RAY

HISTORIC RELIGIOUS IDENTITY, RAY URBAN DIGNITY

Searching Planning perspective at the neglected historic religious district to revive the local quality as a promoter of urban cohesion in different scales

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Historic Religious Identity, Ray Urban Dignity

*Searching Planning perspective at the neglected historic religious district to revive the local quality as a promoter of urban cohesion in different scales*

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این دسته‌ای به‌خاطر ناهنجاری‌های شناختی در دسته‌بندی و ساختار رنگ‌های اسلاید، فاقد سیاست‌های دسته‌بندی و ساختار رنگ‌های اسلاید می‌باشد. برای پیش‌بینی دقیق‌تری از ویژگی‌های رنگ‌های اسلاید، نیاز به تحلیل بیشتری است.

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INTRODUCTION
01. INTRODUCTION

Motivation

Tourism industry can play an important role in economic and social development in any countries and nowadays, it is considered as a new profitable industry. Although Iran with a huge sources of history, culture and nature is one of 10th tourist attraction countries in the world, owing to mismanagement, it is accounted for tiny share of the global tourism industry revenue. However, historic and religious attractions of Iran can invite visitors who are interested to know more about Iran’s story. The city of Tehran as the capital of Iran is an example of global city. In the southern part of Tehran, Ray as the most historic city with 6000 years antiquity is located where the religion shaped the identity and spatial configuration of it. Ray was the capital of Iran in Seljuk dynasty with a significant importance in economic and ecologic aspects. Although it is visited by almost 10 million visitors per year due to the holy shrine, it does not have a considerable revenue. Since I remember, Iranians were proud of their old civilization and Ray as a main part of this civilization has always been center of this pride. For me as a visitor who have visited this district for several times, it has never been associated with the oldest civilization in my mind. Recently, by Tehran growing, Ray glory was unfortunately hidden. In fact, by hearing the name of Ray, only a religious district with multicultural, low level and poor residents is imagined. This question has always been in my mind why Ray has been forgotten and I always regret that its potentials have not been exploited. As an Iranian urbanism student, I have been always fascinated by urban and district developments as well as a way that spatial arrangements of district influence their economic performance, environmental quality and consequently the comfort of their inhabitants. In this graduation project, I chose Ray district in Tehran metropolitan as a case study to answer the mentioned questions that I have always faced with them. As a matter of fact, I try to provide opportunities to find out ways that help Ray to use its potentials, keep identity and be revitalized with more social cohesion neighborhoods. Basically, Ray due to concentration of civil symbols, social infrastructure, unique historical and religious attractions with long history of civilization and located in the North, South and East, West corridor would be a good place to recruit and attract internal and external tourists. Thus, I hope this graduation project will help in developing a better future for the user of Ray, either residents or tourists, with less segregation and more economic and environmental prosperity.
01.1. Background information

**TEHRAN as the main Iran’s Centrality**

Iran is home to one of the world's oldest civilizations in the heart of the Middle East and Tehran as its capital is the largest city in Western Asia. Before modernisation period, Tehran was an unimportant village with 19 kilometer and 200,000 inhabitants outside the ancient city of Ray which is now absorbed by Tehran. Today, Tehran is a metropolitan with 12 million population as the sixth of the country’s population that the most its huge expansion was happened in the recent three decades due to being the intensive centre of political, administrative and economic. It is a capital with:

- %20 of the country’s population
- %48 of the country’s high ranking officials
- %44 of the country’s financial services
- %40 of country’s food industry
- %40 of the country’s consumption market
- %36 of the country’s big factories
- %34 of the country’s clerical workers, etc.
- %31 of the country’s red meat supply
- %30 of the country’s employment in manufacturing industry
- %29 of the country’s wholesale, retail, restaurants and hotels
- %24 of the country’s water, electricity, and gas consumption

![Map of Iran, Tehran, and Ray](image-url)
01.1. Background information

RAY at a glance

Ray, also known as Rhages and is the oldest existing city in the province. It is richer than many other ancient cities in the number of its historical monuments. Ray had been inhabited for thousands years and was the capital in several periods. However, it gradually lost its importance in the presence of nearby Tehran, when Tehran started to grow and has been absorbed into the greater Tehran metropolitan area. Due to Abd Al Azim holy shrine, Ray is visited by more than 10 million visitors per year. It is connected via the Metro to the rest of the city and has many industries and factories. Ray is considered as the 20th district of Tehran metropolitan in the southern zone. With:

- 40 km distance to the International Airport
- 30 km distance to the national Airport
- 120 km distance to the second religious city, Qom.
- 5 km distance to Imam Khomeini graveyard.
- 5 km distance to the Sun City (Tehran main Cemetery).
- 2 Metro stations.
- 70% of Tehran’s vegetable supply
- 60% of Tehran’s fruit supply
- 60,000 ha Agricultural lands
- <1000 Industrial units
- 430 ha Industrial and storage areas

Figure 1.3: The maps show the location of Ray.
The scale of the city

Figure 1.2: The maps compare the scale of Randstad with Tehran and Delft with Ray.
Tourism industry can play an important role in economic and social development in any countries as a profitable industry. Although Iran with a huge sources of history, culture and nature is one of 10th tourist attraction countries in the world, owing to mismanagement, it is accounted for a tiny share of the tourism industry revenue.

However, historic and religious attractions of Ray can invite visitors who are interested to know more about Iran story. It is the most historic city with 6000 years antiquity where the religion shaped the identity and spatial configuration of it. Ray was the capital of Iran in Seljuk dynasty with a significant importance in economic and ecological aspects. Due to the Holy Shrine of Abd Al Azim Hassani which is located in the centre of the old radius nucleus of the city and historic attractions, Rey has almost 10 million visitors per year.

Figure 1.4: The map shows the Islamic countries with their important religious sites.
01.2. Vision of Tehran Master Plan in 2025

Tehran municipality is now at a crossroad in its spatial development and the main aim of the new master plan is organizing the social, cultural and economic transformation of the city.

On «Spatial Organization of Tehran», in order to decentralizing of the city center and modifying the radial organisation of the current structure, the centres network in different scales have been organized. By refining the main center and increasing the share of the networking system in the city structure and by disturbing it and creating the hierarchical desirable network, the network is established.

Based on this document, Tehran is a city with Iranian and islamic authenticity and identity in Vision 2025. It will be an knowledge based metropolitan, intelligent global, beautiful and lively, safe and resistant in terms of natural hazards. In addition a sustainable and coherent city with suitable structure for settlement, activity and recreation with general welfare is planned.

Finally Tehran metropolitan is considered with national and international functions with modern economy and at least one of the important cities of the South west region.

The historic religious centre of Tehran has been defined in Ray.

Figure 1.5: The image shows Tehran Master plan that the historic religious centre has been defined in Ray. Source: Tehran municipality.
Position of Rey in future vision

The ancient Rey is one of the main tourist, religious and job hubs in Tehran metropolitan due to its special location in Tehran spatial structure, its valuable historic, religious centers and its ability to create employment opportunities.

Some prospects of Tehran Master Plan related to Rey District

- Tehran Metropolitan; a authenticity city with Iranian and Islamic identity
- Tehran; a beautiful and green city with wide variety of public spaces
- Tehran; a sustainable and coherent city with a proper structure for living, working and recreation
- Tehran; a metropolitan city with global and national actions, and center of political, cultural and economic of Iran, Southwest Asia and Islamic countries

Prospects of Rey District in detailed plan

- Rey position as an historical and religious center in Tehran
- Rey as one of the special areas of Tehran with open and green centers and a variety of tourism and recreation activities
- Rey as an important pole of the operation with high employment capacity in the South of Tehran
- Rey- a strong pole to attract tourists to the historical and religious centers in the district

Tehran Master Plan Goals

- Enhancing Tehran's role of International, national and regional by appropriate using of physical, social, human and financial values
- Enhancing activities and job opportunities
- Environmental protection and city immunization from natural disasters and other risks and harms
- Improving the urban environment in order to reduce air pollution
- Improving network and transportation by developing infrastructure, public transport systems and travel demand advantages
- Improvement, modernization and reconstruction of worn-out tissue of Tehran
- Increasing urban environmental quality and protection of natural heritage and historical urban areas and development of public & touristic spaces by implementing local and subjective plans for Tehran

Ray District’s Goals

- Booming Tehran economic development by maintaining and refinement the current zoning and developing the fields of activity
- Immunization the district against natural disasters
- Improving the urban environment in order to reduce air pollution
- Improving transport and traffic
- Improve living conditions in terms of housing, services and tissues
- Public space and touristic development according to the existing potential of the region
- Identity reconsideration of the region according to the characteristics of historical, cultural, religious of the regional
01.3. Unequal development in Tehran

01.3.1. Demographics

Tehran has experienced the rugged development in its life especially in recent decays that has led to Tehran polarisation. The process of urbanisation and expansion has always attended to the north direction, and the south has had a junckspace role in general. This unfair development resulted to an obvious gap between the North and the South socially and spatially.

Tehran’s population has grown from 200,000 to 12 million. Tehran had a population growth from 4.5 million to about 8.8 million from 1966 to 1996. Indeed the process of growth and formation of cities in the arable lands in the southern and western districts of the Tehran were rapid. Since 1986, the development of the metropolis of Tehran has been characterized by a rapid growth of its suburban areas, which now contain %30 of its 12 million inhabitants.

Figure 1.6: The map and graphs show the Tehran population density and its growth.
01.3. Unequal development in Tehran

01.3.1. Demographics - Social Segregation

As a result of the quick population growth and the migration from all over the country to the capital in order to achieve the better job opportunities and urban facilities, the rate of urbanization growth was enormous. During these years beside the rapid growth of population, development of the road network, establishment of new industries in and out of Tehran's boundary resulted to the many informal settlement of immigrants inside and outside of Tehran city. Villages and small cities in the South and the West of Tehran grew greatly, hence new residential areas in a short period were formed in suburbs.

Figure 1.7: The image shows the population density around the city of Tehran in 2006 (Source: Atlas Tehran).

Figure 1.8: The image shows the density of low income group in TMR. In this map the poor group of people are mostly live in small cities or villages in south and southeast of Tehran (Source: Atlas Tehran).

Figure 1.9: The image shows migrants come to Tehran as the capital from all around Iran.
01.3. Unequal development in Tehran

01.3.1. Demographics - Social Segregation

The literacy ratio is one of the indicators of development which shows the difference between the northern and southern parts of the city. The highest ratio of literate people is observed in the northern half of Tehran and the lowest in the south of the city.

The unemployment rate in suburbs is high as well as the South and the West parts. whereas, the corridor from the center to the north, shows a low unemployment rate. This is explained by the fact that the inactive population seeking jobs mostly live in the center and northern parts of the city.

the districts along the edges of the city, which are relatively new, house a majority of the migrant population. From a socioeconomic perspective, migrants who live in the central areas are of moderate means and migrants in suburbs are mostly poor.

Migrants in Urban Decay Tissue

Figure 1.10: The maps show social factors in Tehran.
01.3. Unequal development in Tehran

01.3.2. Spatial Segregation

Generally, the life quality in the North is higher than other areas due to concentration of the urban services. In addition, the land price in the North is three times more than the south that has led to concentrate the highest density of population in the central and southern part of the city. Moreover, the most of the historic and old part of Tehran are centralized in the linear axis in three zones, the North, centre and the South that depends on their locations their importance is different.

Figure 1.11: The maps show some spatial factors in Tehran.
Tehran urban activities

01.3.2. Spatial Segregation

Figure 1.12: The map shows the Tehran urban activities. Source: based on Mashayekhi, 2009, edited by author.
Concentration of the high scale functions

01.3.2. Spatial Segregation

Figure 1.13: The map shows the concentration of the high scale functions. Source: based on Mehryar, 2012, edited by author.
The concentration of the commercial activities, services and green areas are mostly in the centre and north zones and industrial functions and agricultural lands are mostly in the southern part.

Figure 1.14: The map shows distribution of the urban activities with high quality functions in the North, activities in the centre and industries in the South. Source: based on Mehryar, 2012, edited by author.
Concentration of Urban decays

01.3.2. Spatial Segregation

Figure 1.15: The map shows concentration of Urban decays and pictures illustrate them. Source: based on Mehryar, 2012, edited by author.
01.4. The importance of Ray
Silk Road

One of the Historic importance of Ray is because of passing the great silk road through it (Rhagea) which connected Peking and India in the east to Baghdad, the Levant and Istanbul, and ultimately the whole of Europe in the west.

It had given Ray a trading importance as a main trading center between East and West in Sasanian Dynasty (224 AD - 651 AD) and the first bazaar was created there so the residents were generally businessmen and traders. The road in addition to its trading character, played an important role in culture and customs transition.
Geographical situation

Tehran is located between the Alborz Mountains in the North and the desert, Dasht-e Kavir in the south. It was formed on the southern slopes of Alborz with an altitude of 1700-900 m above sea level. Limited by the mountains and the desert resulted the city of Tehran has expanded towards the south and west, due to its suitable geographical condition. They have formed the region’s landscape as well as its natural, social and cultural environment. Ray as the southern district located in the plains and its mountains are not so high.

Figure 1.18: The maps show topography, typology and landscape of Tehran.
Figure 1.19: The image shows the location of Tehran between the Alborz Mountain in the North and Dasht-e Kavir desert in the South (Source: google map).

Figure 1.20: The north-south section of the region emphasises on the special geographical position of the TMR (Source: Mashayekhi, behind the mutation, 2009)).
01.5. Problem fields

In fact, from 1920, the end of Qajar dynasty, Tehran modernization resulted in Tehran polarisation. Hence, it was divided in two parts, rich (north) and poor (south). Furthermore, a rapid growth of urbanization and migration in Tehran after Islamic revolution, has affected in Ray, physically and socially that led to separate Ray from the rest of Tehran in higher scale. In addition, due to environmental changing, a fragmentation has happened inside the district that led to create a gap between residents and migrants, poor and rich in local scale. Although diverse groups from different cultural backgrounds, social, educational and economic levels live close to each other, they do not have strong relationship due to their differences and lack of mutual understanding. On the other word, Ray suffers from social exclusion which means weakness of the Ray to keep all individuals and groups within the district, what we expect as a society. In addition, due to lack of proper facilities and life quality, residents who are able to relocate, leave Ray and they are replacing with new migrants or people from other areas who do not have any sense to Ray. It leads to change its identity and becomes pale. Tourism infrastructure and necessary facilities are not proper. Owing to lack of hotel, tourists prefer to stay in the North districts and spend just few hours in Ray to visit the holly shrine and rarely historic areas. Thus they do not participate in district economy a lot.

Overall, Ray suffers from spatial-social segregation and fragmentation in local level as well as metropolitan scale. the quality of life in Ray is low and need of the local services and facilities are tangible. In addition, Ray has not been facilitated with needed services and infrastructure for tourism development.

01.6. Aim of the project

In order to address a solution to what was defined in the problem statement, the main aim of this project is find out about important factors for integrated spatial development of Ray as a segregated district first in local level and then in Tehran metropolitan area. To have a better understanding about segregated historic-religious districts, a broad review on segregation factors and theirs impacts on residential desirability of Ray was done. As a matter of fact to achieve these goals, the position of Ray and its transformation during the history were done from the beginning of the project that help to understand why Ray has been segregated. At the end, some solutions and strategies are suggested to deal with this phenomenon.

This project will be developed based on this belief that: if the city applies proper normative instruments in relation to local services, can promote more interaction between residents in different levels that leads to increase social cohesion. As a result, in long term period, gradually spatial-social segregation in bigger scale will be solved. Furthermore, by improving the local urban quality, private sectors are encouraged to investigate in Ray to promote the opportunities of tourism development. As a result, by investigating in different sectors, new job opportunities will be provided and economy development will be boomed.

The main aim of this project is:

-By reviewing Ray vision, answering to what can be an internal strategy of Ray to be able to consider the potentials at the local level and metropolitan level in order to reinforce Ray identity and connect the district to the metropolitan. Moreover, Improving the local structure within metropolitan structure is the aim of the project.

-In addition, The project will try to answer to the present needs of district by social- spatial interventions in order to increase touristic and residential desirability in local level as well as metropolitan level.
01.7. Main research questions and tools

RESEARCH QUESTIONS
Due to the fact that Ray as the oldest place of the city with the highest visitors has been neglected and suffers from social spatial problems in local scale as well as metropolitan scale. The thesis searches:

-How Ray can be improved to have better social interaction within the district? What kind of social and spatial interventions are needed to provide this opportunity?

-How Ray can be improved to have better synergy with the rest of the city in future? What kind of physical and spatial interventions are needed to provide this opportunity?

and sub questions are;

-Why Ray district with 6000 years antiquity, highest tourist attractions in Tehran metropolitan, the third important religious zone in Iran, has been segregated with poor condition in local level?

-What spatial regeneration interventions can increase livability in this area?

-How Ray can use of its inherent potentials to reinforce investment opportunities? What are Ray inherent potentials and which one has a powerful role?

APPROACH
Reviewing literature about transformation of Tehran and Ray, public space and Tourism development.
Analysis of the city by mapping the fundamental transformation stages when Ray city became a neglected district.
• Before Islam
• After Islam
• After Modernisation

DESIGN STRATEGY
Ray as a segregated, fragmented religious district should be studied in different scales.

Using and criticizing the new vision of Tehran Master plan which is proposed by municipality in order to highlight the role of Ray, help the project to be guided.

Generally, Ray urban structure is conceived as a transformation through history that has led to be absorbed by Tehran metropolitan.

By proposing different scales strategies for Ray based on our understanding gained in the research of the mechanism of the segregation in the city, fragmented Ray can be connected as a unique fabric as well as be connected to the rest of the city. This will be achieved by attempting to restructure the city in such a way that we create conditions to improve synergy and networks inside of Ray and with the rest of the city.
Figure 1.21: The graph presents the methodology for the research project.
THEORETICAL FRAMEWORK

“...framing is a way of selecting, organizing, interpreting, and making sense of a complex reality to provide guideposts for knowing, analyzing, persuading, and acting.” (Rein and Schön, 1993, p.146)

The literature review creates the theoretical framework of the project. Basically, all cities are in a continuous transition situation. During their ages, their shapes, sizes, conditions, functions are changing just different. Generally, urban decay happens within the transformation context. During this transformation, segregation has been attracting attention of policy makers and planners since it is a cause of various urban problems. Social-spatial segregation can be one of the main reasons of a general deterioration in a city. Henry Lefebvre’s explains segregation is a type of detachment that destroys the totality of a complex, tears the city apart and brings formlessness and isolated information (1996). In fact, segregation is the result of “two gross forces, the negative preventing dispersal and the positive, fostering solidarity” (Peach, 1996, p.380). It should be mentioned that segregation has negative and positive sides. In addition, it can be divided into various categories such as social, spatial, economic, political, residential segregation and etc. segregation is a spatial term and has a significant physical meaning above its social meaning. In fact a city has two components, buildings linked by space, make physical city and human activities linked by interaction make social city. They act conjointly to produce significant outcomes (Vaughan, 2007). On the other word, Segregation is the projection of a social structure onto space (Ha¨ussermann and Siebel, 2001). Basically, social polarisation has doubtedly relation with spatial segregation. When spatial segregation becomes extreme and loses its cultural form, a social problem is created (Vaughan, 2007). In this regard, there is a common belief that high levels of segregation are related to a low level of political participation (Musterd, 2005). As a result, spatial segregation and socioethnic segregation effect negatively on social cohesion.

Social cohesion is defined as “the capacity to acknowledge the existence of different social and territorial groups present in the city, their diverse and sometimes contradictory interests as well as the capacity for these groups to organise themselves and for the city to create institutions in which these groups can confront each other and decide about the city’s future” (Cassiers and Kesteloot, 2012, p.2).

To reverse exclusion by area, we have to make inner cities more attractive for more people by creating stronger incentives to renovate cities (Power, 2000). The future of cities depends on supporting and integrating everybody as well as minority communities within more vibrant, more popular neighbourhoods (Power and Mumford, 1999). As a matter of fact, policies try to provide a mutual recognition of all socio-spatial groups, the rich and the poor in the city as well as the city users and empower the poor with social rights. The proper policy includes an integrative approach to social cohesion and the city is an arena that the different socio-spatial groups confront each other. The goal of the policy is the right to the city for the rich, the poor and the city-users.

The phenomenon of segregation and fragmentation are exemplary in Ray. Rapid growth of urbanization and migration in Tehran affected in Ray, physically and socially, sometimes positive and mostly negative impacts. Ray is located in the south of Tehran with almost 400000 populations in middle or a lower class. In addition, around 50000 migrants live there that a part of them are from Iraq and Afghanistan. It shows that Ray is a multicultural district with social diversity. As a matter of fact, providing opportunities for mutual recognizing of all socio-spatial groups, the rich and the poor in the city as well as the city users, help the society become more cohesive.
SECTION 2.
HISTORIC ANALYSIS
Figure 2.1. The table shows Iran timeline (Source: Hemmati, towards regional synergy, 2012).
Mapping the history

This chapter presents a historic analysis of Ray urban process to clarify how Tehran was born by Ray and now it forgot his mother. This analysis is an attempt to illustrate the major period of the city’s fundamental changes and transformation. This study shows how actions and interventions have transformed the Tehran morphology and how the city is polarized and Ray has been separated from the rest of the city.

There are three key stages of the city’s fundamental change when Ray became a religious district from an ancient city:

• **RAY**- Before Islam 550 BC- 651 AD
• **RAY**- After Islam 639 AD- 1920
  - 1501- 1736 Safavid dynasty
  - 1797- 1857 The Birth of Tehran, The King of Qajar selected Tehran as a capital of Iran
  - 1880- 1906 The expansion of the walled city
• After Modernisation 1920 -2013
  - 1906- 1940 Pahlavi I, The fall of the fortress, Birth of the metropolis
  - 1953- 1973 Pahlavi II, The first masterplan for the capital
  - 1973- 1996 Islamic Revolution, Iran and Iraq war
  - 1996- 2013 Present

The main questions in this chapter are as they follow:
What are the forces behind the physical transformations of Ray and the separation of the district from the rest of the city?
<table>
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<th>Description</th>
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</tr>
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<td>Orupus</td>
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<td>State Rampart, Middle City, Outer City (Parthian City)</td>
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<td>Abandonment of Ray</td>
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<td>Afghans, Afsharid Dynasty (1736AD-1796AD), Zandiyeh Dynasty (1750AD - 1794AD)</td>
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<td>Islamic republic 1979AD- 2013 AD</td>
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<td>new type of buildings, Residential complex, shopping mall, highways, metro</td>
<td>Due to the war and rural migrants Ray has had an unplanned growth. The origins are relocating and replacing with migrants. The shrine became the center of attention and it was expanded. The trend of the segregation is continuing.</td>
</tr>
</tbody>
</table>
Figure 2.2: The maps show Ray urban structure from 247BC to 1736 AD while Tehran did not exist yet, illustrated by author.
City expansion in the first core (ancient Ray)

Origin of Ray: Ray also known as Rhages (Greek: Rhagai; Latin: Rhagae or Rhaganæ) and formerly was the great capital of Iran, and is the oldest existing city in the province. The remains of the ancient city lies on the eastern outskirts of the modern city of Shahr-e-Ray, that itself is located a few miles on the Southeast of Tehran.

Its origin dates can be traced back to the fifth millennium B.C. as a part of the Central Plateau Culture. The settlement was used as the capital by the Medes called Rhaga. Ray is featured in the Avesta (the original document of Zoroastrianism, the Iranian religion) as a eminent holy place, and it is also mentioned in Torah (the Jewish Bible). Some historians ascribe its building to the ancient mythological monarchs, and some others are on the opinion that Ray was the seat of a dynasty of Zoroastrian leader.

The first core of Ray was located next to a spring called Cheshmeh-Ali or «Nahre Soren». In 1935, Eric Schmitt a German archaeologist discovered this ancient site and dated found items back to 6000-4000 B.C. Between 900 B.C and 700 A.D Ray was divided into two regions, Ray Barin (upper Ray) which was located at the south of Cheshmeh-Ali and Ray Zirin (lower Ray) located in the eastern part of Cheshmeh-Ali and on the south of the Bibi-Shahr-Banoo mountains. Ray repeatedly destroyed by aliens invasions and natural disasters that the most important ones were the Mongol invasion and an earthquake in 8th century.

Before Islam Ray was shaped only by rampart as a security and protection wall, castle and temple as the urban elements. Ray played an important role in trading market due to be on the way of the Silk road.

Ray was conquered by the Muslim Arabs in 641 A.D. During the reign of the Muslim caliph al-Mahdī in the 8th century, the importance of Ray grew and it competed in western Asia only by Damascus and Baghdad. Generally, writers described it as a extrem beautiful city surrounded by green gardens, built largely by fired brick and brilliantly decorated with blue faience (Heidary, 2012).
City expansion in the second core (shrine of Hazrat-i-Abdul Azim)

Ray continued to be an important city and experienced the capital of Iran under the rule of the Seljuq dynasty, but it was weakened by the predatory disputes of rival religious sects in the 12th century. In this period, Ray was divided in three zones: Sharestan (middle city), Kohandege (outside city), and Rabaz (bazaar). In fact, between 700-1200 A.D, before the Mongol invasion was the best era for Ray. The Mongol almost completely destroyed Ray in 1220 A.D, and massacred its inhabitants. The massacre's survivors escaped to Tehran, and leaving remnants of Ray led to Ray ruined completely. The Abdul Azim holy shrine which was constructed in Saljuq dynasty was a religious centre. Hazrat-i-Abdul Azim was a holy man from the family of Imam Ali, the first Imam of the Shieh sect, who migrated from the city of Samera (Today Iraq) to Ray. When he died in 852 A.D, he was buried in the middle of gardens out side of the ancient Ray and later a tomb was constructed there. As a matter of fact a village was expanded around it and known “Abdul Azim village”, which progressed gradually over the time and now is called Ray. In fact, the second core of Ray traced back to a rural era, outside the city's boundary. Another reason of the village's growth was its vicinity to the Silk Road. After Islam mosque, bazaar, gate and residential neighbourhoods shaped the urban structure.
After the conversion of Iranians to Islam, naturally the creation of religious places for religious worship became important. The main focal points in traditional cities were mosques. The Abdul Azim holy shrine was the main mosque and the most religious place in Tehran which was the small village in the North of Ray. In the vicinity of mosques there was another significant element which called bazaar as a main commercial and social centre as well as before Islam due to be on the silk road path which were destroyed by Mongol invasion.

Actually, after Islam there were also different types of bazaar in Iranian traditional cities as well as Ray that connected the main city’s gates together. The increase of the social communication and economic exchanges through the bazaars led to the Ray growth especially in Safavid dynasty. In fact, owing to the fact that the Bazaar was the main centre of the social communication, commercial, economic and cultural activities, it was considered as the backbone of the city. Abdul Azim gate was the main gate that Ray’s bazaar was connected via it to Tehran’s bazaar in Qajar dynasty.

Another Islamic urban component was residential neighbourhoods which were located in the city’s boundary. Based on ethnicity, race and religion neighborhoods were house of different groups.

“The bazaar and the mosque as inseparable twins have served for many centuries, as the primary arena of public life, they were two principal arenas of sociability outside of kinship relations. In combination they formed the context in which city dwellers organized their communal life and often as a direct consequence, their political alliance” (Ashraf, 1988).
Figure 2.8: Ray urban structure from 247BC to 1335 AD, illustrated by author.
Although Ray was destroyed by Mongol invasion, the presence of some monuments from the Safavid dynasty (1736-1502 A.D) illustrates that Ray was revitalized. In Safavid period, as the longest-lasting Persian dynasty, the Shieh sect became the official religion in Iran and was accepted as a formal belief in Ray. As a result, the shrine role was highlighted and it was visited by more pilgrims. The kings themselves paid more attention to the religion and did some measurements such as expanding the shrine of Abdul Azim. In fact, the village was expanded due to the increase number of pilgrims. the longest-lasting Persian dynasty in the past thousand years.

“The Safavids set in train a struggle for power between the urban and the crown, they laid the foundation of alliance between the religious classes and the bazaar which played an important role both in the Persian Constitutional Revolution of 1906–1905, and again in the Islamic Revolution of 1979; the policies introduced by the king of Safavid conduced to a more centralized administrative system which has overlapping political and religious boundaries” (Savory, 2009).
Beginning of the Polarisation / the Social-spatial Segregation in Tehran

- Car
- Infrastructure network
- Highrise buildings existed

Figure 2.10: The photo illustrates Tehran’s modern transportation network in 1930s which changed the traffic pattern from pedestrian to vehicle. The traditional city was superimposed by the squares, wide boulevard and the new public spaces (Source: http://www.skyscrapercity.com).
Tehran Urban growth process
1881-1996

“From a walled city of 19 square kilometres with an estimated 230,000 inhabitants in 1900, marked by the salience of three national institutions—bazaar, mosque and royal court—Tehran had by 2010 evolved into a metropolis housing almost a sixth of the country’s population” (Bayat, 2010, p.101)

Figure 2.11: Tehran urban growth from 1881 to 1996. Source: Mashayekhi, 2009.
Ray was an important city in Iran but unfortunately, by Tehran growing after the modernisation process, the glory of Ray was hidden. In fact, Ray today has been absorbed into the greater Tehran metropolitan area.

Figure 2.12: The maps show Ray urban growth from 1921 to 2013, illustrated by author.
02.3. Identifying life’s pattern after Modernisation

02.3.1. The Birth of Tehran
1797-1857

To understand Ray growth process and its social-spatial structure, it is necessary to look back to Tehran expansion process in history as a whole. By researching on Tehran transformation, the reasons of Ray segregation will be more clear. Actually, when Tehran experienced the first steps of modernization, Ray was absorb by it. Tehran was a small village outside the ancient city of Ray which had been inhabited for thousands years. Although it was the capital in the 11th century, it declined at the end of the medieval period, when Tehran started to grow (Lockhart, 1960, in: Madanipour, 2006).

At the end of the 18th century, Agha Mohammad Khan, the founder of the Qajar dynasty, moved the national capital from Shiraz to Tehran in 1797 due to its strategic location, having equidistant from other major cities of the country and its geographical position at the foot of the southern slope of Alborz mountain. Tehran was restricted by walls as an undeveloped and poor city with 15,000 populations.

The structure of Tehran exactly followed the traditional Iranian settlements pattern which the bazaar and mosque were the main urban elements of the city. In addition, the palace of the king was located next to the bazaar in order to control every single activity. Mahallat (neighbourhoods) were the places that social fabric of the traditional city was defined there. They organized urban space according to ethnic-religious divisions not class line whether rich and poor. Actually, the same religious affiliation lived within particular quarters (Bayat, 2010). There were few major streets in the city that connected the city’s gates to the bazaar and then to the palace of the king (citadel). Moreover, long narrow streets connected the rest of the city to the bazaar and vice versa. The wall had 6 entrance gates that their characters in relation to the city were defined by their location and position. The Abdolazim and Qazvin gates were the most important trading gates in the south and the west, connecting the city in a national and international scale (Mashayekhi, 2009).

Figure 2.13: Tehran's wall had 4 gates that the main one was Abdolazim gate which connected Ray Bazaar to Tehran Bazaar.

Figure 2.14: When Tehran became the capital, the wall was expanded from 4 gates to 6 gates but still Abdolazim gate had the most important trading role.
TEHRAN 1857

Figure 2.15: Tehran in 1857. Source: based on Mashayekhi, 2009, Edited by Author.
02.3 Identifying life’s pattern after Modernisation

02.3.2. The expansion of the walled city
1808-1906

In the second half of the nineteenth century the king of Qajar visited Europe and he fell in love with Paris. This moment was the beginning of the modernization process or westernization of Persia. The consequence of the closer relationships with Europe influenced on traditional Persian society (Mashayekhi, 2009). As a result, Tehran was transformed from the small town to a modern city. In this time the old wall of the city was collapsed and new city walls was constructed, in a perfect octagon form with 12 gates instead of 6 gates that made the city four times bigger than before, from 4.2 km² to 18.4 km². Although the gates had their own characters in relation to the city as well as previous ones, they had become mostly decorative. It should be mentioned that these transformations were inspired by the vision of a ‘modern city’ derived from Baron Haussmann, whose ideas spread at this time from Paris to the Middle East (Bayat, 2010).

The king of the Persia sought to boost Tehran as well as the European cities. As matter of fact the northern part of the traditional city started to develop followed by the “European city” that new institutions and building types were introduced (Mashayekhi, 2009). Generally, during 130 years rule of the Qajar kings in Iran, despite the importance of Tehran as the capital, the growth of the city was slowly. In 1921 Tehran was limited to 24 square kilometers with about 200,000 inhabitants that emphasize that slow growth (Ghamami, 2004). Although the city as shown on the map of 1890, it was not divided yet into quarters, poor and rich, the process of transformation into the modern city was started. Owing to the fact that the king chose the Shemiran as his summer residence due to good weather, water sources and more wide areas and the growing presence of Europeans Tehran, north of Tehran was known as a high class quarters for rich people. It is notable that the northward growth of the city inclined towards a high quality of development, while the southern quarters, already established as industrial, tended to become poor. In the early 20th century the political and economic changes of Iran and their influence on Tehran, in 1906 came the constitutional revolution, followed by the subsequent establishment of the parliament and the discovery of oil in 1908. Thus, Tehran became more important as the political, intellectual and international centre of Iran (Mashayekhi, 2009).
02.4. RAY- AFTER MODERNISATION

Qajar dynasty 1796-1925

Generally, Ray was changed during the Qajar dynasty, when Ray grew mostly around the shrine and the caravansaries, Qajarian bathroom, Borhan school (religious school) and Jame mosque were built as new urban components. The plaza with economic function and Mozaffary Street (the oldest way between Abdul Azim village and ancient Ray which is today the main access to the holy shrine), along the bazaar, are part of the old city structure. The Mozaffary Street was changed into a street in the end of Qajar dynasty (1916-1926 A.D), (Heidary,2012). The most of the historic buildings, such as the bazaar and caravansaries, were located in the north of the shrine that illustrate the first development occurred on that area. On the other word, the urban growth direction was from the Qajarian fabric (second core, south district) to the ancient city (first core, north district).
Basically, the historic city was organized in four zones: Nafar-Abad, Hashem-Abad, Tootestan and Sar-takht. Nafar-Abad, in the southern part was the biggest district and its center worked as an open space for gathering people. It also was a place for some monumental structures, such as Tekyeh and Sagha-khaneh (a room with a water source for thirsty people), (Heidari, 2012). Nafar-Abad district was connected to the other points of the historic city through the bazaar, holy shrine, and the Maidan-e koochak, which is another plaza on the other side of the bazaar. The origins of Nafar-Abad were mostly the owner of the bazaar and the caravansaries. This neighborhood was the most important one due to its location and the area. Hashem-Abad, located at the West of Nafar-Abad in the southeast part of the shrine which was surrounded by farmlands that the owners and the workers lived together in this neighborhood. Nowadays, the most of its constructions have been unfortunately destroyed. Tootestan was other district of the old city, which was located at the East of Mozaffary street and in the North of Nafar-Abad. Finally, Sar-takht was the most famous quarter due to its physical conditions. The district center of Sar-takht was located in the middle of the tissue. Today, the major structures, such as the Abanbar, bath and local mosque were destroyed and replaced by renewal projects (Heidari, 2012). In Qajar dynasty, Ray followed iranian urban pattern which had one main axis with three main components; gate, bazaar and mosque and residential quarters were surrounding but this pattern gradually was changed.

Ray’s bazaar and Tehran’s bazaar were connected to each other via the main dusty road in the middle.

In order to make an easier access of pilgrims from Tehran to Ray, the first train line was established which called Mashin Doodi that later it resulted to emerge industrial points around.
Figure 2.26: The map shows Tehran in 1890. Source: based on Mashayekhi, 2009, Edited by Author.
02.5. Birth of the metropolis

Pahlavi I Dynasty 1920-1940

Reza Shah achieved the power in 1925 in a remarkable political instability condition and social insecurity that resulted by years of civil war, foreign occupation and nomadic uprisings (Bayat, 2010). Although Reza Shah continued processes that had been started by Nasereddin Shah Qajar, during the First World War, they had been halted because of difficulties presented to the country. The major developments during Reza Shah’s rule were constructing and increasing highways and Trans-Iranian Railway, introducing a modern education, increasing the modern industrial plants and considering public health. In addition, secularism and nationalism opinions became highlighted.

Reza Shah sponsored European educations for many Iranian students in order to promote modern education in Iran. As a matter of fact, some students were sent to Europe for educational reasons. After students returning, new social classes were formed. A professional middle class and an industrial working class emerged. The king relocated to the north of Tehran and reused palace as an administrative center. The employees of this sector had more freedom to select their living areas and began looking towards the northern parts of the city. Therefore the city started to divide into two parts, the rich in the north and the poor in the south. In addition, the king disagreed with religious opinions and events. When he travelled to Turkey in 1934 and met Ataturk, followed his secular opinions. In 1936 he banned Chador (a kind of Hejjab) for women and it was typical enough of Reza Shah’s modernizing ambitions.

Figure 2.27: Reza Shah destroyed the wall and some buildings, divided the city into different parts, renovated some of the buildings and changed their function as new institutions.

Figure 2.28: Reza Shah at the opening ceremony of the University of Tehran (source: http://en.wikipedia.org/wiki/RezaShah).

Figure 2.29: Reza Shah visited Atatürk in Turkey (source: http://en.wikipedia.org/wiki/RezaShah).
This sparked a conflict between old and new, with traditional practices forbidden and modernity becoming the rule. The importance of religion and old parts became pale. Generally, the result of the modernization process in the country was transforming. In fact, Tehran was transformed from the traditional Iranian Islamic city to a modern metropolis. Generally, the result of the modernization process in the country was transforming. In fact, Tehran was transformed from the traditional Iranian Islamic city to a modern metropolis. During Reza Shah’s reign, the introduced urban grid, public spaces, state institutions and housing typologies permanently changed the character of Tehran. The 1930s by wide spreading road-widening schemes that the teared historic urban fabric, became accessible by motor vehicles (Madanipour, 2006). The traditional structure of the city was certainly different with the image that Reza Shah had in mind in terms of the city expansion. As a result, firstly the city wall was demolished and secondly attempts were made to end the mahalleh system, by zoning pattern based largely on class segregation. A new urban model formed by the modern institutions and boulevards designed by European, in the northern parts of the former wall (Bayat, 2010). Reza Shah constructed a new street network and a national transportation network in order to promote the unity of the country’s territory in different aspects (Hemmati, 2012). The developed road system and the increased use of motor cars, as a part of the development communication were the reasons of the capital accelerate extension that led to industrial growth. Constructing modern manufacturing plants was important as well as developing industries rather than small, individual factories that led to increase the number of industrial plants during Reza Shah’s reign.

Rapid industrial growth created a urban working class. Tehran’s population increased from 196,000 in 1922 to about 700,000 by 1941. In fact, modernization accelerated the pace of life by changing the culture, education, and traditional social norms, including those governing the role of women (Hemmati, 2012). From that time the old socio-economic system entered a period of gradual decline, and the inhabitants become increasingly divided into various classes (Mashayekhi, 2009).
TEHRAN 1937

Figure 2.33: This map shows Tehran in 1937. Source: based on Mashayekhi, 2009, Edited by Author.
At the beginning of Second World War (1939-1945) all changes to the city were stopped and the development process slowed down. The implemented transformations in Tehran between the early twentieth century and 1937 had resulted critical shifts in the city’s socio-economic and spatial structure (Mashayekhi, 2009).

In August 1941, Reza Shah was forced to abdicate in favour of his son, Mohammad Reza Shah due to political issues. After the World War II and the oil nationalizing in 1951, the economic role of Iran increased in the world. As a result, the capital as a centre of industry and trade became more highlighted. The new industry generation in the capital absorbed migrants from all around Iran. In addition, the concentration of administrative institutions in the city led to a social polarization. The migrants placed in the rich families and employees houses who left their houses in the south and moved to the north due to better services. This migration trend made the population 1.5 million in 1956. Overall, social distinction also entailed physical segregation (Mashayekhi, 2009). Thus, Tehran was established in two parts, the traditional part in the South and the modern part in the North.

Generally, Tehran saw a rapid expansion and was transformed from the hexagon shaped city into a boundless young metropolis. The vertical axis from the bazaar to the mountain formed the backbone of the urban structure. Actually, Owing to the high quality infrastructure and services in the North, Tehran expansion was into the northern direction after World War II (Hemmati, 2012). As a result the north-south axis became more important than the east-west one. The structural pattern of Tehran experienced a number of momentous transformations by the advent of the car.

Social polarization was accompanied by political and administrative fragmentation which was the result of the desperation of the traditional life from the new developed areas as a whole.
02.6.1. Importance of Ray was gradually faded

Pahlavi II Dynasty 1940-1956

In the first Pahlavi period (1925-1941), Iranian urbanism was supported by government policy followed modern constructions pattern. It influenced on Ray as well. For instance Abdul Azim historic square was changed to a new roundabout, then some streets were built around it and Mozaffary Street was widened (Heidari, 2012). This caused some historic part were demolished such as the Abbasi caravansary and Maidan Takye. On the other hand, some public services were built in a new classic style such as a clinic, a modern bath and a police station. In terms of residential buildings, they were developed in quality and quantity and some modifications took place such as modern houses were not made in courtyard plan and were modified in facade, entrance and materials (Heidari, 2012).

In Pahlav era, religious events were banned and accordingly religious parts were paid less attention. In addition, after modernisation process, new industries and factories came to Tehran and they were located in the South. The North of Ray along the main axis (Fadayeen Road) was occupied by industries that the first one was the cement and cloth factory. Due to the job opportunities that were created and land price, new migrants from all around Iran settled in Ray. Although in this period cars had come to Ray (not in centre), in centre, lands were still more expensive due to be near the shrine and services, so migrants settle near the industries and made their houses without plans.

In 1941, the second part of the Pahlavi dynasty was started.
Figure 2.40: This map shows Tehran in 1953. Source: based on Mashayekhi, 2009, Edited by Author.
The urban pattern of Tehran in the 1960s was the result of a rapid unplanned growth in the economic and social system that created suburbs settlements.

Generally, they were limited to the area close to the city or areas which were connected to the old central parts of Tehran (Ray and Shemiranat), the city did not stretch out to the farther cities and villages (Mashayekhi, 2009). Basically, the rapid increase in oil prices and the continuous migration to the capital resulted the city explosion that reached 4.59 million population in 1975. The build up areas expanded in all directions but especially to the North. The city's planned structure was the street system that switched the new modern centre in the South to the North.

Figure 2.41: This photo shows a car street and institutions along it in Tehran. source: majazi.net
02.6.3. The first masterplan for the city (Los Angeles effect)

Pahlavi II Dynasty 1964-1973

In 1960s, the sharp growth of the capital led to a massive fear and worries for the future of the city. In 1964, the first Tehran master plan was prepared by Farmanfarmaian Consulting Engineers in Tehran in co-operation with Victor Gruen in Los Angeles. They believed that a city with a heart is the ideal city following the American modern towns. In 1965, Gruen envisaged the tomorrow’s metropolis as a central city surrounded by ten suburbs cities with their own centres. The linear version of Howard's concept was used in Tehran master plan by Gruen. He tried to implement the theory of the ideal Metropolis with ten large districts and 500,000 inhabitants that green belts separated them but linked to each other via a rapid transportation system (Hemmati, 2012). According to this plan, Tehran would have extended westward toward Karaj (the industrial town), and merged with Tajrish (in the north) and Ray (in the south). The master plan emphasized the idea of decentralization (Mashayekhi, 2009).

The real transformation of Tehran into a metropolis occurred in 1974 when oil price had a sharp rise as well as after the Islamic revolution in 1979. In order to control development, creating an appropriate centre in Tehran was proposed by shahestan-e Pahlavi’s plan. This plan would provide a central business district and some urban facilities within the city that never materialized due to mismanagement and the Islamic revolution. Basically, the contrast between modernity and tradition in urban areas had become stronger in the end of the Pahlavi régime. The conflict that had started before, now logically culminated in the ideologically inspired Islamic revolution (Mashayekhi, 2009).
Reza-Shah, the first Pahlavi king, died on exile in 1944 and was buried in the south corner of the holly shrine of Hazrat-i-Abdul Azim (Heidary, 2012). In the second Pahlavi era (1941-1979), Iran architecture modified its style, from new classic to modern. Reza-Shah’s tomb is a good example which was built in 1949-1952. In order to access the new tomb in the west side of the shrine, a new road was constructed by destroying the urban fabric. In addition, the quarters were extended next to the farmlands and old gardens were destroyed and replaced with new residential blocks. The quarters of Sar-takht and Tootestan had the highest traffic because of their vicinity to Mozaffary Street and instead of traditional houses, apartments with poor design and planning were built (Heidary, 2012). When oil industry was nationalised, Tehran became more powerful. However, Ray because of being religious district did not participate in modernisation process a lot thus it became more pale. In fact, the policy of modernisation was dedicating Ray as a industrial zone and working class people. The Tehran expansion was toward North more than south. as a result Ray self grew in the South and new industrial neighborhoods were created. The number of industries increased along the main axis in the North and west. In 1962 after Land reform program, new rural migrants migrated to Tehran and Ray became crowded. Some of the original residents due to the new fabric relocated to the North of Tehran who were able and they replaced with new rural migrants. this groups was not able to buy houses near the shrine so rented. gradually the quality of life around the shrine also changed. The most of Ray land were agricultural and migrants could also worked there near their houses. After Gruen plan, two residential projects were built. One in the North east and one in North west. the first one was to organizing homeless people of Tehran and another one was for workers of factories. A number of roads were built.
Figure 2.46: This map shows Tehran in 1373. Source: based on Mashayekhi, 2009, Edited by Author.
Rural migrants who had rented houses in the centre, after some years became independent they relocated to the West of Ray. By destroying agricultural lands, built their houses and replaced with new migrants from other parts of Iran and Afghanistan. In addition, new industrial neighbourhoods were created along South-west and South-east roads. South-east road connected Ray to another industrial town which is called Varamin and South-west connected to the first Iran oil refinery which is located in the South of Ray. These industries in addition of agricultural lands attracted a lot of working class people from Tehran and other cities.
1973-1996 Metropolization, Islamic Revolution, Iraq-Iran war

Source: http://www.pbs.org
Islamic Revolution-1979

In 1976, Ray, Shemiran and Tehran were connected. In fact, by the end of Pahlavi the contrast between modernity and tradition in urban areas had become stronger that before that led to the revolution. The 1979 revolution and subsequent war with Iraq (1988–1980) had a dramatic effect on the city. During the time of Islamic revolution in 1978-1979, for the first time the unfriendly urban spaces of Tehran showed a dramatic harmony. People from different groups came together by the single aim of being against the dictatorship and wishing to overthrow the monarchy (Mashayekhi, 2009). After two years of mass demonstrations in Tehran and other cities, the revolution was happened in the year 1979 then the monarchy collapsed. The Islamic revolution led to collision between modernization and traditions, between economic development and political underdevelopment, between global market forces and local bourgeoisie, between foreign influence and nationalism. When the Islamic Republic came to power, due to traditional opinion, abolishing every trace of modernity or westernized culture inherited from the Pahlavi régime became a goal (Mashayekhi, 2006). On the other hand, tradition, was reinforced by religious ideology. During the early years after the revolution, the city’s expansion accelerated in an unplanned pattern. However, after about five years, the government made some strategies in order to control migration and the massive flood of refugees.

Iran-Iraq war (1980-1988)

At the same time the Iran-Iraq war, one of the most destructive wars of the 20th century was happened. In fact, Iraq attacked Iran in September 18, 1981 months after the 1979 revolution which commenced which stopped economic development and the investment in urban development dwindled. Furthermore, during 1976 to 1986 immigration to the TMR become more severe. The capital was witness of a rush 2.5 million war refugees, and also 2 million Afghan refugees from Soviet Union’s invasion of their country. As a matter of fact, this growth of population and their housing need increased rapidly that led to the huge extension of the south urbanization. The master plan of Tehran, tried to consider the south planning structure. The low quality construction resulted the rapid expansion of the slum areas and a huge number of social and spatial problems. The most of the suburban housings were built for the lower or middle-classes who worked largely for the expanding service industries or for governmental institutions. These type of buildings mostly were rapidly established along the main roads.

Figure 2.49: These photos show a huge number of immigrants from the South of Iran due to the war, came to Tehran as the capital, to find jobs and security.
02.7.1. Unplanned growth in Ray
1979-1996

The revolution had an impact on Ray, in two phases. During the first decade (1979-1989), the process of changes were slowly due to the imposed war. Naturally after Islamic revolution, religious ideology became highlighted and religious places and events also were paid more attention by governments. As a result Ray as the main religious part of the capital achieved its importance and became the centre of attention. In order to abolishing modernity from the urban structure, the Reza shah tomb as a symbol of modernisation and secularism was destructed in 1979 (a religious school was later built in its location) as a radical action.

In 1979, Iran was attacked by Iraq and the war was started which took 8 years. As mentioned before, in this period the Tehran suburbs grew suddenly. New Migrants from War-torn areas, came to Tehran as the capital to find job and security. The price of land in the North of Tehran was much higher compared by the South, thus new migrants preferred to settle in Ray. Although some of them worked in Tehran, some of them found new jobs in industrial sector of Ray and by destroying agricultural lands, they made their houses quickly closed to the industries that led to create the industrial neighbourhoods in low quality. The Arabs from South cities which came to Ray settled in North-east and create their own community. The Ray infrastructure boomed after 1990 and a new network was added. The new infrastructure resulted fragmentation in some areas.

Tehran have had a unbalance development because of some factors such as being under the pressure of fundamental economic-social transition, the War, increasing migrants, increasing industries, weaken monitoring on urban development. Tehran from 12 districts was changed to 20 districts that Ray is the 20th.
02.7.1. Unplanned growth in Ray
1979-1996

During the second decade, the renovation and expansion plans of the Abdul Azim shrine altered the traditional fabric. Most of the plans were based on preparing services for pilgrims. In fact, during 1984-1994 the historic fabric was demolished and cleared under a “rehabilitation” without any comprehensive plan (Heidary, 2012). The development plan of the holy shrine began in 1994 in order to improve the transportation system, make a cultural center for pilgrims and residents, such as a library and a museum. In addition, providing needed public services for visitors such as parking, motels and improving the residential fabric were the aims of the plan as well as reconstructing the holy shrine as a spiritual and religious center and building a theological faculty and a new shopping mall.

Due to the increased pilgrims in Ray, the managers decided to extend the estate from approximately 10,000 m2 to 30,000 m2. Unfortunately, the urban conservation and architecture heritage were not taken into consideration in the new urban expansion and strategies that Sadly, some parts of the traditional fabric and some monuments were ruined between 1990 and 2001 (Heidary, 2012).

Figure 2.52: This photo shows the expansion plan around the shrine in 1991.

Figure 2.51: The map shows Ray urban fabric in 1976-1996, illustrated by author.
Figure 2.53: This map shows Tehran 1996. Source: based on Moshayekhi, 2009, Edited by Author.
Figure 2.54: This map shows Tehran in 2007. Source: based on Mashayekhi, 2009, Edited by Author.
After 1996, the shape of buildings in Ray was gradually changed. Some old ones which had been built without plan, were demolished and rebuilt again from 1 and 2 stories to 3, 4 and 5 stories. These changes were not only about building fabric but also it happened in social fabric. Some migrants after being more wealthy relocated to Tehran and replaced with migrants. Moreover, lack of facilities and services made this motivation more powerful. Although the price of land in Ray increased, it still lower than Tehran. As a result some administrative employee who are in the middle class selected Ray as the area to live and they work in Tehran. %23.2 of Ray population are employees. however, half of the population are still workers, who worked in Ray or other industrial towns such as Varamin, Robat karim and etc.

In 2002, new construction was started that changed agricultural lands to mass construction for residential issue. 32 apartments were built that shows the needs of housing and population growth. In addition of mass construction in residential sector, commercials and administrative buildings were increased. Generally, Ray due to larg, free, agricultural and cheap lands was suitable place to built mass complexes as an economic revenue. This district suffers from traffic jam. It worked as a south entrance gate of Tehran as well as before. To access to Tehran from south cities, Ray had to be passed and vice versa. Although some of them did not have any stop in Ray, they had negative impacts such as traffic, air pollution, noise pollution and etc. A part of these problems have been solved by constructing the new highways.

Metro has also brought a huge changes in Ray and has made Ray more accessible. But unfortunately private cars and taxis are mostly used in side of the district due to lack of proper public transportation.

During the recent decays, some highways were added to the south in order to connect the North to the South especially in high scale network that all of them were not successful.

The automobile culture rooted in urban life which was the impact of the master plan, as a means of free movement in the city.
In local scale, although several public services and facilities were constructed in the South to improve the social and cultural situation, they are not enough. Actually, despite of some important actions in order to develop Ray, the marginalized Ray scrimmaged with the urban problems of its unplanned growing structure. Since during the post industrial era the character of the south became industrial, a many large-scale industrial buildings became warehouses. Although the most of them have been left, they have occupied a huge area in the north and west that created some problems.

In addition in 2003, Ray was facilitated by Metro line which brought a lot of changes and opportunities. Todays, the shrine is not only a mosque but also it has been expanded and new services and programs have been added. Now it is known as a vibrant heart of Ray.

Generally, Ray historic city is disruptive because of civil programs and traffic problems. In addition, local managers and designers did not pay attention to the conservation of the historic context and destroyed historic fabric for new building constructions (Heidary, 2012). Other problem is access ways that the new streets constructing led to the fragmentation of the historic city.

Ray still suffers from low life quality, lack of visitors’ requirements, especially in temporary residential, traffic problems and welfare services. It is necessary activate the potentials to restore and rehabilitate Ray by collaboration between the historic city municipality, cultural heritage experts, holly shrine estate managers and inhabitants.

Figure 2.55: This map shows the shrine complexes with new functions.
Source: http://abdolazim.com/persiannet/So
Until the 1970s, the borders between Tehran and the surrounded villages were clearly defined even after the wall collapsing. However, from the 1980s, Tehran’s suburbs significantly grew and the borders vanished. Today’s, the suburbs developments determine the development within the municipal limits which contained %30 of the total population (Mashayekhi, 2009). This population consisted mostly of immigrants from other cities who relocated to the capital for economic reasons as well as war immigrants who had lost their families and houses. The huge migration to the capital changed the social fabric. In addition, Tehran’s suburbs are also very young without suitable facilities and services. These young small suburbs cities, without deep identity, have been growing without any control.

By a quick look at the current map of Tehran, the infrastructure network draws your attention. The great network is the only implemented goal of the Los Angeles-type master plan. This structure has provided a modern means of mobility that has led to a faster urban expansion. Generally, in recent years, service centers and road networks were developed as well as before and several residential and industrial complexes were constructed along the major roads. Population growth in Tehran was gradually decreased. However, the physical expansion rate of cities and villages in Tehran metropolitan is increasing.
Figure 2.58: The map shows Tehran 2013. Source: based on Mashayekhi, 2009, Edited by Author.
Figure 2.59: The image shows a nice view of Tehran 2010. source: http://fa.wikipedia.org/wiki/.
The contemporary Tehran metropolis with its endless suburban extension!

Todays, the wide growth is not limited in Tehran and all the rural and agricultural areas, industrial zones, as well as towns are part of a discontinuous urban space. They are usually separated from each other by agricultural and industrial land or desert. Tehran's suburbs are very young without proper urban services. Due to the fact that the residents are mostly migrants from all around Iran, the social fabric is consist of diverse culture and mostly low educated and economic level. They have no common cultural history needed for creating an integrated metropolitan area. In fact, it will be considered as one of the greatest issue that Tehran will face in the near future.
Tehran infrastructure and the main transportation nodes

Figure 2.61: The map shows the main roads traffic intensity in the TMR (Source: Hemmati, 2012).

Figure 2.62: The map shows the main nodes of transportation in TMR - Airports and train stations (Source: Hemmati, 2012).
Figure 2.63: The image shows Ray urban fabric in 2010. Source: http://abdolazim.com/persiannet/
02.9. Ray industrialization growth
1955-2013

-Small industries with new residential complexes emerged mostly in the North of Ray;
-rural migrants settled in Ray.

-The light industry grew along the main road;
-The industrial neighbourhoods were increased in the North.

-The massive wars migrants, Afghan refugees and workers of the industry sector settled in Ray;
-Industries and their residential were added in the West along the train line;
-The role of the shrine became highlighted after the revolution;
-The new constructed highways resulted fragmentation.

-Municipality planned for south development by highlighting the Ray historic religious character;
-The mass complex buildings were constructed;
-The social fabric is changing.

Figure 2.64: The maps show the Ray industrialization growth process from 1955 to 2013.
Figure 2.65: A picture shows Ray as an industrial district. Source: http://www.panoramio.com.
02.10. Effective urban plannings on the Tehran development process

The first developments tried to transform Tehran from the traditional Islamic city to a modern metropolis with new economic and cultural pattern that divided according to income and wealth. The decentralization policy attempted to reduce attractiveness of the capital by providing more balance in urban system at the national level. The future of the Tehran growing determined in the east-west linear polycentric form.

The first developments tried to transform Tehran in the mid-70s, the second master plan aimed decentralization Tehran’s population and economic activity away from the centre to the new settlements around. The polycentric development in the capital was proposed by dividing the city into five sub-region.

The third one in 2006 promotes the linear polycentric development, but in the north-southward.

Figure 2.66: A brief review on the TMR master plans.

Figure 2.67: Formation of the TMR (Source: Esfandyar Zebardast).
SECTION 3.
CASE STUDY
03. CASE STUDY

In three case studies, the main access axes are surrounded by commercial, services and hotels in order to offer public facilities for pilgrims.

KARBALLA - IRAQ
Dewan company awarded contracts for urban renewal of historic religious cities in Iraq and these pictures show the new design for pilgrimage site.

MASHHAD - IRAN
Mashhad is the first religious city in Iran that globalization or the religion transform whole structure of local fabric and polarized the city.

QOM - IRAN
Qom is the second religious city in Iran that there are few proposal plans in order to expand it.

Figure 3.1: The pictures show Imam Hossein holy shrine as the third Shia's Imam and Abalbazl Abbas holy shrine in Karballa, Iraq.

Figure 3.2: The pictures show Imam Reza holy shrine in Mashhad as the first religious city in Iran.

Figure 3.3: The pictures show Hazrat Masoumeh holy shrine in Qom as the second religious city in Iran.
SECTION 4.
PILGRIMS SIGHT IN RAY
To be able to address the need of pilgrims inside the city, it is important to know who the pilgrims are in Ray. Some factors are relevant to spatial activity of pilgrims (tourist). According to the research literature, these factors are divided into two groups: the first consisting of factors that are related to the character of the specific trip (length of visit, individual tourists or part of a group, etc) while the second group is associated with the specific characteristics of the tourists themselves.

Variable related to the tourists themselves (socio-demographic variables):
- Nationality
- Pilgrims age
- Level of education
- Level of job
- Social level

Variable related to the character of the trip:
- Transportation mode,
- Length of stay in destination
- Visiting with a group or individual
- Accommodation

In this chapter, the characteristic of the pilgrims will be discussed. The main question will be as they follow:
Who are the pilgrims in Ray?
Where do they stay and how do they arrive to the city and how do they move inside the city?
04.1. Pilgrims sight in Iran

Trend: The most of travelling to Iran are for family visiting purpose. Due to the fact that Iran is one of the biggest Islamic country, it contains a lot of religious places all around itself. As a matter of fact, %13 of passengers visit Iran for this aim. In 2012, 17 million visitors visited Tehran as the capital of Iran that 10 million of this number visited Ray as the religious district.

Ray is mostly visited due to its religious identity. The shrine is visited by:

10 Million Tourists Per Year,
8 Million visitors from Tehran metropolitan and its surrounding,
250,000 Visitors in Imam Ali matydom and new year,
12,500 visitors in Thursdays and Fridays as the religious days,
7,600 visitors in normal days.

Figure 4.1: The graph shows the purpose of travelling to Iran.

Figure 4.2: The graph shows the number of travelling in Touristic destinations in Iran.

Figure 4.3: The graph shows the Pilgrims figures in Ray.
04.2. Factors of spatial activity of pilgrims
04.2.1. Who are pilgrims in Ray?

Trend: Most of the pilgrims are from Iran, in a range of 24-20 years old and low education level. The most of pilgrims are in moderate to low position of jobs as well as social level. In addition, they spend only few hours in Ray. As a result the dominant pilgrims are from a weak level of the society.

Figure 4.4: The graphs show the Pilgrims figures in Ray.
04.2. Factors of spatial activity of pilgrims
04.2.2. What are trips’ characters in Ray?

Trend: Most of pilgrims travel by public transportation, Metro, to Ray, therefore there is a high dependency to public transport inside the city. Due to the fact that the most of pilgrims are from Tehran, they back to their houses. while, %37 stay in the vicinity of the shrine, camp in the closed park and the south street. It shows that high investment on hotel has no sense, we need to invest on houses and hostels. Moreover, the most pilgrims are with family which has influence of the type of accommodation they choose.

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**TRANSPORTATION MODE**

<table>
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<th>Mode</th>
<th>%</th>
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<tbody>
<tr>
<td>Private car</td>
<td></td>
</tr>
<tr>
<td>Taxi</td>
<td></td>
</tr>
<tr>
<td>Bus</td>
<td></td>
</tr>
<tr>
<td>mini bus</td>
<td></td>
</tr>
<tr>
<td>Metro</td>
<td></td>
</tr>
<tr>
<td>Train</td>
<td></td>
</tr>
<tr>
<td>Tour Bus</td>
<td></td>
</tr>
<tr>
<td>Airplane</td>
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</tr>
</tbody>
</table>

**ACCOMMODATION**

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</thead>
<tbody>
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</tr>
<tr>
<td>Park, street, Shrine</td>
<td></td>
</tr>
<tr>
<td>Friend, family house</td>
<td></td>
</tr>
<tr>
<td>Back to home</td>
<td></td>
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</tbody>
</table>

**KIND OF TRIP**

<table>
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<th>Kind of Trip</th>
<th>%</th>
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<td>Individual</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td></td>
</tr>
<tr>
<td>Religious groups</td>
<td></td>
</tr>
<tr>
<td>Tour</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.5: The graphs show the trips figures in Ray.
SECTION 5.
URBAN ANALYSIS
The picture presents Ray urban quality. Source: fa.wikipedia.org
Ray’s prospect
The historic Ray is considered as one of the most prominent and the most identity core of tourism, religious and employment of Tehran’s future in terms of its special position in the spatial structure of Tehran and with regard to the enjoying of the most important, valuable, historic and religious centres, and high capability of creating centers of employment and urban activities with residential neighborhoods.
In fact, from 1920, the end of Qajar dynasty, Tehran modernization resulted in Tehran polarisation. Hence, it was divided in two parts, rich (north) and poor (south). In order to control the unexpected changes, in Tehran master plan, different zones have been defined. The main historic religious core of Tehran has been defined in the southern part in Rey district. Although a huge number of historic, religious, cultural and industrial points of Tehran are concentrated in the south, Rey has some problems due to segregation. As a result, the question rises what kind of social and spatial interventions are needed to deal with the segregation in the district?

A review on Ray and Tehran process shows that these processes are strong and influenced by different factors such as the political, economic, social and spatial aspects. Moreover, they are influenced by different levels such as global, national, local and group level processes, by structural and individual factors. These processes have led to concentration and segregation socially and spatially. Together, they can...
05.2. Distribution of urban activities

05.2.1. Spatial Segregation

05.2.1.1. functions

The urban development in Ray shows that most of religious, cultural and historic elements are along the main organic axis which is started from the holly shrine in the South and is ended by the rampart in the East side. It can be noticed that the main religious core of the district is the Abdul Azim holy shrine and the main historic core is Cheshmeh Ali in the East.

Figure 5.3: The map shows Ray’s land used map, illustrated by author.
05.2.1. Spatial Segregation

05.2.1.1. Functions

Ray has different types of residential neighbourhoods with different social fabric such as industrial, old, traditional, new and modern neighbourhoods that the qualities are different.

The most oldest with worse quality is located in the Southern which its residents were mostly the owner of the bazaar before 1940 that replaced with rural migrants and illegal refugees. This neighbourhood is considered as a tourists facilities in the Ray master plan.

After 1996, Ray has been witness of a residential complex growth by destroying agricultural lands inside of Ray in order to respond to the housing needs.

In terms of industries, they have had linear growth along the infrastructure lines. In the North, it has the most important role because of being the first industrial core in the South after modernisation which is closed to the other industrial districts on the other side of the Azadegan highway.

South-west industries formed along the train line and South-east along the road that connected to the closed industrial town named Varamin.

Generally, Ray has more than 1000 industrial units that have occupied 430ha lands. In Tehran master plan, industries should be replaced out of the Ray boundary due to being polluting and not compatible. The plan has been started and recently, the cement factory replaced with an University as well as replacing the cloth factory to a shopping mall along the main axis as a starting point. After the master plan most of industries were closed that this also have brought several social problems.
05.2.1. Spatial Segregation
05.2.1.1. functions

There are a diverse types of commercial and services in Ray in different scales, city scale like the Bazaar, district and neighbourhood scale like scattered shops. Commercial function is started from the main Bazaar which was built in the Safavid dynasty in the North of the shrine. It has been concentrated in the main square and then has continued along the main axis to the North. After the 1990 year, some shopping malls as a new type of commercial was emerged. The new bazaar was built in the West side of the old one which was the Modernism though result in order to offer new services and being available for every body. The shrine is connected to the square via Mozaffari street which is a commercial street and works as one of the main public spaces in Ray. This zone is the most awake part of the city during nights. Although there are different types of commercial and services in the district, they are not proper and enough. Ray suffer from lack of appropriate facilities and services for residents and visitors. They are usually forced to use Tehran services as higher quality facilities.
05.2.1. Spatial Segregation
05.2.1.1. functions

There are a lot of wastelands in the district that the most of them are located in the south, North and West sides. They are mostly, abandoned industries, semi-ruins buildings and worse quality buildings. They have been occupied 36% of Ray that can be used as future development opportunities.

Around 60,000 ha lands of Ray has been occupied by agricultural that supply 70% of Tehran vegetable and fruit. Unfortunately the farms which were located inside of the boundary have mostly ruined in order to replace with residential complexes. Todays, the most of these lands are located in the boundary that has made a green belt around Ray. However, this green belt is also in danger of destroying for Tehran expansion. In Tehran master plan, the preservation of the green belt is considered as a main factor.
05.2.1. Spatial Segregation
05.2.1.1. functions

The historic axis is started from the shrine, the first religious core in the Southern zone and is ended by the rampart as the first Ray urban core in the East side. The oldest historic places is near Cheshmeh Ali, the rampart which traced back to 6000 years ago and the oldest religious centre was constructed in Seljuk dynasty. Generally, the religious places have been taken into consideration more than historic and the historic monuments are eliminated. In fact, Ray is known by its religious role. Annually, between 8 to 10 million visitors visit Ray due to its shrine. Ray has more than 18 recorded religious monuments. However, historic potential should be highlighted in order to attract more visitors and help Ray to bring back its identity.

Figure 5.14: The map shows the spread historic spaces, illustrated by author...
05.2.1. Spatial Segregation

05.2.1.1. functions

Public space as a mediator can put residents in different relations to attractions, such as public and private services (Marcus, 2007). Generally, public space has physical and functional conditions which effect social interactions. The physical and functional qualities of a public space are related to the physical facilities, the activities, accessibility conditions, and the surrounding land-used programmes that support the activities there. Ray has different types of public spaces that depend on their locations and functions different groups use them. The most famous public space in Ray are the shrine complex and the metro stations that used by every body every days. Due to the fact that the public spaces quality and services are not well designed, they should be taken into consideration that help the district to be more livable and attractive.

More over, By applying proper normative instruments in relation to public spaces, interactions between residents can be promoted in different levels that lead to increase social cohesion. As a result Thus, Public spaces, public services and multipurpose spaces with appropriate quality can be the elements of increasing social interactions.

Figure 5.12: The shrine complex consists of the shrine, the bazaar, the new bazaar, Mozaffari street in the north of the shrine and the closed public services. It is visited by 8000 people in normal days.

Figure 5.13: Ray has two metro stations that are used by different groups students, trader, residents, employees and visitors. Both are locate din the West of the district.
Ray is located in the Southern part of Tehran but it connected to Tehran in different ways such as highways, roads and metro line. The oldest access way is the road that has been the fist connection between Ray bazaar and Tehran bazaar. It was a dusty road for horses and camels that has been changed to a car road. The new Imam Ali highway was constructed in the East two years ago that connected Ray as a southern district to the north of Tehran. Actually, the basic roads were built after Pahlavi era and the most of the highways were built after 1990 to connect Ray more directly to Tehran. The south Tehran entrances are from Varamin and Qom and through them Tehran is connected to the national network. It shows that Ray plays an important role in Tehran infrastructure network.

Although the infrastructure network have tried to connect Ray to the rest of the city, the Azadegan highway in the North resulted a physical segregation and works as a barrier. In addition, in side of the district, infrastructure caused some fragmentation for instance the west neighbourhood has been seperated from the district by the metro line and the highway as well as the South east neighbourhood. Ray has two metro stations that are located in the west side. the first one is in North-west and the another one which is the main one is located in the end of the new boulvar in the west. This boulvar is the shortest and the most direct access way to the shrine. Ray is car base district that private cars are mostly used. It suffers from traffic jam and lack of proper public transportation.
05.2.1. Spatial Segregation

05.2.1.2. Infrastructure

Figure 5.17: The maps show public transportation network that they cannot completely cover the district, illustrated by author.

Figure 5.18: The maps show pedestrian network which is not cohesive.
Tehran’s metro network was established in 1999 and started by one line which connects Tehran to Karaj and it was gradually extended and is still going to be increased due to the high demand of the population requirements. Today, Metro network consists of five active lines and two lines under construction which offer services for 2.5 million passengers per day.

The line one connects the north of Tehran to Ray directly and the line 6 has been proposed which enters to the west of the district. Ray stations were established in 2003 and 2004 in the West side to facilitate the motor traffic.

It is a necessary system for Tehran as well as Ray due to the fact that the community is looking for new ways to use high capacity rapid transit at a reduced cost and one of the most important concerns of Tehran citizens is motor traffic.

Metro is used by mostly residents, visitors, students, traders and employees in Ray. However two stations can not respond to the district needs and users demands.

Figure 5.19: The map shows the only two metro stations locations in Ray, illustrated by author.

Figure 5.20: The pictures show Ray metro station as the main one and Javanmard station in the north.

Figure 5.21: The chart shows the most of the users are residents and job has the second percentage.
Controversial axises

Figure 5.22: The maps illustrate the important and controversial axises related to their roles, illustrated by author.
05.2.2. Social Segregation

05.2.2.1. Diverse Communities

a. The map shows that the centre of the district is house of mixed residents, the North east is house of Arabs communities. Moreover, industrial neighbourhood mostly are located in the North west and the South east with their special characters. and lowest economic-social class residents are in the East side closed to the historic zone.

b. c. The maps show that the centre of the district is house of the highest social level residents. and this level decreases whatever goes to the boundary as well as the economic level.

d. The map shows that residents in the middle are in the good level of economic and social position. The residents of the North and South of the center are in the middle class as well as North-east and North-west of the district. The suburbs are host of the poor and lower class residents.

Figure 5.23: The maps illustrate some social factors such as social-economic fabrics.
Ray is home to 400,000 inhabitants that 50,000 of them are migrants. There is an increasing growth of population in the suburbs but population in Ray seems to have stabilised. %5.3 of Tehran population lived in Ray in 1996. The average population density in Ray is 290 persons per hectare.

Generally, the average of Ray population is younger than Tehran. %35.2 of Ray population is under 24 or equal but %30.7 of Tehran population are in this category.

The maps illustrates that the price of land in the center and near the shrine is higher than in the North, South and suburbs of the district.
SECTION 06.
DESIGN STRATEGIES
“The capacity to acknowledge the existence of different social and territorial groups present in the city, their diverse and sometimes contradictory interests as well as the capacity for these groups to organize themselves and for the city to create institutions in which these groups can confront each other and decide about the city’s future” (Cassiers and Kesteloot, 2012, p.2).
The research in the chapters history and urban analysis showed how Ray lost its importance and character by transformation and inappropriate interventions. These factors created a socially and spatially segregated district in metropolitan scale and a fragmented districts in local scale. In this section, design strategies will be proposed which will be a response to the main research questions in order to find normative solutions. These questions are as they follow:

**How Ray can be improved to have better synergy with the rest of the city in future? What kind of physical and spatial interventions are needed to provide this opportunity?**

**How Ray can be improved to have better social interaction within the district? What kind of social and spatial interventions are needed to provide this opportunity?**
what comes out of a review of segregation and fragmentation is that these processes are strong and influenced by different factors such as the economic, social and spatial aspects. Moreover, they are influenced by different levels such as global, national, local and group level processes, by structural and individual factors. In order to fade the negative points some strategies are proposed. In fact the aim of the strategies are to deal with segregation and fragmentation contribute to achieve more social and spatial cohesion. On the other word, the strategies attempt to decrease spatial segregation and increase social mix areas.

In the thesis, the proposal strategies are defined in two scales, Metropolitan scale and Local scale that the higher scale strategies are based on the local ones. Connecting Ray to the rest of the city as the metropolitan scale strategy and connecting fragmented Ray together as a Local strategy will be described.

Due to industries, agricultural lands, land price and its location, immigrants have settled in Ray that have changed social fabric. In addition, Ray has been segregated from the rest of the city due to three main reasons as follows;

- The first one is its location which is in the southern district and independent from three sides.
- The second one is the North highway which is separated Ray from Tehran urban fabric.
- The third one is the huge industries in both side of the highway which act as a barrier.

In order to connect Ray to Tehran spatially, we proposed three approaches as follows;

- By proposing new metro stations, Ray can be joined to the Tehran public transportation network that leads to be connected.
- By replacing the polluting and annoying industries to sustainable and compatible ones in both sides of the highway, this zone will be a south zone engine.
- By continuing functions, green, sport or etc, from Tehran to Ray, Ray will be connected to Tehran functionally.
Generally, Ray suffers from spatial fragmentation in Local scale that has led to social exclusion. By reviewing and studying the district structure, the main solution to reverse exclusion in Ray is increasing the quality of the public spaces physically and functionally. The physical facilities, the activities, accessibility conditions, and the surrounding land-used programmes support public spaces. Thus, Public spaces, public services and multipurpose spaces with appropriate quality can be the elements of increasing social interactions by putting residents and users in different relations to attractions. In this case, selecting areas in transition nodes draws activity by encouraging people to cross and use the amenities.

**06.1. Different scales strategies**

**06.1.2. Local scale strategy**

**Reasons**

Ray has been Fragmented in side of the district due to three main reasons as follows;

- The first one is resulted by the highways, roads and metro line.
- The second one is resulted by a huge number of wastelands, useless spaces and abandons industries.
- Due to the lack of general public spaces, different communities use their own public spaces separately.

**Solutions**

To connect the fragmented Ray to each other socially and spatially, we proposed three approaches as follows;

- By proposing a new Tram network, different parts of Ray will be connected to each other.
- By improving the pedestrian network, Ray will be accessible by pedestrians in low scale.
- By converting the useless areas to public spaces and highlighting some of them, they can offer public services related to their characters for residents as well as Tehran’s residents.
06.1. Different scales strategies

To reverse exclusion by area, we have to increase local quality and make inner cities more attractive and accessible for more people. Districts are not only the décor for tourism, leisure, shopping and the headquarters of multinationals, but also they are places for social confrontation within the urban community (Cassiers and Kesteloot, 2012).

The aims of the proposal different scales strategies are giving the importance of Ray back to it and make it livable, active and more cohesive district.

By applying the metropolitan scale strategies, Ray will be connected to the rest of the city and the spatial segregation which has happened during the history will be faded.

By applying the local strategies, the fragmented district will be more cohesive. By doing a collaborative process of planning, designing, revitalizing and arranging the physical elements Ray can be more harmonious, vibrant and successful places for people, first residents and then in a larger scale tourists or other users. The key points for the future planning are limiting suburban land supply, creating higher density in depleted urban zones, encouraging people to recycle old buildings and used land, improving public transportation, managing neighbourhoods to encourage a social mix, improving public spaces, services, creating multipurpose spaces and protecting green spaces (Power and Wilson, 2000).

Figure 6.1: This image shows the current situation of Ray, which is defined in three main cores, industrial, historic and religious that their connections are weak. Due to infrastructure, Ray is fragmented in local scale and segregated in higher scale. There are two metro stations with no relationship and the green belt has been abused.

Figure 6.2: This image shows the proposal situation. The industry and religious cores replaced with job & activity and cultural centres. The connections between three centres have been reinforced. There are a strong relationship between metro stations and the other centres. By introducing tram and pedestrian network, The fragmented Ray is more cohesive, accessible, liveable and connected to the rest of the city by introducing new metro line.
06.2. Spatial Development of Transit Nodes

Basically, a new transit network will provide spatial development opportunities for its area. In fact, a new type of public transportation combined with an urban renewal, can help the area becomes more vital and contributes on its economic activities. As a matter of fact, the commercial, service functions and administrative function will be concentrated in the vicinity of the transit nodes. As a result, the land value will gradually increase. Generally speaking these new types of developments create support for the public transportation system that cover part of the public transit development costs (Hemmati, 2012).

Hence, the new investments in the Ray public transportation system should follow a more integral investment policy of the district. Overall, By following the policy, when these two quantities are developed in an integrated way, high costs and poor results can be avoided (Priemus et al., 1999).

In order to propose the spatial development around the transit nodes Transit Oriented Development (TOD) principle will be explain.
Transit-oriented development (TOD) is universally defined as compact, mixed-use and walkable districts connected to regional destinations by high quality transportation networks (Hemmati, 2012). In fact, TOD is a new form of development, aims to organize the relation between transportation planning and land use programs. This form of development takes place within walking distance, normally radius 400 meter of transit nodes. TOD provides a range of opportunities and benefits that some of them have been listed in below:

- Increased transit ridership
- Reduced traffic congestion, car collisions and driving
- Reduced air pollution and energy use
- Improved environmental quality and health
- Increased mobility options
- Reduced personal transportation cost
- Increased economic activity
- Increased property values, and therefore, increased public revenues to support additional community investments (Hemmati, 2012).

Generally, to create walkable areas with better access to transit helps developments to upgrade the liveability and quality of life in areas. Consequences, the appeal and liveability of an area can be improved in better ways and with convenient access to the transit which is achieved in part by concentrating development around transit stations and stops (Hemmati, 2012).
Same as other planning concepts, TOD has some critiques that the main considered controversial one refers to the gentrification in low income settlements. On the other word, by constructing the new development, the economic performance will be promoted and higher urban services and a better life quality will be provided. As a result, by increasing the living demands in the low income settlements, the general housing cost will be increased that will lead to push away the low income households from the jobs and transit nodes. In order to relieve the disturbing effects of TOD in housing market, affordable housing for different income groups especially low income, should be taken into consideration. In fact, the mixed neighbourhoods provide advantages for residents in terms of decreasing the social and economic segregation. In addition, by developing housing opportunities near the transit nodes for low-income populations, the access coast will drop. Generally, TOD nodes have some rules that have been illustrated graphically.

Figure 6.5: Necessary Rules for transit node development (Source: Hemmati, 2012).
06.2. Spatial Development of Transit Nodes

06.2.3. Typology for Development of the Transit Nodes

Transit nodes represent different characteristics. Some nodes are often located in crowded centres at the heart of the regional economy, while others are located in residential neighbourhoods where transit provides a convenient means for daily needs working, leisure activities or housing.

In addition, some nodes are usually located in areas which are experiencing a rapid growth, while others are more established where changes are gradually (Centre for transit-oriented development, 2007). Beside these differences, various transit nodes also share specific similarities and common features (Hemmati, 2012).

**Airport Node**

The first place in the transit nodes development hierarchy is Airport node. It known as the gate toward the global world. Therefore both, node and place have high value in this node. In fact, this node has high accessibility by different modes of transportation such as train, Express bus, and Automobile. The transit node is offered a high density development focused international business market. Main land uses in the Airport Node are:
- Primary international companies, banks and commercial centres
- main Centre to organize national, regional and international conferences, annual meetings of companies and commercial exhibitions.
- 4 or 5 star hotels for foreign visitors.
- commercials and services to meet the needs of local workforce and traveller.
- Promotion of a vertical mix of uses to ensure that ground-floor street frontages are active (Hemmati, 2012).

**Regional Centre**

Regional Centre is the second place this development hierarchy. This node is the regional centre, with a dense mix of employment, housing, commercial, services and entertainment that provide regional markets. It is known as the primary centres of economic and cultural activity for the region. The residential buildings typology is mostly High-rise and mid-rise apartments. This node is a fusion of metro, train, BRT, local buses and public taxis. Main land uses in the regional centre are:
- Administrative, businesses, offices and other high-intensity employment destinations.
- Major commerce and other high-intensity visitor destinations.
- Major cultural and entertainment destinations.
- High-density residential to provide a local community, safety and public spaces.
- Local retail shops and services to meet the needs of local residents, workforce and visitors.
- Promotion of a vertical mix of uses to ensure that ground-floor street frontages are active (Hemmati, 2012).

**Town Centre**

Town Centres are positioned in the third place in this hierarchy. Town Centres contain a mix of employment, residential and retail and usually at little lower power than Regional Centres. These places are magnets for surrounding areas, while also serving as commuter hubs to the larger region (Hemmati, 2012). The residential buildings typology is usually medium and low-rise buildings. Different types of transit modes serve Town Centres, focuses primarily on transport service to jobs in the greater region. Main land uses in the Town centre are:
- A substantial residential community involving med and low-rise residential and mixed-use developments.
- Intense commercial and employment opportunity that will benefit from the excellent transit connections.
- A good range of facilities and services for local inhabitant and surrounding municipality.
- Local retails and services to meet the needs of local residents, workforce and visitors.
Neighbourhood Centre

Neighbourhood Centres are primarily residential areas and are well-connected to Regional or Town Centres as well. They usually feature local retail mixed in housing and small employment. The transit nodes are usually closed to existing neighbourhoods. Due to its location there are limited lands for development or re-development unlike the others they have a lot of undeveloped areas. Main land uses in the neighbourhood centre are:

- Predominantly residential; med and low-rise apartment blocks.
- Neighbourhood employment, professional offices and services near the transit node.
- Local retail shops and services.
- No major attractor destinations (Hemmati, 2012).

Semi-Industrial Centre

Semi-Industrial Centres are neighbour of residential and industrial areas which are separated by major barrier like highways or train line. They are known as the secondary centres of production within the region. The residential typology is mostly medium and low-rise buildings. They are highly accessible by highways. These nodes consist of a rich mix of transit modes such as automobile, train, local bus and express bus as well as Regional Centres. Main land uses in the Semi-Industrial Centre will be:

- Clusters of complementary and interdependent industrial activities.
- Some innovative companies related to compatible industries.
- Local shops and services to meet local residents, workforce needs.
- A substantial residential community involving med-rise and low-rise residential (Hemmati, 2012).

Industrial Centre

Industrial Centres are the first production centre within the region. They are located within industrial areas or other large employment centres. They are highly accessible by highways. These nodes consist of a rich mix of transit modes such as automobile, train, local bus and express bus as well as Regional and Semi Industrial Centres. Main land uses in the Industrial Centre will be:

- A dominant Industrial land use.
- Clusters of complementary land interdependent industrial activities same as Semi industrial Centres.
- Few innovative companies related to industries (Hemmati, 2012).
## Design Guidelines Matrix for Transit Nodes Development

<table>
<thead>
<tr>
<th>Transit Node Type</th>
<th>Airport Node</th>
<th>Regional Centre</th>
<th>Town Centre</th>
<th>Neighbourhood Centre</th>
<th>Semi–Industrial Centre</th>
<th>Industrial Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Location</strong></td>
<td><strong>Land Use</strong></td>
<td><strong>Land Use Ratio</strong></td>
<td><strong>Density</strong></td>
<td><strong>Location</strong></td>
<td><strong>Land Use</strong></td>
</tr>
<tr>
<td></td>
<td>Within Airports.</td>
<td>Employment (Commercial Activity, Office);</td>
<td>100% Non-Residential</td>
<td>High-density commercial, employment,</td>
<td>Employment (Industrial, Office);</td>
<td>Employment (Industrial, Office);</td>
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<td></td>
<td></td>
<td>Mixed Use;</td>
<td></td>
<td>commercial, employment, and civic/cultural</td>
<td>Warehousing and Storage;</td>
<td>Warehousing and Storage;</td>
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<td>Cultural and Entertainment Destination;</td>
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<td>Residential;</td>
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<td>Supporting Retail &amp; Services;</td>
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<td>Major Retail &amp; Services;</td>
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<td>Commercial or Mixed Use</td>
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<td>Residential</td>
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<td>Industrial</td>
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</table>

**Figure 6.6:** Design guideline matrix for transit nodes developments (Source: Hemmati, 2012).
## Design Guidelines Matrix for Transit Nodes Development

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<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Transit Modes</td>
<td>Automobile Metro Rail Transport System BRT Local Bus Express Bus</td>
<td>Automobile Rail Transport System Local Bus Express Bus</td>
<td>Automobile Rail Transport System Local Bus</td>
<td>Automobile Rail Transport System Local Bus</td>
<td>Automobile Rail Transport System Local Bus</td>
</tr>
<tr>
<td>Mobility Facility</td>
<td>Park &amp; Ride Bicycle Facility</td>
<td>Park &amp; Ride Bicycle Facility</td>
<td>Park &amp; Ride On-Street Parking Bicycle Facility</td>
<td>On-Street Parking Bicycle Facility</td>
<td>On-Street Parking</td>
</tr>
<tr>
<td>Average Job / Housing Ratio</td>
<td>No Resid. 10 Jobs: 1 Dwelling</td>
<td>5 Jobs: 1 Dwelling</td>
<td>1 Jobs: 3 Dwelling</td>
<td>7 Jobs: 1 Dwelling</td>
<td>Vari.</td>
</tr>
<tr>
<td>Total Job Target</td>
<td>More than 50.000</td>
<td>20,000 - 50,000</td>
<td>5,000 - 15,000</td>
<td>limited</td>
<td>5,000 -15,000</td>
</tr>
<tr>
<td>Example</td>
<td>Imam Khomeini International Airport Payam International Cargo Karaj City Centre Eslamshahr Central Station Parand Central Station Pakdasht Station</td>
<td>Eslamshahr North Station Parand Stations Soltanabad Station</td>
<td>Chahardangeh Station</td>
<td>Shamsabad Station</td>
<td></td>
</tr>
</tbody>
</table>
06.3. Metropolitan scale strategy
06.3.1. Public transportations in Tehran

Figure 6.7: The map shows Tehran public transportation network, active metro lines and the proposal ones. Currently, line number 1 connects Ray to the rest of the city, and line number 6 is proposed, illustrated by author.
Metro is the last transport mode that added to Tehran region. The Tehran metro metro system normally mobilizes 2.5 million people per day. The responsible of the metro construction in Tehran metropolis and the whole regional territory is Tehran Urban and Suburban Railway Group who constructed Tehran Metro network. Unfortunately in the current situation, the metro system does not cover the whole regional territory. Currently, Tehran metropolis has five active metro lines and two lines are under construction. By comparing the location of the metro nodes with the distribution of the economic activities, the similarity of both configurations is clear which tend to concentrate on the central axis of Tehran from north to south. Metro will enforce many transformations along its area of influence and will provoke some changes on configuration of concentration areas of TMR (Hemmati, 2012). The longest metro line is started from the North of Tehran and is ended in Kahrizak in the South of the city, out side of the boundary. This line has two stations in Ray in the West side. In fact, Ray has almost 430,000 population and 8,000 the shrines visitors in normal days. In addition, due to the universities and job market, it is visited on a daily basis. Due to the long distance and traffic of Tehran, Tehran residents face many difficulties to reach the area. Metro is the only fast public transportation that provides access of Tehran’s residents to Ray and vice versa in higher scale as a newer and more efficient public transportation mode. However, the system has some problems as follows; the lack of completeness of the Tehran metro network, being Crowding in the current situation, particularly in religious dates, the lack of metro branching paths to the inner district. In addition, this line can not cover the district completely. However, South zone should be connected to the rest of the city more directly. A new proposed Tehran metro line enters to Ray from the East side. By proposing new metro stations along the new line in active areas, Ray can be covered by 4 stations instead of 2 busy stations. The first proposed station should be located in the North East in the vicinity of the Dowlatabad neighbourhood with 90,000 population. The second proposed station should be located in the historic zone due to its important and future development projects.
06.3. Metropolitan scale strategy
06.3.2.1. Typology for TOD nodes in Ray

The station is located in the north west, closed to the huge industrial zone and 13Aban neighbourhood on the other side of the metro line and the highway.

The Ray station is the most important one due to its function, location and the number of users. It is located in the end of the boulevard closed to the shrine.

The cultural station which is proposed by the project, is located in historic zone. It is adjacent to the five important historical elements and the universities.

Dowlatabad station has been proposed by the project and is established in the eastern neighbourhood.

Figure 6.10: Due to Ray metro stations locations and roles, as transportation nodes, different characters of TOD can be applied on them, illustrated by author.
New industry generation with modern technology can be located around the Javanmard station with Semi industrial character.


Due to its important, closed to the shrine, function and a number of users, new functions should be highly professional mix used. Administrative, offices, services and etc can be proposed.


This station is located in historic zone, so cultural function, hostel for university’s students, new branch of architecture university, hotels for tourist, small offices can be proposed.

3 source: http://www.davidmixner.com

This station is neighbourhood station to present services for residents. Some administrative sector related to Tehran due to distance can be located here.

4 source: http://www.businessinsider.com

By following TOD method, each station has a character. The character of 4 metro station in Ray has been defined. relating to its character, related functions can be located around and developed in future.

06.3. Spatial Development of Transit
06.3.2.2. Spatial Development Proposal

Figure 6.11: Depends on each metro station’s character, future developments can be proposed, illustrated by author.
The purpose of the functional zoning of the district is to identify areas that have a dominant homogeneous performance.

According to the principles and criteria provided in the Ray master plan and overall coordination of zoning in Tehran Master Plan, Ray, district 20, with 2264 ha area is defined in different zones. This zoning map as a guild line helps the project to be develop by directed pattern.
In order to connect different parts of Ray together and make a cohesive district a new public transportation network should be proposed. Introducing the Tram network, help fragmented Ray to be connected into the different parts very well. Introducing a Tram network for the first time in Iran, brings back the memory of Mashin doody, the first train of Tehran that connected two bazaars together. The main Tram stations are located in the metro stations in order to make TOD nodes.

Figure 6.14: The image shows the first train in Tehran which called Mashin Doodi in order to make Ray more accessible for pilgrims.
Source: www.tabnak.ir

Figure 6.13. The map shows the proposed Tram network that has made the district more accessible as a local scale strategy, illustrated by author.
Due to the compact structure and urban concentration near the center, the square, bazaar and the shrine, the ratio of pedestrian traffic is high. However, it is necessary to be strengthened appropriately in this zone as well as other zones. Generally, when pedestrian traffic increases, it leads to such a positive advantages.

In addition of human health, less use of the private vehicles reduces air and noise pollution with less traffic jam. Moreover, a suitable pedestrian network provides more livable, vital and attractive district that leads to create more cohesive area in local scale.

Unfortunately, the Ray infrastructure (Metro line, the West highway as well as some inner highways) had made a fragmented and not accessible district by pedestrian. By improving the problematic ways and adding new connections in missed areas in order to create a unique pedestrian network, Ray can be accessible in local scale. Ray as such a district with low steep topography has the potential of using bicycle opportunities. This network can be designed and implemented for long distances that can be effective in improving the traffic.

Figure 6.15: The map shows the proposal pedestrian network as a local scale strategy. Illustrated by author.
06.5. Local scale strategy

06.5.3. Preserving the green belt as a green engine

Agricultural green spaces provide a green belt around Ray district as a soft transition zone between the South and the North of the city. It creates a new potential for future developments in term of agricultural industry. In addition, it can be used as recreation spaces within city scale.

Tehran municipality's prospect
One of the Tehran master plan prospect is to preserve the green belt in order to control urban expansion and unplanned growth. Ray as the southern district is responsible of the South zone.
06.5. Local scale strategy

06.5.4. Preserving the green belt as a green engine

Lack of green and open space in Ray and also juxtaposition of old and new buildings beside each other, in addition of a huge number of the empty, waste lands and abundant industries have generally created a chaotic and unpleasant atmosphere in the district. By converting the useless areas to green areas, they can be used as new public spaces in neighbourhood and districts scales.

As one aim of the project, the shrine should be back to the past identity. By converting the old buildings to the green spaces in the South, the shrine will be connected to the wide green. It creates a new potential for future projects developments for instance, it can be used as tourist space within city scale.

Currently, along the metro line is occupied by industries and waste lands within the district boundary. This line can be converted to an green industries and future developments opportunities.

The future developments opportunities can be defined as free stand buildings that provide public amenities and accommodation for pilgrims, with certain underground parking facility.

Figure 6.20: The images show old and new building are in adjacent of each other, have made the district chaotic.

Figure 6.19: The map shows the proposed strategy in order to replace useless area to public spaces. In addition, using the west line as a future development opportunities. Illustrated by author.

Figure 6.21: The image shows that the shrine was built in the middle of the gardens.
06.4.4. Preserving the green belt as a green

Case study

Green space works as a soft transition zone between old and new parts of the city. Two good examples are Al Azhar park in Cairo and Al Aqsa mosque in Palestine that have used green belt to determine the old zone boundary in the cities.

Figure 6.22: The image shows Al-Azhar Park project in Cairo that a green belt has been used as a soft transition to determine old district boundary. Source: www.akdn.org

Figure 6.23: The image shows Al-Aqsa Mosque in Palestine that a green belt has been used as a soft transition to determine old district boundary. Source: turntoislam.com.
The municipal area of Ray is almost 2264 ha that 563 ha of that is occupied by the polluting and annoying industries and wastelands that according to the Tehran master plan, industries have to be replaced to the South, out of the Ray's boundary. This amount is almost a quarter of the whole area which provides opportunities for future development projects.

Based on TOD method, Ray has four TOD nodes. According to their inherent characters, new development projects can be applied there in different functions, type of buildings and density.

Cities boundaries have a diverse characters. They can play cities breathing place role, environmental character as well as future development. Freestand buildings in the Ray green boundary provide future development capacities for visitors and residents.
Design strategies in different scales

Figure 6.24: The image shows the hierarchy strategies from the locals scales to metropolitan scale. Preserving the green belt, activating public spaces, organizing zoning areas, improving pedestrian network, introducing tram network as local scale strategies and defining new metro stations as a metropolitan scale strategy have tried to decreased social spatial segregation problems and increase local quality and make the district more active, cohesive, livable and attractive.
SECTION 7.
DESIGN PROPOSAL
The public space plays a key role in an urban structure and city life. It as a privileged element provides an opportunity to promote local cohesion. In fact, a public space with its natural ability can create and maintain strong local centrality. In addition, a public space effects environmental quality, economic competitiveness and emphasises the sense of citizenship.
Abdul Azim holy shrine was constructed in the middle of gardens and was connected to Ray by a green way with 500 length. In the second stage, an indoor Bazaar was created in the North of the shrine afterward on the both side of the green way were allocated to shops and services. Then, in the vicinity of the commercial and services, and on the back of the green way, Residences were deployed that the North neighbourhoods of the case study zone are the results of that action. And finally, the South east and the South west neighbourhoods were created by destroying the agricultural lands. Hence, the unique feature of the shrine that was the only holy shrine constructed in the middle of green lands instead of the urban fabric had been taken.

The construction of the Reza Shah’s tomb (after Islamic Revolution was converted to the religious university) as well as the building of the new bazaar to comply with the old market on the west way to the shrine, and adding the educational, administrative and cultural elements on the west of the shrine along the boulevard completed this transformation.

Due to the the shrine location, the oldest urban fabric is located in this zone which is house of illegal refugees and owing to the freelands, new residents with multiculture fabric have been settled in new residential complex. fact that this zone is the old part of the district.

The metro station was built in the west of the boulevard in not well designed and organized fabric. In addition, the connection between the station and the shrine is weak.

Nowadays, the zone suffers from an unplanned growth, the heavy traffic jam, the lack of proper public transportation, the 7ha worse fabric in the South as well as the wastelands, not organized agricultural lands and not compatible functions along the boulevard. Moreover, the lack of public facilities and necessary services are tangible.

Figure 7.1: The map shows the design location, relation between the station, the boulevard and the shrine.
Almost the south of Ray is located in design process.

**Ray Station**
The station as a Regional Centre of TOD is located in the residential neighbourhood at the end of the axis. A huge number of people use it on a daily basis that should be taken into consideration.

**Modarres Boulevard**
The boulevard was constructed in Pahlavi II era and now it is known as the shortest car access way to the shrine. The length of the boulevard is almost 1300 m and the surrounded functions are mostly residential.

**Abdul Azim Holy Shrine**
In the end of the axis the shrine complex, bazaar and centre of Ray are located. The shrine is visited by 10 million visitors per year and 8000 visitors in normal days.
07.1. Case study analysis
07.1.3. Problematic areas

The case study location face some urban problems. There are three measurements to deal with them; Reconstructing the old/worse condition buildings to provide necessary functions; Renovating the usable and available buildings to improve their functions; Refunctioning irrelevant functions with relevant programs.

Figure 7.3: The map shows the problematic areas in the design location. Illustrated by author.
07.1. Case study analysis
07.1.4. Land use

Around the metro station is occupied by residential, few shops and some educational blocks. According to its Regional Centre character in TOD and its function, the buildings' functions should be changed to more public, such as commercial, services, mix used area and etc., in order to respond users' needs. Along the boulvard, mostly are residential that should be reused as more public facilities and tourist amenities. Around the shrine, the building's quality are not acceptable and most of them have been destroyed. The new project for tourists should be applied in this area. There are a lot of small/big waste land in the case study that they should be converted to more compatible functions. A lot of car parking have been located around the Shrine that have made the facade unattractive that should be converted to public space and some attracttive and necessary functions. There is not any tourists facilities in the site that should be taken into consideration. The West edge of the project is waste land and some small industries that their potentials should be used in correct way.

Figure 7.4: The map shows the site functions, which the residential and agricultural are the highest. Illustrated by author.
Residential blocks are mostly in three/four stories with less than 20 years old. The worst residential fabric is located in the south of the shrine which is destroying.

Public function around the shrine is mostly commercial, around the station is educational and along the boulevard is administrative.

The wastelands closed to the shrine have created unattractive areas that they can be converted to the public spaces or public functions.

Figure 7.5: The maps show the site functions: zones. Illustrated by author.
07.1. Case study analysis
07.1.5. Buildings typology

**Buildings quality**

The acceptable or good quality condition buildings will be reused as a new function related to the vision. However, the bad condition buildings should be reconstructed for instance, The South east and the North east of the shrine are the oldest fabric with the bad quality blocks that should be thought.

**Buildings Stories**

The most of the buildings are in one or two stories along the boulevard and high stories in the suburbs. New Buildings should be one or two stories in South and East side due to the Shrine›s view.
07.2. Case study Design proposal
07.2.1. Infrastructure

In order to improve Ray connectivity, the infrastructure network had been taken into consideration. The project has tied to improve the public transportation, introduced the Tram network and define the pedestrian network, the fragmentation problem was solved in local scale as well as the spatial segregation in the higher scale. In case study zone, pedestrian and public transportation network are highlighted.

**Current infrastructure**

**Proposed infrastructure**

Figure 7.8: The map shows the current infrastructure with its weaknesses. Illustrated by author.

Figure 7.9: The map shows the proposed infrastructure. Illustrated by author.
07.2. Case study Design proposal

07.2.2. Pedestrian network

Depends on the street characters, the sidewalk are different. The pedestrian zone around the shrine is normally used for religious events in special days such as martyrdom of Imam Ali which 250,000 visitors gather in the shrine as well as new year. This area can be used as temporary exhibitions and cultural activities place in normal days. The half part of the boulevard is used by pedestrian and public transportation in order to improve the area's quality. In commercial, services street pedestrian role is more highlight. the pedestrian sidewalks can be used as restaurants cafes and temporary markt.

Figure 7.10: The map shows the proposed pedestrian network. Illustrated by author.

Figure 7.11: The picture shows the pedestrian border in holly places are fully crowded by pilgrims in the in special religious events.

Figure 7.12: The picture shows temporary market that depends on its character can be held in the boulevard and near the shrine.

Figure 7.13: The picture shows an attractive and liveable pedestrian sidewalk.
07.2. Case study Design proposal
07.2.3. Boulevard as a guideline

“The Boulevard is not simply a typology of circulation space; it implies an entire way of looking at space and human movement. The avenue treats both the city and its landscape as one productive body; it is a device that manages that productive body and of its growth, which is seen as potentially limitless” Maria St.

The boulevard with its pedestrian walking paths help the community to re-think about the purpose and design of the street, while does not reflect the character of the old centre.

The boulevard with walking route, public transportation and activity along link the the metro station as the Regional TOD Centre and the shrine complex as the main Ray’s centre together as continue walking routes within activity along that.

The Modarres boulevard is started by the shrine and is ended by the hospital in the higher level due to passing above the train line and the highway which the distance between them are occupied by industries and wastelands. As a result, from the shrine side, the hospital is not clear but the shrine is visible from the hospital side. Moreover, along the boulevard is occupied by residential function and few public functions that have made the boulevard not livable and active during days. In current situation, the boulevard does not have direct connection to the station due to the closed wall.

First by getting help of boulevard element as a guideline, the link between the station and the shrine will be improved. By opening up the closed wall and make a connection, the station will be more accessible. Replacing the private functions to public functions helps the boulevard to become more active and attractive during days and highlights the station way. The abandoned industries and waste lands should be converted to an active function related to the Ray potentials for instance green industries that make a transparent layer between the shrine and the hospital. Freestand buildings as a future development capacities can be planned in this green line.

Figure 7.14: The pictures show the example of the active boulevard which is a pedestrian axis with public facilities. source: www.landezine.com

Figure 7.15: The diagrams show the current condition of the boulevard and the proposal plan. Illustrated by author.
07.2. Case study Design proposal

07.2.4. Vision map

In order to improve the relation between the station and the shrine, the boulevard axis should be taken into consideration. In current situation, the residential function dominant on other functions and has made this axis not attractive that should be converted to public.

As a result, in order to create a regional centre in the Ray metro station, activate the boulevard, make the shrine more accessible, offer more visitors services and generally upgrade the south zone, this vision map is proposed. The vision map illustrates the proposed functions in details.
07.2. Case study Design proposal
07.2.4.1. Proposed functions

- **Commercial-services**
  A long the main streets, the first floor are allocated for public function such as commercial and services. In addition, the important nodes like the station and the shrine are the centre of public facilities to respond the users needs.

- **Commercial-services- Administrative**
  A long the boulevard, the residential blocks are converted to more public functions as well as the second layer of the station and the shrine limitation.

- **Commercial-services- Administrative- Residential**
  The mixed function is applied on the the second layer of the shrine, the station and the boulevard.

- **Commercial-services- Residential**
  The mixed function with out the administrative one is suitable for the east side of the shrine due to be near the residential neighbourhood.

- **Touris services**
  Due to the fact that the project aims to attract more visitors, needed services and facilities are a kind motivation. The south of the shrine is allocated for this aim due to its access, view and strategic location. This project is constructed in one or two stories due to the shrine boundary’s standards and should follow the Iranian Islamic pattern.

- **Touris institution**
  The residential block in the boulevard is converted to Tourist institution due to its strategic location closed to the shrine.

- **Cultural- Commercial-services**
  In order to offer services for pilgrims, this function is located closed to the shrine as a mediator between the shrine and the tourist services.

- **Cultural centre, Iconic building**
  The lack of cultural faction is tangible in this zone that can be eliminated by building the iconic building in the middle of the boulevard’s wasteland.

- **Temporarymarkt**
  Depends on the location either in the entrance of the shrine or the boulevard, the character of the temporary market is changed. It is more related to cultural issue which is closed to the shrine and the boulevard markets offer services.
**Light industry with residential**
The west wasteland can be converted to the efficient, compatible and sustainable industry that help to active the Ray’s green inherent potential. The residential blocks places the workers of this sector. In addition, this line can be taken into consideration as future development opportunities.

**Residential**
The East waste land should be used as a residential followed sustainable design.

**Green park**
The zone needs open spaces to balance the built up areas. As matter of fact some waste lands are converted to public green park that the most important one is located in the south of the shrine which has created camping opportunities for visitors who are force to camp along the south street.

**Multistories parking lot**
Due to the number of the visitors and pilgrims, they are concentrated in the sphere of the station and the shrine influences. their balconies can be used as restaurants and cafes with a nice tomb and the agricultural land view.

**Flat car parking**
Car parking is a serious facility that should cover the zone completely. There are two types of car parking in this zone which the flat ones are located in the edge of the south park and the new public complex in the West side.

**Public transportation terminal**
Due to the exchange hub and easy access, the main public transportation terminals are located in the sphere of influence of the station and the shrine.
07.2. Case study Design proposal
07.2.5. Design point
07.2.5.1. The station design

Due to the fact that the station plays a key role in this project, the proposed functions and their design are significantly important. Owing to TOD method, this station is a regional centre. According to the regional centre character, land use ratio should be %20 residential and %80 non residential that the non residential should be employment (commercial activity, , professional administrative, business, office, institution), mixed use, cultural and Entertainment destination and major retail & services. In addition, the height of the buildings should be high-rise and mid-rise buildings that in Ray station these factors have been taken into consideration.
public services in the first floor and other floors are high professional administrative and business

Metro station entrance

Metro station building

Temporary market in the plaza

The residential building is converted to the public services

NORTH view to the Station

Figure 7.32: The section shows the north part of the station’s development. Illustrated by author.
07.2. Case study Design proposal

07.2.5.2. The boulevard design

Figure 7.33: The map shows the proposed boulevard design. Illustrated by author.

Figure 7.34: The picture shows the boulevard atmosphere with the proposed cultural centre and markt in the boulevrad. Illustrated by author.
Cultural centre, Iconic building is located in the wasteland

Residential buildings converted to the public services services

The wide boulevard is used only by pedestrian and public transportation

Residential buildings converted to the public services just in the first floor

The old parking converted to the new shopping mall

Present shops are renovated

NORTH East view of the Boulevard
Figure 7.35: The section shows a part of the boulevard, closed to the shrine which was the not organized parking lot and it converted to the public facilities. Illustrated by author.

WEST view to the Shrine
Figure 7.36: The section shows the boulevard quality. Illustrated by author.
07.2. Case study Design proposal

07.2.5.3. The shrine zone design

Figure 7.37: The map shows the proposed the shrine zone design. Illustrated by author.

Figure 7.38: The image shows the south of the shrine.

Figure 7.39: The picture shows the south development, the tourist facilities in one and two stories, the camping park and agricultural lands. Illustrated by author.
The wasteland is converted to a multistory Parking lot with balcony restaurant and nice view to the shrine and the green lands.

Tourists hotels and services are located in the south of the Shrine.

Temporary markt or exhibition is located in the entrances of the Shrine.

Residential buildings converted to the public services just in the first floor.

Camping Park is located in the south of the shrine in the large green park.

Figure 7.41: The section shows the south entrance of the shrine with multistories parking lot and the camping park in the east side. Illustrated by author.

Figure 7.40: The section shows the east entrance of the shrine with tourist facilities and the temporary markt. Illustrated by author.
07.2. Case study Design proposal

07.2.6. The axis proposed design

Figure 7.42: The images show Modarres boulevard condition (the connection between the station and the shrine) before and after the design proposal. Illustrated by author.

Figure 7.43 The map shows the proposed development for south zone. Illustrated by author.
07.2. Case study Design proposal

07.2.6. The axis proposed design

Figure 7.44: The map shows the connection between the metro station and the Holy Shrine. Illustrated by author.
SECTION 8.
REFLECTION AND EVALUATION
08. REFLECTION

INTRODUCTION
Throughout this section I will reflect on my Master thesis in order to show the relationship between the research and the design, as well as my subject in a wider relevance. The exploration of the research and the design cooperation will start with the definition of the subject. Generally, this process began with a thorough literature review based on the main interests I had within the context of social and spatial quality in Ray and segregation and fragmentation phenomenons. Since the subject was shaped, the theoretical research formed the backbone of the concept and the data research took the main step. The urban strategies that are being proposed by the present thesis aim to rethink the social and the spatial conditions in the southern district of Tehran named Ray in order to provide opportunities to counteract the processes of decay and socio-spatial segregation and fragmentation. The idea of this thesis was sparked by the newspapers headline: “How forgotten Ray can gain back its identity?”. In addition, Ray has been defined as a main historic- religious centre in Tehran master plan made by municipality.

In fact, Ray with 6000 years old and 10 million visitors per year due to its holy shrine, has been neglected and the local people suffer from the segregation in high scale and fragmentation in local scale. It is a multicultural district with diverse people. Due to its location and function, segregation is tangible in metropolitan scale. Firstly I aimed to connect Ray to the rest of the city more strongly, but by context analyzing the fragmentation in the local scale became more highlighted. Actually, Ray is not only segregated from the rest of the city but also it suffers from inside fragmentation socially and spatially. Lack of proper local services, low life quality have caused to moving out residents and replacing with migrants who do not have any sense to Ray. The thesis tried to revive local quality as a promoter of urban cohesion in different scales. On the other word, by promoting the local economic, social, spatial potentials in order to preserve their identity and to stimulate of their economy in different scales, Ray can be revived. Overall, limitations and opportunities of local actions should be determined in order to reach upper levels.

THE RELATIONSHIP BETWEEN RESEARCH AND DESIGN
By researching, it was understood that segregation and fragmentation phenomenons are strong and influenced by different factors such as the economic, social and spatial aspects. Moreover, they are influenced by different levels such as global, national, local and group level processes, by structural and individual factors. In addition, it was clarified that areas and people have strong relationship. It means character of an area effects our decision, as much as whom we influence where we can select to live. Some places are inherently unattractive to live in; this impacts strongly on people, determining who moves in, out and who stays, creating people-based characteristics, alongside physical conditions. Studies illustrated that social and spatial factors and strategies in different scales should be taken into consideration. In fact, in order to reverse exclusion by area, we have to improve local quality and make inner district more attractive for more people by creating stronger incentives to renovate it. The future planning ways in Ray are limiting suburban land supply, creating higher density in depleted urban zones, encouraging people to recycle old buildings and used land, improving public transportation, managing neighbourhoods to encourage a social mix, improving public spaces, services, creating multipurpose spaces and protecting green spaces. In fact, through this socio-spatial structure, urban space mediates social experiences and confrontations on a daily basis. Thus Public spaces, public services and multipurpose spaces with appropriate quality can increase social interactions. The introduction of tram network and proposing new metro stations provided spatial development opportunities in Ray. New public spaces can be defined in these nodes with concentration of mixed use function and walkable areas. They have a key role on enhancing livability, social interact and life quality in Ray.

THE REALTIONSHIP BETWEEN THE THEME OF THE STUDIO AND THE SUBJECT
The theme is directly connected to the studio of Complex Cities and regions in transformation which stands under Spatial planning and strategy chair. My project is faced with changing urban identity, social, spatial, functional and migration patterns. The thesis deal with segregation in different scales and presented the strategies for possible developments. In fact, my project is to consider Ray urban form and its structure in different levels, first the local scale for example public spaces and neighbourhoods and then metropolitan scale for example metro and tram network. Generally, the Complex Cities Studio has allowed me to explore freely around different scales strategies for the right criteria to assess the local design. This was provided through the sufficient range of lectures series such as spatial planning, urban growth and urban regeneration. Actually, the studio has reflected upon the chosen complex as the thesis project in order to transform problems into opportunities and creates a balance future development socially and spatially.

THE RELATIONSHIP BETWEEN THE METHODICAL LINE OF APPROACH AND THE METHOD CHOSEN BY STUDENT
Basically, the high scale interventions need strategies that will ensure a long term improvement of spatial and social structures. As a result, spatial conditions for local integration cannot be achieved without the review of the urban networks in all scales with their diverse challenges. If this hierarchy strategy idea is applied in Ray, the eventual restructuring of Ray district can become a cohesive urban space towards the cohabitation of multiple users. As mentioned previously the research focused on multiscalar approach in different layers. As a matter of fact the methodology follows this hierarchy. Analyzing, visioning, planning and designing have been done in two scales local (Ray district) and metropolitan (Tehran context).
Due to industries, agricultural lands, land price and its location, immigrants have settled in Ray that have changed social fabric. In addition, Ray has been segregated from the rest of the city due to three main reasons as follows;

In order to connect Ray to Tehran spatially, we proposed three approaches as follows;

TOD (Transit Oriented Development) nodes can be introduced as new centrality in Ray.

The introduced TOD Nodes

1 - Javanmard Station
2 - Ray Station
3 - Cultural Station
4 - Dowlatabad Station

Depends on each metro station's character, future developments can be proposed.

The proposed zoning map organizes the future developments and functions.
Ray has been fragmented in the side of the district due to three main reasons as follows:

1. Highways, road, and metro line
2. Wastelands, useless spaces, and abandoned industries
3. Lack of well-designed and isolated green belts and public spaces

To connect the fragmented Ray to each other socially and spatially, we proposed three approaches as follows:

1. Proposing a new tram network
2. Improving the pedestrian network
3. Converting the useless areas to public spaces and highlighting some of them

The maps show the proposed tram and pedestrian networks that have made the district more accessible at the local scale.
THE RELATIONSHIP BETWEEN THE PROJECT AND WIDER SOCIAL CONTEXT
The specific starting point of this urban restructure proposal was defined along the necessity of consolidating the urban structure and growth of Ray towards preparing the conditions for positive impact of local development. Parallel to this statement, it is needed to improve quality of life of the inhabitants of Ray, reduce social spatial segregation by considering their needs and capacities into the transformation of Ray and have higher developing perspectives. Generally, when the socio-spatial segregation is solved in local level, they will become gradually pale in city scale. By considering social, cultural values and urban identity, more vital urban environment can be generated.
By changing the urban form, people relations can be changed. As a matter of fact, Thesis tried to provide a mutual recognition of all socio-spatial groups, the rich and the poor in Ray as well as the visitors. The thesis took into consideration residential relation as a mutual accessibility between residents. Concentration of social groups create the opportunities for a greater planning, a more effective programmes, especially where the district is hold by weaker social groups. By mutual recognizing of all socio-spatial groups, society can be more cohesive.

It is possible by applying proper normative instruments in relation to public spaces. On the other word, reviewing and studying the district structure showed the main solution to reverse exclusion in Ray is increasing the quality of the public spaces physically and functionally. The public space plays a key role in an urban structure and city life. It as a privileged element provides an opportunity to promote local cohesion. In fact, a public space with its natural ability can create and maintain strong local centrality. In addition, a public space effects environmental quality, economic competitiveness and emphasises the sense of citizenship.

The physical facilities, the activities, accessibility conditions, and the surrounding land-used programmes support public spaces.

Thus Public spaces, public services and multipurpose spaces with appropriate quality can be the elements of increasing social interactions by putting residents and users in different relations to attractions. In this case, selecting areas in Metro station as transition node, the shrine surrounding as the vibrant heart of Ray and the boulevard link draw activities by encouraging people to cross and use the amenities.

In the end, by a collaborative process of revitalizing, designing and arranging the physical elements Ray can be more harmonious, vibrant and successful places for people, first residents and then in a larger scale tourists or other users. Well designed Ray plays as magnets for businesses and tourism industry. It can attract more tourists who visit Ray for religious or historic purposes and investments, and instill community pride, the viability of the district.


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