestern parts of the older Shiraz. In this form, the streets were more geometrically ordered, while buildings took a more regular layout. In contrast to the organic nature of the old texture, the middle one is grid-like, with wider spaces between residential units and greater uniformity in the building blocks. The widths of the streets vary between 6 and 12 meters, plot area ranges between 80 and 300 square meters, and it contains minimal commercial activities other than the ones on major roads. Modern City Area, This part of Shiraz was developed after 1981, and includes most of the northern and northwestern areas of Shiraz. The width of the streets in this area is between 10 to 19 meters and all are aligned according to a system of grids for easy flow of vehicles. The majority of the buildings are multi-story and the development pattern is based on a strategic plan developed through various growth studies of Shiraz. The design focuses on main

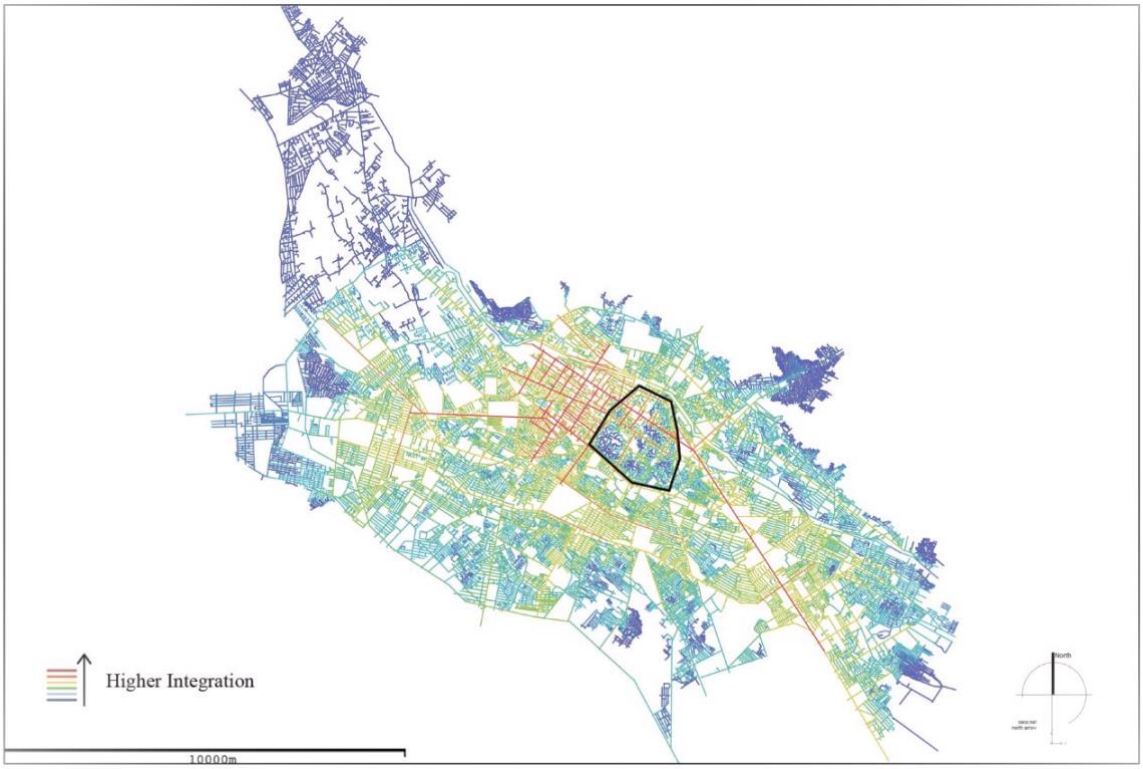


Fig.92.Shiraz city limits, showing the results for integration.

transportation routes and structured land distribution, reflecting modern ideals in urban planning.The Outlying Fabric: which started to appear about 1971, is representative of the suburbs and dormitory towns surrounding Shiraz. In fact, peripheral zones expanded more and more, especially since 1981, due to the increase in population, migration in town, and housing needs. Such development usually took place to the east and south of town and often didn't follow more formal urban planning. The middleand high-income groups in some areas, especially in the northern region, built more orderly developments. However, much of this peripheral texture does have ramifications of informal growth, such as the the eastward appearances of marginalized unplanned neighborhoods.

This is often radically underserved by municipal infrastructure and services.The Satellite Zones: The satellite texture began to take shape in the early 1980s through planned satellite towns created to alleviate pressure on Shiraz's urban core. These estates were designed to afford orderly living quarters and alleviate some of the hardships presented by unregulated growth. The only one of these developments which could be identified in Shiraz is the New Sadra Town, which lies northwest of the city. Construction in Sadra started in 1992, and this town remains the city's only satellite development, designed from its inception to ease the pressures of sprawl most effectively.The Semi-Rural Areas: Semi-rural texture might come from areas that developed through the incorporation of surrounding villages into the city's fabric. Although not thoroughly new, these textures meld rural characteristics with influences of the urban environments. Parts of western and northwestern Shiraz have developed from what were previously villages such as Talkhdash, Qasr al-Dash, and Koshan. Further, these have moved away from being purely rural in layout to more urbanized forms, although remnants of their village setup are still somewhat evident. The urban structure is newer here, because in recent years there has been much redevelopment.

- **Analyzing the Historical Fabric of Shiraz**

The major steps involve analyzing the historical fabric of Shiraz, and are as follows:

The initial research centers on analyzing documents and exploring the origins and development of the city. Shiraz, similar to other cities in Iran, has evolved around three key pillars: defense, trade, and culture. While these elements may not be readily apparent in the city's present layout, historical evidence reveals a thoughtfully planned urbanization process influenced by these foundational aspects.

Second Phase: Following this, an inquiry into the historical maps and remains of cities that have been closely related to Shiraz on an urban basis was conducted. Namely, remains and maps from Bishapur and Ghale-ye Abu Nasr proved beneficial in enlightening the hypotheses regarding Shiraz's development by providing a contrastive setting in which to understand its course of urban evolution better.

Third Stage: This includes field studies and urban surveys carried out in the historic fabric of Shiraz. These surveys laid the pathway to understand the changing texture of the city. The selection of selected districts allowed the research of crucial architectural elements and spearheaded to deliver in-depth information by paying due attention to each element of a building regarding its historical importance.

Final Step:The final step is the integration of the outputs from the previous steps in terms of developing principles and guidelines of design. This is necessary so that the outcome is useful and implemented in practice in order to form a base for a conservation intervention in historic textures with respect to the heritage of the city.

- **Shiraz: Urban Development and Structural Formation in Recent Periods**

The structure of Shiraz City can be put under the scanner from the year 1921, when modernization began in Iran, and further, the growth of this city, along with its physical form, can be seen to have undergone five separate phases.

The First Phase of Development (1925–1956)

Between 1925 and 1956, Shiraz underwent rapid urban development, especially in comparison with the Qajar period in which growth of the city remained restricted. In 31 years, the population of the city was doubled and increased up to nearly 170,000 in 1956. There are a number of factors that resulted in this transformation, including modern technologies such as automobiles; military bases established an network of government institutions extended. Up until this time, Shiraz had a contained growth pattern because of the traditional ways of living, high mortality rates, and less mobility. However, during the three decades, the city saw much development.

This era introduces the westward expansion of Shiraz beyond its historic core. The Governor-General's Office and General Staff headquarters, located more than a kilometre west from the old city's western boundary, hastened the construction of a new middle urban zone. With its flat, buildable land, the western edge became highly desirable for residential building, and with the streets well-planned and well-defined to make the area desirable. The non-residential uses of land then arrived, and the area urbanized.

Then, a new focal point of the city appeared: around the axis of Karim Khan Zand Boulevard, opposite Vakil Bazaar. It was strengthened by the building of Zand Street,

The area around Setad (Imam Hussein) Square emerged as a central hub during this period of urban development. Significant changes unfolded between the Vakil Bazaar and the old Bagh Shah Gate, now referred to as Zand Crossroad. Several important public buildings were constructed during Reza Shah's reign, including key financial offices, administrative departments, and a detention center situated within the historic Karim Khan Citadel. Nearby, new government facilities and civic offices were established, enhancing the city's administrative influence and its economic role.

In the 1930s, private enterprises also began constructing urban facilities in the city. These facilities included transportation, movie theaters, restaurants, and hotels, which mainly were centered around the Zand Crossroad. In the late 1930s, the second half of Zand Street, from Setad Square to Namazi Square, was also built. As a result of the establishment of important institutions in this district, security improved in western Shiraz, incentivizing further residential development.

Development of commercial establishments beyond the boundaries of the old city, which was in need of modern construction, vehicles, and fashionable boutiques, became the birthplace of the downtown Shiraz. Thus, with the emergence of new streets, traditional markets shifted to street-front shops, and most of the market stalls moved to the newly established streets, leading to development in the commercial outlook of Shiraz.

The Second Phase of Development (1956–1966)

The second phase of development in Shiraz was marked by the extension of the urban area 1.8 times compared with its 1946 size, including heavy construction during this period. A number of important factors were in favour of such rapid growth: founding and development of the university, military and administrative centers expansion, access roads, immigration. Also, the health improvement of the public, such as control of fatal diseases and low mortality rates, accompanied by population growth fed the growth of the city. The decline of the traditional agriculture system and movements of capital from villages to cities also accelerated the growth of Shiraz. Interestingly, during this time, there is no significant development on the east part of the city. This urban marginalization first appeared only on a very small area in the south.

In the north, the historical axis of Darvaze Esfahan-Darvaze Qoran retained its importance, while the construction of the Bagh Safa Bridge initiated a new road which linked Setad Square to the northern part of the city. During this period, however, the main axis of growth remained westward, where heavy developments-such as the construction of Namazi Hospital, one of the biggest and best-equipped in the Middle East at the time-inclined the extension of Karim Khan Zand Boulevard even further west; and the formation of a grid of streets, known as the Hedayat area, was assumed as the second phase of growth.

Along this newly extended Karim Khan Zand Boulevard, various key institutions were established and developed, including Poostchi Hospital, Shiraz University of Medical Sciences, the Faculty of Engineering, and the Red Crescent Organization, previously called Shir-VA-Khorshid. Qasr Dasht Street, an old highway, was to develop as another key corridor of development parallel to the westward Lotfali Khan Zand axis. Along Lotfali Khan Zand Boulevard, from Gode-Araban to the Paramount, today Panzdah-e Khordad Crossroad, business and urban services developed without stop, which served to saturate the commercial axis. This westward expansion of commerce and services continued to either side of Qasr Dasht Street up to the Cinema Saadi Crossroads.

Besides this commercial growth, many hospitals and medical centers were under construction in the middle part of the city, and even within its historic core, which also continued to lure residents and plunged this area as the new commercial, administrative, and medical hub. These changes thus gradually shifted Shiraz's city center from the historic core to the western edge of the city. The general trend in urban growth was essentially like its predecessor but was more rapid in this period. While open space filled and residential areas began to expand with new commercial and administrative buildings, the western edge of the city took on greater importance.

Despite this westward shift, the Zand Crossroad-the starting point of Shiraz's earlier development-continued to be an important leisure and commercial hub, serving quite varied contingents of the city's population.

Third Phase of Development (1966–1975)

The period from 1966 to 1975 marked a pivotal phase in Shiraz's transformation into a modern urban hub. During this time, the city's area expanded 2.2 times, and its population grew by 1.57 times compared to 1966. When compared to 1956, the city's size had quadrupled, and its population increased by 2.49 times. By the end of this era, Shiraz had grown to more than eight times the size of its original historical core. However, the rate of physical urban expansion outpaced the population growth, highlighting a significant disparity during this period.

Key Factors That Drove the Rapid Development during the Years. It was further triggered by establishing scientific, administrative, and military centers, promoting car manufacturing that led to an extended car ownership within the city. Foreign exchange earnings increased along with oil price improvements, and continued rural to urban migration brought further rapid growth in Shiraz. Some of the rural migrants into Shiraz include those rural people who could not fit into the new agricultural system in rural areas propagated by the land reforms;.

Considering the period taken into focus, one of the changes most relevant to the urban structure and morphology of the city was definitely a sharp growth of marginalization. This happened particularly in the eastern and southern parts of Shiraz: these zones became primary areas of informal settlements due to the fact that land was cheaper there and they were crossed by principal migration routes. At the same time, western development showed slackening growth compared to previous decades.

This was further improved by the bridging of the dry river with several bridges: Namazi, Hijrat, Hor, and Pirnia. Access was thus hugely improved, triggering development in the northern areas of the town. An upbeat urbanization process thus resulted in the northern slopes of Shiraz. The creation of the city park stirred development in residential quarters around it. New branches north of Zand Street, like Hedayat Street to the south, were formed to continue promoting residential quarters.

Overall, the pattern of urban development during this period carried on the tendencies that were visible a decade earlier, but to a much greater degree-think more expansive, yet one still eliciting core improvements in infrastructure, increased residential and commercial uses within the city.

The Fourth Phase of Development (1975–1989)

Between 1975 and 1989, rapid urban changes gripped the city of Shiraz more so than in the preceding decades. However, most of the development that went on

This phase also demonstrated a continuance of the progress made during the third phase. Although there was expansion in the south and east of Shiraz as well, it was once more less organized than in the west.

Upgrades to infrastructure and urban facilities within the historic heart of the city often led to the permanent loss of much of its historic character. Many residential neighborhoods near the marketplace were converted into storage areas for goods or abandoned altogether, losing their original identity. The influx of migrants into these regions triggered unplanned construction and significant alterations to the city's layout. As a result, housing was unevenly distributed, creating pronounced inequalities in population density and contributing to one of the city's most pressing urban challenges.

This coincided with the broader national challenges of population growth and urbanization, especially during the fourth national development plan, showing the unbalanced distribution of the people and resources. These issues stimulated a more integrated approach in terms of city planning. The fifth national development plan, from 1973 to 1977, regulated the distribution of services and infrastructure in the urban areas and allowed municipalities to work toward solving their problems of sprawl and growth. In this general strategy for urban planning, several municipal laws were modified during 1966, which aligned cities with national development. Such national plans had their impact on Shiraz's physical structure too, like other cities.

During this time, Shiraz was rapidly being developed in the northwest and west of the city. Wide streets were developed due to high-rise structures in many different parts of the city. New areas of Shiraz were being constructed without much attention toward preservation of Shiraz's historic core. The result was a changed urban fabric for the city because more resources were invested in new development rather than preserving the historic areas of the city.

The Fifth Phase of Urban Development

This thirty-year period from 1989 to 2019 brought significant changes to Shiraz’s urban landscape, though the nature of these changes followed similar patterns to earlier phases. The city expanded in all directions, with the northwest remaining the focal point of most construction and development. Key initiatives during this period included the creation of industrial zones and parks, the development of satellite towns and residential areas, as well as the building of **highways** and the widening of existing roads. Additionally, new streets were constructed within the historic core of the city to reduce traffic congestion.

One of the most notable developments during this period was the expansion of the Shah Cheragh shrine and the construction of various cultural, tourist, and commercial complexes within the historical districts. By 2011, a renewed focus on restoring and revitalizing Shiraz’s historic areas emerged, leading to a transformation of many residential buildings into accommodation centers aimed at attracting tourists.

This would involve destroying part of the old residential district to build a mega cultural-commercial complex between Shah Cheragh-Astaneh shrines-the most contested effort by any Shah. Accordingly, the idea opposed urban planners and other development experts in that it meant erasing part of the old urban fabric as 57 hectares around the shrine's precinct would also have to be cleared from densely packed residential districts.

The influx of migrants and the rise of informal employment in the old citycenter further altered the urban structure. Many of the remaining residential units in these historic districts were converted into warehouses or commercial spaces, disrupting the traditional residential and demographic balance. Overall, these developments drastically changed the **morphology** and architectural character of Shiraz, especially within its historic core, with lasting impacts on its **social, economic, and environmental landscape.

Shiraz's Path to Growth: Exploring Endogenous Development

In general, Shiraz was extended westward, as was the case for many urbanizations in those times, but the growth was not in an even pace and scale. The city adopted modern wide streets as the population increased and more use of automobiles was recorded. This led to much disturbance in the historic core, where its urban structure was destroyed, as most of these wide streets were created. The most important streets that can be named are Karim Khan Zand and Lotfali Khan Zand for the major ones, and Ahmadi, Hazrati, Noh-e-Dey, and Astaneh for smaller ones.

Shiraz has been continuously changing since the beginning of modernity in Iran, that is 1921. Due to an endogenous development process, much damage was caused to its historical texture. Shah Cheragh Shrine was extended and developed by one of the most important projects in later years, which can be said to be one of the continuums of this transformation. Another example is the so-called "Shrine to Shrine" project, which was to create a cultural and religious corridor between Shah Cheragh Shrine and Astaneh Seyed Mir Mohammed-it failed to achieve its goals. The second example is the building of the Noh-e-Dey Street, which entailed the destruction of the valuable parts of the historical fabric of the city in order to develop the traffic flow, thus accelerating urban disruption for the sake of endogenous development.

While endogenous development has been propagated as a holistic strategy in efforts to fight against suburban sprawl and low-density expansion in many developed countries, it has always resulted in a long-term approach less than expected in Iran. Besides that, the strategy has been so much implemented in Shiraz with major concentration on physical changes at the cost of retaining cultural and historical evidence in the city. However, the more reflective application of endogenous development in Shiraz's urban planning could still lead to the significant improvement of development methodologies within the city. It is relevant to note, nonetheless, that endogenous development should pertain not only to physical planning but also to social, economic, and environmental concerns.

- **PART FIVE:** THE HISTORICAL TEXTURE OF CITIES AND THE INTERVENTION PROCEDURE

Introduction

One of the most important approaches that can help to maintain the historical city texture in its physical and social vitality is building within the existing built space. However, contemporary processes and intervention methods have been an important problem for professionals, especially in developing countries. Developing countries lack the theoretical basis and intellectual basis of many such concepts concerning

urban development and intervention strategies in historical areas since they are not the originators. This is because of the growing need for development to be balanced with the conservation of historic areas.Given the importance of the conservation of historic buildings and textures, as well as the value of cities, several international charters have been produced so far with the purpose of guiding and controlling interventions within them. These documents establish the bases for the management of interventions that are produced in historic textures and give guidelines on how development should be carried out without changing their cultural and architectural values.

Probably, the critical question arising from reviewing those national and international guidelines is: Do they take into consideration building within the existing spaces of historical cities? In case of an affirmative answer, what kind of indications are provided, and to what extent do they facilitate or restrict interventions in such sensitive areas?This chapter discusses the complicated relationship between heritage preservation and urban development by drawing lessons from the processes of inserting new construction within historic cityscapes. The chapter begins with the historical perspective on the development of infill, identifying their contribution to forming both the character and function of the ancient urban environment. The study will lead up to a critical discourse on contemporary urban practices in relation to successful cases and challenges faced during interventions within the historic areas.

The chapter then focuses on Iranian cities, referring to various case studies and surveys in order to show different approaches adopted for the needs of these urban textures. Particular attention is paid to Shiraz, where the impact of master urban plans on the city's historic core is analyzed in detail. It would be inclusive of how such schemes have framed the urban tissue, influenced the architectural continuity, and supported or disrupted the cultural identity of the area.A review of comparative intervention methodologies follows, where the national frameworks and international conventions are reviewed. Considering such standards, the chapter develops the gaps, strengths, and opportunities of intervention strategies in historic zones.This multilevel analysis is concluded with the formulation of operational principles for responsible and sustainable urban development. This chapter, which is dealing with the protection of the cultural and architectural nature of historic areas against the increasingly heavy pressure of modern urbanization, serves as a road map from the past to the present on how to design new, innovative solutions in such an environment with rich heritage in a context-sensitive manner.

Approaches to Urban Intervention in Historic City Textures

This report gives an overview of urban development in Iran concerning the challenges caused by large-scale interventions in the historical textures of its cities. The paper discusses the failures of Iran's modernization efforts and urban planning within the context of the 20th century and beyond. The issues, among others pointed out in the document, include the following:

Imitation of Western Urban Models: Iranian urban development imitated Western modernization models, which had been developed in a specific cultural, social, and architectural context in Iran. In replicating the West's modernization models, they failed to consider the cultural, social, and architectural contexts of Iran, leading to new urban structures not in harmony with the historical texture of cities.

Incoherent Planning and Execution: Most urban intervention plans were incoherent with the existing urban structures , which became reasons for failure or partial

Road widening for accessibility

Increase profitability of residential projects

Construction pattern changes for optimal utilization of available space

Macro Strategies for Improvement in Economic Activity

Given the deficiencies in the current context but keeping in mind the possibility of economic enterprise within this historical fabric, any future interventions will need to be concentrated in the following areas:

Economic Performance across the City: Expand the activities according to the demand generated by the current city population .

Areas of Specialization and Fundamentals: Specify the areas of specialization and develop an investment portfolio at the community level to assist in the accomplishment of multiplier effects in the local economy.

Centralized Economic Activities Basic Needs

The renovation of the historic area will create focused activities that respond to a number of basic needs. Among them are:

Centralized Economic Activities Creation of activities with centralized performance in respect to the city for cohesive economic performance.

Full Economic Cycle The creation of activities that can effectively provide a full cycle of production, supply, training, and sale and repair in a metropolitan context.

- Space Benefits: The economic activities should be based on the use of spatial advantages provided by the historical texture and should be at an operational scale.

- Surplus Retention: These activities should retain surplus value within the historical fabric to ensure the sustainability of the local economies.

- Decentralized Performance: Activities are to be oriented toward those that do not develop highly centralized concentrations in other parts of the city for the purpose of maintaining an equitable urban environment.

- Concentration through Zoning: The zoning system should make economic activities concentrate within the western half of the historical area where applicable synergy and efficiency will prevail.

Currently, the uneven development of activities within the historical fabric has not only impeded all conservation and development efforts so far, but has also imposed a significant encumbrance. For example, the high market turnover and heavy traffic attract large numbers of people, which in turn break residential stability and transfer surplus capital into other urban zones. This incoming capital creates construction in those areas and makes the historical texture a residence for the workers of the market, who mostly do not have any sense of appreciation for its value or the capacity to renovate or repair their homes.

Besides, the city-based economy has favored the presence of free, inexpensive shops whose activities are unrelated to the historic and cultural identity of the region. For example, research has identified that the tissue historical has increasingly focused on misery services that contribute nothing to the growth of the region but to its decline in prosperity and fame.

execution of the projects. Not even the approved plans were commonly successfully executed due to rapid planning, disregard for local needs, and economic pressures.

Damage to Historical Texture: Interventions have, in most cases, been highly destructive to the social and economic dimension of urban historical textures of Iran, as well as the physical one. The large-scale development projects create visual chaos and undermine social relationships in urban settings.

Failure of Revitalization Projects: Despite the reconstruction projects undertaken for the uplift of historic urban areas, most of those projects were unsuccessful in achieving their objectives. Removing historic values, absence of consideration of social factors, and lack of coordination among the agencies were only a few of the issues present.

Late 20th Century Efforts: During the late 1980s and throughout the 1990s, there was a shift toward town-planning in tune with more strategic approaches and integrated processes, with token gestures toward preserving historical textures. However, this was largely unsuccessful because of weak execution, resource shortages, and lack of coordination.

Large-Scale Projects That Failed: Grand projects of development, such as the Imam Reza Shrine project in Mashhad and interventions carried out in cities like Isfahan, Shiraz, and Tehran, were considered failures. The nature of these projects changed the texture of the city without consideration for the needs of the local population or even the historic character of the area.

Conclusion: On this basis, the paper concludes that interventions into historical urban textures in Iran were utterly ineffective. Projects failed to preserve the physical, social, and cultural essence of the respective historical areas; in fact, they often created more problems than they solved.

Urban Interventions in Shiraz's Historic Fabric: Insights from Master Plans

As discussed in earlier parts of this study, efforts to address the historical fabric of Shiraz, similar to those in other ancient Iranian cities, have taken place under the framework of overarching urban development plans. These initiatives have been categorized under various themes, including the enhancement of historical textures, the resolution of problematic areas, the revival of cultural-historical pathways that have lost their urban significance, and the renovation of non-urban living spaces. Key interventions also aim to revitalize urban areas facing significant challenges.

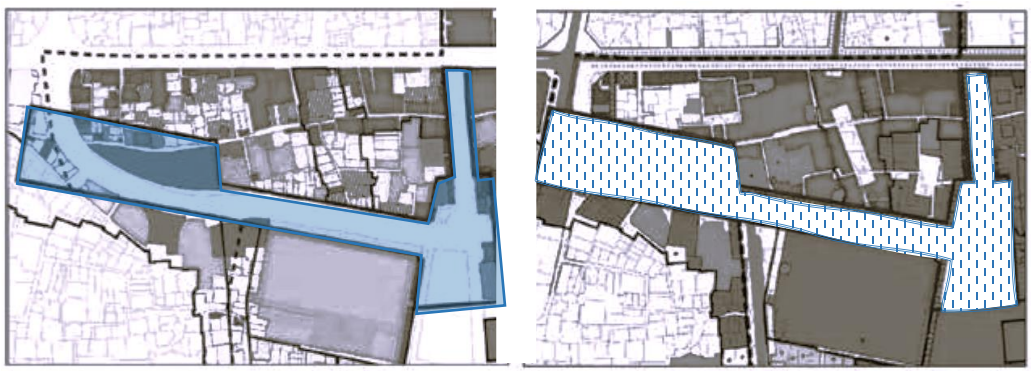
Significant intervention initiatives targeting the historical urban fabric of Shiraz comprise the Sang-e-Siah Passage Revival, the Malek Passage Revival, the development of the Nikan Cultural, Commercial, and Residential Complex, the establishment of the Shrine to Shrine Cultural Complex, the Shah Cheragh Shrine Development Plan, and a range of smaller projects.

Widespread demolitions and the declining efficiency of the historical fabric, compounded by numerous issues faced by the local residents and stakeholders, prompted the formulation of a strategy known as the "Revision of the Detailed Plan of the Historical-Cultural Area." The strategy specifically addresses specific problems regarding the historical tissue and is looking for answers.In November 2011, Pardaraz Consulting Engineers presented a comprehensive review of the detailed plan for the Shiraz Cultural and Historical District. After a three evaluation the

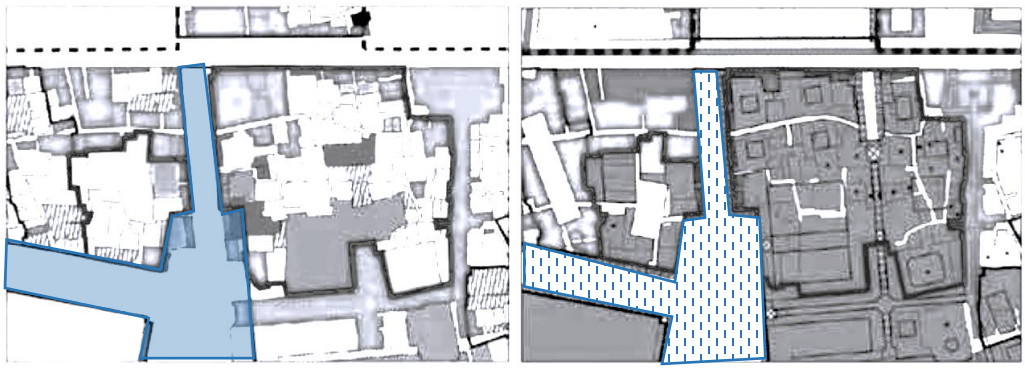
Fig.93.Revitalization and Development of Shiraz's Historical Areas

Before

After



Area 1-1



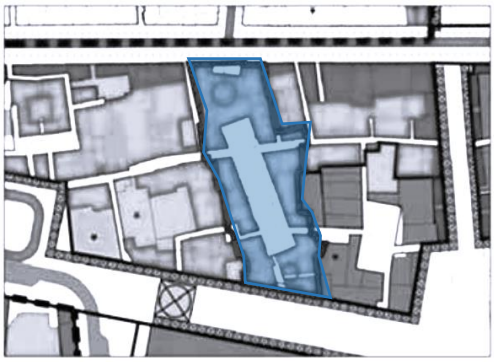
Area 1-2

Area 1-3

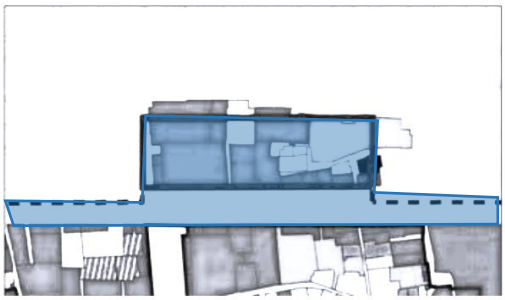
Fig.93.Revitalization and Development of Shiraz's Historical Areas

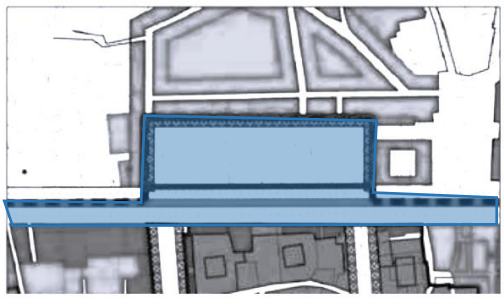
Before

After



Area 2-1





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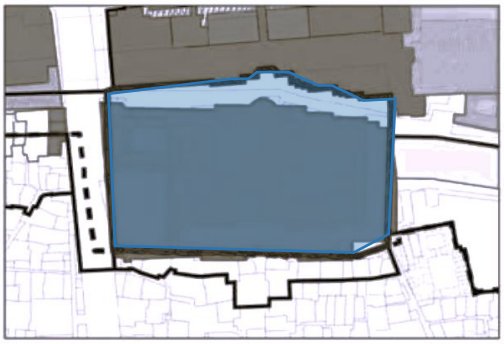
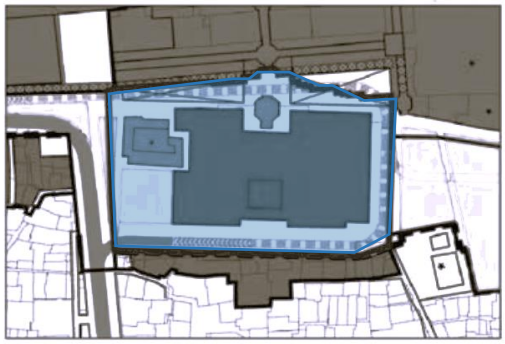




Area 2-3

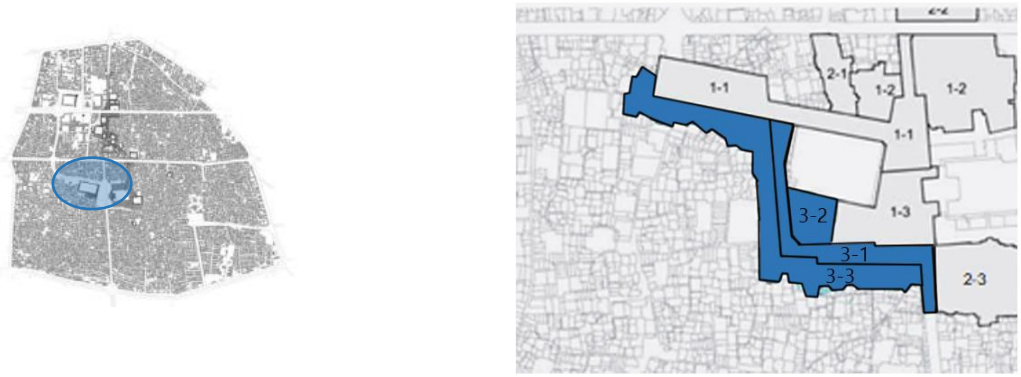
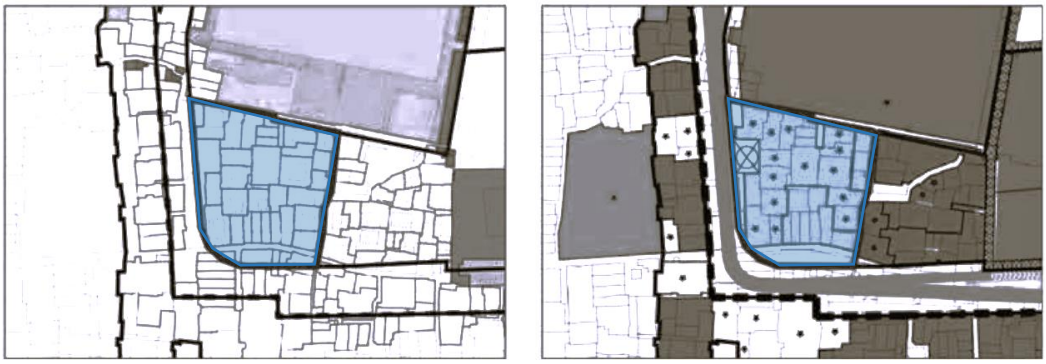


Fig.93.Revitalization and Development of Shiraz's Historical Areas

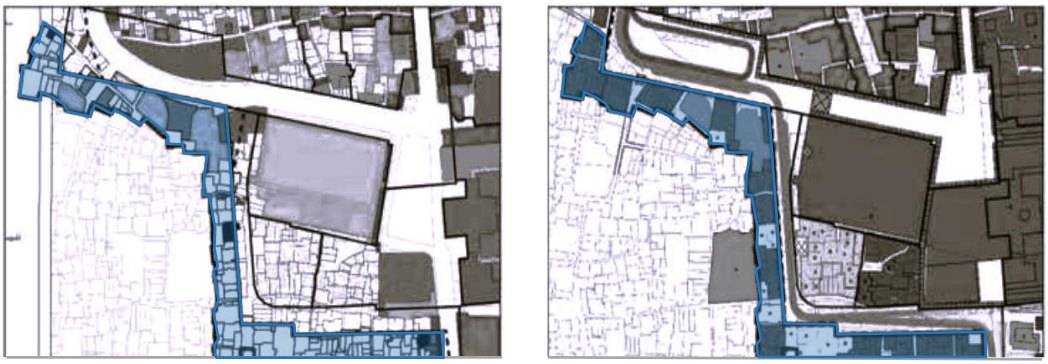
Before

After

Area 3-1



Area 3-2



Area 3-3

, Ministry of Roads and Urban Development granted approval for this plan in 2014.

The most recent updates from the revised plan (2011) outline objectives, strategies, and policies to address the historical fabric. This includes macro-management frameworks, intervention methods for the historical texture, and proposed solutions to enhance the area effectively.

Macro Strategies for Revitalization of Historical Area

One serious problem concerning the historical region is the gradual and relentless decline along with physical deterioration, which forces large areas to be abandoned and laid to waste by stagnation in social activities. The main strategy underlying this plan is Urban Renaissance; the focal point of this strategy is changes in activity structure in a revolutionary way. This can be realised with the following strategies:

1.Attractiveness, Authenticity, and Differentiation**: Give more attractiveness and distinctiveness to the city as a whole.

2. Priority Given to Cultural Aspects: Take precedence over artistic and cultural aspects over any other type of intervention and restoration.

3. Contextualization: Align the environment physically and socio-economically with its historical context.

4. Dynamic Urban Spaces: Create a dynamic and shifting urban area that is responsive to community needs.

5. Cultural and Cultural Revival: Activities are shifted, especially in the eastern and southern parts-toward cultural and recreative activities.

6. Cultural Emphasis as Catalyst of Regional Economic Growth: Manipulate the uses of culture-driven initiatives toward regional economic growth that would substantially affect future avenues of direction and developmental potentials.

Macro Strategies in Addressing Housing Crisis

The valorization of all unique values of the historical fabric counteracts the housing crisis with service and infrastructure upgrading and necessarily requires the following: rich history, well-defined spatial identity, social character, quiet environment, pedestrian way of life, richness of architecture, and spatial quality. The following two strategies are instrumental in enhancing the quality of housing stock and residential environment, which is indeed a determining factor to enhance renovation rates and reduce decay.

- Improving Housing Quality:

Improve standards of accommodation.

Infrastructure development.

Provide facilities.

Ensure safety and security.

Create a friendly social environment.

Densification:

Shah Cheragh Shrine and Tourism

Shah Cheragh attracts many visitors, especially in religious occasions and festivals; infrastructure that is conducive and on par with market and housing demands is necessary amidst existing constraints. Furthermore, tourism that pertains to the historic aspect of the city remains confined to small visits to places such as the Karim Khan citadel and the historical market; many cultural and historical sites have not yet been discovered or utilized properly. This implies that a large portion of the financial means is taken out of the neighborhood, even though tourism remains the same.

Conclusion: Activities within the historical texture are not dynamic and effective enough to contribute to sustainable development. Now, based on those challenges, the following suggested macro strategies will help improve the activity structure of the historical area:

Suggested Macro Strategies for Revitalization

1. Improving Work-Sharing Patterns with the City:

- Developing the Pilgrimage Role: from the shrine, become increasingly important to ensure more visitors.

- Consolidating the Business Role: developing business activities which support pilgrimage and cultural tourism.

- Promoting the Historical-Cultural Tourism Role: manifest evidence of the dynamic character of the area by making possible productions and provision of services.

2. Development of Functional Environmental Capacity:

- Ease Congestion: Spatial efficiency with more visitors and establishments.

- Maximize Accessibility: Accessibility of the whole area - both to residents and visitors.

- Ensure Functional Synergy: Complementary functions blend activities of the historic space through careful planning.

Whereas this could only be done in a limited way given increased congestion and lack of accessibility, functional synergy could be achieved by sensitive planning that allows functions to be interrelated and function in harmony with each other within the historic context.

From the various studies conducted on the Shiraz Detailed Plan, the critical understanding of the interventions in the historical and cultural texture is enumerated below:

Overview of Detailed Plan

The detailed plan of Shiraz for the historical and cultural fabric shall fulfill its objectives in line with the segregation of the area into four distinct zones, wherein each segregation emanates from particular characteristics. The respective actions to be proposed for each zone include:

1. Primary Structure of Historical Texture:

- Activities: This zone is to be absolutely protected, enhanced, restored, and reinforced with the view to preserving the essence of its historic core value.

2. Zone of Treasures Assembly

- Activities: Active protection initiates an activity at a place of important historic treasures.

3. Zone of Treasures Constructions

-Activities: The zone focuses on micro renovation and rebuilding with a view to maintaining the value of key constructions.

4. Traditional Urban Areas:

- Activities: Reconstruction and development activities are to be focused on upgrading these districts in order to maintain an appropriate standard of living.

Identified Issues

From the "Detailed Plan Review of the Shiraz Historical and Cultural Area" and from accompanying field investigations-particularly in relation to such projects as the "Shrine-to-Shrine Cultural-Commercial Complex"-a number of issues have been noted in the failure of actualized outcomes to achieve many of the identified priorities:

-Lacunas in the Implementation: Most of the goals envisaged in the plan have not been correctly transformed into reality, especially regarding adequately compensating for the lost architectural features due to demolition.

-Lack of Conformity with Standards: The fact that minimum requirements regarding the language of urban architecture, morphological concerns, and environmental and architectural standards were not respected is what, in fact, makes this kind of intervention highly defective.

-Unmet Community Needs: The detailed plan, despite its comprehensive approach to the study of needs and feasibility relevant to its architectural propositions, has failed to meet the local residents' and stakeholders' physical and social needs.

Lingering Issues

Several unresolved problems reflect the failure of Shiraz's historical texture urban regeneration:

- Traffic Congestion: One continuous problem is traffic congestion.

Social Issues: The development of social ills such as delinquency has had negative impacts on the area in terms of human beings.

-Residence Reluctance: It is observed that there is a remarkable number of cautious attitudes about living in the historical area, which is mostly related to shortages of houses and a weak substructure.

-Economic Disbalances: The unequal share of economic values attached to land and property in historic texture signals serious imbalance among parts.

Thus, the current approaches to urban regeneration have not adequately addressed the root causes of Shiraz's historical texture. Inability to meet the physical, social, and economic needs of the community showcases the failure of the greater urban strategies in this culturally diversified area.

Conclusion

Construction within the historical texture of Iranian cities' urban structure is full of problems and complicated questions, each one of which could have a deeper study on its own. However, this research focuses on a broader, yet crucial issue that could contribute to the future of urban development in these historical areas.

There are no set norms and logical procedures that have been evidenced in the case of Iran's traditional urban fabrics when it comes to the regeneration of unoccupied or abandoned space left derelict for commercial benefit through property speculation. No definite goals or planning concepts have, as such, been stated behind the transformation of such underutilized regions in the city's historic core. Because of this, the rise of new construction and the removal of these historical textures as a result of this factor are winning the race compared to efforts exerted to preserve the past. This situation brings under scrutiny how necessary it is that stringent guidelines ensure developments within these localities uphold the structural authenticity of ancient structures.

The characteristics and historical context of urban fabric, including archaeological and historiographical studies, will determine the methods and approaches used to read and understand the city’s texture. However, all approaches to reading urban textures share a common foundation: the analysis of urban morphology and architecture as key components in interpreting and designing within historic city environments.

The development of the urban district is influenced by multifarious factors such as cultural traditions, religious beliefs, economic activities, kinship ties, and political dynamics. It is these elements that define the urban fabric and cause its morphology to change through time. Thus, one critical aspect of understanding historical urban textures is the realization of how the interactions and behavior of the people have contributed to the city's pattern and form. The creation of new infill structures in these historical contexts is done in three major steps: reading, designing, and implementation.

This being the first step in research, the climatic conditions of several historical ages are an important guide to understand how the region evolved. Also, studying historic happenings which influenced building the city-for instance, wars, occupation, and climatic changes-is one major aspect of the preliminary phase of study.

In addition to this in this project, it is intended to further explore the understanding of Persepolis and provide an interesting site for visitors to understand it better and see its importance. This ultimately brings us to the end that the study of Persepolis' structure was not only important to understand the architectural and urban principles of ancient cities but also gives important lessons to modern intervention in historical urban fabrics. The balancing at Persepolis among aesthetics, functionality, and cultural meaning can be of utmost guidance in the current day's preservation and development of historic urban areas. In interpreting how Persepolis was designed to interact with the surrounding environment, a better understanding is obtained about those critical factors that in turn shall shape future urban development in historical contexts.

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