



Urban Transformation

Case Study: Isfahan, Iran

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STEP 1

Select a town in your country of origin, ideally your home-town, search for maps from different times and for today, distinguish major periods of urban development and their characteristics in terms of urban growth and expression of design for “core and edges”(1:50000)

Introduction to Isfahan

The city of Isfahan is renowned as a symbol of Iranian urban glory and elegance.

Isfahan, a historic city in central Iran, is renowned for its rich cultural heritage and urban design rooted in the Safavid era. Historically **centered around Naqsh-e Jahan Square**, the city grew systematically along the **Zayandeh Rud river**, integrating gardens, mosques, and bazaars.



Silk Road Path



Iran in the World Map



Isfahan in Iran Map



Isfahan County



Isfahan City

Original core of Isfahan

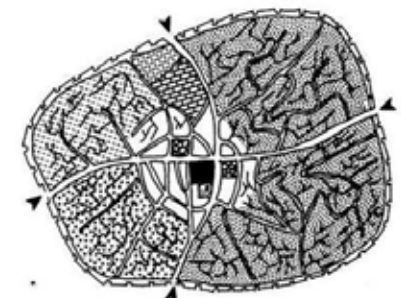
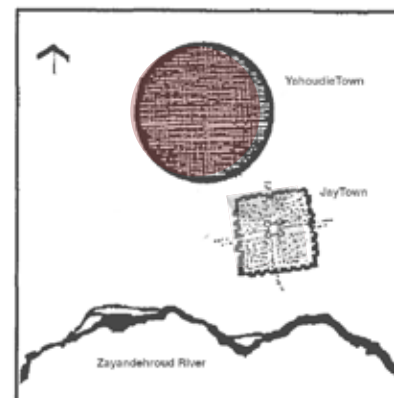
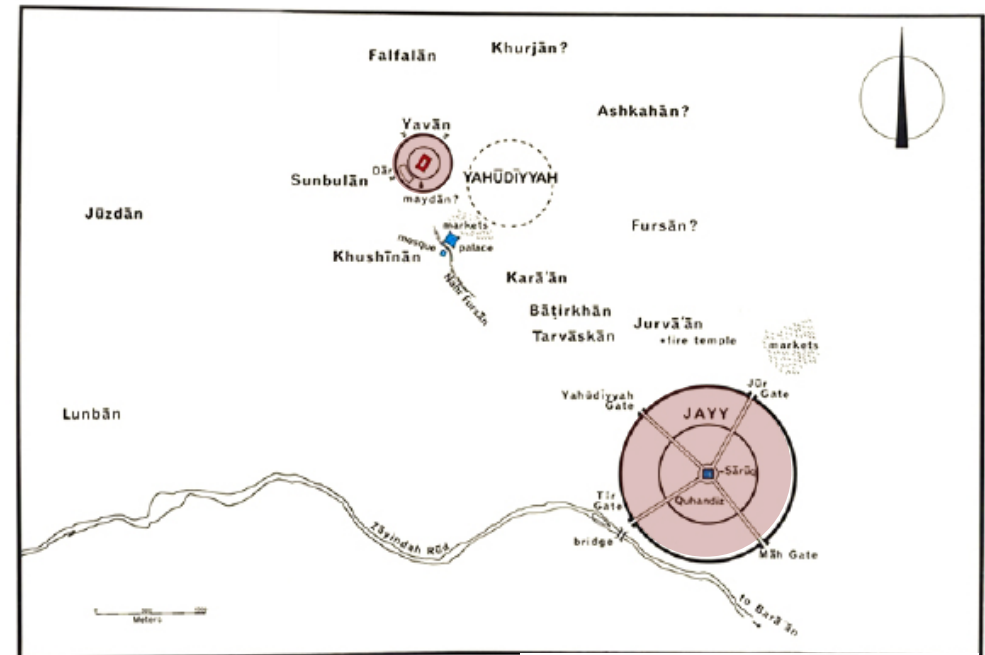
Early Islamic Period (7th-10th Centuries)

The current core of Isfahan was originally formed by settlements known as **Jey** and **Yahudiyeh**.

The reason for choosing these areas was their proximity to the **Zayandeh Rud River**, which provided an ideal location for **agriculture**, as well as their closeness to the **Silk Road**.

Jay had a **linear-nuclei structure** with settlements connected by routes and waterways. After the Arab invasion, the Jame Mosque became a central urban element.

This period is characterized by the transformation of agricultural lands into urban spaces.



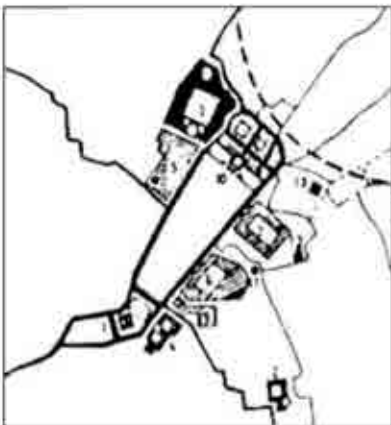
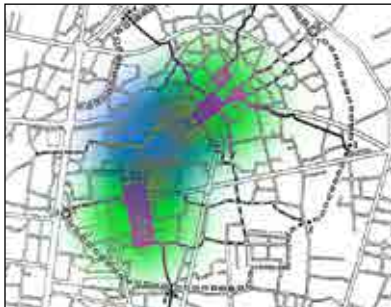
A schematic model of Islamic city

Seljuq Era

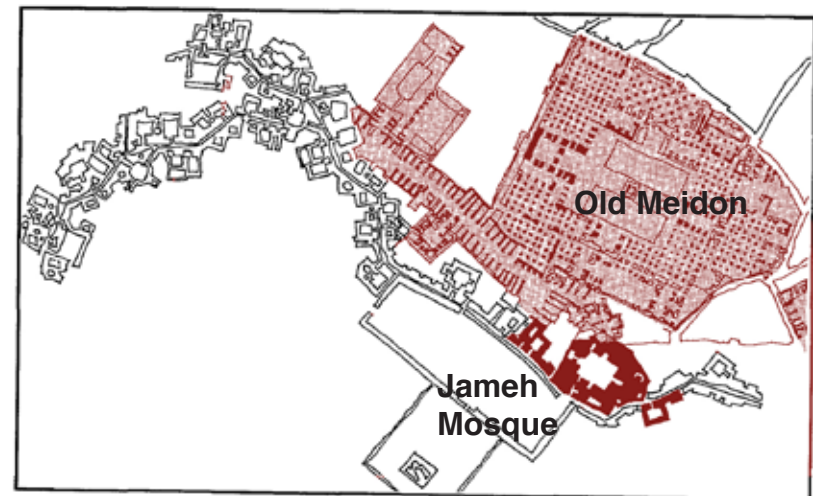
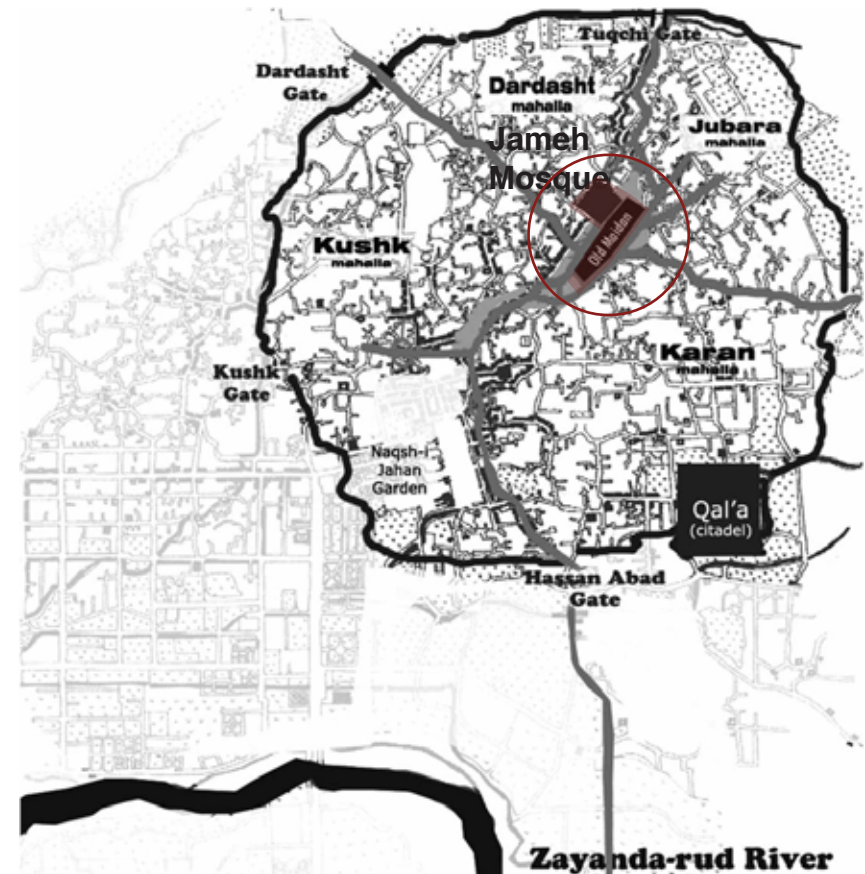
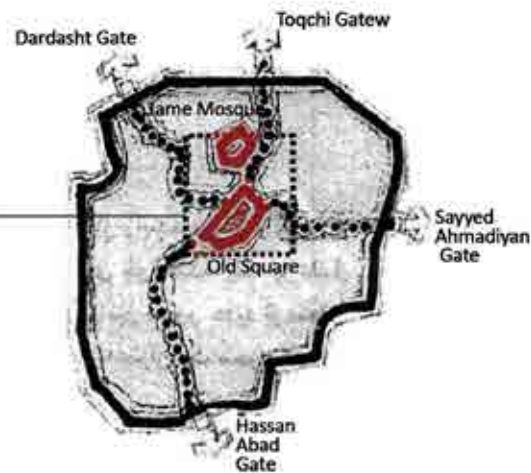
The character of the interconnected and enclosed city (11th-12th Centuries)

Isfahan developed a coherent and central structure with the main spaces and governmental buildings concentrated around the **Atigh Square** and **Jame Mosque**, which became the focal point of **religious, social, and political activities**. The city was enclosed by a defensive wall with gates, and major roads radiated from the center to these gates. The urban structure became **central-radial**, with the main bazaar connecting to the city gates.

The city's core was located around the Old Square as the main center of access, and the linear structure of the city continued along the bazaar. **Key urban spaces included squares, bazaars, and transportation routes.**



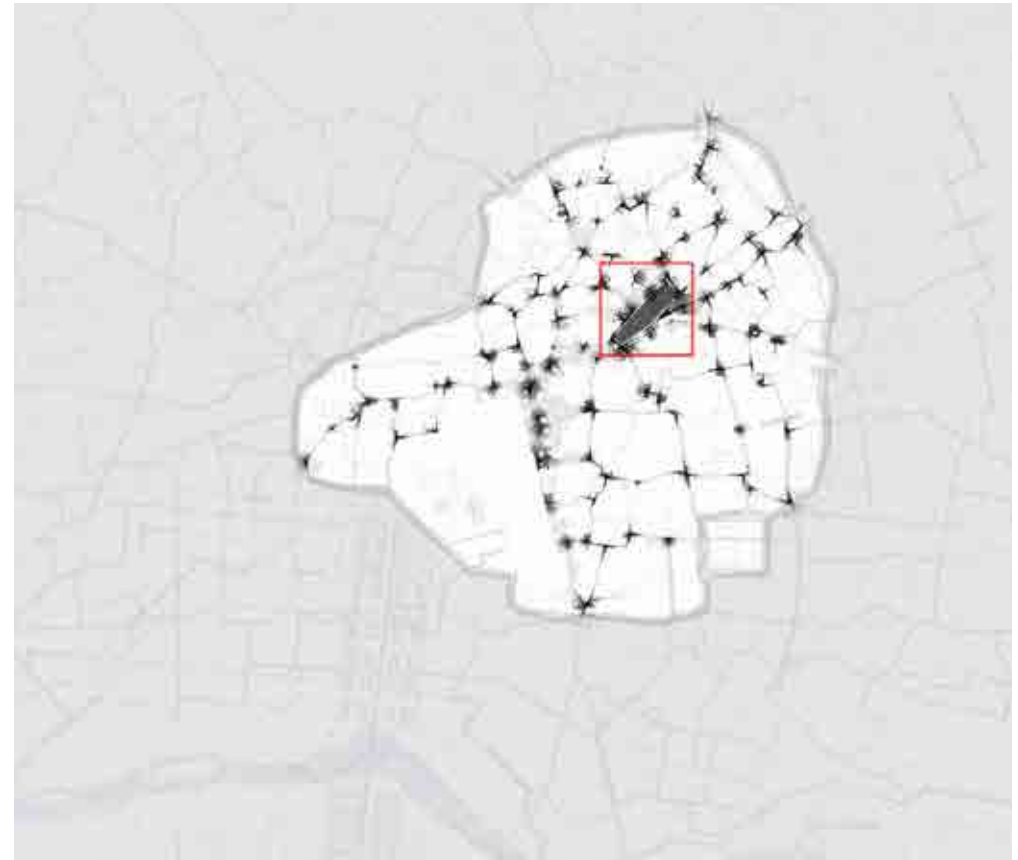
Isfahan_School_of_urban_design_a_morphol



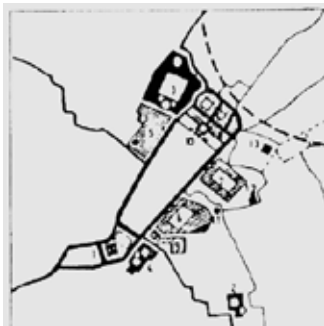
Seljuq Era

The Evolution of City Center
(11th-12th Centuries)

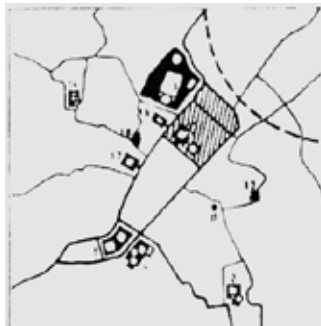
Before Isfahan's **city wall** was built, the old Maidan functioned as an **open market** for commercial, social, and religious activities near landmarks like the **Jame Mosque**. Initially unstructured, it became a Bazaar-Maidan after fortification, fostering **village expansion**. The city grew **linearly** with shops along main routes and residential clusters inside the walls. Over time, new neighborhood centers emerged, connected by secondary routes to the Maidan. Atiq Square, the old Maidan, became a key historical hub, evolving significantly over time.



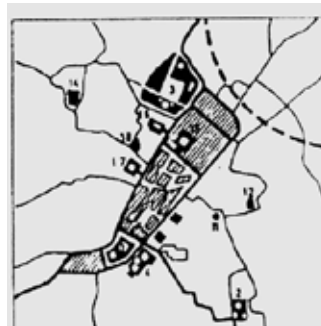
Abbasid (8th- 9th Century)
- Emergence of Isfahan
- Common open market space
Between villages



Seljuk (10th- 12th Century)
- Forming initial city structure
- Primary City Center



Safavid (16th- 18th Century)
- "Golden age of Isfahan City"
- Subsidiary City Center



Qajar (18th- 20th Century)
- Depressing vacuum occurred
- The old maidan get filled by
residential
and commercial complexes



Contemporary (1950s- 2000s)
- Superimposing new street
grid on
the historical layers
- A ring imposed over the illd
maidan and cut the arterial ba-
zaar



Existanig situation
- A new multilevel historic style
square erected on the place of
old
maidan
- New streets passing under
the
new maidan

Seljuq Era

The Evolution of City Center
(11th-12th Centuries)

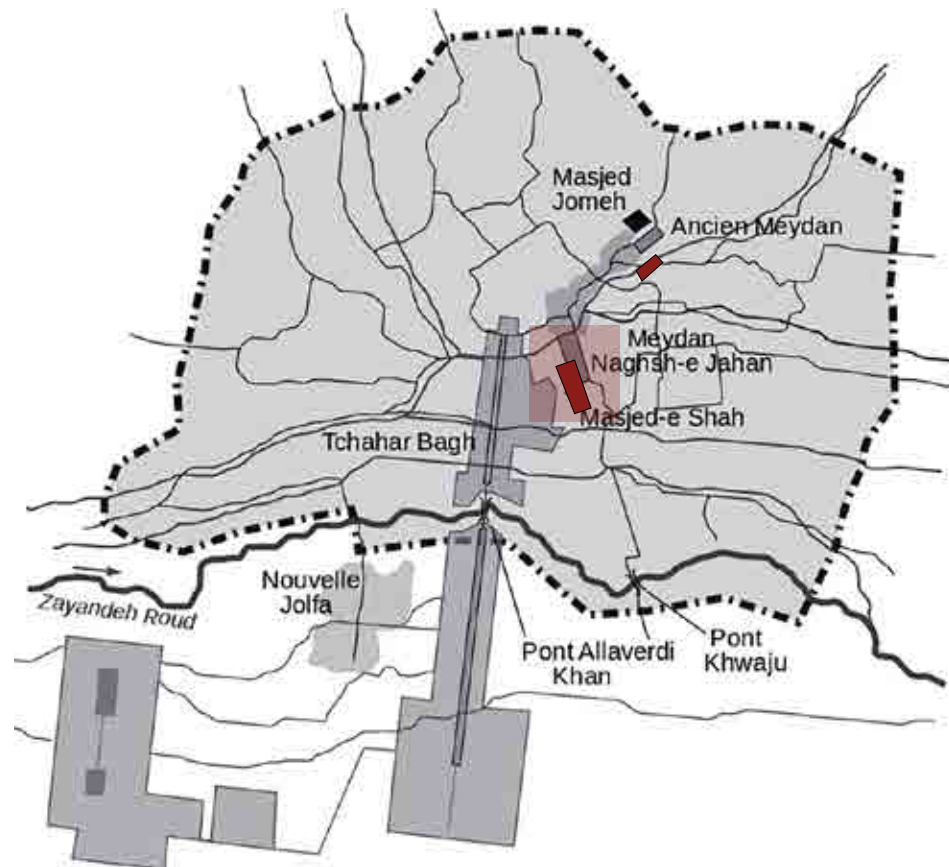
In this period, the structure of the city core is central radial with a predominant orientation northeast-southwest and on a larger scale with the Madies and the river is as a linear-nuclei



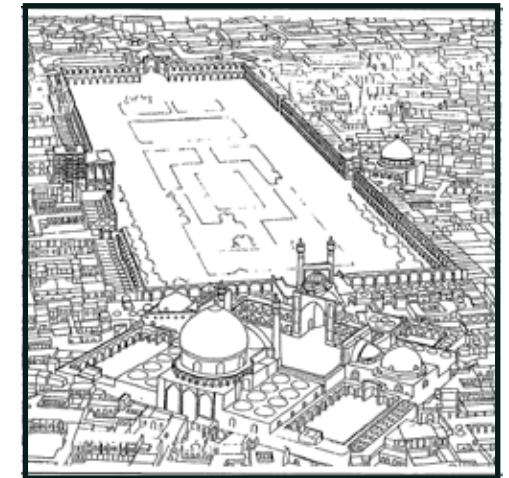
Safavid Era

View of Open City (16th-18th Centuries)

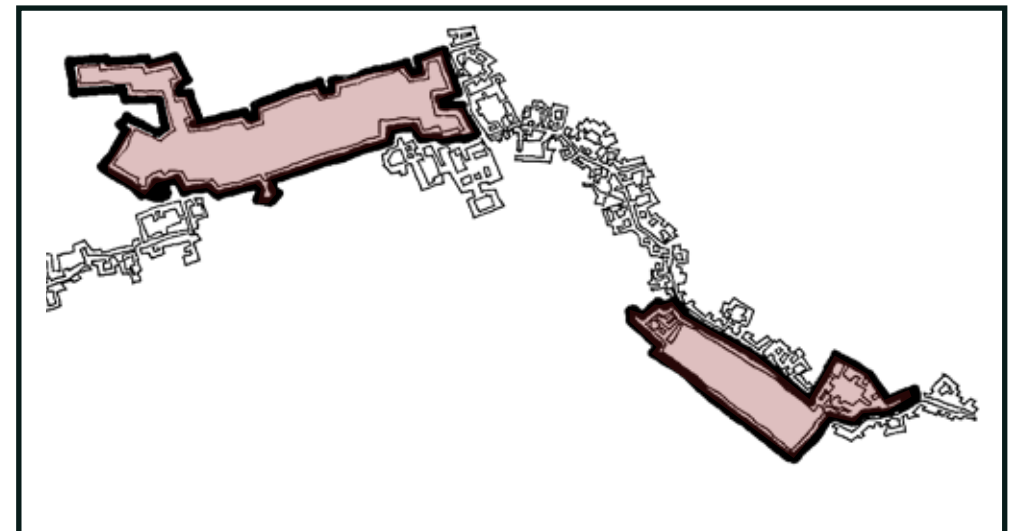
During the Safavid era, Isfahan was chosen as Iran's capital and underwent significant growth, particularly to the **south** and **west**. This Development comprised planned and organic expansions. The planned developments included the iconic **Naqsh-e Jahan Square**, surrounded by structures like the Ali Qapu Palace, Sheikh Lotfollah Mosque, Shah Mosque, and Qaysaria Bazaar, reflecting political, religious, intellectual, and commercial power.



City crosses, BUILDING THE CITY- Omid Omrani-2015



Naghshe-i-Jahan square, incoming routes and its adjacent urban elements, based on Ardalan's map



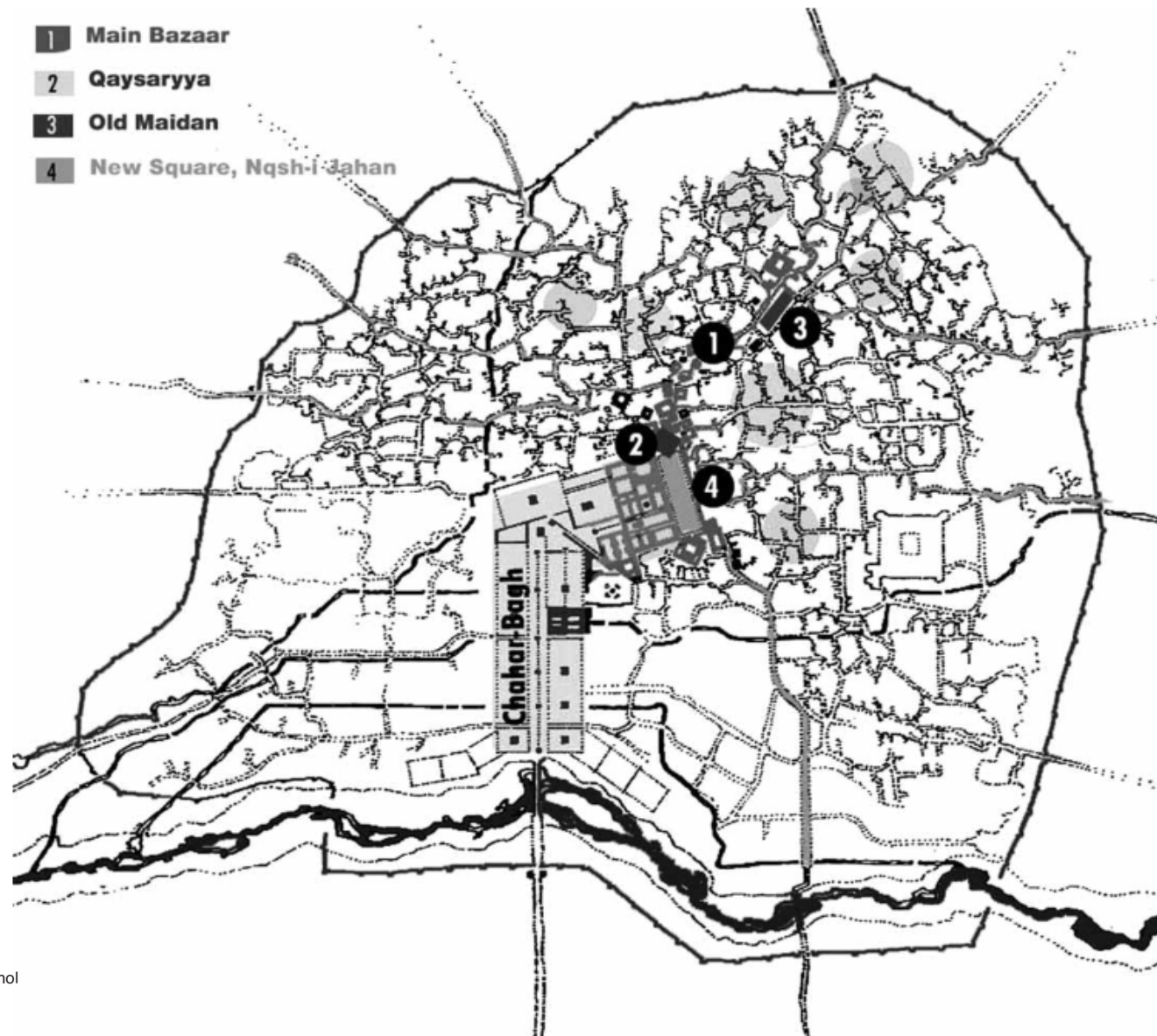
Transformation Edges and Cores:

Edges: Growth extended toward southern and western parts, including the development of Jolfa and Abbasabad districts.

Cores:

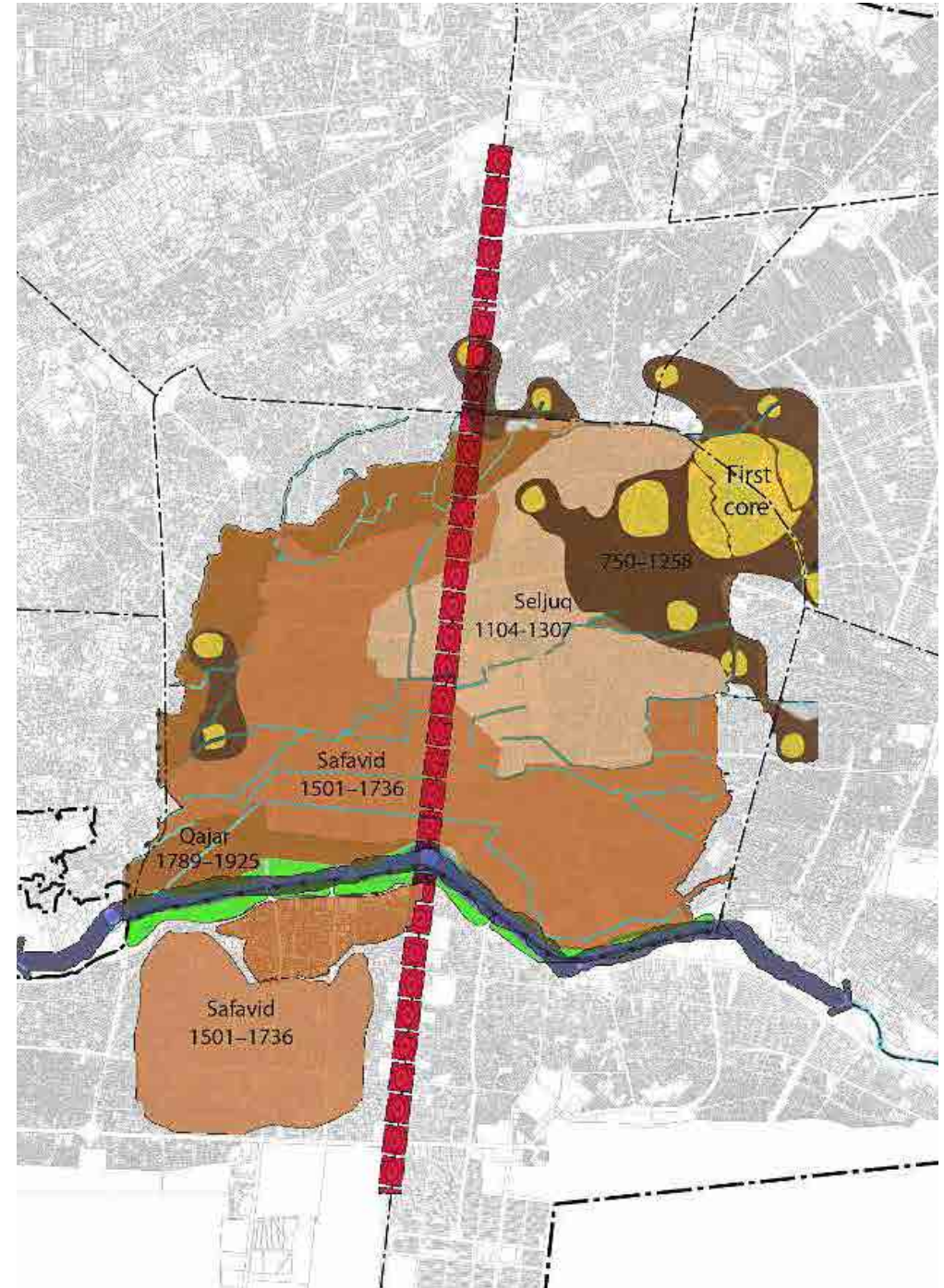
Old Core: The historical city center.

New Core: Naqsh-e Jahan Square, established as a symbolic and functional focal point for commerce, religion, and governance.



Urban Expansion of Isfahan Over Time

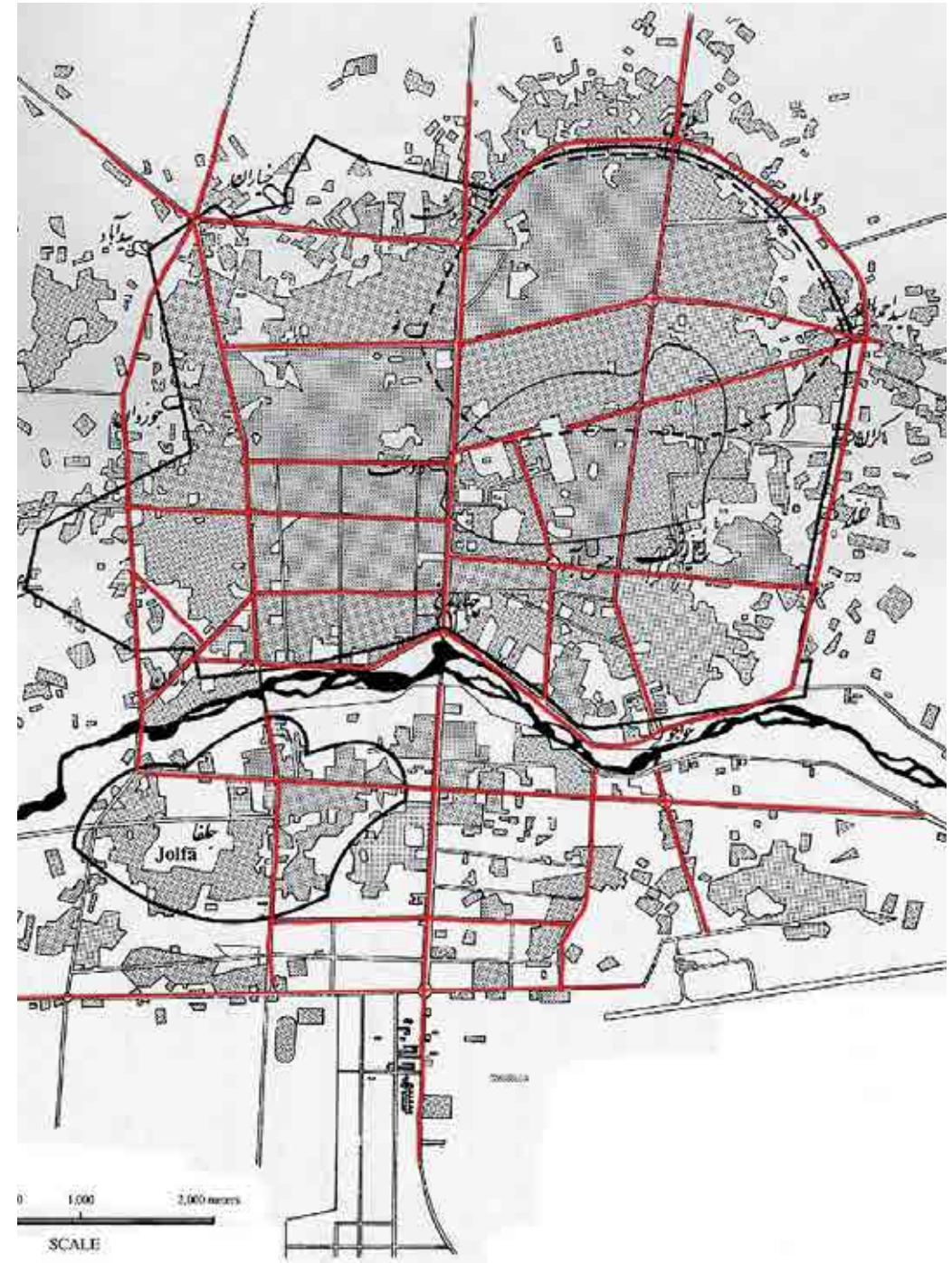
This map illustrates the changes in Isfahan's urban expansion across **different eras**, highlighting the transformation of its spatial structure over time. It showcases the city's growth from its early settlements along the **Zayanderud River** to its modern developments, reflecting the impact of historical, social, and environmental factors on its urban evolution.



Pahlavi Era until Now

(20th Century)

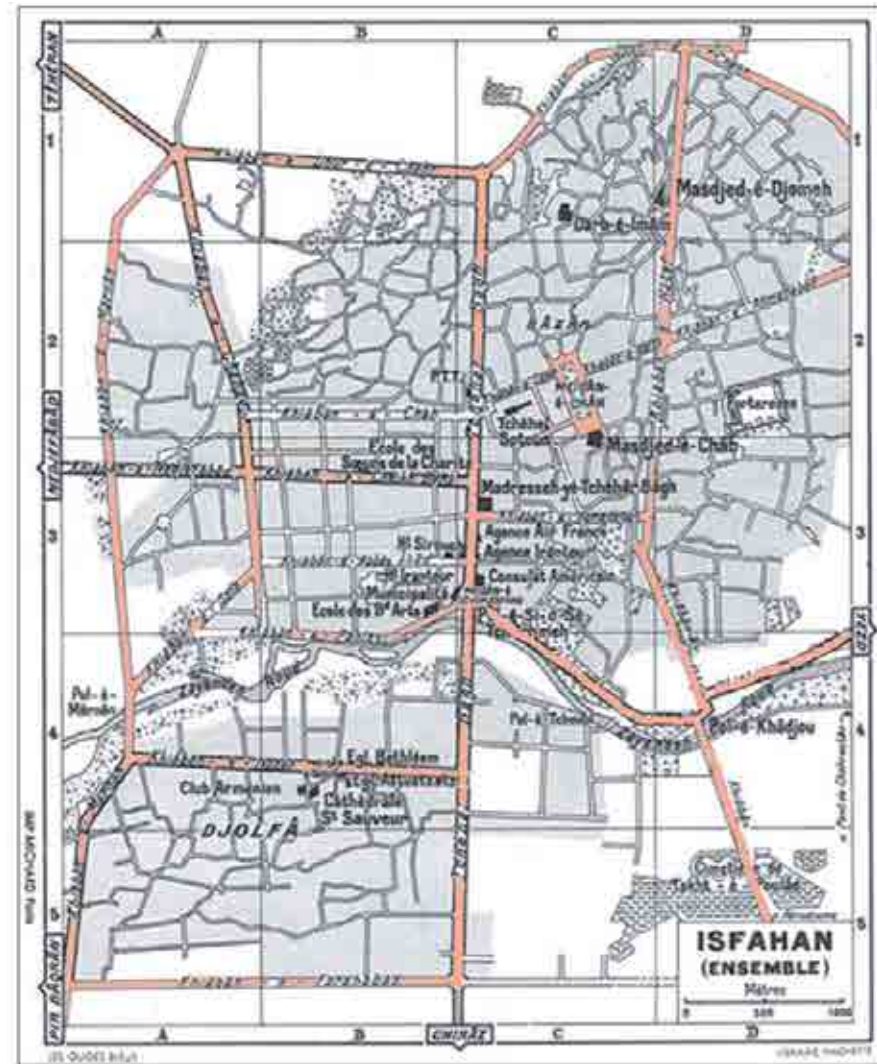
The introduction of modernization brought significant changes to Isfahan's urban structure. Road-building and physical reshaping programs introduced **grid-patterned streets**, fragmenting the traditional urban fabric. The traditional bazaar lost some of its economic significance as new trading centers developed along these streets. The city's structure evolved to integrate the old core with new traffic axes, shifting its spatial organization to a networked framework centered on service axes. Additionally, new industrial spaces emerged, and the city expanded in all directions, resulting in a **multi-core structure**.



Pahlavi Era until Now

Isfahan's structure in Pahlavi era (1956). The structure is networked.

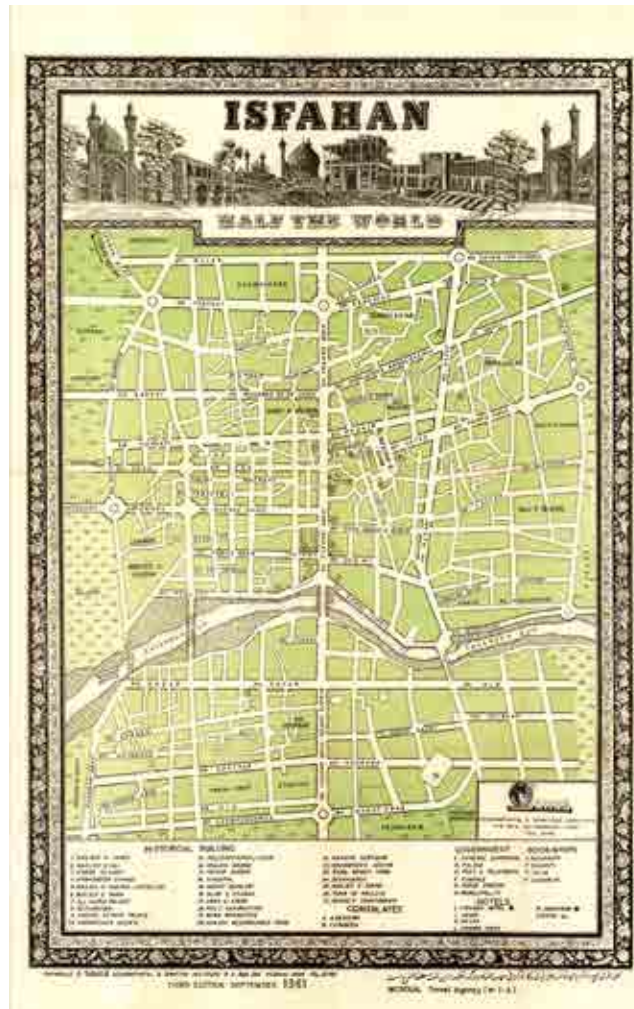
During the Pahlavi era with the aim of renovating the worn-out contexts left from the Qajar period, street construction continued based on the previous structure



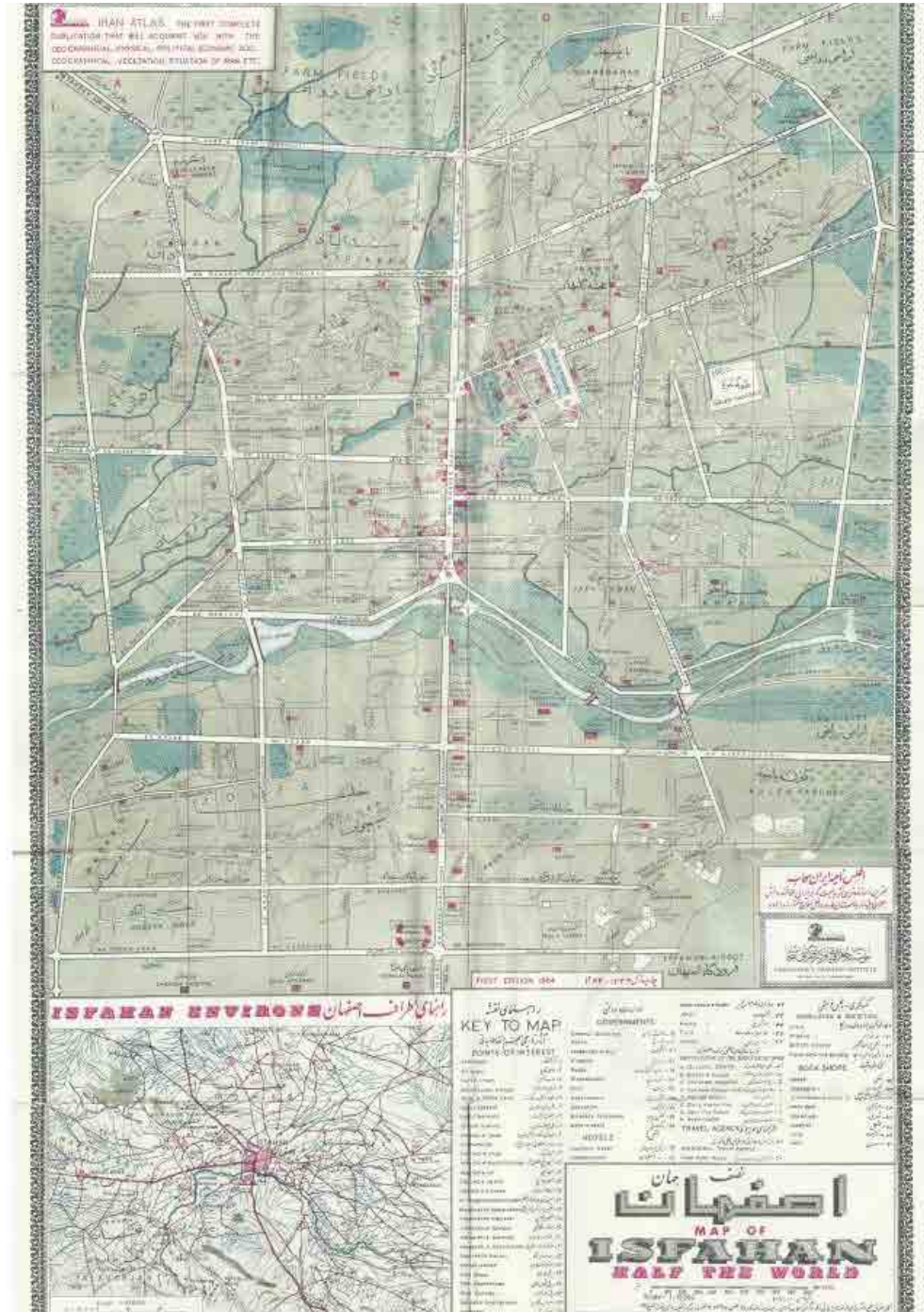
Pahlavi Era until Now

The streets of Isfahan in the years 1921, 1932, 1946

What can be understood from these developments, illustrates the cross sectional cutting, namely the connection line of the historical texture of Isfahan has planned and performed, which destroyed a part of the texture and valuable structures.



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Pahlavi Era until Now

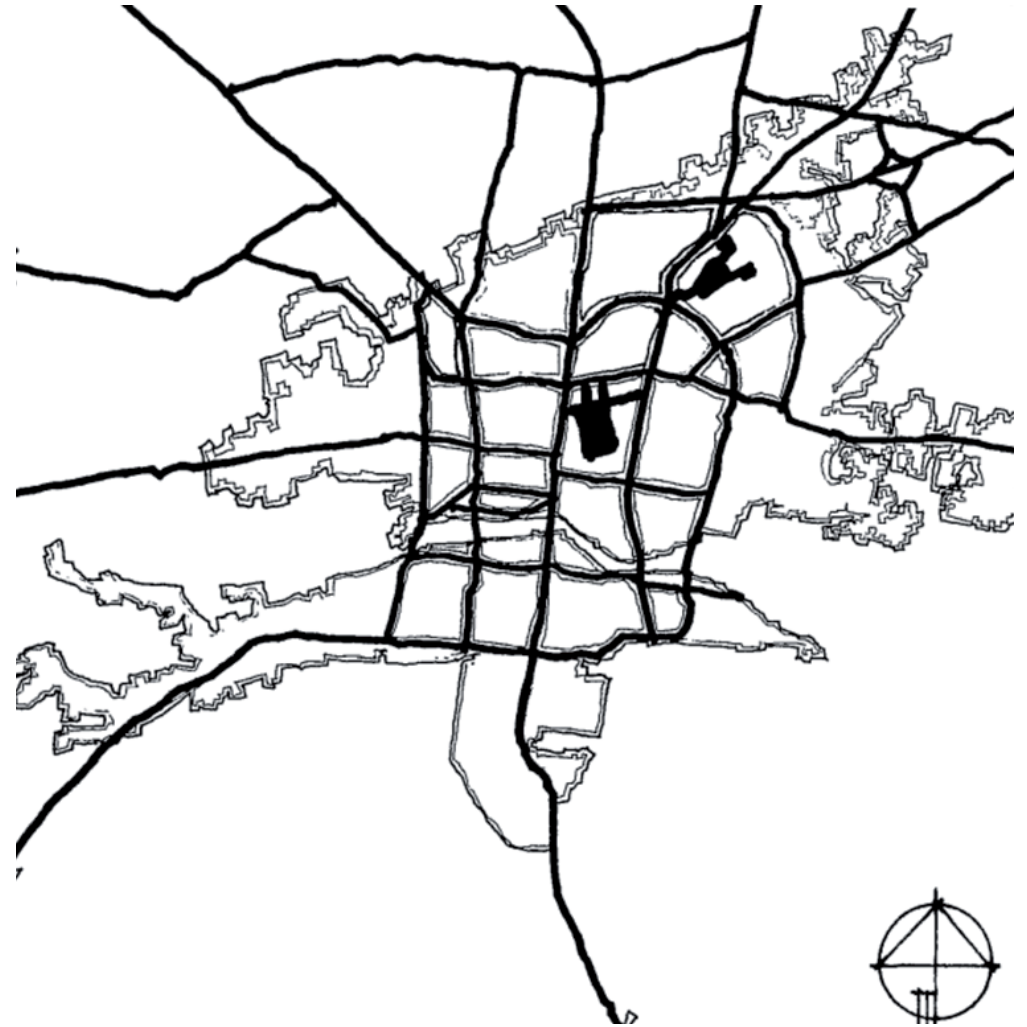
First Master Plan of Isfahan

This plan was produced by E.E. Beaudouin, a French architect and planner, in collaboration with Organic Consultants, an Iranian architectural and planning firm.

The plan was considered outrageously radical. It imposed a rectangular grid of roads designed for cars onto the older urban fabric, without consideration for the city's historical evolution or existing patterns of growth.



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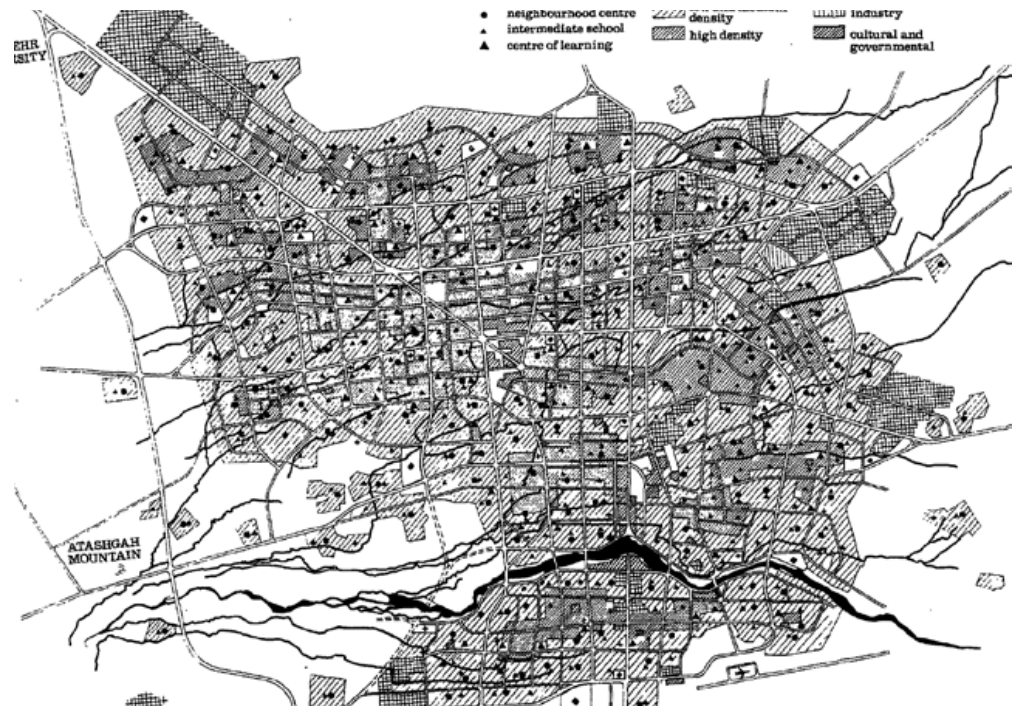


Pahlavi Era until Now

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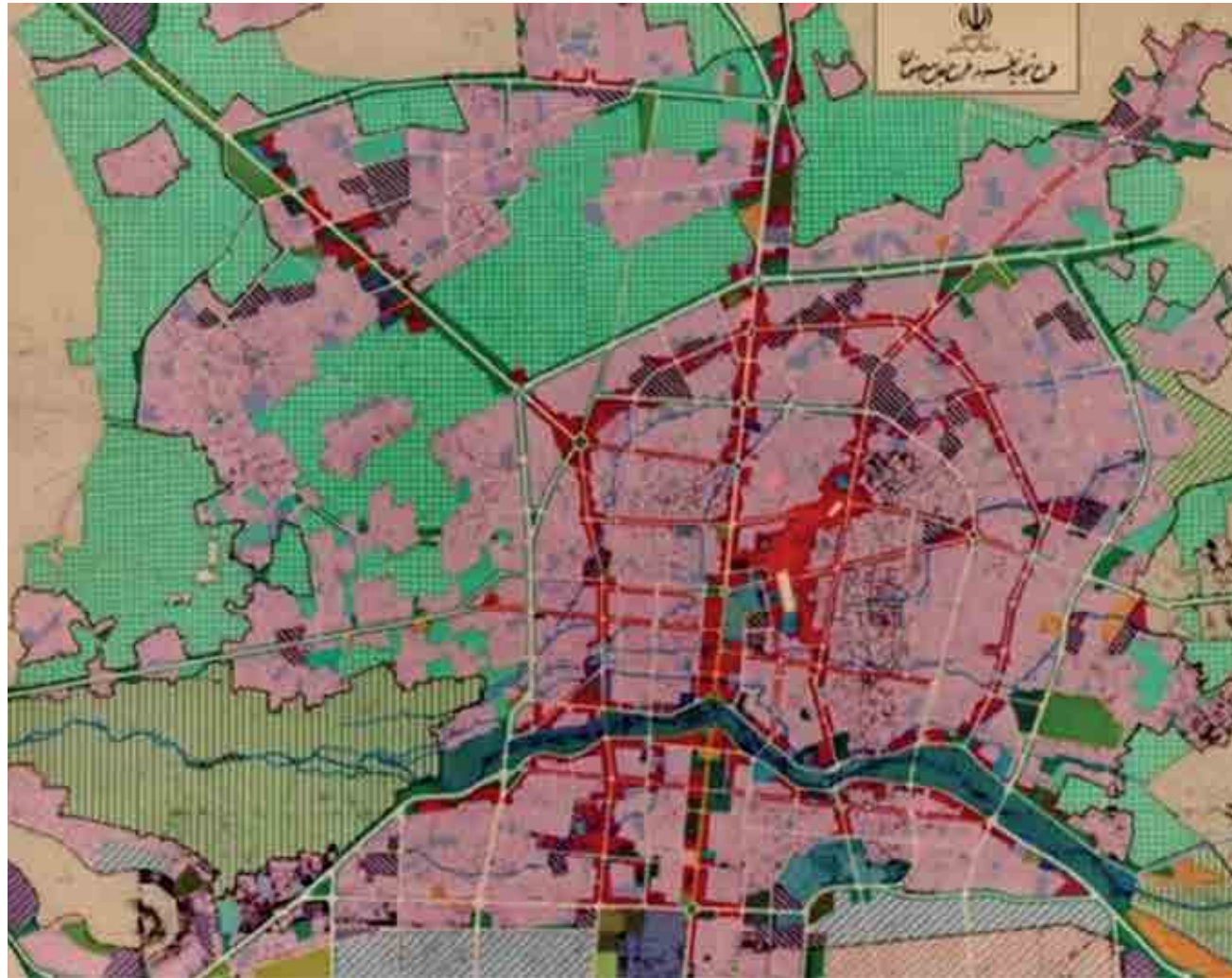
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Pahlavi Era until Now

Second master plan of Isfahan

A second master plan was made in 1971. Like the first, this plan focused on road networks, land use, and building density or height, with the goal of achieving its objectives through the regulation of these three elements. The plan encouraged horizontal expansion of the city and reduced the concentration of activities in the old city centers



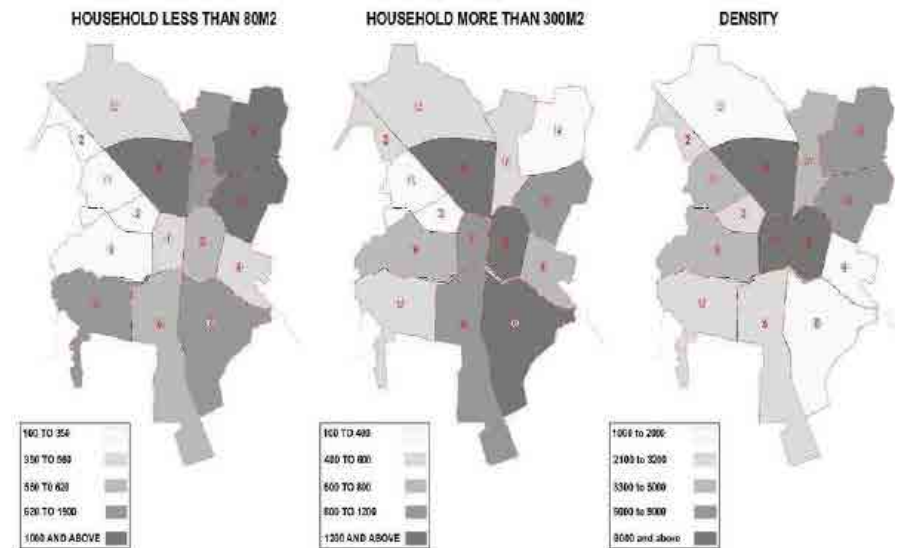
Contemporary Era

(Late 20th Century-Present)

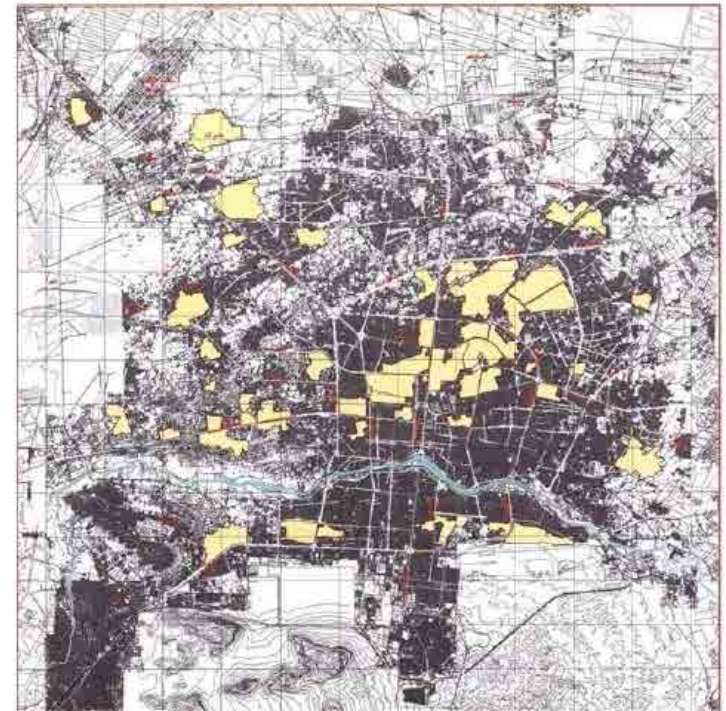
Isfahan has experienced urban sprawl, particularly in recent decades, influenced by various factors including **modernization, decentralization policies, and population growth**. After the Islamic Revolution, urban growth became more dispersed and less balanced, leading to a breakdown of the city's homogeneous spatial organization.



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Isfahan municipality district by density an size of household.

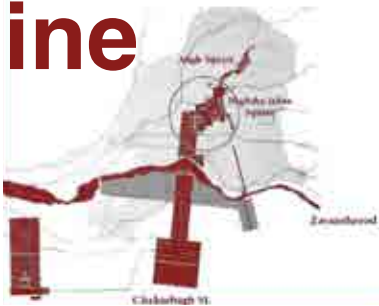


Distribution of old and heritage texture in Isfahan city.

Isfahan's early settlement north of the Zayandeh Roud River leveraged favorable land for irrigation, enabling agriculture, while the river served as both a vital resource and natural defense for the Jey government core.



Timeline



view of open city

Safavid era

The core of Isfahan during the Safavid era included key landmarks like **Naghshe Jahan Square**, **ChaharBagh**, royal gardens, and the surrounding palace and bazaar.

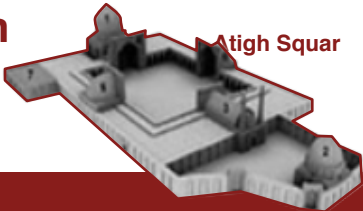


Modernization

Contemporary

Transformations through both structural and infrastructural developments.

The core of Isfahan's formation



750

1037

Interconnected and enclosed city

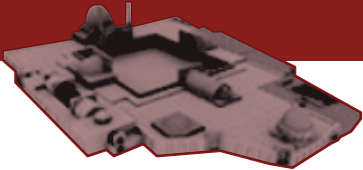
Seljuq era

During the Seljuq era, Isfahan had a unified urban structure centered around **Atigh Square** and the Jame Mosque, with key spaces such as squares, streets, and markets forming the **core of the city's** urban fabric.



1194

1501



1722

1789

Europeanization

Qajar era

Isfahan's urban development was characterized by the construction of individual, decorative buildings and the integration of European architectural influences.

1925

1979

NOW

Isfahan Transformation

STEP 2

Identify and localize a characteristic fine-grain urban morphology in this town and investigate its typologies of built form and open spaces (1:500). Indicate values of use and form for it. Simulate small-spatial urban changes of tomorrow (extension/ elevation of built form on private ground, 1:500), relative to the structural conditions of the land-market today. Define the spatial differentiation of the morphology (public-private)

Urban Structure and Typologies in Isfahan

(Late 20th Century-Present)

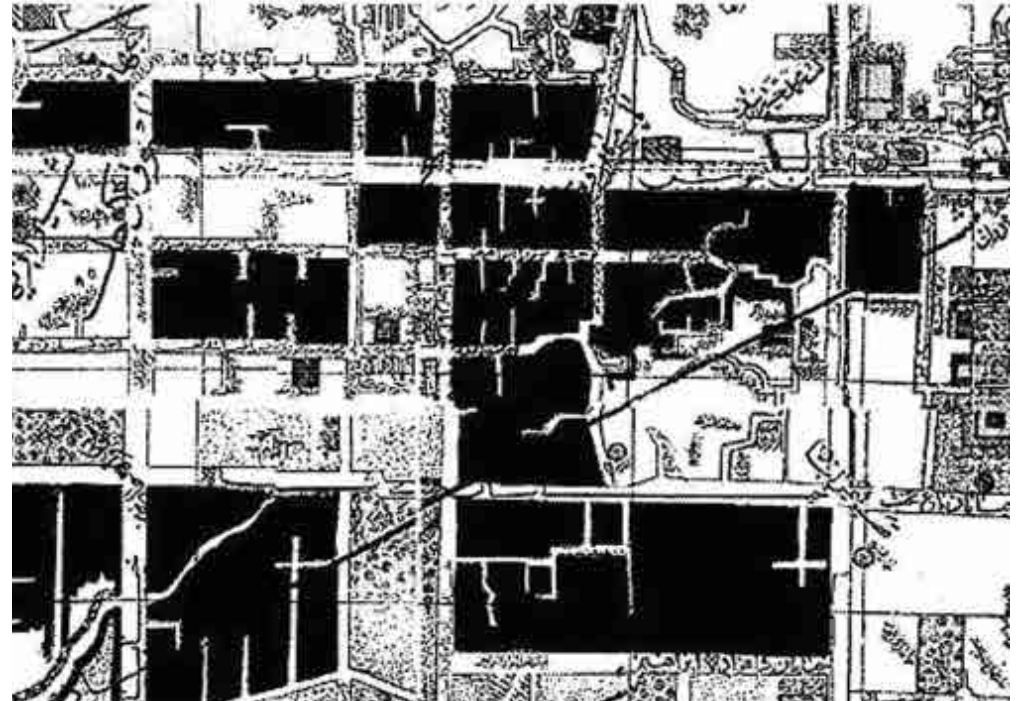
Isfahan's urban morphology combines **historical** and **modern** features, with **organic and grid-like layouts**. Key elements include traditional bazaars, squares like Naghsh-e Jahan, and residential neighborhoods (mahalleh). Bazaars connect parts of the city, while Chaharbagh Avenue integrates green space. The Zayandehrood River and irrigation canals shape the city's organization, with varying street hierarchies.



Street network in Old Isfahan



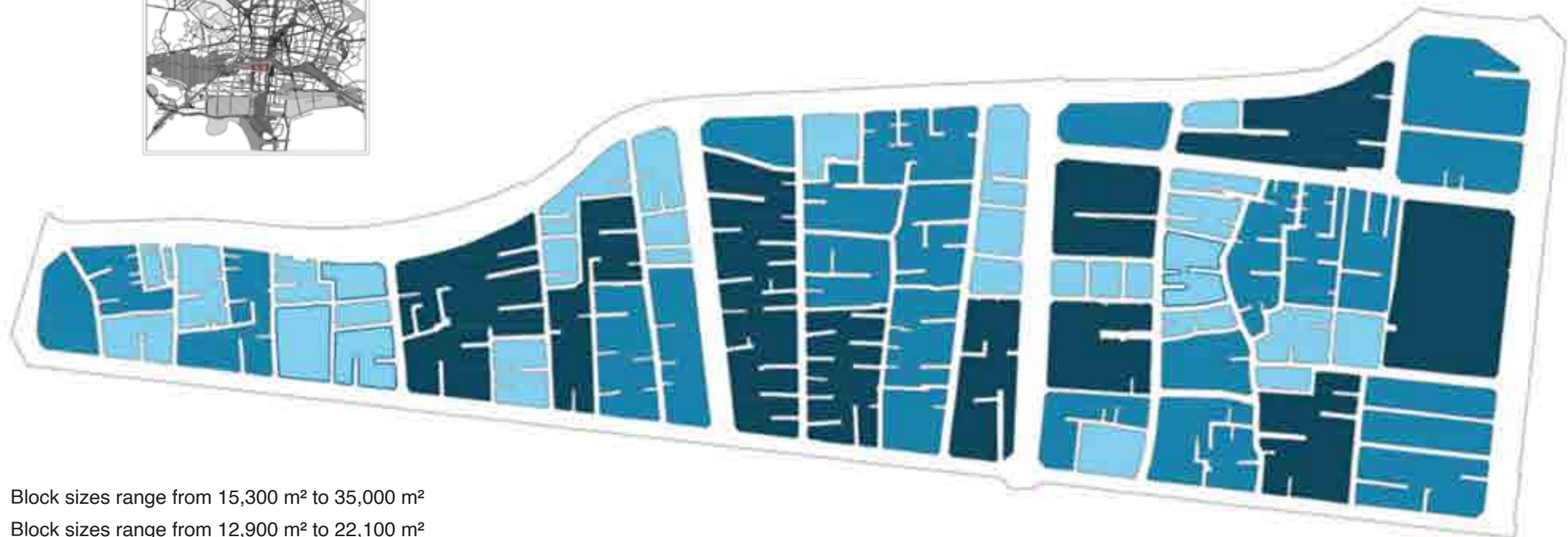
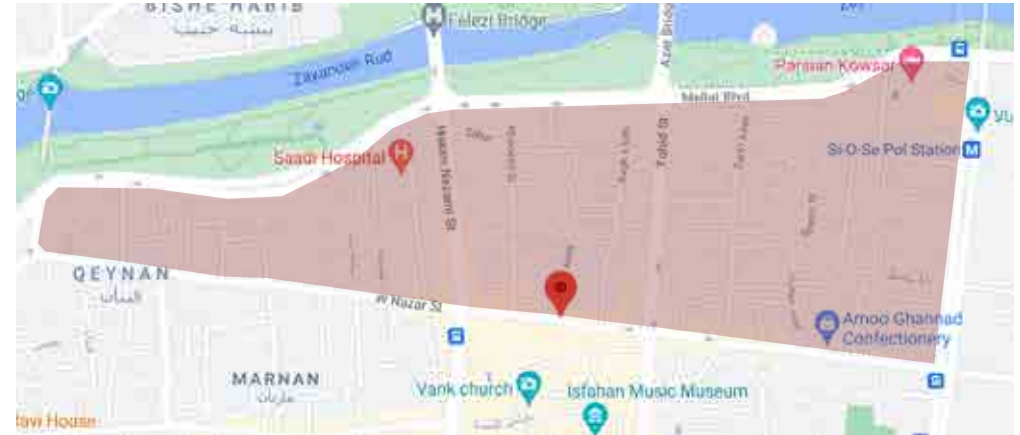
Street network in Safavid new developments.



Fine-Grain Urban Morphology

Bagh Zerezhk (District 5)

Bagh Zerezhk represents a transition from rural to urban patterns, with historical roots that reflect traditional Persian land use and architecture. It showcases traditional courtyard houses, narrow alleyways, and garden-based layouts typical of Isfahan's older districts. In this neighborhood, various types of blocks are scattered. However, medium-grain blocks are predominant.

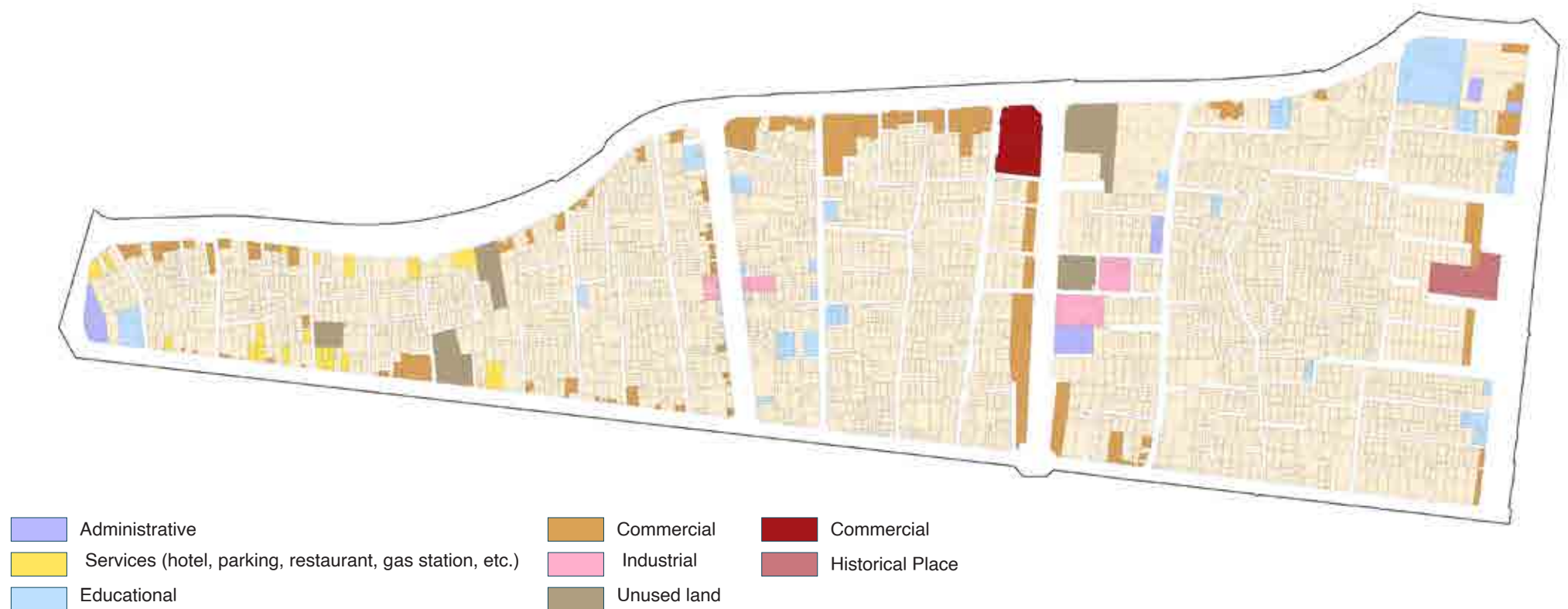


- Block sizes range from 15,300 m² to 35,000 m²
- Block sizes range from 12,900 m² to 22,100 m²
- Block sizes range from 7,600 m² to 10,300 m²

Fine-Grain Urban Morphology

Land Use

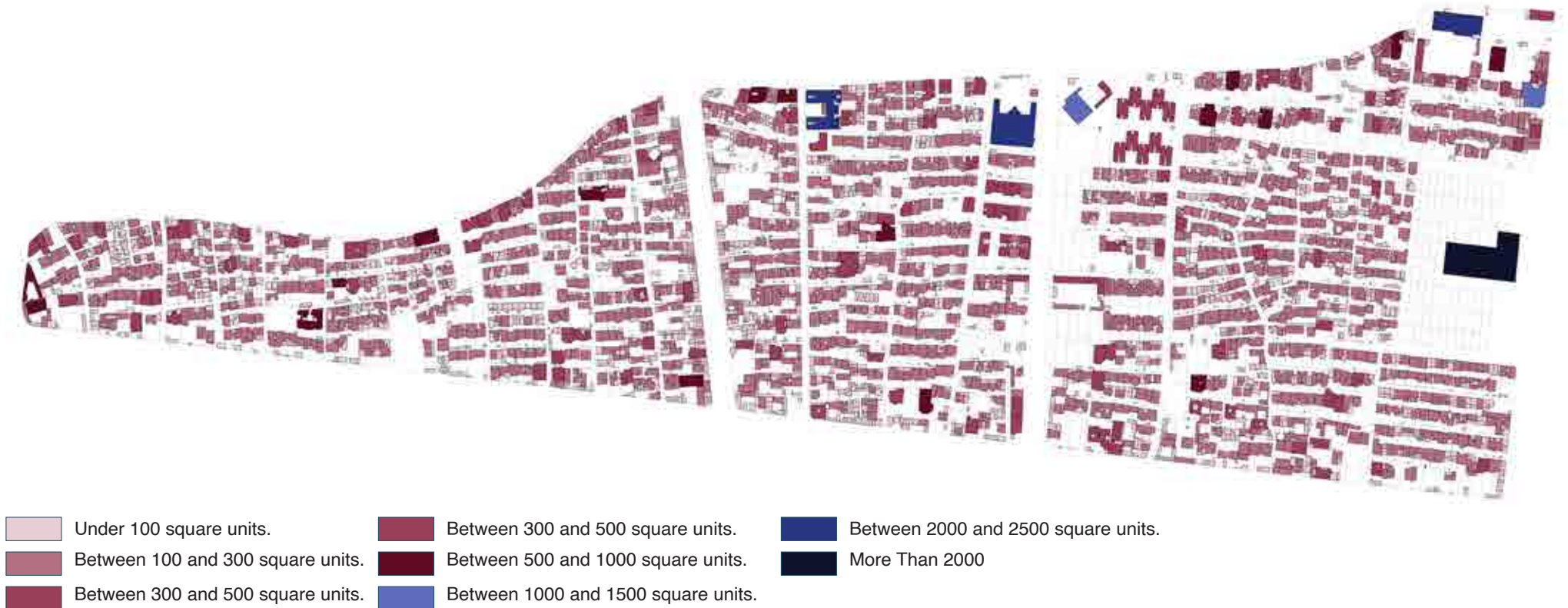
The land use in Bagh Zerehshk, Isfahan, is a mix of residential, commercial, and historical green spaces within a compact, walkable urban layout. Dominated by residential zones with small-scale commerce, the area retains traces of traditional gardens and courtyards, though urbanization has led to reduced green spaces and adapted structures to meet modern needs.



Fine-Grain Urban Morphology

Parcel's Area

The parcel sizes in Bagh Zereschk, Isfahan, are predominantly small to medium, reflecting its traditional urban fabric and compact development pattern. These smaller parcels support dense residential structures and contribute to the fine-grain morphology of the neighborhood. The limited parcel sizes promote efficient land use and a sense of community while preserving the area's historical character. However, some recent developments have introduced larger parcels, altering the traditional scale and spatial organization of the area.



Fine-Grain Urban Morphology

Nolli map

A Nolli map of Bagh Zereshk would showcase the spatial organization of the neighborhood, highlighting the **relationship between built and open spaces**. It would reveal the dense arrangement of buildings, **narrow streets, and interconnected courtyards** that define the area's traditional urban fabric. The map would also illustrate the distribution of green spaces, such as gardens and courtyards, and the transition between private and public zones. A Nolli map can help visualize the compact layout and land use patterns, providing insights into the neighborhood's historical and morphological characteristics.



Simulate small-spatial urban changes

Old Factory



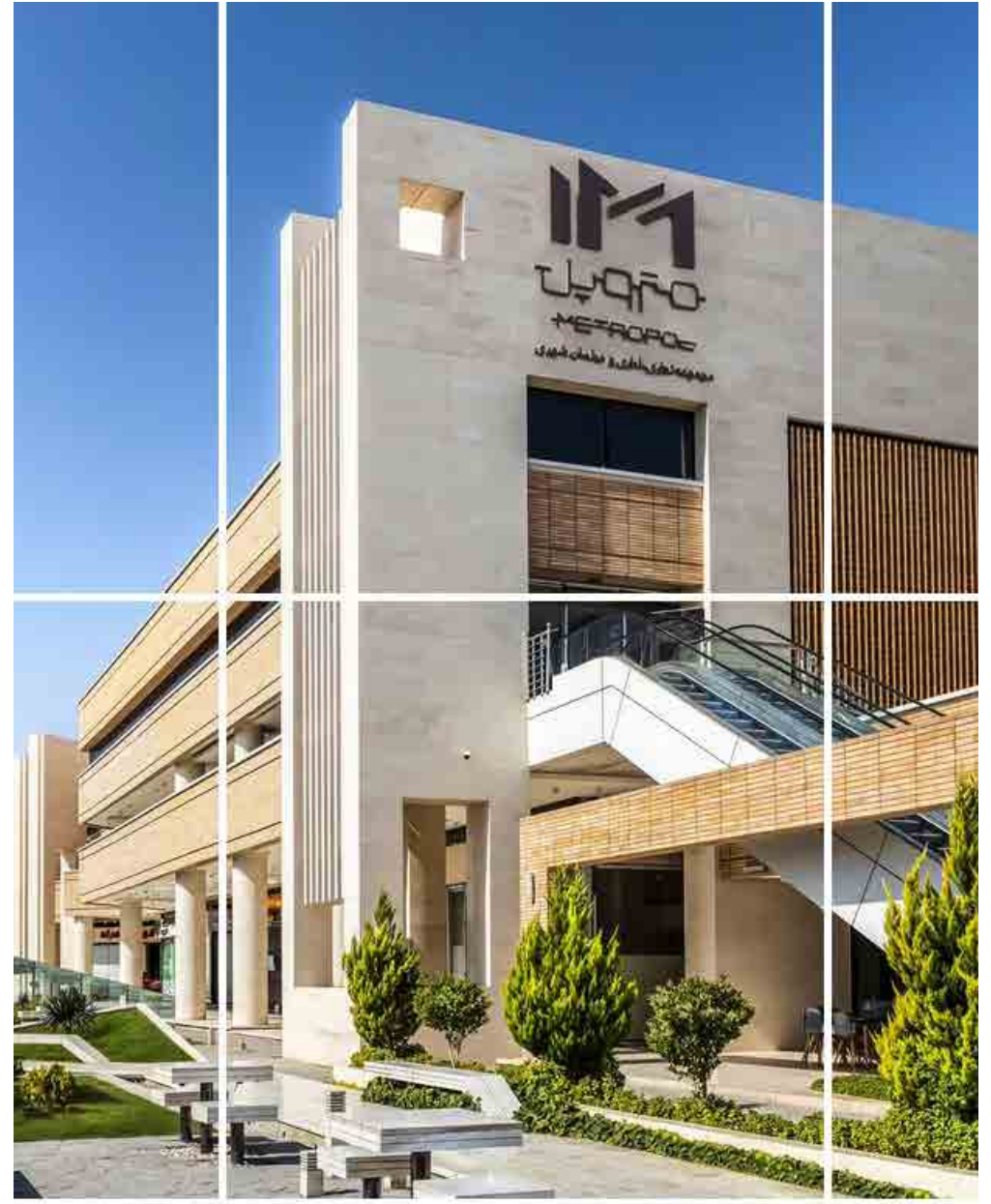
Past



Present



Future



Future

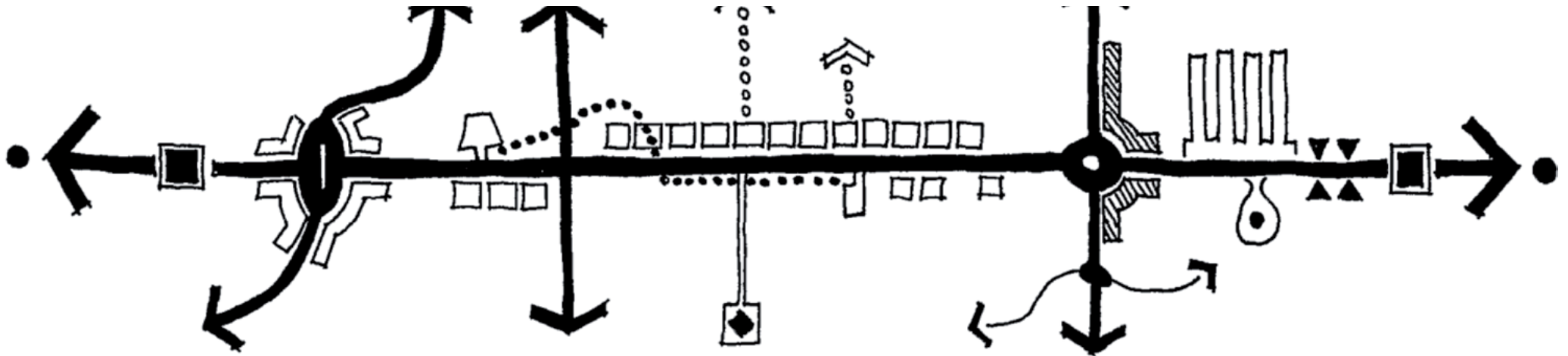
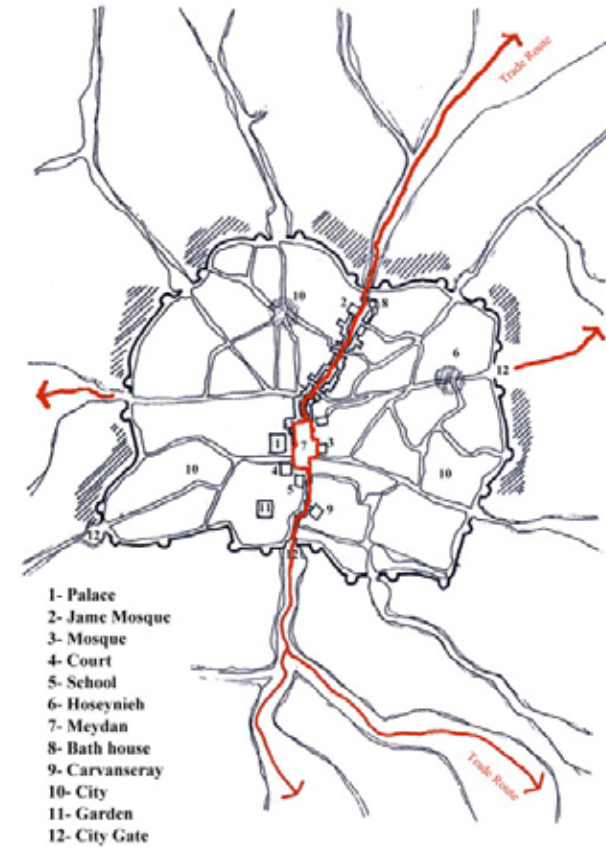
STEP 3

Characterize the overall urban structure (compact/ multi-core-fragmented) of the selected town and the role of landscape/ green open spaces relative to periods of history.

From Compact

Compact Structure (16th-19th Century)

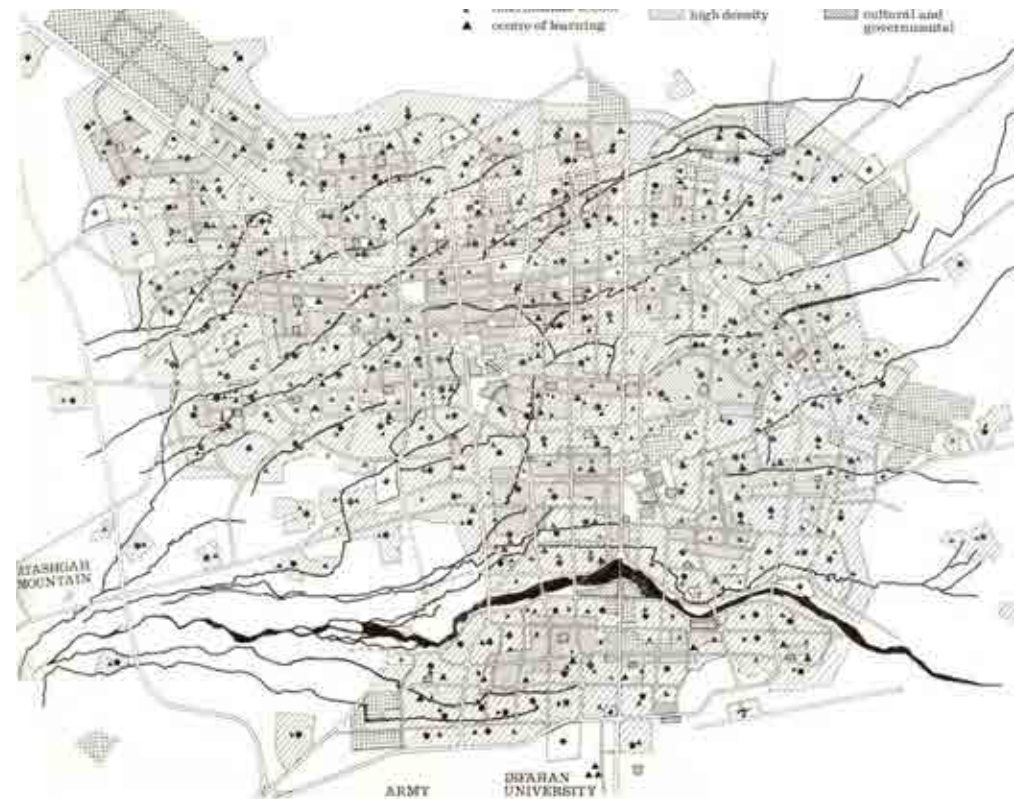
The compact structure of Isfahan reflects traditional Iranian city design, shaped by the **hot and arid climate**. Dense layouts and integrated urban elements, such as the **bazaar and key passages**, facilitated connectivity and functionality. The city's morphology was a cultural response to environmental needs, featuring proximity of land uses and clear access networks. The bazaar exemplified spatial integration, connecting the old meydan (square) to city gates, creating a harmonious and efficient urban form.



To Multi core Structure

Multi-core Structure

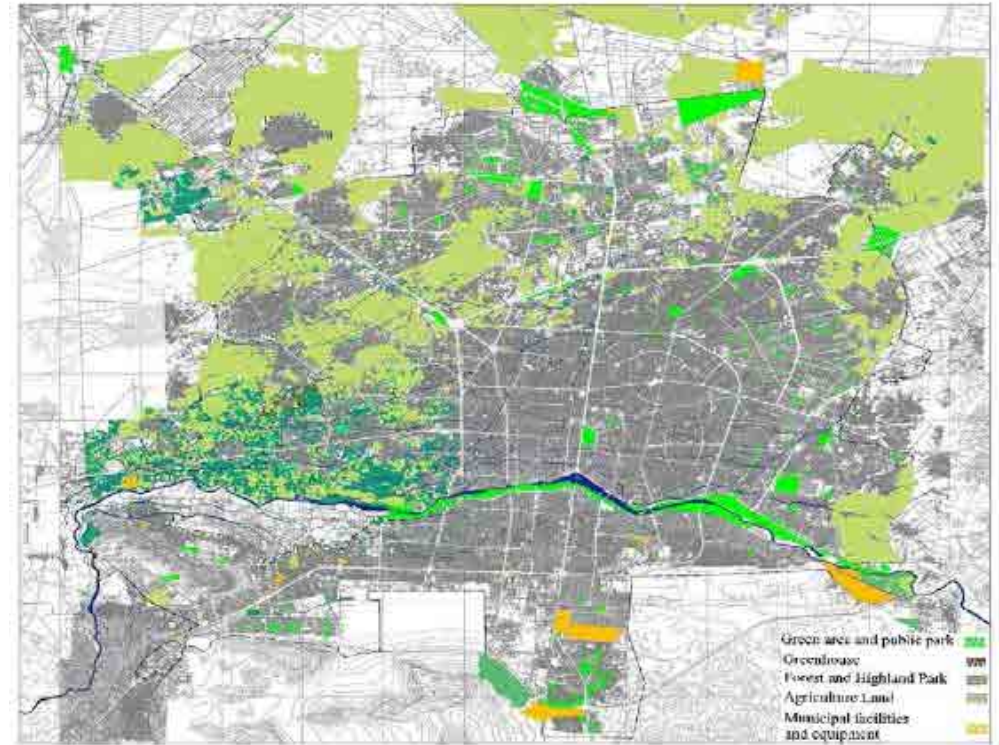
Isfahan's multi-core structure emerged as different centers of activity developed over time. The Seljuk era saw Atigh Square and the Jame Mosque as central spaces, while the Safavid period introduced Naghsh-e Jahan Square as a ceremonial and governmental hub. Local Neighborhood developed their own focal points with mosques and public baths, creating a decentralized yet cohesive urban pattern. **Today, Isfahan is divided into 15 districts and 199 neighborhoods, reflecting historical multi-core influences.**



Role of Green Open Spaces

From Historical green spaces to new parks.

During the Safavid era, Chaharbagh Avenue became a key green axis, while Naghsh-e Jahan Square and Si-o-se-pol Bridge combined gardens, commerce, and recreation, regulating the micro-climate through trees for shade and water features for cooling. Over time, much of Chaharbagh's and Naghsh-e Jahan's green spaces were lost. The Zayanderud River remains crucial to Isfahan's green infrastructure, while Nazhvan Park, once agricultural land, is now the city's main green space, preserving the tradition of balancing recreation and the environment.



STEP 4

Identify and localize

- Lack of urban changes (because of preservation rules or no interest of the land- market)
- Massive urban changes (replacement of structural conditions in built form arrangement)
- Small spatial urban changes (Integration of extensions/ elevations into built form arrangement)

Lack of Urban Changes

Julfa Neighborhood Centers.

The lack of significant urban changes in the Julfa neighborhood centers of Isfahan can be attributed to the strong preservation of its identity and cultural heritage. Despite the broader urban developments in the city, Julfa has maintained its distinctiveness through its religious buildings, unique architectural style, and the cultural practices of its Armenian Christian community.



Julfa, A Remnant of the Neighborhood Concept



Massive Urban Changes

Isfahan, south of the city, 1956, and the Google image retrieved in 2010. During the contemporary era, most of the city expansion was directed to the south parts.



Isfahan, east of the city, 1956, and the Google image retrieved in 2010. Within a few decades, the physical characters of this area are completely changed.



Small spatial urban changes

Adaptive Reuse of Historic Buildings

Conversion of traditional houses into boutique hotels, art galleries, and cafés, particularly in tourist areas. Re-purposing caravanserais as cultural hubs or small shopping centers.



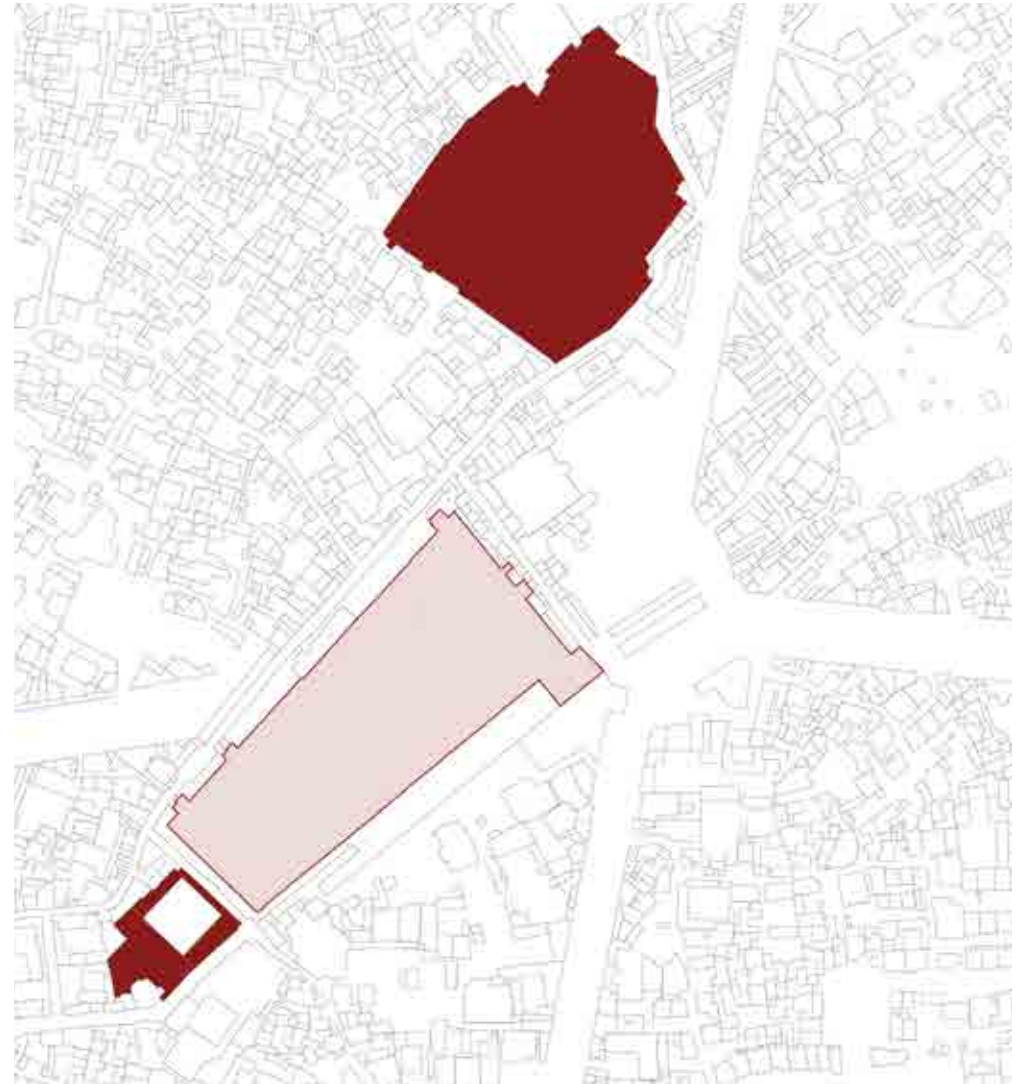
STEP 5

Identify and localize major public spaces and patterns of spatial differentiation by their integration into the surrounding urban context (from public to private)

Major public spaces changes

Imam Ali Squarer

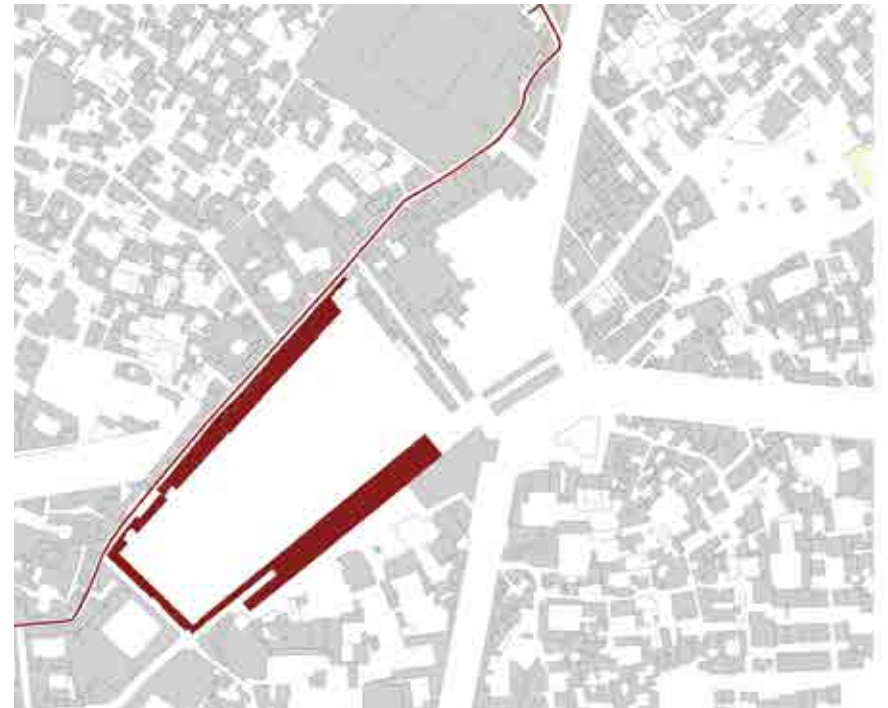
The Atiq Mosque and Old Square in Isfahan were once the city's largest public spaces, serving as key centers for worship, trade, and social gatherings, reflecting the city's rich cultural and architectural heritage.



Semi Public Space

Imam Ali Square

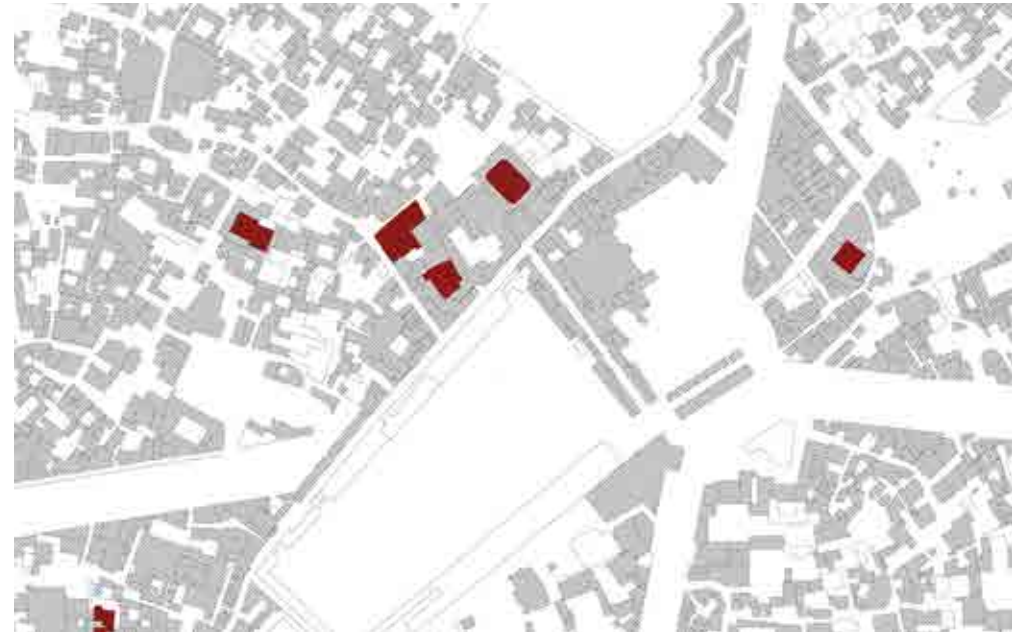
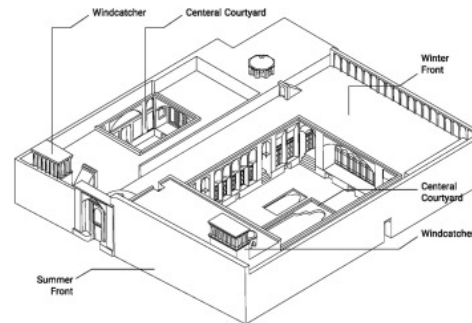
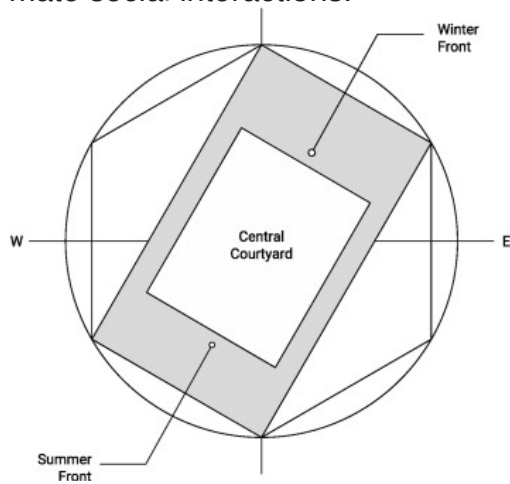
The Jame Mosque in Isfahan exemplifies how bazaars serve as semi-private spaces, seamlessly linking commercial and religious functions. The bazaar's linear structure, with its interconnected passageways and courtyards, creates a gradual transition from bustling trade zones to the serene and spiritual environment of the mosque.



Semi Private Space

Imam Ali Square

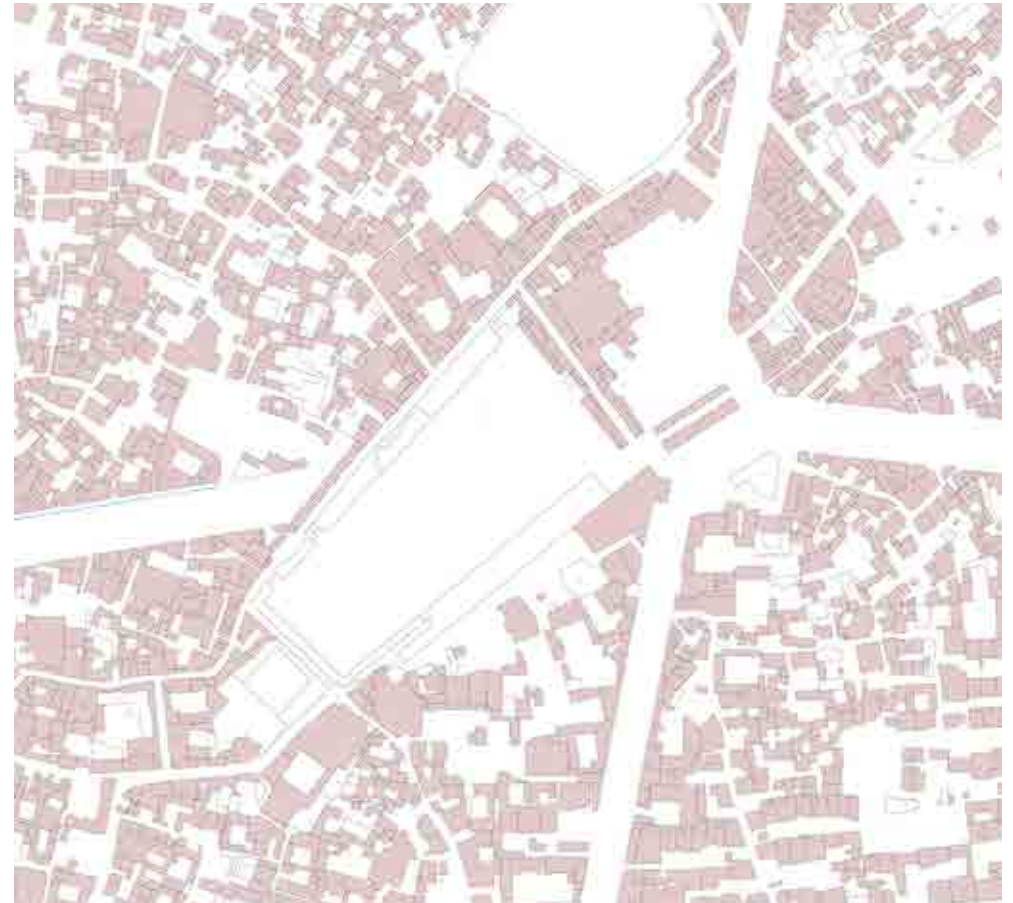
Traditional Iranian courtyard houses are semi-private spaces due to their inward-facing design, central courtyards, and hierarchical spatial arrangement. The courtyard acts as a buffer between private living areas and public streets, providing controlled access and fostering intimate social interactions.



Private Spaces

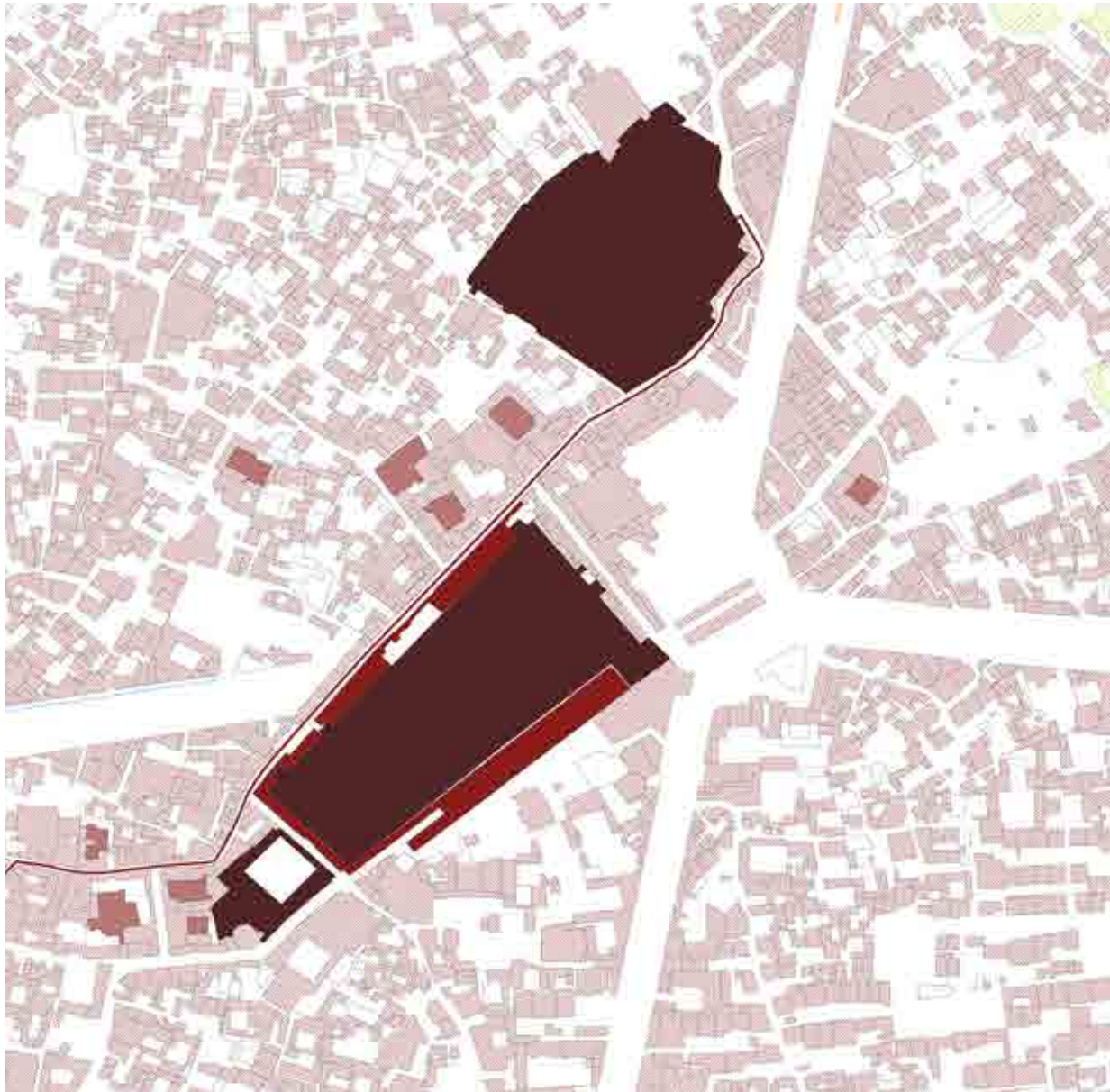
Imam Ali Square

Most buildings near the Jame Mosque in Isfahan are traditional private houses, designed for residential use with inward-facing layouts to ensure privacy.



Spatial interaction

Imam Ali Square



- Public Space
- Semi Public Space
- Semi Private Space
- Private Space

STEP 6

Define existing structural opportunities for local urban transformation over time, which are appropriate to counterbalance the tendencies of the land –market. The opportunities and derived perspectives can be taken from the selected characteristic morphology, the patterns of urban structure growth and the overall urban landscape.

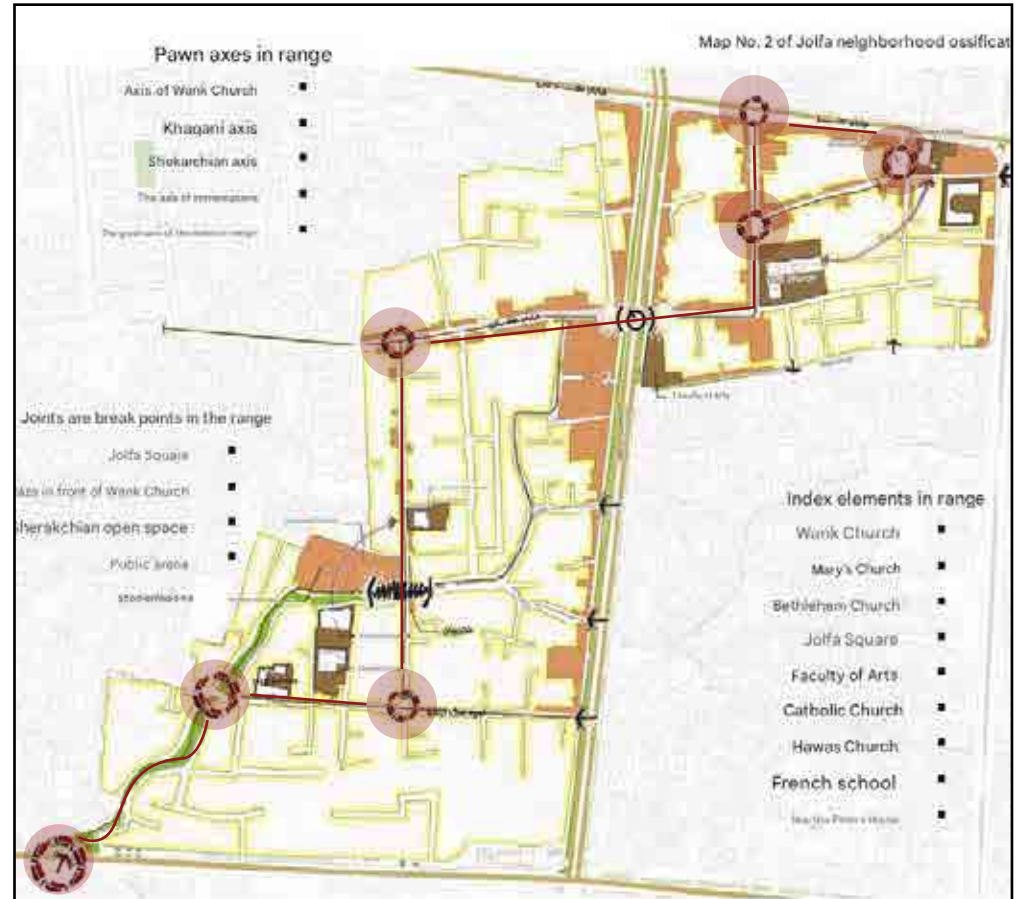
Current Urban Fabric

Julfa Neighborhood

Julfa is a historic quarter in Isfahan with a significant Armenian minority population that has undergone radical spatial changes due to comprehensive urban plans implemented over six decades



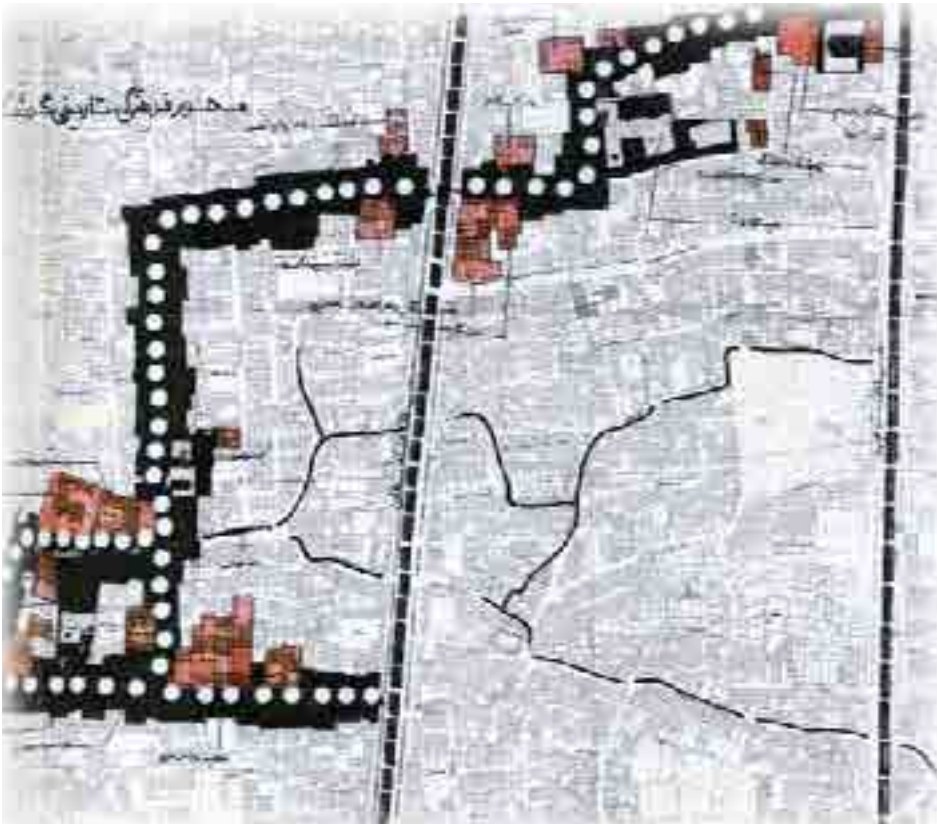
Julfa, A Remnant of the Neighborhood Concept



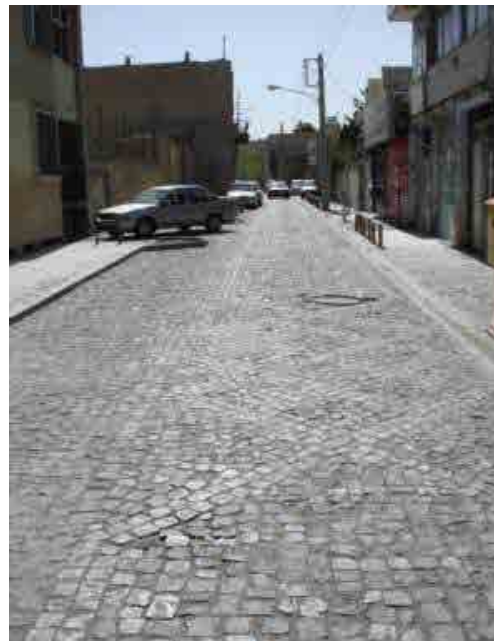
Current Urban Fabric

Julfa Neighborhood

Julfa is a historic quarter in Isfahan with a significant Armenian minority population that has undergone radical spatial changes due to comprehensive urban plans implemented over six decades



The location of urban spaces
Julfa, A Remnant of the Neighborhood Concept



Julfa pedestrian axis



Urban Growth Opportunities

Connecting Urban Nodes with Nature (Green Corridors)

The proposal for a green corridor in Jolfa aims to create a seamless and sustainable link between key joints and squares within the neighborhood. This corridor will not only enhance pedestrian mobility but also promote environmental benefits by reducing heat and improving air quality .The design will harmonize with Jolfa's historic charm while offering residents and visitors a community-friendly space. The corridor will act as a social spine, encouraging vibrant cultural interactions and enhancing the neighborhood's urban experience.

