

“Social sustainability and the future in the Iranian historic neighbourhoods’ townscape”

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ABSTRACT

Historic urban quarters are part of the human environment. They embody all the evidence of past human activity within a specific region of a city. They are the centres of the social, economic and cultural life of the town and they are also the main constituent of a city's character. In most Iranian cities there still exist many historic neighbourhoods. Unfortunately, the only ones that are successful are commercial like the bazaars or the many ancient buildings and monuments, while the old residential quarters are mostly in decline and have few prospects of a sustainable future.

With the modernization of the city and the transformation of its social life, the historic quarters were the first places to be affected by a change of lifestyle. These days, many are in a precarious position, the main problem being their physical layout, with narrow streets and many impasses. Before the advent of the car, these were perfectly adequate for the passage of humans and animals. Sadly, this is no longer the case and there is fierce competition for space between pedestrians and motor vehicles.

Generally speaking, in most of the old quarters of Iranian cities, because of the profusion of run-down houses and the lack of social infrastructure, the younger generation is abandoning these areas. So, nowadays, the residents are mostly old people and low-income families who cannot afford to rent or live in better sectors with higher rents. Moreover, this low-maintenance townscape creates an unpleasant image and character for Iranian historic neighbourhoods. However, some of these neighbourhoods still possess many of the positive features that are necessary for social sustainability, such as a proper identity, a human-scale pattern, density, permeability of pedestrian movement and a hierarchy between private and public space. Unfortunately, there is a great deal of evidence of a decline in the social functions of Iranian antique quarters; thus, this study focuses on their social sustainability.

This research first offers a review of the concept of social sustainability and its relationship with the urban context and neighbourhood townscapes; it presents the criteria for social sustainability, the features of townscape and the mixed, quantitative and qualitative methods which are both essential for measuring the level of sustainability. The study then, as its main contribution, proposes a method for measuring the level of social sustainability in historic urban quarters to determine the positive and negative aspects (opportunities and constraints) of the historic townscape. In the final stage, this study introduces some guides for future development to highlight the opportunities and controlling the constraints. The results lead us to state that, the level of social sustainability is either high or low and also helps to find the positive and negative

aspects of the historic neighbourhoods' townscape with the objective of improving its social sustainability.

The findings of this study provide insights into the issues that policy-makers and urban designers should consider in devising regeneration solutions and endeavours dealing with the townscape of historic quarters with aiming to improve social sustainability. The primary implications are summarized in two outcomes including the level of social sustainability in the old quarters and the degree of amenability of the townscapes of historic neighbourhoods for social sustainability.

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Contents

Thesis Structure.....	1
Chapter 1: Introduction	3
1.1 Research Background.....	5
1.2 Research Aims and Questions	6
1.3 Research Methodology.....	7
Chapter 2: Social sustainability and townscape (Literature review).....	9
2.1 Sustainable development.....	11
2.1.1 Social sustainability.....	13
2.2 Social sustainability and neighbourhood townscape.....	19
2.2.1 Neighbourhood	19
2.2.2 Urban social sustainability	29
2.2.3 The effects of urban form on social sustainability	32
2.3 Framework of the Study.....	38
2.3.1 The criteria of social sustainability which take account of neighbourhood townscape 39	
2.3.2 The features of townscape which improve or create accessibility, safety and security, sense of place and social Interaction and community spirit (social sustainability):.....	43
2.4 Urban form and context of Iranian cities and social functions	51
2.4.1 Urban form and context in traditional Iranian cities and social functions	51
2.4.2 Significant changes in urban form and influence on social functions in Iranian cities .	61
2.5 Conclusion	66
Chapter 3: Research Methodology.....	67
3.1 Reviewing the Research Questions	69
3.2 Case Study Method.....	70
3.2.1 Case Study Chosen	71
3.2.2 Mixed research methods for Looking at the Case study	72
3.2.3 Data Collection techniques	75
3.2.4 Analytical Methods	84
3.2.5 Interpretation and evaluation of the results	88
3.3 Conclusion	90

Chapter 4: Juibareh a case study of a neighbourhood91

4.1	Case Study information	93
4.1.1	Isfahan.....	93
4.1.2	Juibareh.....	104
4.2	Data Collection.....	110
4.2.1	Collecting Interviews Data	110
4.2.2	Collecting Observational Data.....	117
4.3	Data Analysis.....	144
4.3.1	Analysing Interviews data	144
4.3.2	Analysis of Observational Data	148
4.4	Conclusion	188

Chapter 5: The local peoples' views (Interpretation and Evaluation of Interviews).....189

5.1.1	View of local area.....	192
5.1.2	Accessibility (access to employment and facilities)	198
5.1.3	Safety and Security.....	211
5.1.4	Sense of place	228
5.1.5	Social interaction and community spirit	236
5.2	Conclusion	245

Chapter 6: Identity, public realm, movement, legibility and land use in juibareh (Interpreting the townscape elements).....247

6.1	An Evaluation of the Identity.....	250
6.1.1	Surviving historic pattern and plot subdivisions.....	250
6.1.2	Surviving historic buildings and elements:	256
6.1.3	The use of prevalent historic materials, styles and details in new buildings:.....	261
6.1.4	Harmony in architectural design and materials of the buildings:.....	263
6.1.5	Distinct image and character	266
6.1.6	Significant physical features which have been lost	270
6.1.7	Significant landmarks	273
6.1.8	Significant views and vistas.....	275
6.2	An Evaluation of Public realm	276
6.2.1	Pavements (condition, quality and maintenance).....	276
6.2.2	The condition of the buildings' frontage	279

6.2.3	Shops frontages	283
6.2.4	Roadside greenery (trees, plants, grassed areas, flowers and borders):.....	286
6.2.5	Street furniture	289
6.2.6	Advertisement boards.....	291
6.2.7	Lighting on roadsides, pathways and sidewalks:	292
6.2.8	Lighting in public and green spaces	294
6.2.9	Public art and (permanent and temporary works, fountains and graphics):	296
6.2.10	Safety and security equipment	299
6.2.11	Public space, quality, use and management:.....	300
6.2.12	Traffic installations (including street markings, parking meters, traffic signals):	303
6.2.13	Green spaces and other semi-natural features:	305
6.3	An Evaluation of Movement	308
6.3.1	Public transport services and accessibility:.....	308
6.3.2	Car use including access, circulation and traffic flows:.....	310
6.3.3	Cycle use, including routes and facilities:	316
6.3.4	On-street parking:.....	319
6.3.5	Parking lots.....	322
6.3.6	Pedestrian movement:.....	326
6.3.7	Accessibility for disabled people.....	332
6.3.8	Permeability of pedestrian movement inside the neighbourhood:	333
6.3.9	Pedestrian movement permeability with adjacent neighbourhoods:.....	335
6.4	An Evaluation of the legibility	337
6.4.1	Nodes (gateway, entry and exit points).....	337
6.4.2	Nodes (neighbourhood centre, important junctions and interaction point)	340
6.4.3	Edges (building frontages, shop frontages)	342
6.4.4	Landmarks	344
6.4.5	Paths.....	349
6.5	An Evaluation of Land use	352
6.5.1	The neighbourhood form.....	352
6.5.2	Distribution and amount of land use	354
6.5.3	The housing types	356
6.5.4	The buildings height (scale)	358
6.6	Conclusion	360

Chapter 7: Conclusion	361
7.1 Summary of Findings	363
7.1.1 Summary of the Interviews' Results	364
7.1.2 Summary of Walking results	369
7.2 How to use the Interview Findings for Design	379
7.3 Restatement of Aims	381
7.4 Limitations	383
7.5 Further Research.....	383
7.6 Recommendations for Practice or Policy.....	383
Bibliography.....	385
Figures.....	396
Graphs	401
Pictures	403
Tables	404
Appendix 1: The Interview's Questions	407
Appendix 2: Information sheet for the interviews.....	415
Appendix 3: Information sheet for the interviews (Farsi)	419
Appendix 4: Observational Survey	423
Appendix 5: The manual analysis of the Observations Data (samples)	435
Appendix 6: Ethical approval.....	443

Thesis Structure

This dissertation is arranged in seven sequential chapters:

1) Introduction: The first chapter gives a brief description of the research context and provides an overall view of the research questions by explaining the objectives. Also, it briefly explains the methodological approach of the research and finally summarises the contents of each of the seven chapters.

2) Social Sustainability and Townscape (Literature review): This chapter comprises four sections. In the first two, the existing literature about sustainability, townscape, urban form, social sustainability, the criteria for social sustainability, will be reviewed, and in the third section the theoretical framework for this study will be identified and finally in the last section urban form and context of Iranian cities will be discussed.

3) Research Methodology: The case study method is followed in this research with a mixture of quantitative and qualitative approaches. The data collection techniques will be described in the research method. This will be followed by a report on how the data will be analysed and evaluated for both the quantitative and qualitative data.

4) Juibareh a case study of a neighbourhood: This part is dedicated to an in-depth dissection of the case study of the research, following the methodology and analysis of the case findings with reference to the objectives of the study. In this chapter the research method will be implemented. The collection of the quantitative and qualitative data will be analysed.

5) The local peoples' views (Interpretation and Evaluation of Interviews): In chapter 5 the results of every question of the interview will be interpreted and evaluated and after that it should be possible to see and determine the final results of the different groups of questions.

6) Identity, public realm, movement, legibility and land use in Juibareh (Interpreting the townscape elements): In Chapter 6 the qualitative data will be mapped and every map will be interpreted and evaluated. In addition, the opportunities and constraints of the townscape elements will be shown. In this chapter, after identifying the opportunities and constraints of every element of the townscape, the researcher will present some guidelines for future development

7) Conclusion: This chapter provides a summary of the findings and results of the study. It will also contain a restatement of the aims and a brief overall review of the research questions and

objectives. Finally, the limitations of the study, the scope for further research on this topic and the theoretical and practical implications of the research will be demonstrated.

CHAPTER 1: INTRODUCTION

1.1 Research Background

Many of the historic urban quarters in the world are being threatened, physically degraded, damaged or even destroyed by the impact of the urban development that follows industrialization in societies everywhere. As a result, the physical and socio-economic conditions of the historic urban quarters do not satisfy the contemporary needs of the people; many people and activities, therefore, move out of such areas in order to be closer to the contemporary facilities. These problems contribute to the decrease in vitality, liveability and sustainability of the historic urban quarters.

Iranian traditional neighbourhoods are experiencing many problems and have begun to decline in the recent years. This all began because of ignorance of the functions and roles of the neighbourhood in city life, even though we cannot retreat to the past neighbourhood context but we can pay attention to the regeneration of Iranian historic neighbourhood concept.

Sustainable development has become one of the most important subjects and is used by many communities around the world from the publication of Brundtland report¹. One of the pillars of sustainable development is social sustainability with its economic and environmental pillars². In this study we are planning to open up the issue of social sustainability in the historic neighbourhoods of contemporary Iranian cities. For the last four or five decades, many Iranian researchers from different fields of study have criticised the social aspects of contemporary Iranian cities. There are many studies which discuss issues such as citizen hood³, place and identity⁴, safety and crime, lack of a sense of attachment to place⁵, lack of collective action and participation⁶ and lack of social cohesion⁷. But there is no comprehensive research which takes the results from specific research methods about the social aspects of the contemporary context of the historic neighbourhoods of Iranian cities and most of them merely discuss social problems, as can be seen in journals and certain literature about the issues of social sustainability in the historic

¹ WCED, "World Commission on Environment and Development (1987)," 1987, <http://www.wsu.edu/~susdev/WCED87.html>.

² Andrea Colantonio and Timothy J Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities* (Hoboken, NJ: Wiley-Blackwell, 2011).

³ F Habib, "رویکرد پایداری در متن شهرسازی" (Sustainability Approach in the Planning Context), *Olum Va Technology Mohite Zist*, 9, 2007.

⁴ M R Pourjafar et al., "پدیدار شناسی هویت و مکان در بافت تاریخی" [Place and identity in historical patterns], *فصلنامه مطالعات شهری ایران اسلامی*, 2010.

⁵ Aliakbari, "توسعه شهر و آسیب شناسی اجتماعی در ایران" [Urban expansion and social pathology in Iran], *تحقیقات جغرافیایی*, 2004. (*Geographical research*)

⁶ Seyed Hamid Mohammadi, Sharifah Norazizan, and Ali Reza Shahvandi, "Civic Engagement, Citizen Participation and Quality of Governance in Iran," *Journal of Human Ecology* 36, no. 3 (2011): 211–16.

⁷ A Pourahmad and S Moosavi, "ماهیت اجتماعات شهری" [Social Nature of Islamic cities]. *Fasnameye Motaleate Shahrhaye Irani Eslami*, 1, 2009.

neighbourhoods. What all these studies have in common are complaints about the current situation and the yearning for a glamorous past. There are many studies by Iranian scholars suggesting that the traditional urban form of Iranian cities used to be successful in dealing with the social aspects of people lives but we cannot find a comprehensive study dealing with the question of whether the traditional urban form of historic neighbourhoods is still responsible for the social life of the people? Being suspicious of the contradictions caused by contemporary conditions of urban structure, most of these studies have failed or have not tried to find a practicable model that first assesses the level of social sustainability and second provides solutions that can enhance the social sustainability of the historic neighbourhoods. To fill this gap in this study we firstly need to assess the level of social sustainability in the historic neighbourhoods and after that identify the urban forms. We will evaluate how far the structure of the historic neighbourhoods is successful in providing social sustainability.

1.2 Research Aims and Questions

The main objectives of this study are:

- 1- The first aim of this study is to propose an approach to understanding and gauging the level of social sustainability in historic urban quarters of Iranian cities which may be applicable to most historic neighbourhoods and new residential quarters.
- 2- The second aim of the research is to provide a greater view and better understanding of social life in an urban core of Iranian historic neighbourhoods
- 3- The final aim is to identify positive and negative aspects of a historic neighbourhood townscape for their revitalisation on the basis of enhancing social sustainability.

The questions addressed in this study are:

Q1) Are the historic neighbourhoods of Iranian cities with traditional urban forms socially sustainable?

- Identifying the criteria for social sustainability which are most relevant to townscape design and urban forms on the neighbourhood scale.
- Assessing the criteria for the social sustainability of resident's feeling in historic neighbourhoods.

Q2) Are townscapes of historic neighbourhoods in Iranian cities amenable to social sustainability?

- Reviewing the literature and identifying the features of the neighbourhood townscape that improves or creates social sustainability.

- Appraisal of the elements of the neighbourhood townscape to find the level of responsiveness of the elements to social sustainability.

Q3) How can social sustainability be improved in the historic neighbourhoods of Iranian cities?

- Identifying the current opportunities and constraints of the townscape of historic quarters
- Suggesting guidelines for future development after identifying the opportunities and constraints of the townscape elements.

1.3 Research Methodology

The aim of this study is to assess the social sustainability of Iranian historic neighbourhood to find solutions for improving or creating social sustainability. Therefore, the case study method will be used as a research tool. The case study will focus on example of the historic neighbourhoods found in Iranian cities.

Mixed research methods for looking at the Case study (see section 3.2.2)

This research contains two purposes which are the level of social sustainability and the level of responsiveness of historic townscape to social sustainability; therefore a mixed method will be applied to the case study. The quantitative method will be employed to assess the level of social sustainability and the qualitative method will be used to evaluate the neighbourhood townscape and the level of responsiveness to social sustainability.

1. Quantitative method (see section 3.2.2.1)

The quantitative method will be used to assess social sustainability in the case study. In the literature review of the research, the specific criteria of social sustainability needed to be assessed for the evaluation of social sustainability will be identified, while the quantitative method will be used to evaluate the criteria of social sustainability.

- **Structured interview** (see section 3.2.3.1)

In order to collect the data a pre-planned structured interview will be used. The case study will be an Iranian historic neighbourhood and this study will endeavour to interview reasonable numbers of local residents consequently, a structured interview is the preferred solution for collecting the data.

- **Analysing and interpreting quantitative data** (see section 3.2.5.1)

After collecting the quantitative data by a structured interview, the results will be analysed. After that, the results will be shown in graphs and tables and they will be ready to interpret and evaluate in Chapter 5.

2. Qualitative method (see section 3.2.2.2)

The qualitative method is used to evaluate the neighbourhood townscape. In the second stage of the case study, the townscape of the study will be evaluated. Thus, we will collect visual data so as to assess the neighbourhood form.

- **Observation** (see section 3.2.3.2)

Observation of the case study will be used to collect visual data for the case study. Observation will be performed in all parts of the case study combined with the walking tool and serial vision for collecting data.

- **Walking tool** (see section 3.2.3.2.1)

Structured walking will be used as a tool to make observations for the case study and to collect the visual data. Walking is a really useful tool to collect data because the case study covers a neighbourhood and walking around such a space is the best way to understand and analyse that locality.

- **Serial vision** (see section 3.2.3.2.2)

To carry out the case study it is necessary to identify a method to collect the visual data. In this study the serial vision method will be used. This consists of a sequence of photos from all parts of the neighbourhood under consideration. Cullen used serial vision for the purpose of design⁸ but in this study his method will be adopted to collect and analyse the data.

- **Mapping, analysing and interpreting the qualitative data** (see section 3.2.5.2)

The collection of visual data will comprise of many linear sequences of photos from all parts of the locality studied. The sequences of photos from the many walked routes will be clustered (see section 4.2.2). Every walking part will be analysed manually and after that will be mapped for the purpose of assessment. Maps will be produced for illustrating each element of townscape. Each map will be interpreted and evaluated in the Chapter 6.

⁸ Cullen Gordon, *The Concise Townscape* (London: Architectural Press, 1961).

CHAPTER 2: SOCIAL SUSTAINABILITY AND TOWNSCAPE *(Literature review)*

Introduction

This chapter comprises four main sections. In the first, the literature relevant to sustainable development will be shown and the main focus will be on the social aspect of sustainability. The second section of the literature review will provide a brief overview of social sustainability, townscape and urban form and suggest which urban form is more socially sustainable. The third part of the chapter is dedicated to the framework of study, selected criteria and a criteria-selection framework for social sustainability and the final part will indicate the significance of traditional urban structure of Iranian cities and will provide a brief literature about the contemporary configuration of Iranian cities and the decline in their social functions.

2.1 Sustainable development

Definition

“Sustainable development is a managing principle for human life in a limited world. It suggests a desirable future state for human societies in which living conditions and resource-use meet human needs without undermining the sustainability of natural systems and the environment, so that future generations may also have their needs met”⁹.

The most widely cited definition of sustainable development describes it as development which is capable of meeting today’s needs without compromising the ability of future generations to meet their needs¹⁰. The definition contains concepts of inter-generational equity and social justice, as well as environmental awareness¹¹. It also implies that a global perspective is necessary and that cross-boundary impacts should be considered. Although there is some agreement about these principles, there is little consensus on how they can be translated into development on the ground.

Several commentators have come close to utilize such definitions by developing characterizations of ‘sustainable cities’ or ‘sustainable development’¹². Elkin states that, “sustainable urban development must aim to produce a city that is “user-friendly” and resourceful, in terms not only

S. Handy, ‘Methodologies for Exploring the Link between Urban Form and Travel Behavior’, *Transportation Research Part D: Transport and Environment*, 1 (1996), 151–165; Yosef Rafeq Jabareen, ‘Sustainable Urban Forms: Their Typologies, Models, and Concepts’, *Journal of Planning Education and Research*, 26 (2006), 38–52
⁹ Robert L. Stivers, *The Sustainable Society: Ethics and Economic Growth* (Westminster John Knox Press, 1976).

¹⁰ WCED, “World Commission on Environment and Development (1987),” 1992, <http://www.wsu.edu/~susdev/WCED87.html>.

¹¹ G. Haughton and C. Hunter, *Sustainable Cities* (Spon Press, 1994).

¹² T. Elkin, D. McLaren, and M. Hillman, “Reviving the City Towards Sustainable Urban Development,” 1991; WHO, “WHO | World Health Organization Report of the Panel on Urbanization, WHO on Health and Environment, WHO, Geneva,” 1992, <http://www.who.int/en/>; Elizabeth Burton, Mike Jenks, and Katie Williams, *Achieving Sustainable Urban Form*, 1st ed. (Routledge, 2001).

of its form and energy-efficiency, but also its function, as a place for living"¹³. Sustainability is now a generic word to express the need for a long-term perspective.

"Sustainability means meeting our needs today without compromising the ability of future generations to meet their own needs"¹⁴.

The concept of sustainability connects to the protection and enhancement of environmental, social and economic sources, in order to ensure the needs of current and future generations.

- Environmental sustainability means that the source and sink functions of the environment should not be destroyed. Therefore, the extraction of renewable resources should not exceed the rate at which they are renewed, and the absorptive capacity to the environment to assimilate wastes should not be exceeded. Furthermore, the extraction of non-renewable resources should be minimised and should not exceed agreed minimum strategic levels.¹⁵
- "Social sustainability means that the cohesion of society and its capability to work towards common goals be maintained. Individual needs, such as those for health and well-being, nutrition, shelter, education and cultural expression should be met"¹⁶.
- Economic sustainability means social and environmental sustainable development is financially feasible¹⁷.

¹³ Tim Elkin et al., *Reviving the City* (Friends of the Earth with Policy Studies Institute, 1991).

¹⁴ "UIA/AIA World Congress of Architects," *Context Institute*, June 1993, <http://www.context.org/about/definitions/>.

¹⁵ Richard Gilbert et al., "Making Cities Work: The Role of Local Authorities in the Urban Environment," September 1996,

¹⁶ *Ibid.*

¹⁷ *Ibid.*

2.1.1 Social sustainability

Most literature in the field of sustainability agrees that the economy, the environment and society are the main dimensions of sustainability and they are related to each other. The different dimensions of sustainable development (social, economic, environmental) have not been equally prioritised within sustainable arguments by policy makers¹⁸. Because sustainable development was created by the cooperation between the emerging environmental movements of the 1960s and the 'basic need' supporters of the 1970s, but also measuring the social aspects of development gives measurement problems, which will be discussed later¹⁹. Consequently, there is a restricted literature that focuses on social sustainability and a comprehensive study of this concept is still missing²⁰. In fact, Littig and Griessler discuss the fact that attitudes to the social sustainability concept have not been established on theory but rather on a practical understanding of credibility and current political agendas²¹. Additionally, a recent study by the OECD²² argues that social sustainability is now dealt with in connection with the social indication of environmental politics rather than as an equally fundamental factor of sustainable development.

2.1.1.1 Definition

"Social sustainability means the satisfaction of basic human needs, the continual reproduction of humans and the subsequent continuation of culture"²³. Also social sustainability is defined as "maintenance and improvement of the well-being of current and future generations"²⁴. Social sustainability is more than the consideration of the basic needs of culture, well-being and the reproduction of humanity. On the basis of this aspect McKenzie defines social sustainability as "a life-enhancing condition within communities, and a process within communities that can achieve that condition"²⁵. In McKenzie's idea the condition includes equity of access to key services

¹⁸ David Drakakis-Smith, "Third World Cities: Sustainable Urban Development, 1," *Urban Studies* 32, no. 4–5 (May 1, 1995): 659–77, doi:10.1080/00420989550012825; Colantonio and Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities*.

¹⁹ Colantonio and Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities*.

²⁰ Ibid.

²¹ Beate Littig and Erich Griessler, "Social Sustainability: A Catchword between Political Pragmatism and Social Theory," *International Journal of Sustainable Development* 8, no. 1 (2005): 65–79; Colantonio and Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities*.

²² "OECD, (2001), Analytic Report on Sustainable Development SG/SD(2001)1-14, OECD, Paris," n.d.

²³ Jesse Dillard, Veronica Dujon, and Mary C. King, *Understanding the Social Dimension of Sustainability* (Routledge, 2008); Beate Littig and Erich Griessler, "Social Sustainability: A Catchword between Political Pragmatism and Social Theory," *International Journal of Sustainable Development* 8, no. 1 (2005): 65–79.

²⁴ Rebecca LH Chiu, "Social Sustainability, Sustainable Development and Housing Development: The Experience of Hong Kong," *Routledge*, 2003, 245.

²⁵ Stephen McKenzie, *Social Sustainability: Towards Some Definitions* (Hawke Research Institute, University of South Australia, 2004). Page 120

(including health, education, transport, housing and recreation), also equity between generations, meaning that future generations will not be deprived by the activities of the current generation²⁶. In this knowledgeable social sustainability is a system of cultural connection wherein the positive features of different cultures are valued and promoted and there is widespread political participation of citizens not only in electoral processes but also in other areas of political activity, especially at a local level. Therefore, McKenzie argues that social sustainability is about accessibility; intergenerational equity and continuation of culture²⁷. Chiu also proposes “that social sustainability relates to social norms and conditions in that any environmental or economic decision must not exceed the community’s tolerance for change”²⁸. It confirms that social sustainability has synergies with social acceptability. “Social sustainability is regularly interpreted from three perspectives; the development-oriented interpretation emphasises social acceptability, in noting that development is socially sustainable when it keeps to social relations, customs, structures and values. The environment-oriented perspective suggests that development is sustainable when it meets the social conditions, norms and preferences required for people to support ecologically sustainable actions regarding resource distribution and intergenerational equality. Finally, the people-oriented interpretation of social sustainability emphasises maintaining levels of social cohesion and preventing social polarisation and exclusion ”²⁹. In addition, little agreement seems to exist on which criteria and perspectives should be adopted in defining social sustainability. There are different definition-form authors or policy makers. Each of them derives their own definition according to specific criteria or study perspectives, making an agreed definition difficult to achieve.

²⁶ Ibid.

²⁷ Ibid.; Kathryn Davidson and Lou Wilson, “A Critical Assessment of Urban Social Sustainability,” 2005.

²⁸ Chiu, “Social Sustainability, Sustainable Development and Housing Development: The Experience of Hong Kong.” Page 65

²⁹ Ibid. page 66-67

- Table 1 illustrates some definitions of social sustainability.

Some definitions of Social Sustainability	Authors
"A strong definition of social sustainability must rest on the basic values of equity and democracy, the latter meant as the effective appropriation of all human rights – political, civil, economic, social and cultural – by all people"	Sachs ³⁰
"A society that has learned to live within the boundaries by ecological limits. Society as a collective and ongoing entity can be sustained, because social practices which imposed excessive burdens upon the environment have been reformed or abolished".	Meadowcroft, J ³¹
"Social sustainability means the satisfaction of basic human needs, the continual reproduction of humans and the subsequent continuation of culture"	Richard Gilbert and others ³²
"Maintenance and improvement of well-being of current and future generations".	Rebecca LH Chiu ³³
"A life-enhancing condition within communities and a process within communities that can achieve that condition. The condition includes equity of access to key services (including health, education, transport, housing and recreation), also equity between generations, meaning that future generations will not be deprived by the activities of the current generation".	Stephen McKenzie ³⁴
"A quality of societies. It signifies the nature-society relationships, mediated by work, as well as relationships within the society. Social sustainability is a given, if work within a society and the related institutional arrangements satisfy an extended set of human needs [and] are shaped in a way that nature and its reproductive capabilities are preserved over a long period of time and the normative claims of social justice, human dignity and participation are fulfilled".	Littig and Griebler ³⁵
"[Sustainability] aims to determine the minimal social requirements for long-term development (sometimes called critical social capital) and to identify the challenges to the very functioning of society in the long run".	Biart ³⁶
"Development (and/or growth) that is compatible with the harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population".	Polese and Stren ³⁷

Table 1: Example of definitions of social sustainability³⁸

³⁰ Egon Becker and Thomas Jahn, "Sachs, I. (1999), Social Sustainability and Whole Development: Exploring the Dimensions of Sustainable Development," in *Sustainability and the Social Sciences: A Cross-Disciplinary Approach to Integrating Environmental Considerations into Theoretical Reorientation* (Zed Books, 1999). Page 27

³¹ Michael Kenny and James Meadowcroft, *Planning Sustainability* (Routledge Chapman & Hall, 1999). Page 15

³² Richard Gilbert et al., *Making Cities Work: The Role of Local Authorities in the Urban Environment* (Earthscan, 1996).

³³ Rebecca LH Chiu, "12 Social Sustainability, Sustainable Development and Housing Development," *Housing and Social Change: East-West Perspectives*, 2003, Page 245.

³⁴ Stephen McKenzie, *Social Sustainability: Towards Some Definitions* (Hawke Research Institute, University of South Australia, 2004). Page 120.

³⁵ Beate Littig and Erich Griessler, "Social Sustainability: A Catchword between Political Pragmatism and Social Theory," *International Journal of Sustainable Development* 8, no. 1 (2005): 65–79. Page 72

³⁶ Michel Biart, "Social Sustainability as Part of the Social Agenda of the European Community," *Soziale Nachhaltigkeit: Von Der Umweltpolitik Zur Nachhaltigkeit*, 2002, 5–10. Page 6

³⁷ Mario Polèse and Richard E Stren, *The Social Sustainability of Cities: Diversity and the Management of Change* (Toronto: University of Toronto Press, 2000). Page 15-16

³⁸ Reviewed by author after Colantonio and Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities*.

2.1.1.2 Social Sustainability criteria

There is also little agreement between the researchers about the criteria of social sustainability which are used in research into social sustainability. A list of criteria used by researchers in their studies focusing on social sustainability is presented in the table below. This table indicates that there is a fragmented approach in the literature. This might be explained by the context specificity of the studies and normative nature of social aspects of sustainability.

Authors	The criteria that are considered for social sustainability
Chambers and Conway ³⁹	Livelihood; equity; capability of withstanding external pressures; safety nets
Sachs ⁴⁰	Equity; democracy; human rights; social homogeneity; equitable income distribution; employment; equitable access to resources and social services
Oman and Spangenberg ⁴¹	Education; skills; experience; consumption; income; employment; participation
Baines and Morga ⁴²	Basic needs; personal disability; needs of future generations; social capital; equity; cultural and community diversity; empowerment and participation
Spangenberg ⁴³	Income; communication and participation; education; social contacts; social security; distribution of income and assets
Chan & Lee ⁴⁴	Provision of social infrastructure; Availability of job opportunities; Accessibility; Townscape design; Preservation of local characteristics; Ability to fulfil psychological needs
Choguill ⁴⁵	Citizen participation; social interaction; feeling of belonging; interpersonal relations among the neighbourhood residents; collective action; mutual support; access to facilities and amenities; safety
Bramley, Dempsey, Power, Brown, & Watkins ⁴⁶	Social equity; access to facilities and amenities; affordable housing; social interaction; safety/security; satisfaction with home; stability (turnover); participation in collective group/ civic activities; Sense of place
Colantonio ⁴⁷ / Cuthill ⁴⁸	Equity; inclusion; adaptability; security Social Justice; Social/community well-being; human scale development; engaged governance; social infrastructure; community and/or human scale development; community capacity building; human and social capital
Dave ⁴⁹	Access to facilities and amenities; amount of living space; health of the inhabitants; community spirit and social interaction; safety; satisfaction with the neighbourhood
Dempsey et al ⁵⁰	Social interactions; participation; community stability; pride and sense of place; social equity; safety and security
(Weingaertner & Moberg) ⁵¹	Accessibility; social capital and networks; health and well-being; social cohesion and inclusion; safety and security; fair distribution (income, employment); local democracy, participation and empowerment; cultural heritage; education and training; equal opportunities; housing and community stability; connectivity and movement; social justice; sense of place; mixed use and tenure; attractive public realm

Table 2: Shows the criteria of social sustainability drawn from different authors⁵²

³⁹ Robert Chambers and Gordon Conway, *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century* (Institute of Development Studies (UK), 1992).

⁴⁰ Becker and Jahn, "Sachs, I. (1999), Social Sustainability and Whole Development: Exploring the Dimensions of Sustainable Development."

⁴¹ Joachim H. Spangenberg, Ines Omann, and Friedrich Hinterberger, "Sustainable Growth Criteria: Minimum Benchmarks and Scenarios for Employment and the Environment," *Ecological Economics* 42, no. 3 (September 2002): 429–43.

⁴² James Baines and Bronwyn Morgan, "Sustainability Appraisal: A Social Perspective," 2004.

⁴³ Spangenberg, Omann, and Hinterberger, "Sustainable Growth Criteria."

⁴⁴ Edwin Chan and Grace KL Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," *Social Indicators Research* 85, no. 2 (2008): 243–56.

⁴⁵ Charles L. Choguill, "Developing Sustainable Neighbourhoods," *Habitat International* 32, no. 1 (2008): 41–48.

⁴⁶ Glen Bramley et al., "Social Sustainability and Urban Form: Evidence from Five British Cities," *Environment and Planning. A* 41, no. 9 (2009): 2125.

⁴⁷ Andrea Colantonio and Tim Dixon, *Urban Regeneration and Social Sustainability: Best Practice from European Cities* (Wiley. com, 2011).

⁴⁸ Michael Cuthill, "Strengthening the 'social' in Sustainable Development: Developing a Conceptual Framework for Social Sustainability in a Rapid Urban Growth Region in Australia," *Sustainable Development* 18, no. 6 (2010): 362–73.

⁴⁹ Seema Dave, "Neighbourhood Density and Social Sustainability in Cities of Developing Countries," n.d., 189–205.

⁵⁰ Nicola Dempsey et al., "The Social Dimension of Sustainable Development: Defining Urban Social Sustainability," *Sustainable Development* 19, no. 5 (2011): 289–300.

⁵¹ Carina Weingaertner and \AAsa Moberg, "Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products: Learning from Perspectives on Urban Development and Companies and Products," 2010.

⁵² Reviewed by author after Colantonio and Dixon, *Urban Regeneration & Social Sustainability Best Practice from European Cities*; Ayyoob Sharifi and Akito Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities," *Habitat International* 38 (April 2013): 126–34, doi:10.1016/j.habitatint.2012.05.007.

2.2 Social sustainability and neighbourhood townscape

The section of literature review provides a brief definition of neighbourhood and following the neighbourhood definition townscape will be identified as the main dimension urban environment which embraces other dimensions such as urban form, public realm and landscape. Townscape character comprises physical and social characteristics. This study focuses just on the physical characteristics of townscape character therefore this section after that attempts to highlight and classify the existing literature on urban form and sustainable urban form and find out which urban form mostly is accepted as most sustainable urban form after that and in final part of this section density will be addressed as most acceptable form of urban form which is responsive to social sustainability and also many arguments in contradiction of density.

2.2.1 Neighbourhood

This study aims to find social suitability conditions in Iranian historic neighbourhoods therefore it is necessary to define what a neighbourhood is. This section gives us some brief definitions.

Definition

A neighbourhood is a community that is geographically localised within a city, town, suburb or rural area. Neighbourhoods are often social communities with substantial direct interaction among residents. The neighbourhood is generally defined spatially as a specific geographic area and functionally as a set of social networks. "Neighbourhoods, then, are the spatial units in which face-to-face social interactions occur – the personal settings and situations where residents seek to realise common values, socialise youth, and maintain effective social control"⁵³

Neighbourhoods are typically generated by social interaction among people living near one another. In this sense they are local social units larger than households not directly under the control of city or state officials.

Researchers have not agreed an exact definition. The neighbourhood consists of an organization with different components and functions like physical, social, political, economic and even administrative⁵⁴. In different cultures and countries the components and functions have different limitations and significances. There are no political, economic and administrative functions in the concept of neighbourhood in Iran and many different countries. However, the physical and social

⁵³ Amie M. Schuck and Dennis P. Rosenbaum, *Promoting Safe and Health Neighborhoods: What Research Tells Us about Intervention*, 2006.

⁵⁴ Phillip L. Clay and Robert M. Hollister, *Neighborhood Policy and Planning* (LexingtonBooks, 1983). Page 9

aspects are two vital components of every residential neighbourhood for most critics and planners⁵⁵.

Suzanne Keller⁵⁶ in a comprehensive review, identifies four definitions of neighbourhood with regard to the physical and social aspects of the neighbourhood:

1. An "area which has an ecological location in a larger area and specific physical characteristics arising from natural geographic conditions and from a particular configuration of activities and usage"⁵⁷.

2. "An area which have facilities such as shops, school(s), public transportation"⁵⁸.

3. "An area representing social values both for the residents and for the larger community," values such as safety, social solidarity, etc⁵⁹.

4. "An area with a special atmosphere. This special atmosphere shows how the area looks and how people look at the area"⁶⁰.

Chaskin⁶¹ defines neighbourhood as a "geographically bound unit in which the residents share proximity and the circumstances within that proximity." The circumstances within proximity comprise social connection, functional connection, cultural connection, and circumstantial connection.

Gerphart⁶² states that the "neighbourhood and communities are the immediate social contexts in which individuals and families engage with the institutions and social agents that regulate and control access to community opportunity structures and resources". In this definition, she notes that the neighbourhood contains special units and associational networks.

⁵⁵ Hadi Ivani, "Socio-Physical Aspects of Urban Neighborhoods in Iranian Cities: With Special Reference to the City of Mashad," 2009. Page 20

⁵⁶ Suzanne Infeld Keller, *The Urban Neighborhood: A Sociological Perspective* (Random House, 1968). Page 91

⁵⁷ Ibid. Page 91

⁵⁸ Ibid. Page 91

⁵⁹ Ibid. Page 91

⁶⁰ Ibid. Page 91

⁶¹ Robert J. Chaskin, *Defining Neighborhood: History, Theory, and Practice* (Chapin Hall Center for Children at the University of Chicago, 1995). Page 1

⁶² Jeanne Brooks-Gunn, Greg Duncan, and J. Lawrence Aber, "Gerphart, M. (1997), Neighborhoods and Communities as Contexts for Development," in *Neighborhood Poverty, Volume 1: Context and Consequences for Children* (Russell Sage Foundation, 2000). Pages 9-10

Meegan and Mitchell⁶³ describe the neighbourhood as a living area which people through neighbourliness can gain access to material and social resources and reach other opportunities that are aspects of the identity of those living there.

2.2.1.1 Townscape

Broadly speaking, in the field of urban design, five important dimensions of the town environment can be identified⁶⁴:

- “Architecture: individual buildings”
- “Townscape: the visual relationships between buildings that make up the urban scheme.”
- “Urban form: largely three dimensional characteristics of built form.”
- “Public realm: the street and spaces and their character.”
- “Landscape: this focuses particularly upon the natural environment.”

Some elements of these dimensions overlap and it is not always clear which belong where, for example, landscape is the layout of urban form. Most agree that townscape comprises all aspects of urban form and it also embraces the public realm. Townscape is defined as “the combination of buildings and the spaces between them and how they relate to one another to form the familiar and cherished local places within the town and its wider context”⁶⁵.

“Townscape is the physical and social characteristics of the built and un-built urban environment and the way in which we perceive those characteristics”⁶⁶. The combination of perceptions and characteristics shapes and contributes to townscape character⁶⁷.

- **“The physical characteristics of a townscape:** the development form of buildings, structures and spaces express the physical characteristics of townscape. The development form affects the pattern of uses, movement and activity in a place and the experience of the people who visit, work and live there”⁶⁸.
- **“The social characteristics of a townscape:** are determined by how the physical characteristics (i.e. buildings, structures and open spaces) are used and managed. For example,

⁶³ Richard Meegan and Alison Mitchell, “‘It’s Not Community Round Here, It’s Neighbourhood’: Neighbourhood Change and Cohesion in Urban Regeneration Policies,” *Urban Studies* 38, no. 12 (2001): 2167–94.

⁶⁴ John Punter and Matthew Carmona, *The Design Dimension of Planning: Theory, Content, and Best Practice for Design Policies* (Taylor & Francis, 1997).

⁶⁵ “Grantham Townscape Character Assessment,” n.d., <http://www.southkesteven.gov.uk/index.aspx?articleid=3045>.

⁶⁶ Great Minster House (UK) Department for Transport, “Department for Transport - Transport Analysis Guidance,” web page, (August 17, 2009), <http://www.dft.gov.uk/webtag/documents/expert/unit3.3.8.php>.

⁶⁷ Ibid.

⁶⁸ Ibid.

the character and value of a pedestrianized square in a town or city centre is very different to a square that has not been pedestrianized⁶⁹.

Many things influence on townscape character, for example, streets, squares, buildings and the spaces between them, boundaries, hedges, gardens, trees, wildlife, windows, doors, the colour and material of roofs and walls, the sense of enclosure, roadways, traffic levels, and people moving within the townscape, as well as the history of the buildings and the people who lived in them. Additionally, the interrelationships of all these elements of character create the townscape character. Townscape character includes four high level themes⁷⁰.

- 1- **People:** Townscapes have been shaped, have transformed and continue to change via the interactions of people with each other and their environment. Nearly everything that is seen in a townscape indicates something about these interactions and these associations are part of the character of places. Local people have a vast acquaintance with what makes up the character of a place, for example, former focal points⁷¹.
- 2- **Time depth:** the townscape, especially in historic quarters, has been created and influenced by the interaction of people and their landscape and townscape over many years. Time or history is an important background for creating townscape⁷².
- 3- **Urban form:** the urban form of a place, including buildings, architectural design style, streetscape, urban block structure, public spaces, street pattern, movement patterns etc. contributes hugely to townscape character⁷³.
- 4- **Ecology:** equally, the natural or semi-natural characteristics of a place, such as gardens, trees, hedge lines, small woods, fields, parks, rivers and lakes are part of townscape character⁷⁴.

The urban form of a place and the natural or semi-natural characteristics are physical themes and dimensions of the townscape.

⁶⁹ Ibid.

⁷⁰ David Walsh, *Historic Townscape Characterisation; The Lincoln Townscape Assessment: A Case Study* (The City of Lincoln Council, 2012). Page 18

⁷¹ Ibid. Page 18

⁷² Ibid. Page 18

⁷³ Ibid. Page 18

⁷⁴ Ibid. Page 18

2.2.1.2 Urban Form

In the previous section, urban form was identified as one of the main themes of townscape. In this subsection, firstly, urban form will be defined. Following that, the definition of urban form will be discussed with a focus on the most acceptable sustainable urban form.

Definition

Form is not easy to define; therefore, it is useful to operationalize the term in order to apply it in this study. Generally, urban form is a composite of characteristics related to land use patterns, transportation system, and urban design⁷⁵. Kevin Lynch⁷⁶ defines urban form as “the spatial pattern of the large, inert, permanent physical object in a city.” Form is “All physical aspects of the city, its buildings, streets, and all other elements that make up the urban realm”⁷⁷.

A result of aggregations is more or less repetitive elements. Urban form, then, is a result of the bringing together of many elements-concepts: the urban pattern. Urban patterns are made up largely of a limited number of relatively undifferentiated types of elements that repeat and combine. Hence, these patterns have strong similarities and can be grouped conceptually into what are called concepts⁷⁸. Specifically, elements of concept might be street patterns, block size and form, street design, typical lot configuration, layout of parks and public space and so on.

There are two forms for an organic planned city. In terms of the doctrine of visual and statistical order, organic towns when viewed in plan form resemble cell growth, weaving in and out of the landscape, closely following the terrain and natural features, embodying the technology of movement through main transport routes, like spider webs or tree-like forms focussed on centres which usually contain the origin of growth. Their geometry seems irregular. The plane city is a specific type of a planned community or planned city that was carefully designed from its inception and is typically constructed in a previously undeveloped area.

The most important characteristics of the urban form development are divided into eight aspects⁷⁹:

⁷⁵ S. Handy, ‘Methodologies for Exploring the Link between Urban Form and Travel Behavior’, *Transportation Research Part D: Transport and Environment*, 1 (1996), 151–165; Yosef Rafeq Jabareen, ‘Sustainable Urban Forms: Their Typologies, Models, and Concepts’, *Journal of Planning Education and Research*, 26 (2006), 38–52

⁷⁶ Kevin Lynch, *Good City Form* (MIT Press, 1984).

⁷⁷ Ibid.

⁷⁸ Eduardo E. Lozano, *Community Design and the Culture of Cities: The Crossroad and the Wall* (Cambridge University Press, 1990); Jabareen, “Sustainable Urban Forms.”

⁷⁹ DETR, *By Design: Urban Design in the Planning System : Towards Better Practice* (Thomas Telford, 2000).

Urban structure: The framework of roads, routes and spaces that associate locally.

Urban grain: The pattern of the arrangement of plots, street blocks and their buildings in an area.

Landscape: The character and appearance of land, comprising its form, shape, ecology, natural elements, colours and the way these factors mix.

Density and mix: The volume of development on a specified piece of land and the range of uses. A combination with a mix of uses can affect a place's vitality and viability.

Scale: The size of a building or parts of a building regarding its backgrounds, especially with regard to the size of a person.

Massing: The mixed impact of the volume, shape and arrangement of a building or blocks of buildings with regard to other buildings and spaces

Details: The skill, building techniques, styles, decoration and lighting of a building or structure.

Materials: The texture, colour, pattern and strength of materials, and how they are used.

2.2.1.2.1 Sustainable urban form

“Two major and opposing arguments concerning urban form in the late twentieth century are important:

- 1- Urban dispersal (implying low density urban development);
- 2- Urban intensification (part of the compact city concept)⁸⁰.

Nowadays, a large number of theories about urban development have focused on the effects of suburbanisation. In particular, some argue that decentralisation of housing and jobs decreases overall travel⁸¹. Many others argue that low density development, which is associated with decentralisation, can lead to increased automobile travel and fuel consumption⁸². As a result, some have advocated the idea of the compact city as an answer, for the reason that higher densities decrease energy consumption as well as pollution⁸³. While decentralisation tends to be advocated by theorists from Australia and the US, compactness could be seen as the vision of European cities⁸⁴. Although the compact city idea is questioned, it has received considerable attention and support⁸⁵.

The search for the ultimate sustainable urban form perhaps now needs to be reoriented to the search for a number of sustainable urban forms which respond to a variety of existing settlement patterns and contexts⁸⁶. A city can never have a fixed form, unless it becomes a museum.

Over the past few decades, cities have been seen as a source of environmental degradation and resource depletion⁸⁷. The past ten years have brought different examples of unsustainable cities suffering from environmental degradation, a poorly built environment and quality of life. To realize

⁸⁰ Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Compact City in Practice,” in *Achieving Sustainable Urban Form*, 1998, 64–73.

⁸¹ P. Gordon, H. W Richardson, and M. J Jun, “The Commuting Paradox Evidence from the Top Twenty,” *Journal of the American Planning Association* 57, no. 4 (1991): 416–20; Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Compact City in Practice.”

⁸² Tim Elkin et al., *Reviving the City* (Friends of the Earth with Policy Studies Institute, 1991); Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Compact City in Practice.”

⁸³ M. Crookston, P. Clarke, and J. Averley, “The Compact City and the Quality of Life,” *The Compact City: A Sustainable Urban Form*, 1996, 134–42; M. Hillman, “In Favour of the Compact City,” *The Compact City: A Sustainable Urban Form*, 1996, 36–44.

⁸⁴ Jenks, m, Elizabeth Elizabeth Buron, and kaite Williams, *Compact City: A Sustainable Urban Form?*, 1st ed (Routledge, 1996).

⁸⁵ Elkin et al., *Reviving the City*, 1991; Michael J. Breheny, *Sustainable Development and Urban Form* (Pion, 1993); Department of the UK Government, “Sustainable Development: The UK Strategy,” 1994; Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Compact City in Practice.”

⁸⁶ Jenks M, Elizabeth Buron, and Kaite Williams, *Compact City*.

⁸⁷ Breheny, *Sustainable Development and Urban Form*, 1993; Jenks, m, Elizabeth Buron, and kaite Williams, *Compact City*; Elizabeth Burton, Mike Jenks, and Katie Williams, *Achieving Sustainable Urban Form*, 1st ed. (Routledge, 2001).

low carbon cities, there is a need for clear concepts about how they will function⁸⁸. Yet, this claim has been answered in academia. With reference to a review of existing literature, there is widespread faith in the compact city model's ability to promote urban sustainability⁸⁹. High densities and mixed uses are the two key concepts, formulating the overall sustainable pattern of cities and creating sustainable urban form⁹⁰. That is why the recent environmental debate has given a major spur to the question of the contribution that high density and mixed use make towards lowering energy consumption and pollution levels⁹¹. By contrast, there are also those who argue against the process of increasing densities on the grounds that high density and mixed land-use cities lead to traffic congestion and overcrowding, greater local air pollution, more crime, noise, social conflict and neighbour nuisance⁹².

Moreover, it has been broadly recognizable that the role of cities in terms of growing sustainability is very important; hence, it is recommended that the role of cities should act as a locus for solving global problems⁹³. However, despite the clarity of ecological and environmental crises and their outcomes, there is no common ground for an alternative urban design and planning paradigm⁹⁴.

"The analysis identifies seven design concepts related to sustainable urban form: 'compactness' 'sustainable transport' 'density' 'mixed land uses' 'diversity' 'passive solar design' and 'greening'. Moreover, it identifies four type forms: 'The Neo traditional Development' 'The Urban Containment' 'The Compact city' 'The Eco-city'."

⁸⁸ Williams, "Does Intensifying Cities Make More Sustainable?," in *Achieving Sustainable Urban Form*, 2000, 30–45.

⁸⁹ Burton, Jenks, and Williams, *Achieving Sustainable Urban Form*, 2001; Williams, K, Burton, E, and Jenks, M, "Achieving the Compact City Through Intensification :an Acceptable Option," in *The Compact City: A Sustainable Urban Form?*, 1996, 83–96.

⁹⁰ Charlotte MacDonald and Colin Jones, "Sustainable Urban Form and Real State Market," *The Annual Journal European Real State Conference*, 2004.

⁹¹ Breheny, *Sustainable Development and Urban Form*, 1993.

⁹² Ibid.

⁹³ Ibid.; Mahmood-Reza Masnavi, "The New Millennium and The New Urban Paradigm : The Comapt City in Practice."

⁹⁴ Breheny, *Sustainable Development and Urban Form*, 1993.

At the end, Jabareen make a matrix from seven concepts of sustainable urban form⁹⁵.

Design Concepts	Neo-traditional Development	Compact City	Urban Containment	Eco-City
Density	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Diversity	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Mixed Land Use	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Compactness	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Sustainable Transportation	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Passive Solar Design	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Greening Ecological design	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High	1.Low 2.Moderate 3.High
Total score	15 points	17 points	12 points	16 points

Table 3: Score of urban form are highlighted in bold source⁹⁶

There are many approaches that aim to achieve sustainable urban forms. Different approaches use different scales of concepts, as well as emphasizing some concepts over others⁹⁷.

⁹⁵ Jabareen, "Sustainable Urban Forms."

⁹⁶ Ibid.

⁹⁷ Ibid.

2.2.1.2.2 Compact city and mixed land-use

Much compact city theory concentrates on the connection between urban form and quality of life. It is argued that urban intensification leads to safer and more energetic urban areas support for local business and services, better social equity and social interaction, and better accessibility to facilities⁹⁸. The compact city suggestion might be valuable for quality of life by creating places that are full of activity, convenient, attractive, energy efficient and supportive of public transport⁹⁹.

However, there are counter arguments put forward predominantly by Americans and Australians. For example, popular demand may be seen to advocate urban dispersal and low density development on the grounds that it leads to less congestion and population and the quality of life in this type of development is much higher¹⁰⁰. Jenks¹⁰¹ argues that experiential research is required to come to a decision about these contradictory arguments. Elkin¹⁰² claims that the compact city “must be of a form and scale appropriate to walking, cycling and efficient public transport and with a compactness that encourages social interaction”. In practice, this suggests densities equivalent to those of the three- and four-storey urban street building found in most British inner city areas¹⁰³ and a form where it is still possible to provide each dwelling with its own front door to a public street and to provide a garden for all family dwellings¹⁰⁴.

There are two models of land use for urban form: single land-use and mixed land-use. Single land-use development refers to suburban and urban areas where most of the buildings are residential and commercial activity is concentrated in the town/city centre or retail parks. Mixed land-use refers to a diversity of activity, such as the presence of retail functions and local industry in residential areas and residential functions is retail areas¹⁰⁵.

⁹⁸ Jenks, m, Elizabeth Buron, and kaite Williams, *Compact City*; Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Comapt City in Practice.”

⁹⁹ Elkin al., *Reviving the City*, 1991; Hillman, “In Favour of the Compact City”; E. Scoffham and B. Vale, “How Compact Is Sustainable—how Sustainable Is Compact?,” *The Compact City: A Sustainable Urban Form*, 1996, 66–73; Mahmood-Reza Masnavi, “The New Millennium and The New Urban Paradigm : The Comapt City in Practice.”

¹⁰⁰ Gordon, Richardson, and Jun, “The Commuting Paradox Evidence from the Top Twenty”; P. Gordon, A. Kumar, and H. W Richardson, “The Influence of Metropolitan Spatial Structure on Commuting Time,” *Journal of Urban Economics* 26, no. 2 (1989): 138–51; P. Troy, “Urban Consolidation and the Family,” *The Compact City: A Sustainable Urban Form*, 1996, 155–65.

¹⁰¹ Jenks, m, Elizabeth Buron, and kaite Williams, *Compact City*.

¹⁰² Elkin et al., *Reviving the City*, 1991.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid. Page 21.

2.2.2 Urban social sustainability

This section mostly focuses on social sustainability criteria which are related to the urban context. In this part we explain some of them and the authors' criteria concerning urban social sustainable.

Bramley and Power suggest a framework for urban social sustainability. It comprises social equity and the sustainability of communities¹⁰⁶. The sustainability of communities indicates social interaction through social networks in the community and pride, a sense of place; safety and security¹⁰⁷. The sustainability of the community is defined as "the ability of society itself or its manifestation as local community, to sustain and reproduce itself at an acceptable level of functioning"¹⁰⁸. Social equity issues are described as "powerful political and policy concerns, and centre upon a distributive notion of social justice. Issues of sustaining the community are seen as more nebulous. Social capital and cohesion are contested concepts, in terms of their value loadings and also in terms of how important these phenomena are for the achievement of wider social goals, but there is quite wide agreement that at least some aspects are potentially important"¹⁰⁹. However, it is difficult to understand why equity is segregated from other key attributes of 'sustainability of the community'. It seems that they offer a functionalist understanding of social sustainability as a process of social cohesion.

Chan and Lee suggest that "the provision of social infrastructure and the availability of job opportunities have an association with accessibility and the ability to fulfil psychological needs. These scholars also refer to townscape design and the preservation of local characteristics as associated with social sustainability"¹¹⁰. Chan and Lee argue that there is a link between built form and social outcomes in reference to the degree to which the amenity of the urban form encourages social interaction¹¹¹. "Townscape design considers the uniqueness of a place and a sense of belonging among the residents. To fulfil basic social needs public facilities such as schools and hospitals are required"¹¹².

Townscape design is associated with urban fabric indicators. These indicators focus on the connection between the definitions of the formal components of urban design to specify the

¹⁰⁶ Glen Bramley and Sinéad Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type," *Environment and Planning B: Planning and Design* 36, no. 1 (2009): 30–48; Kathryn Davidson and Lou Wilson, "A Critical Assessment of Urban Social Sustainability," 2005, 5–7.

¹⁰⁷ Davidson and Wilson, "A Critical Assessment of Urban Social Sustainability," 2005; Bramley and Power, "Urban Form and Social Sustainability."

¹⁰⁸ Bramley and Power. ¹⁰⁹ Bramley and Power, "Urban Form and Social Sustainability." Page 42

¹⁰⁹ Ibid. Page 33

¹¹⁰ Edwin Chan and Grace KL Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," *Social Indicators Research* 85, no. 2 (2008): 243–56.

¹¹¹ Ibid.

¹¹² Ibid.

impact on the level of sustainability¹¹³. "This tool allows for the design of streets and neighbourhoods to be measured and compared in relation to factors such as land use diversity; natural surveillance (fronts and backs); permeability/street connectivity; employment density, and number of buildings and number of lots"¹¹⁴.

McKenzie (2004) argues that equality of access to key services (including housing), intergenerational equality, public participation in civic and political activities, particularly at a local level and sense of community ownership are indicators of social sustainability¹¹⁵.

Urban services accessibility (public utilities, mass transport, and telecommunication) are also essential for the sustainability of modern cities. Open and green areas provide places for social gathering, public interaction, and buffer zones in crowded areas therefore access to open and green spaces increases social sustainability¹¹⁶.

Maximising the exchange whilst minimising the travel helps to reach a truly sustainable environment. Furthermore, the proximity of the living areas to work and social places will have environmental benefits in the sense of reduced carbon emissions from vehicles and other kinds of transport¹¹⁷. Consequently low carbon emission improves air quality and the capacity to walk or ride and contributes health and wellbeing¹¹⁸. Busy streets full of cars cause a negative impact on the community by dividing neighbourhoods. Also badly maintained streets with heavy traffic, which contribute to unpredictable patterns of movement, create dangers for children and affect the quality of neighbourhood interaction. Green space accessibility also improves the psychological wellbeing of communities and also enhances human activity, climate improvement and ecological diversity, without separating and isolating people from each other. It is essential for human interaction and community development¹¹⁹.

¹¹³ Sergio Porta and John Luciano Renne, "Linking Urban Design to Sustainability: Formal Indicators of Social Urban Sustainability Field Research in Perth, Western Australia," *Urban Design International* 10, no. 1 (2005): 51–64.

¹¹⁴ Ibid.

¹¹⁵ McKenzie, *Social Sustainability*, 2004.

¹¹⁶ Chiu, "12 Social Sustainability, Sustainable Development and Housing Development"; Michael Corbett and Judy Corbett, *Designing Sustainable Communities: Learning from Village Homes* (Island Press, 1999); Chan and Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," 2008.

¹¹⁷ Derya Oktay, "Urban Design for Sustainability: A Study on the Turkish City," *The International Journal of Sustainable Development & World Ecology* 11, no. 1 (2004): 24–35. Page 30

¹¹⁸ Ibid. page 32

¹¹⁹ Ibid. pages 32-33

The residents of streets with heavy traffic are less likely to know their neighbours. On the other hand, pedestrian-oriented communities are held to contribute to social sustainability and lead to more social interaction, physical fitness, diminished crime and other social problems¹²⁰.

Employment delivers income to support individual and social wellbeing. Social contact and interaction in workplaces improve the social wellbeing of the citizens¹²¹.

Indeed, job opportunities tend to be closely associated with educational achievement. Social sustainability in this sense is connected to arguments over whether educational achievement in a given community will provide proper job opportunities at income levels that are enough to sustain individuals and communities¹²².

¹²⁰ Ibid. pages 32-33

¹²¹ Chan and Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," 2008.

¹²² Kathryn Davidson, "Monitoring Systems for Sustainability: What Are They Measuring?," 2009.

2.2.3 The effects of urban form on social sustainability

High and low density are two kinds of urban form, therefore in the next two sections, the arguments about density being amenable to social sustainability are demonstrated and the opposite argument that it is not responsive to social sustainability is discussed.

2.2.3.1 Density for social sustainability

Density is a feature of urban form which has received major attention in the literature with regard to its social impact, as in the "compact city" versus 'sprawl' debate¹²³.

The density plays a strong role in all the criteria of social sustainability. For instance, access to services and facilities are easier and more economically viable in high densities¹²⁴, although this might be different between services and other issues (like job access)¹²⁵. Compact urban forms and higher population densities are also related to better access to services.

People have a greater possibility of meeting each other on the street in higher densities rather than in lower density areas¹²⁶ and, on the other hand, in lower density areas spontaneous interaction would have decreased and led to more car travel. The 'sense of community' is higher in neighbourhoods that have made possible direct interaction¹²⁷. In a compact city, communities can be more mixed and less segregated than in a typical 'suburban sprawl'¹²⁸.

¹²³ Glen Bramley and Sinead Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type," *Environment and Planning. B, Planning & Design* 36, no. 1 (2009): 30; Hugh Barton, *Sustainable Communities: The Potential for Eco-Neighbourhoods* (Earthscan, 2000); Michael J. Breheny, *Sustainable Development and Urban Form*, vol. 2 (Pion London, 1992); Reid Ewing, "Is Los Angeles-Style Sprawl Desirable?," *Journal of the American Planning Association* 63, no. 1 (1997): 107–26.

¹²⁴ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type"; Raymond Bunker, "Urban Consolidation and Australian Cities," *Built Environment (1978-)*, 1985, 83–96; Elizabeth Burton, "The Potential of the Compact City for Promoting Social Equity," *Achieving Sustainable Urban Form*, 2000, 19–29; Michael JS Collie, "The Case for Urban Consolidation," *Australian Planner* 28, no. 2 (1990): 26–33; Graham Haughton and Colin Hunter, *Sustainable Cities* (Routledge, 2003).

¹²⁵ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type"; Barton, *Sustainable Communities*; Burton, "The Potential of the Compact City for Promoting Social Equity"; Katie Williams, "Does Intensifying Cities Make Them More Sustainable," *Achieving Sustainable Urban Form*, 2000, 30–45.

¹²⁶ Andres Duany, Elizabeth Plater-Zyberk, and Jeff Speck, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream* (Macmillan, 2001); Emily Talen, "Sense of Community and Neighbourhood Form: An Assessment of the Social Doctrine of New Urbanism," *Urban Studies* 36, no. 8 (1999): 1361–79.

¹²⁷ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type"; Thomas J. Glynn, "Psychological Sense of Community: Measurement and Application," *Human Relations* 34, no. 9 (1981): 789–818; Jack L. Nasar and David A. Julian, "The Psychological Sense of Community in the Neighborhood," *Journal of the American Planning Association* 61, no. 2 (1995): 178–84.

¹²⁸ Glen Bramley and James Morgan, "Building Competitiveness and Cohesion: The Role of New Housebuilding in Central Scotland's Cities," *Housing Studies* 18, no. 4 (2003): 447–71; Barton, *Sustainable Communities*.

Compact cities and higher densities produce smaller ecological footprints compared to urban sprawl¹²⁹. Young people and single individuals would rather live in higher density residences if they are a cheap option, but there is a transition stage and they plan to move to lower density when they could afford it¹³⁰.

People in smaller homes would prefer to live in apartments that have good access to transport and shops rather than in the traditional detached, suburban bungalow¹³¹ but a piece of research carried out in Australia showed that apartment dwellings tend to remain largely the abode of young adults, overseas students and temporary migrants¹³². The majority of other groups of people continue to show an evident preference for low-density housing¹³³.

In Australia, there is a class dimension to policies that seek to produce higher densities in the cities caused by the force of urban growth boundaries and of changes to development assessment plans to encourage higher densities¹³⁴. On the basis of current policies, the working class will be forced into apartments while the middle and upper classes can continue to enjoy low-density living¹³⁵. Certain problems arise with equity and fairness. There is a conflict between two groups of planners; those who wish to force people to live in compact cities, and 'Australian dreamers' who are opposed to planning restrictions in traditional suburban developments. The first group tends to support the development of transit-oriented developments, mixed use, higher-density housing associated with shops, work and transit nodes¹³⁶.

¹²⁹ Duany, Plater-Zyberk, and Speck, *Suburban Nation*; Peter Calthorpe and William Fulton, *The Regional City* (Island Press, 2001); Peter Katz, Vincent Joseph Scully, and Todd W. Bressi, *The New Urbanism: Toward an Architecture of Community*, vol. 10 (McGraw-Hill New York, 1994).

¹³⁰ Andrejs Skaburskis, "New Urbanism and Sprawl A Toronto Case Study," *Journal of Planning Education and Research* 25, no. 3 (2006): 233–48; Peter Howley, Mark Scott, and Declan Redmond, *An Examination of Residential Preferences for Less Sustainable Housing*, 2008.

¹³¹ Clive Forster, "The Challenge of Change: Australian Cities and Urban Planning in the New Millennium," *Geographical Research* 44, no. 2 (2006): 173–82.

¹³² Graeme Hugo, "Implications of Demographic Change for Future Housing Demand in Australia," *Australian Planner* 42, no. 2 (2005): 33–41; Joan Vipond, Keith Castle, and Richard Cardew, "Revival in Inner Areas: Young People and Housing in Sydney," *Australian Planner* 35, no. 4 (1998): 215–22.

¹³³ Skaburskis, "New Urbanism and Sprawl A Toronto Case Study"; Patrick Troy, "Suburbs of Acquiescence, Suburbs of Protest," *Housing Studies* 15, no. 5 (2000): 717–38; Judith Yates, "The Rhetoric and Reality of Housing Choice: The Role of Urban Consolidation," *Urban Policy and Research* 19, no. 4 (2001): 491–527.

¹³⁴ Forster, "The Challenge of Change."

¹³⁵ Ibid.

¹³⁶ Brendan Gleeson, "Critical Commentary. Waking from the Dream: An Australian Perspective on Urban Resilience," *Urban Studies* 45, no. 13 (2008): 2653–68.

On the other hand, Groenewegen et al¹³⁷ argue that green open spaces are associated with public insecurity and fear of crime, although they have health benefits.

Density for social sustainability	Authors
access to services and facilities	Bunker¹³⁸; Burton¹³⁹; Collie¹⁴⁰; Houghton and Hunter¹⁴¹
better access to services	Burton¹⁴²; Williams¹⁴³
Social interaction	Duany and Plater-Zyberk¹⁴⁴; Talen¹⁴⁵
Higher sense of community	Glynn¹⁴⁶; Nasar and Julian¹⁴⁷
More affordable for young generation	Skaburskis¹⁴⁸; Howley et al¹⁴⁹
communities are possible to be more mixed and less segregated	Bramley and Morgan¹⁵⁰; Burton¹⁵¹
access to transport and shops rather	Forster¹⁵²
green open spaces associated with public insecurity (fear of crime)	Conversely Groenewegen et al¹⁵³

Table 4: the reason why density is responsive to social sustainability

2.2.3.2 In contradiction to density

In contrast to high density, there are many arguments in favour of low density and below we explain some studies, research and suggestions about low density and social sustainability.

Dissatisfaction with local neighbourhoods and social problems are associated with higher density areas¹⁵⁴. In higher density societies, people may withdraw from social contact and experience stress¹⁵⁵.

¹³⁷ Peter P. Groenewegen et al., "Vitamin G: Effects of Green Space on Health, Well-Being, and Social Safety," *BMC Public Health* 6, no. 1 (2006): 149.

¹³⁸ Bunker, "Urban Consolidation and Australian Cities."

¹³⁹ Burton, E, "The Compact Cities :just or Just Compact?," *Urban Studies* 37, no. 11 (2000).

¹⁴⁰ Michael JS Collie, "The Case for Urban Consolidation," *Australian Planner* 28, no. 2 (1990): 26–33.

¹⁴¹ G. Houghton and C. Hunter, *Sustainable Cities* (Spon Press, 1994).

¹⁴² Burton, E, "The Compact Cities :just or Just Compact?"; Burton, Jenks, and Williams, *Achieving Sustainable Urban Form*, 2001.

¹⁴³ Williams, "Does Intensifying Cities Make More Sustainable ?".

¹⁴⁴ Andres Duany and Elizabeth Plater-Zyberk, "The Neighborhood, the District and the Corridor," *The New Urbanism: Toward an Architecture of Community*, McGraw-Hill, New York, Xvii-Xx, 1994.

¹⁴⁵ Talen, "Sense of Community and Neighbourhood Form."

¹⁴⁶ Glynn, "Psychological Sense of Community."

¹⁴⁷ Nasar and Julian, "The Psychological Sense of Community in the Neighborhood."

¹⁴⁸ Skaburskis, "New Urbanism and Sprawl A Toronto Case Study."

¹⁴⁹ Howley, Scott, and Redmond, *An Examination of Residential Preferences for Less Sustainable Housing*.

¹⁵⁰ Bramley and Morgan, "Building Competitiveness and Cohesion."

¹⁵¹ Elizabeth Burton, "The Compact City: Just or Just Compact? A Preliminary Analysis," *Urban Studies* 37, no. 11 (2000): 1969–2006.

¹⁵² Forster, "The Challenge of Change."

¹⁵³ Groenewegen et al., "Vitamin G."

Andres Duany and Elizabeth Plater-Zyberk, "The Neighborhood, the District and the Corridor," *The New Urbanism: Toward an Architecture of Community*, McGraw-Hill, New York, Xvii-Xx, 1994.

¹⁵⁴ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type."

The rate of poverty is higher in higher density areas¹⁵⁶.

High density developments are in tension with the liveability of neighbourhoods¹⁵⁷. A study has been done on the people who made a choice to live in a new compact residential area of Dublin. The majority of the residents wanted to relocate from their compact environment to lower density areas. They expressed a wish to have access to more space and a clean environment with less noise and more children services and facilities¹⁵⁸.

Urban green spaces in European cities are under strong pressure due to increasing urbanization. When this process is combined with a densification planning policy the results are less people living in green residential environments. Such policies have a greater proportionate influence on low socio-economic people who do not have sufficient income to move to greener areas outside the cities. On the basis of these policies the development of compact, denser cities faces the possibility of differential class impacts¹⁵⁹.

A study has been done in a number of blocks of Baltimore's renewed inner harbour which shows that compact and higher density neighbourhoods are marked by social exclusion, poverty, high rates of crime, drug abuse and dilapidated housing¹⁶⁰.

Criminal syndicates that commit daily murders and muggings are more common in the inner city despite urban renewal¹⁶¹. An analysis of social capital in Italy states that the mafia is the 'dark side' of social capital¹⁶². Criminal networks like the mafia weaken social trust and local economies. Mafia criminal activity is associated with higher density cities like Naples (the home of the Camorra)¹⁶³. Urban renewal programmes in the 1990s regenerated the central areas of Naples. These areas, like the Piazza del Plebiscito, were cleared of cars to make pedestrian precincts and reduced crime and social problems. Urban redevelopment of city centre areas creates vibrant

¹⁵⁵ Gary Bridge, "The Neighbourhood and Social Networks," *Bristol: ESR Centre*, 2002; Lance Freeman, "The Effects of Sprawl on Neighborhood Social Ties: An Explanatory Analysis," *Journal of the American Planning Association* 67, no. 1 (2001): 69–77; Georg Simmel, "The Metropolis and Mental Life," *The Urban Sociology Reader*, 1903, 23–31; Louis Wirth, "Urbanism as a Way of Life," *American Journal of Sociology*, 1938, 1–24.

¹⁵⁶ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type."

¹⁵⁷ Howley, Scott, and Redmond, *An Examination of Residential Preferences for Less Sustainable Housing*.

¹⁵⁸ Ibid.

¹⁵⁹ R. A. Verheij, J. Maas, and P. P. Groenewegen, "Urban—rural Health Differences and the Availability of Green Space," *European Urban and Regional Studies* 15, no. 4 (2008): 307–16.

¹⁶⁰ Mark V Levine, "A Third-Word City in the First Word: Socila Exclusion, Racial, Inequality and Sustainable Development in Baltimore, Mark V. Levine Page 123," in *The Social Sustainability of Cities: Diversity and the Management of Change* (University of Toronto Press, 2000).

¹⁶¹ Richard Owen, "Analysis: Naples, a City in the Grip of the Camorra | The Times," 2006.

¹⁶² Robert D. Putnam, Robert Leonardi, and Raffaella Y. Nanetti, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton university press, 1994).

¹⁶³ Ibid.

compact neighbourhoods from previously poor neighbourhoods. It appears that changes in architectural forms have had little effect on fundamental social issues in Naples.

High density building may also affect the aesthetics of places and their appearance and consequently people's sense of attachment and pride in such places. However, it is not clear why this relationship is positive rather than negative¹⁶⁴.

In contradiction to density for social sustainability	Authors
Dissatisfaction with local neighbourhoods and social problems in high density	Bramly and Power ¹⁶⁵
withdraw from social contact and experience stress	Wirth ¹⁶⁶ ; Simmel ¹⁶⁷ ; Freeman ¹⁶⁸ ; Bridge ¹⁶⁹
The rate of poverty is higher in higher density	Bramly and Power ¹⁷⁰
tension with the liveability	Howley et al ¹⁷¹
social exclusion, poverty, high rates of crime, drug abuse and dilapidated housing	Levine's ¹⁷²
affect the aesthetics of places and appearance and consequently people's sense of attachment	Audirac and Zifou ¹⁷³ ; Diamond and Noonan ¹⁷⁴ ; Nelessen ¹⁷⁵ ; Shore ¹⁷⁶ ;
Mafia criminal activity is associated with higher density	Putnam et al.'s ¹⁷⁷ ; Owen ¹⁷⁸

Table 5: the reason why density is not responsive to social sustainability

¹⁶⁴ Ivonne Audirac and Maria Zifou, *Urban Development Issues: What Is Controversial in Urban Sprawl?: An Annotated Bibliography of Often-Overlooked Sources*, 247 (Council of Planning Librarians, 1989); Henry L. Diamond and Patrick F. Noonan, *Land Use in America* (Island Press, 1996); Anton C. Nelessen, "Visions for a New American Dream," 1994; William B. Shore, "Recentralization: The Single Answer to More than a Dozen United States Problems and a Major Answer to Poverty," *Journal of the American Planning Association* 61, no. 4 (1995): 496–503; Robert W. Burchell et al., "The Costs of Sprawl—Revisited. Report 39. Transit Cooperative Research Program," *Transportation Research Board, National Research Council. National Academy Press, Washington, DC*, 1998; Bramley and Power, "Urban Form and Social Sustainability."

¹⁶⁵ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type."

¹⁶⁶ Wirth, "Urbanism as a Way of Life."

¹⁶⁷ Simmel, "The Metropolis and Mental Life."

¹⁶⁸ Freeman, "The Effects of Sprawl on Neighborhood Social Ties."

¹⁶⁹ Bridge, "The Neighbourhood and Social Networks."

¹⁷⁰ Bramley and Power, "Urban Form and Social Sustainability: The Role of Density and Housing Type."

¹⁷¹ Howley, Scott, and Redmond, *An Examination of Residential Preferences for Less Sustainable Housing*.

¹⁷² Levine, "A Third-Word City in the First Word: Socila Exclusion, Racial, Inequality and Sustainable Development in Baltimore, Mark V. Levine Page 123."

¹⁷³ Audirac and Zifou, *Urban Development Issues*.

¹⁷⁴ Diamond and Noonan, *Land Use in America*.

¹⁷⁵ Nelessen, "Visions for a New American Dream."

¹⁷⁶ Shore, "Recentralization."

¹⁷⁷ R. Putnam, "Bowling Alone, Simon and Schuster," *New York, NY*, 2000.

¹⁷⁸ Owen, "Analysis: Naples, a City in the Grip of the Camorra | The Times."

Conclusion

From the literature above we can see that there are counter-arguments about density and the level of amenability to social sustainability, concluding that the majority of authors and researchers believe that density is a more appropriate form for social sustainability. Additionally, density is mostly accepted as an answer to other aspects of sustainability. Density increases environmental and economic sustainability. Although there are many arguments against urban density, such as the high level of crime and poverty, these criteria are mostly linked to the quality of the townscape. Townscape design also has an influence on social sustainability. The successful townscape with good maintenance and design is associated with the reduction in the level of crime and poverty.

2.3 Framework of the Study

This study is approached from an architectural viewpoint. Therefore, it focuses on those physical characteristics of a neighbourhood townscape that can be improved through design solutions. Although both the physical and social characteristics of a townscape are needed to discover its full character, this study focuses solely on the physical aspects. A neighbourhood townscape is at the heart of this study because the researcher is an architect who wants to concentrate on those aspects of social sustainability that are most closely allied to townscape design and which can be consciously improved. In section 2.1.2 some brief definitions of social sustainability are presented (table 1) and a number of measures of social sustainability are given in table 2. These definitions and criteria are drawn from different authors with varied backgrounds such as urban planners and policy makers, but this study is undertaken from an architectural perspective and represents an attempt to focus on those aspects and criteria of social sustainability that an architect can better understand and improve by using design solutions. So, after reviewing different sources about social sustainability in an urban setting, in the next section four criteria closely related to townscape design that an architect could improve by devising new solutions or redesigning townscape elements, are adopted. This section will also highlight those criteria for social sustainability that are related to townscape and urban form on a neighbourhood scale.

In previous sections, much of the literature explains the concepts of sustainable development, social sustainability, urban social sustainability, townscape, urban form, the neighbourhood and building density. This section takes into account all the studies reviewed in the previous sections and reveals the criteria of social sustainability that take account of townscape features.

2.3.1 The criteria of social sustainability which take account of neighbourhood townscape

The literature review shows that accessibility to employment and facilities, social interaction and community spirit, safety and security and a sense of place are the criteria necessary for social sustainability which take account of townscape and urban form on the neighbourhood scale. In this study the following have been chosen as the main criteria for assessing social sustainability.

2.3.1.1 Accessibility (access to employment and facilities)

(Sachs, 1999), (Choguill, 2008), (Bramley, Dempsey, Power, Brown, & Watkins, 2009), (Colantonio, 2009), (Cuthill, 2010), (Dave, 2011), (Dempsey et al., 2011), (Weingaertner & Moberg, 2011)

One of the essential arguments for improving social sustainability is accessibility. People like to participate in leisure and cultural activities as well as living and working without traveling too far¹⁷⁹. People prefer to be settled in areas with employment opportunities and facilities for all the family members in the proximity¹⁸⁰. Everybody should have good and convenient access to facilities and services in their daily lives.

Employment is one of the main concentrations of social sustainability¹⁸¹. Employment provides incomes for individuals and the working space creates an area for social contact and interaction, which are necessary to increase the feeling of social well-being of the people¹⁸².

The existence of different amenities is vital to a society. Public facilities such as medical centres and schools provide the basic needs of the citizens¹⁸³. While others facilities such as sport and community centres offer places for holding different leisure activities. The elderly, children and the disabled within a community need special provisions for their uses. Additionally, open spaces and green areas provide facilities for social gatherings and public interaction in crowded areas¹⁸⁴. Accessibility is perhaps the most important concept in defining and explaining regional form

¹⁷⁹ P. C. Smith, "Sustainability and Urban Design," *Building Hong Kong: Environmental Considerations*, 2000, 17–42.

¹⁸⁰ Edwin Chan and Grace KL Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," *Social Indicators Research* 85, no. 2 (2008): 243–56; Anthony Gar-On Yeh and Mee Kam Ng, "Che Mus 2000, C, O, Urbanization versus Urban Planning Practice in Malaysia: Considerations, Prospects and Possibilities.," in *Planning for a Better Urban Living Environment in Asia* (Ashgate Aldershot, 2000).

¹⁸¹ Spangenberg, Omann, and Hinterberger, "Sustainable Growth Criteria."

¹⁸² Weingaertner and Moberg, "Exploring Social Sustainability."

¹⁸³ Jerome Rothenberg, "Economic Evaluation of Urban Renewal; Conceptual foundation of Benefit-Cost Analysis," 1967.

¹⁸⁴ Chan and Lee, "Critical Factors for Improving Social Sustainability of Urban Renewal Projects," 2008; Chiu, "12 Social Sustainability, Sustainable Development and Housing Development"; Corbett and Corbett, *Designing Sustainable Communities*; Alexander R. Cuthbert and Harry T. Dimitriou, "Redeveloping the Fifth Quarter: A Case Study of Redevelopment in Hong Kong," *Cities* 9, no. 3 (1992): 186–204.

and function. Urban form is directly related to the level of accessibility. Therefore, accessibility has been chosen as a first criterion for social sustainability that takes effect from neighbourhood townscape.

2.3.1.2 Safety and security

(Spangenberg, 2004), (Chan & Lee 2007), (Choguill, 2008), (Bramley, Dempsey, Power, Brown, & Watkins, 2009), (Dave, 2011), (Dempsey et al., 2011), (Weingaertner & Moberg, 2011)

Ensuring the safety of a neighbourhood is a vital part of social sustainability¹⁸⁵. Security is a key component in every neighbourhood. People would rather live in a safe and secure place where there are no thieves, burglars or vandals¹⁸⁶.

Feelings of safety (from crime or antisocial behaviour) improve trust and reciprocity between residents. Also safety supports the sense of community and sense of place in an area¹⁸⁷. Safety is associated with the built-up environment and comprises the cited benefits of natural surveillance, for instance, the existence of windows directly overlooking streets¹⁸⁸ which is a function of detailed urban design and context instead of just density.

Safety as a community feature comprises the two dimensions of “physical” and “social”¹⁸⁹. Control and the prevention of physically dangerous situations, such as accidents, constitutes physical safety. It needs proper arrangement of activity settings and clear warnings like signs and barriers. For example, the design of streets with proper sidewalks in a neighbourhood can control the speed of cars, thereby reducing harmful accidents and making a safe living space for residents. The social aspect of safety is generally identified to be most essential by people. Some of the dangerous activities, like crime, burglaries, violence and drug abuse have a determinative role on a neighbourhood’s inhabitants¹⁹⁰.

¹⁸⁵ Dempsey et al., “The Social Dimension of Sustainable Development”; Burton, “The Compact City.”

¹⁸⁶ Corbett and Corbett, *Designing Sustainable Communities*.

¹⁸⁷ Bramley et al., “Social Sustainability and Urban Form”; Hugh Barton, “Henry Shaftoe 2000, Community Safety and Actual Neighbourhoods,” in *Sustainable Communities: The Potential for Eco-Neighbourhoods* (Routledge, 2013), 231.

¹⁸⁸ Bramley et al., “Social Sustainability and Urban Form”; Christopher Alexander, Sara Ishikawa, and Murray Silverstein, “A Pattern Language: Towns, Buildings, Construction (Cess Center for Environmental),” 1977; Jane Jacobs, *The Death and Life of Great American Cities* (Random House Digital, Inc., 1961).

¹⁸⁹ Danielle C. Ompad and others, ‘Social Determinants of the Health of Urban Populations: Methodologic Considerations’, *Journal of Urban Health*, 84 (2007), 42–53.

¹⁹⁰ Danielle C. Ompad et al., “Social Determinants of the Health of Urban Populations: Methodologic Considerations,” *Journal of Urban Health* 84, no. 1 (2007): 42–53.

2.3.1.3 Sense of place

(Chan & Lee 2007), (Choguill, 2008), (Bramley, Dempsey, Power, Brown, & Watkins, 2009), (Dempsey et al., 2011), (Weingaertner & Moberg, 2011)

Relph states that “to be inside a place is to belong to it and to identify with it”¹⁹¹. Nothing says more about the physical environment than the people who live it. Achieving a ‘sense of place’ is advocated through carefully designing spaces and buildings, for example, the retention of landmarks¹⁹². The inhabitants’ sense of belongings is enhanced if they feel that they are a part of a community. The same claim applies to the concept of pride or sense of place if people feel attached to the neighbourhood, they will want to live there and participate in its continued development¹⁹³. The sense of place has two aspects:

- **Place attachment** is an affective connection between people and places¹⁹⁴. Place attachment is considered to be created and maintained across people’s interactions with their environment and the people in that environment¹⁹⁵. These attachments or emotional ties to places occur at the individual level.
- **Community attachment** means a feeling, a sense of being socially part of the neighbourhood or community, and a sense of rootedness, or attachment to the physical community or neighbourhood¹⁹⁶. This attachment can provide personal and group identity¹⁹⁷. Guest and Lee¹⁹⁸ suggest two dimensions of community attachment: community sentiments and community evaluation. Community sentiments refer to feelings of emotional or psychological bonds to place which reflect how much a person would miss the area if they were to leave that place and community. Evaluations refer to a person’s overall satisfaction with the community.

¹⁹¹ Edward Relph, *Place and Placelessness Pion* (London, 1976). Page 49

¹⁹² Dempsey et al., “The Social Dimension of Sustainable Development”; Andres Duany, “Neighbourhood Design in Practice,” *Urban Villages and the Making of Communities*, 2003, 85–101.

¹⁹³ Cynthia Woolever, “A Contextual Approach to Neighbourhood Attachment,” *Urban Studies* 29, no. 1 (1992): 99–116.

¹⁹⁴ Griff Tester et al., “Sense of Place among Atlanta Public Housing Residents,” *Journal of Urban Health* 88, no. 3 (2011): 436–53; Setha M. Low and Irwin Altman, *Place Attachment* (Springer, 1992); Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (U of Minnesota Press, 1977).

¹⁹⁵ Tester et al., “Sense of Place among Atlanta Public Housing Residents”; Carla Koons Trentelman, “Place Attachment and Community Attachment: A Primer Grounded in the Lived Experience of a Community Sociologist,” *Society and Natural Resources* 22, no. 3 (2009): 191–210; Low and Altman, *Place Attachment*.

¹⁹⁶ Tester et al., “Sense of Place among Atlanta Public Housing Residents”; Stephanie Riger and Paul J. Lavrakas, “Community Ties: Patterns of Attachment and Social Interaction in Urban Neighborhoods,” *American Journal of Community Psychology* 9, no. 1 (1981): 55–66.

¹⁹⁷ Tester et al., “Sense of Place among Atlanta Public Housing Residents.”

¹⁹⁸ *Ibid.*; Avery M. Guest and Barrett A. Lee, “Sentiment and Evaluation as Ecological Variables,” *Sociological Perspectives* 26, no. 2 (April 1983): 159–84.

2.3.1.4 Social Interaction and community spirit

(Spangenberg, 2004), (Choguill, 2008), (Bramley, Dempsey, Power, Brown, & Watkins, 2009), (Colantonio, 2009)(Cuthill, 2010), (Dempsey et al., 2011), (Weingaertner & Moberg, 2011)

Social interaction and social networks are defined as essential aspects of social capital¹⁹⁹. Social capital has been described as “social networks and the associated norms of reciprocity”²⁰⁰ and also refers to attributes of social organization including trust, the degree and knowledge of relationships within networks and obligations and expectations²⁰¹

People within society need to work together and interact in order for societies to be socially ‘sustained’. The phrase social interaction is used to refer to the joint influence of two or more people on one another's behaviour which produces a relationship. This relation is the basis of the social structure in a community. Social interaction is some kind of involvement with other people and does not include work involvement. It's when a person interacts with people on a personal basis. People can have social interaction at home or outside of the home.

Community spirit is a group of people working together to improve the community they live in. It is a phrase used to describe local people working together for a mutually positive and pleasant result. This would be clear at a community fair, a school event, or in more practical circumstances where a local is in need of help and the community gathering intends to provide suitable support. Other examples are charitable events organised by the community, putting together a team of volunteers to walk through local streets and clear them of rubbish are some other kind community activity.

¹⁹⁹ Dempsey et al., “The Social Dimension of Sustainable Development”; Ade Kearns and Ray Forrester, “Social Cohesion and Multilevel Urban Governance,” *Urban Studies* 37, no. 5–6 (2000): 995–1017.

²⁰⁰ Putnam, “Bowling Alone, Simon and Schuster.” Page 21

²⁰¹ Dempsey et al., “The Social Dimension of Sustainable Development”; Mark Pennington and Yvonne Rydin, “Researching Social Capital in Local Environmental Policy Contexts,” *Policy & Politics* 28, no. 2 (2000): 233–49.

2.3.2 The features of townscape which improve or create accessibility, safety and security, sense of place and social Interaction and community spirit (social sustainability):

This section seeks to dissect the arguments linking townscape features and social sustainability or, to be more precise, the relationships between townscape features and social sustainability.

The five dimensions of urban environment comprise architecture, townscape, urban form, public realm and landscape²⁰². In most descriptions, townscape comprises the other four aspects of urban environment. Furthermore, there are four main elements that make up urban form. These are land use, density, transport infrastructure and the characteristics of the built environment. An additional micro-element is layout²⁰³. The most important characteristics of urban form development are divided into eight aspects²⁰⁴: *Urban structure, urban grain, landscape, scale, massing, details and materials*. Consequently, the physical character of townscape embraces all aspects of the urban form, public realm and landscape. The townscape features that improve or create accessibility, safety and security, sense of place, social interaction and community spirit (social sustainability on the neighbourhood scale) are explained below on the basis of the elements of townscape.

Built form features reflected in key new urbanism design attitudes comprise street connectivity, accessible destinations and mixed land use, in company with moderate to higher levels of residential density, public meeting places and quality parks and open space²⁰⁵.

Accessibility and local permeability will be promoted by integrating land uses and transport and making places that connect with each other that are also easy to move through²⁰⁶. Every time people walk to the shops and have to cross the road they are faced with a classic example of bad design. This bad design is the result of a philosophy of traffic engineering that put cars first and required that various modes of transport must be set apart. For improving accessibility a place needs to have good and easy movement. Pedestrian movement is especially important on the neighbourhood scale (filtered permeability).

²⁰² Punter and Carmona, *The Design Dimension of Planning*.

²⁰³ Colin Jones and Charlotte MacDonald, "Sustainable Urban Form and Real Estate Markets," in *European Real Estate Conference, Milan, June, 2004*.

²⁰⁴ DETR, *By Design*.

²⁰⁵ Sabina Deitrick and Cliff Ellis, "New Urbanism in the Inner City," *Journal of the American Planning Association* 70, no. 4 (2004): 426–42; Lisa Wood, Lawrence D. Frank, and Billie Giles-Corti, "Sense of Community and Its Relationship with Walking and Neighborhood Design," *Social Science & Medicine* 70, no. 9 (2010): 1381–90.

²⁰⁶ DETR, *By Design*.

Accessibility is associated with the ability to reach a range of social, leisure and employment destinations from home and easy access to pedestrian and transport systems. Diversity and mixed land use also help to increase accessibility²⁰⁷.

“Matters such as community safety, accessibility, sustainability, quality of life are key concerns within the public realm and are significant elements within the urban design agenda”²⁰⁸. Without a well-designed public realm that supports journeys from beginning to end, such strategies are liable to fail to provide long-term accessibility and social inclusion goals²⁰⁹.

Lund²¹⁰ found that the regularity of walking inside neighbourhoods was associated with more accidental interactions with neighbours, which can provide relationship formation and development. The level of vehicular traffic and car parking has been shown to negatively affect the level of area friendliness, safety and helpfulness²¹¹. Therefore, a pedestrian-friendly neighbourhood that encourage regular local walking may be essential from not only a physical but also a mental health perspective²¹².

According to Jacobs, “spontaneous surveillance of the urban environment by its inhabitants only occurs in a lively city where the streets are used both day and night, in which public spaces are well maintained and inspire confidence and a sense of belonging”²¹³

The poor condition and maintenance of the built environment and public realm are also argued to have negative psychological effects on people's sense of safety²¹⁴.

Urban development is structured corresponding to the ‘natural logic’ of neighbourhood scale, with a clearly designed centre and edge²¹⁵. A sense of community and neighbourliness are produced by having well-designed neighbourhoods with clear borders and a clear centre (legibility). When smaller scales are combined with increased residential density, direct interaction

²⁰⁷ Graeme Evans, “Accessibility, Urban Design and the Whole Journey Environment,” *Built Environment* 35, no. 3 (2009): 366–85.

²⁰⁸ City of Edinburgh Council, “Standards for Urban Design. Edinburgh.” 2003.

²⁰⁹ Evans, “Accessibility, Urban Design and the Whole Journey Environment”; Karen Lucas, *Running on Empty: Transport, Social Exclusion and Environmental Justice* (The Policy Press, 2004).

²¹⁰ Hollie Lund, “Testing the Claims of New Urbanism: Local Access, Pedestrian Travel, and Neighboring Behaviors,” *Journal of the American Planning Association* 69, no. 4 (2003): 414–29.

²¹¹ Wood, Frank, and Giles-Corti, “Sense of Community and Its Relationship with Walking and Neighborhood Design”; Elaine Mullan, “Do You Think That Your Local Area Is a Good Place for Young People to Grow up? The Effects of Traffic and Car Parking on Young People’s Views,” *Health & Place* 9, no. 4 (2003): 351–60.

²¹² Wood, Frank, and Giles-Corti, “Sense of Community and Its Relationship with Walking and Neighborhood Design.”

²¹³ Jane Jacobs, *The Death and Life of Great American Cities* (Random House Digital, Inc., 1961). Page 55

²¹⁴ Bramley et al., “Social Sustainability and Urban Form.”

²¹⁵ Duany and Plater-Zyberk, “The Neighborhood, the District and the Corridor.”

is promoted. Visible routes and destinations, and a visible choice of routes, will contribute to making a place feel safe and unthreatening²¹⁶.

Legibility is explained by theorists as expanding people's feelings of sense of place and safety by enhancing their direction and way-finding²¹⁷. It follows, that legibility is conceptually connected to the connectedness and permeability of a place, which are also argued to contribute to these feelings of safety and place attachment²¹⁸.

Diversity of layout, building form and tenancy can contribute to creating a successful living and working place. Jacobs states that dense, mixed-use neighbourhoods are strong supporters of safe and socio-economically active growth²¹⁹.

Neighbourhoods with a mix of land uses enhance a high level of activity on the street and more activities keep the streets safer. Women feel safe and they can walk to provide basic needs and create foot traffic and natural surveillance. Children enjoy a safer environment to play or cycle, the elderly have more chance to meet and talk and strangers might feel they are vigilant. People have less fear of being a victim in crime²²⁰.

When people engage in various activities like living, playing, shopping and working in the same neighbourhood, it offers a higher possibility of meeting, greeting, smiling and talking, consequently, of connecting the community. The mixed land use gives a chance for the people of various age groups to mutually interact and make an inclusive community. A mixed use neighbourhood has a more suitable access to people, places, and activities²²¹.

After reviewing a great deal of literature about the feature of a locality that can improve accessibility, safety and security, sense of place and social interaction and community spirit, we reach the following results:

²¹⁶ DETR, *By Design*.

²¹⁷ Kevin Lynch, *The Image of the City*, vol. 11 (the MIT Press, 1960); Andrew Kelly and Melanie Kelly, "Building Legible Cities 2," *Bristol: Bristol Cultural Development*, 2001; Nicola Dempsey, "Are Good-Quality Environments Socially Cohesive?: Measuring Quality and Cohesion in Urban Neighbourhoods," *Town Planning Review* 80, no. 3 (May 1, 2009): 315–45,

²¹⁸ Amos Rapoport, "Environmental Quality in Designing a New Town," *Royal Australian Planning Institute Journal* 10, no. 4 (1972): 139–43; Dempsey, "Are Good-Quality Environments Socially Cohesive?"

²¹⁹ Jacobs, *The Death and Life of Great American Cities*, 1961.

²²⁰ Anastasia Loukaitou-Sideris and Camille Fink, "Addressing Women's Fear of Victimization in Transportation Settings A Survey of US Transit Agencies," *Urban Affairs Review* 44, no. 4 (2009): 554–87; Sarika Bahadure and Rajashree Kotharkar, "Social Sustainability and Mixed Landuse, Case Study of Neighborhoods in Nagpur, India," *Bonfring International Journal of Industrial Engineering and Management Science* 2, no. 4 (2012): 76–83.

²²¹ Bahadure and Kotharkar, "Social Sustainability and Mixed Landuse, Case Study of Neighborhoods in Nagpur, India."

To achieve accessibility a place needs to have:

- Successful movement with filtered permeability
- Mixed land use with density

To achieve safety and security a place needs to have:

- Successful and attractive public realm
- Successful movement with filtered permeability
- Legibility
- Mixed land use with density

To achieve a sense of place a locality needs to have:

- Place with own identity
- Successful and attractive public realm

To achieve social interaction and community spirit a place needs to have:

- Successful and attractive public realm
- Successful movement with filtered permeability
- Mixed land use with density

From the above results we suggest five features of townscape (physical characteristics) that improve or create social sustainability. We will describe these five features in the paragraphs below.

1. A place with its own identity

The positive features of a place and its residents influence its particular character and sense of identity. These features comprise landscape, building traditions and materials, patterns of local life, and other factors that cause one place to be different from another. The places with a distinct character which people can appreciate easily are memorable. Most of the places which are pleasantly distinctive grew naturally in response to local conditions²²².

2. Successful and attractive public realm

“The Public Realm is defined as - the parts of the city (whether publicly or privately owned) that are available for everyone to see and use without charge, 24 hours a day, including streets, squares and parks”²²³. It is expanded and improved by creative management and by developments designed to welcome a broad cross-section of different people. The success of the public realm

²²² DETR, *By Design*.

²²³ Ciaran Murdoch, “Public Spaces,” n.d.

depends on the preparation of its paving, planting, lighting, orientation, shelter, signage, street furniture, and the way it is overlooked, along with the paths which move across it, and the uses in and next to it²²⁴.

3. Successful movement with filtered permeability

Movement in a place comprises car movement, pedestrian movement, cycle movement and disabled movement. Most important, movement in a neighbourhood is pedestrian movement. A successful place needs to possess convenience, safety and a comfort movement system where people go to and pass through buildings, places and spaces. Streets are more than just traffic networks for cars and should be a safe and attractive environment for all users. A successful movement network is a network of connected spaces and routes, for pedestrians, cyclists and vehicles.

Filtered permeability is defined as "a coarse grain for cars and a fine grain for cyclists and pedestrians"²²⁵. Filtered permeability is the idea that walking and cycling networks must be more permeable than motor vehicles road networks. This will encourage walking and cycling by providing them with a more attractive environment free from traffic and a time and convenience advantage over car driving. Filtered permeability needs cyclists, pedestrians to be separated from private motor vehicles in some parts²²⁶.

4. A place with Legibility

"Legibility is a term used to describe the ease with which people can understand the layout of a place"²²⁷. Kevin Lynch, a prominent urban design theorist, defined a method of analysing legibility based on five elements: paths, edges, districts, nodes and landmarks²²⁸. The elements of a neighbourhood can be these five legibility elements that Kevin Lynch defined.

Landmarks, gateways and focal points help people find their destination. Vistas create visual connections between places. Planting can give emphasis to pedestrian ways. Visible routes and destinations, and a visible choice of routes, will contribute to making a place feel safe and unthreatening. The places with clear images make them easy to understand and probably function

²²⁴ DETR, *By Design*.

²²⁵ S. Melia, "Filtered and Unfiltered Permeability: The European and Anglo-Saxon Approaches," *Project 4* (June 2012): 6–9.

²²⁶ Ibid.

²²⁷ Ian Bentley, *Responsive Environments: A Manual for Designers* (London: Architectural Press, 1985).

²²⁸ Lynch, *The Image of the City*, 1960.

well and are pleasurable to live in and visit. Similarly, some places draw their attraction from their lack of clear routes and images²²⁹.

5. Mixed land use with density

The mixed-uses (whether within an area, street or a building) can help to clarify what economic and social activities it will support and how a place is well-used. Mixed-use development is any urban, suburban or village development, or a single building with mixes of residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally combined and offer pedestrian connections²³⁰. A mix of uses may be appropriate at a variety of scales: within a city, a neighbourhood, a street or even in a specific building. In residential neighbourhoods, workplaces, shops and other amenities can make the neighbourhood much more than a dormitory and it can also provide the most opportunities for higher densities and intensive activity at locations with good access to public transport. Some higher densities provide facilities suitable for particular classes of household, such as single or young people, or couples without children²³¹.

Diversity of layout attracts people to live, work and play in the same neighbourhood. A successful mix of uses helps to create a balanced community with a range of services, without increasing reliance on the car where residents are liable to interact with each other positively.

²²⁹ DETR, *By Design*.

²³⁰ Grant Ian Thrall Professor of Geography University of Florida, *Business Geography and New Real Estate Market Analysis* (Oxford University Press, 2002).

²³¹ DETR, *By Design*.

The Figure below shows the five features of a place which improve social sustainability.

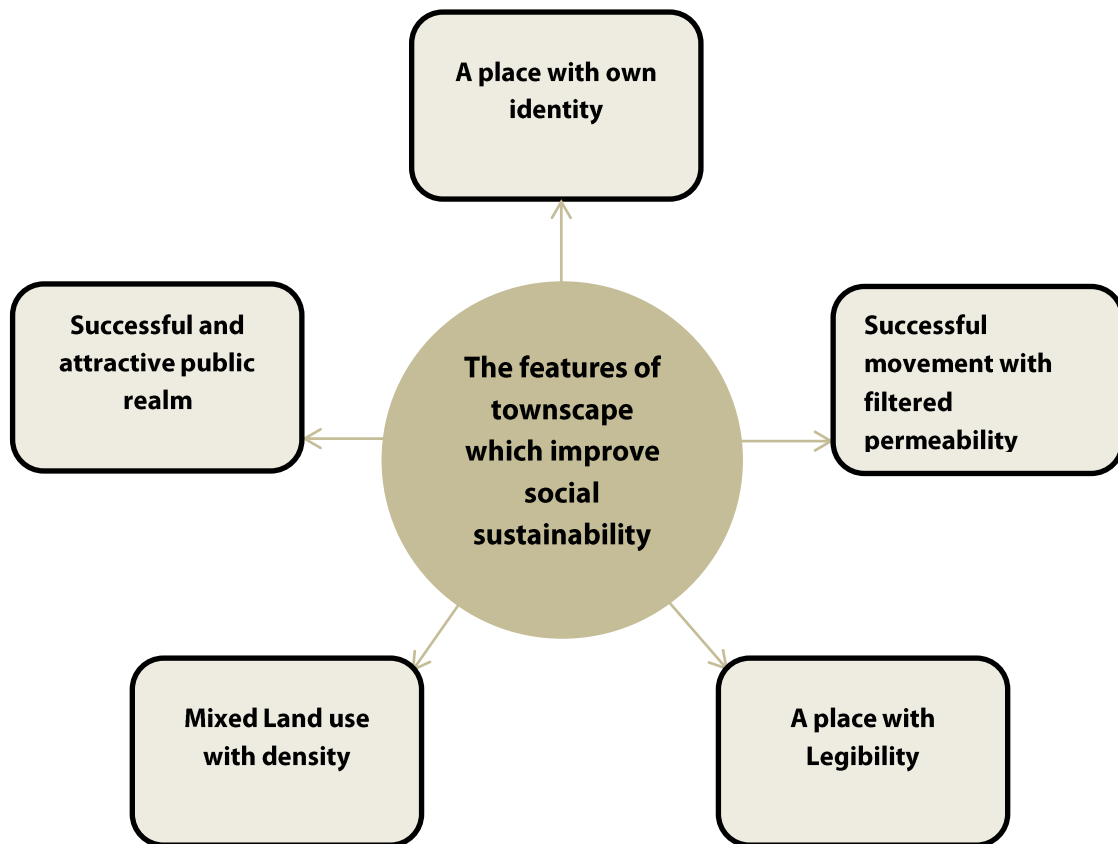


Figure 1: the features of townscape which improve social sustainability

Conclusion

This section shows that accessibility (access to employment and facilities), safety and security, sense of place and social interaction and community spirit are four key criteria of social sustainability which derive their effect from the townscape of neighbourhood. Therefore, to assess the level of social sustainability in Iranian historic neighbourhoods these four criteria of social sustainability will be scrutinised. In the second part of this section, after reviewing the literature, five features of townscape were identified. Figure 1 shows these features all of improve the standard of social sustainability in a place. For an evaluation of the level of amenability of the Iranian historic neighbourhood it is crucial to assess these five features of the historic neighbourhoods.

Although this study is rooted in an Iranian context, its main frame of reference derives from western sources about urban social sustainability simply because this approach is virtually unknown in Iranian literature and there is no comprehensive coverage of it in the context of Iranian cities. Moreover, the four key aspects of social sustainability (accessibility, safety and

security, sense of place and social interaction and community spirit) which have been chosen to assess it are strongly linked to the social function of Iranian cities. The next section will discuss the urban context of traditional Iranian cities and of contemporary cities and their social function.

2.4 Urban form and context of Iranian cities and social functions

In this section the context of urban form in traditional Iranian cities and the contemporary form of Iranian cities will be discussed. Additionally the social function of Iranian cities in both their traditional and contemporary forms will be discussed.

2.4.1 Urban form and context in traditional Iranian cities and social functions

Iranian urban planning can be divided into two periods. The first is the pre Islamic, extending from the 9th century B.C (during the empire of the Medes) to the 7th century C.E (the post-Islamic period), which started when the Arabs conquered the Sassanid Empire²³².

Before the Arab invasion there were different varieties of urban forms under the control of the ruling empire so it is hard to speak about a specific urban form and discuss its social functions²³³. But after 7th century C.E. (post Islamic period) with its combination of pre-Islamic urban forms and Islamic ideas of city planning new styles appeared. The forms were unique and distinct from the pre-Islamic cities and other areas of the Islamic world²³⁴.

This section focuses exclusively on the post-Islamic period (7th century C.E) and the term 'traditional cities' refers to the urban forms of the post-Islamic period.

The urban form of traditional Iranian cities comprises many elements such as the Bazaar, the Maidan (square), the Mosque, the Mahalleh (residential quarters), the Karavansarah (caravansary), the Hammam (public bathhouse) and the Zurkhaneh (house of strength). All which have an important cultural and social function in the city.

²³² S.M Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*, 2009; Ayyoob Sharifi and Akito Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities," *Habitat International* 38 (2013): 126–34.

²³³ Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²³⁴ Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

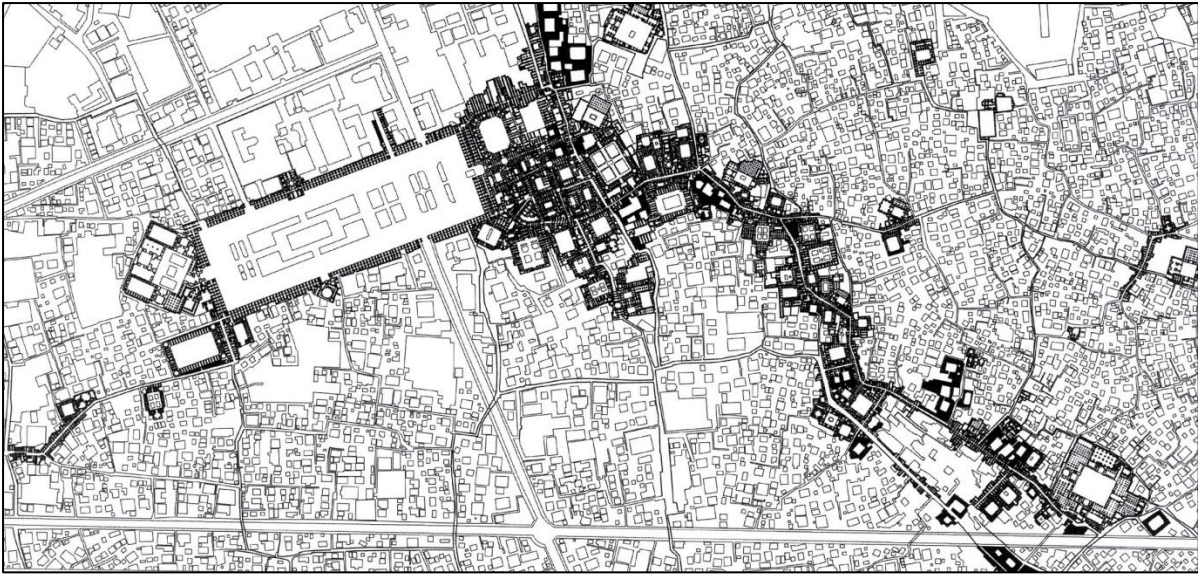


Figure 2: Structure of traditional urban form of Isfahan

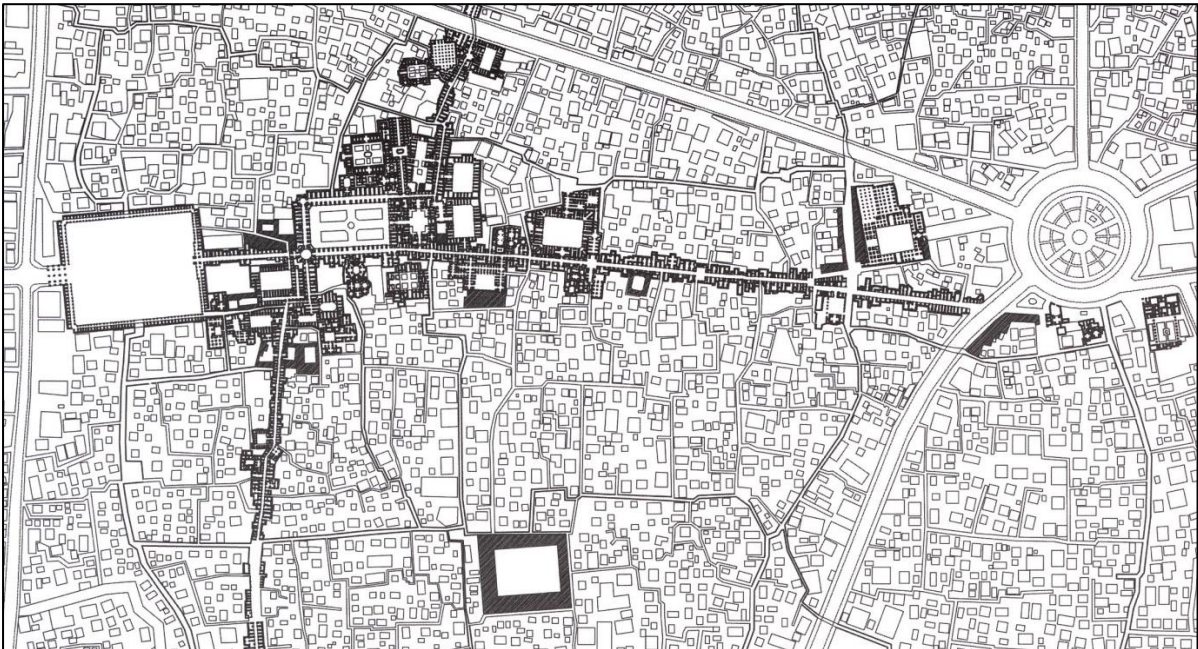


Figure 3: Structure of traditional urban form of Kerman

Bazaar:

The bazaar is the main element of traditional Iranian cities. The bazaar was originally developed to provide a commercial and manufacturing function but it has other important functions too²³⁵. The introduction of the bazaar into Iranian cities dates back to ancient Iran when the Medes and

²³⁵ Brian D. Clark and Vincent Costello, "The Urban System and Social Patterns in Iranian Cities," *Transactions of the Institute of British Geographers*, 1973, 99–128; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

Achaemenids planned their cities²³⁶. It has been characterised as the heart of the city²³⁷ and Mottahedeh calls the mosque and the bazaar the “two lungs of the city”²³⁸.

The bazaar follows the fundamental rule of joining different elements and facilitating a comprehensive urban structure. The traditional city bazaar accommodates the most intensive sorts of urban activities and provides a border between the residents of the city and outsiders²³⁹. The bazaar typically has a linear form²⁴⁰ is located in the central part of cities (expansions of the bazaar in residential areas are called Bazaarcheh), is attached to other elements such as the mosque and Mahallehs. It is also connected to all the main routes²⁴¹. The bazaar is the main feature and backbone of the Iranian city²⁴².

The bazaar is the most important spatial axis in the social life of the cities²⁴³. Adjacent to major religious institutions, government offices, courts and traditional social gathering places such as the coffee houses (Ghahvekhaneh) and public baths (Hammam); it provides facilities for most interactions along multiple social dimensions (commercial, social, political, religious, neighbourly, etc.), as well as purely economic interactions²⁴⁴. The notable activities and central position of the bazaar areas turn them into a most important public forum, attracting varied people who, in the process of managing their personal activities, exchange and listen to information, rumour, and opinions about economic conditions, family affairs, and political disputes²⁴⁵. Moreover, in their traditional association with mosques²⁴⁶, merchants have had relations with different social groups with whom they have been able to cooperate. A sense of belonging and solidarity has been

²³⁶ Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*, [From Pre City to City: A Historical Analysis of City and Its Physical Image].; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²³⁷ Arang Keshavarzian, *Bazaar and State in Iran* (Cambridge University Press New York, 2006); Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²³⁸ Keshavarzian.

²³⁹ Kayvan Karimi, “The Spatial Logic of Organic Cities in Iran and the United Kingdom,” *Proc. Space Syntax 1st Intl. Sym. London. Pp*, 1997, 1–17; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²⁴⁰ Clark and Costello, “The Urban System and Social Patterns in Iranian Cities”; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²⁴¹ Masoud Kheirabadi, *Iranian Cities: Formation and Development* (Syracuse University Press, 2000).

²⁴² Ibid.

²⁴³ F Barimani and S.A Barabadi, “بافت قدیمی شهرها جلوه فرهنگ مادی و معنوی شهرهای اسلامی: مورد بافت قدیم شهر خاف,” [Historical patterns of cities reflecting the material and spiritual aspects of Islamic cities]., *Joghrafiā Va Tose*, 2009.

²⁴⁴ Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²⁴⁵ Keshavarzian, *Bazaar and State in Iran*.

²⁴⁶ Kheirabadi, *Iranian Cities*; Keshavarzian, *Bazaar and State in Iran*; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

imbued in them by these cooperative hierarchies which intrinsically have encouraged them to trust the collective action process²⁴⁷.

The bazaar is the main social and pedestrian network of the city, through which a host of diverse public gatherings and residents have passed on a daily basis. The bazaar has also taken a vital role in the development of characteristics such as local identity, sense of community and attachment to place. These social qualities, connected to the economic and manufacturing benefits of the bazaar, have significantly contributed to the enhancement of the city's liveability²⁴⁸.



Picture 1: the main bazaar of Isfahan



Picture 2: the main bazaar of Kerman

Mosque:

After the Arab invasion, structural transformations were made to the cities in order to meet Islamic requirements. The most significant change was the introduction of community mosques (Masjed Jame), which in some cases replaced the Zoroastrian fire temples (Atashkadeh), and in others were built elsewhere²⁴⁹. The importance of the community mosque can be understood by the fact that no settlement in the early years of Islam was considered a city without having a community

²⁴⁷ Keshavarzian, *Bazaar and State in Iran*; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁴⁸ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁴⁹ Kheirabadi, *Iranian Cities*.

mosque²⁵⁰ and “the community mosque is directly connected to the other main elements of the traditional Iranian city, such as the bazaar, residential quarters (Mahalleh), square (Maidan - similar to the Roman Forum), Hammam (Public baths), Madrasah (Seminary), and Arg (Governmental Palace)”²⁵¹.

In each Mahalleh (neighbourhood) there was a mosque which worked on a neighbourhood scale and was usually located in the centre of the neighbourhood. The main difference between the community mosque and other mosques is the Friday prayer, in which all the residents of the city must take part according to the Islamic Sharia. Friday prayer is held in the community mosque because of its unique position²⁵². The primary function of the mosque is to accommodate the daily prayers but the community mosque involves more roles than that of praying. Because of its proximity to the bazaar the community mosque not only prepares an environment for people from all walks of life, irrespective of their socio-economic status, to gather together but is also a place for discussion about a variety of social, economic, and political issues, for the distribution of ideas, making important decisions for the administration of the community, and bringing people together to ask and act for major changes, such as the 1979 revolution²⁵³. The Mahalleh mosque (neighbourhood mosque) provides further social functions. It is a place for local residents to argue about problems related to their neighbourhood and cooperate to improve their quality of life²⁵⁴.



Picture 3: The Imam Mosque of Isfahan

²⁵⁰ Janet L. Abu-Lughod, “The Islamic city—Historic Myth, Islamic Essence, and Contemporary Relevance,” *International Journal of Middle East Studies* 19, no. 02 (1987): 155–76.

²⁵¹ Barimani and Barabadi, “بافت قدیمی شهرها جلوه فرهنگ مادی و معنوی شهرهای اسلامی: مورد بافت قدیم شهر خاف” [Historical patterns of cities reflecting the material and spiritual aspects of Islamic cities].”; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²⁵² Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

²⁵³ Kheirabadi, *Iranian Cities*.

²⁵⁴ Mohammed Abdullah Eben Saleh, “The Impact of Islamic and Customary Laws on Urban Form Development in Southwestern Saudi Arabia,” *Habitat International* 22, no. 4 (1998): 537–56; Sharifi and Murayama, “Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities.”

Mahalleh (residential quarters or neighbourhood)

The residential quarters or residential neighbourhood are called Mahalleh in traditional Iranian cities there were several Mahallah. People of similar ethnic and religious backgrounds gathered together in their own quarter²⁵⁵. Each quarter had its own religious place, Hammam (public bath), Bazaarcheh (the extension of the bazaar inside the neighbourhood), and other facilities, making the neighbourhood self-contained²⁵⁶. There was a hierarchy of alleys and they get narrower as get away from the bazaar²⁵⁷. These labyrinthine ways were occasionally covered to give the residents more security against the horse-riding invaders, in case the walls were broken²⁵⁸. The neighbourhoods were designed to meet human requirements and increased the ordinary interaction between people. The spaces in the end of impasses were used by the group of households as a gathering place for housewives and a playground for their children²⁵⁹.

The majority of services were provided by the neighbourhood or community leaders and each neighbourhood of the city was responsible for its own well-being, and achieved it through communal action²⁶⁰. Because of strong associations and religious ties, the social cohesion and sense of unity were high in traditional Iranian neighbourhoods²⁶¹.

Before modernization of Iranian cities (roughly before 1933) sense of responsibility was really high among the residents of a neighbourhood because Islamic teaching emphasizes the importance of social relationships and the need to help poor and vulnerable people²⁶².

In most neighbourhoods the rich and poor lived in the same area, sometimes next door to each other and the more fortunate had a duty to support the less fortunate. As a result, social and economic segregation was really low in traditional Iranian cities because of these characteristics. The residential neighbourhoods were socially cohesive, and the sense of community and local identity among the residents were in good condition²⁶³.

²⁵⁵ Kheirabadi, *Iranian Cities*.

²⁵⁶ Barimani and Barabadi, "بافت قدیمی شهرها جلوه فرهنگ مادی و معنوی شهرهای اسلامی: مورد بافت قدیم شهر خاف" [Historical patterns of cities reflecting the material and spiritual aspects of Islamic cities]."

²⁵⁷ E Shieh, *با شهر و منطقه در ایران* [City and Region in Iran]. Tehran., 2009.

²⁵⁸ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁵⁹ Ibid.

²⁶⁰ Kheirabadi, *Iranian Cities*.

²⁶¹ Pourahmad and Moosavi, "ماهیت اجتماعات شهری" [Social Nature of Islamic cities]. Fasnameye Motaleate Shahrhaye Irani Eslami, 1,".

²⁶² Vincent J. Cornell, "Safi, O, Islamic Modernism and the Challenge of Freedom," in *Voices of Islam: Voices of Change*, vol. 5 (Greenwood Publishing Group, 2007); Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁶³ Kheirabadi, *Iranian Cities*.

Maidan (public square)

The Maidan, which was created in the pre-Islamic period, is a large public square located either at the centre of the city or near the gates²⁶⁴. There were also smaller Maidans which were in the centre of residential neighbourhoods. In many cities a large Maidan is connected to the major bazaar and to the community mosque²⁶⁵. The Maidan is also part of the main city structure like other major elements of the urban form and constitutes an integrated urban structure. The Maidan provides the space for relaxation and social interaction²⁶⁶. Also the greenery in the Maidans is a vital element for human health. Being open to everyone, the Maidan makes possible the encounter and socialization of residents with different socio-economic backgrounds. Another function of the Maidans includes serving as gathering places during major religious, political, or sociocultural events²⁶⁷.

²⁶⁴ Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*, [From Pre City to City: A Historical Analysis of City and Its Physical Image].

²⁶⁵ Ibid.

²⁶⁶ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁶⁷ Kheirabadi, *Iranian Cities*.



Picture 4: From Naghsh-e-Jahan Square (Constructed between 1598 and 1629, it is now an important historical site, and one of UNESCO's World Heritage Sites. It is 160 meters wide by 508 meters long, an area of 89,600 m²)²⁶⁸



Picture 5: From Meidan Ganj Ali Khan(The Ganjali Khan Complex was built by Ganjali Khan who governed Kerman, Sistan and Kandahar provinces from 1596 to 1621 under Safavid Shah Abbas)²⁶⁹

Zurkhanah (Traditional gymnasiums)

The traditional Iranian gymnasiums are called Zurkhanas. This feature originated in pre-Islamic times²⁷⁰. They are not only places for physical exercise but in the past were centres for political and social activities²⁷¹. Along with Zoroastrian teaching, which was later supported in the Islamic period, spiritual health is a function of physical health and therefore it is necessary for each person to have physical exercise²⁷². Furthermore, a good social reputation was essential for admission to the the Zurkhanah and the person had to be a selected member of the community. Those attending the Zurkhanah could be awarded the Pahlavan title, which required a combination of qualities expected of an ideal person, especially, justice, courage, courtesy and the disposition to help the weak and vulnerable²⁷³.

²⁶⁸ "Imam Square - Great Public Spaces | Project for Public Spaces (PPS)," n.d., http://www.pps.org/great_public_spaces/one?public_place_id=672.

²⁶⁹ "Panoramio - Photos by Mauro - Iran 2013," n.d., http://www.panoramio.com/user/7705189?comment_page=1&photo_page=49.

²⁷⁰ Kheirabadi, *Iranian Cities*.

²⁷¹ M Goudarzi, "سیر تواتر ورزش باستانی و زورخانه در ایران." [Evolution of Ancient Sports in Iran].," *Harekat*, 22, 2005; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁷² Goudarzi, "سیر تواتر ورزش باستانی و زورخانه در ایران." [Evolution of Ancient Sports in Iran]."; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁷³ Kheirabadi, *Iranian Cities*.



Picture 6: traditional picture of Zurkhanah²⁷⁴

Hammam (Public Bathhouse)

The Hammam is another important social gathering place in the traditional city (public bath)²⁷⁵. This is a place for health and social contact where people go to bathe, have a massage, shave, and converse. They are found in all the traditional cities of the Islamic world²⁷⁶. Typically there is a Hammam close to each important mosque, and each neighbourhood has its own Hammam. People often spend hours in the Hammam for psychological relaxation and to socialize and talk about daily life issues²⁷⁷.

Taking this section into account, we can say that the form of traditional Iranian cities contains many elements which are significantly responsive to social function.

As elaborated under each of the above-mentioned sub-sections, an assessment of traditional Iranian cities against these criteria indicates that they have, to a large extent, been successful in addressing social sustainability concerns. The only issue that raises anxieties about the social sustainability of traditional Iranian cities is the fact that mahallehs, although not walled off from each other, have conventionally been segregated, based on religious or ethnic origins. It can generally be said, however, that in the past cities have performed reasonably well against the social sustainability criteria.

²⁷⁴ "Photo Courtesy of EZATOLLAH KARIMI," n.d.,

<http://www.thestar.com.my/Story/?file=%2F2006%2F11%2F19%2F1ifetravel%2F15416387>.

²⁷⁵ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁷⁶ Kheirabadi, *Iranian Cities*.

²⁷⁷ Ibid.



Picture 7: the public paths (KermanThe Ganjali Khan Hammam was built by Ganjali Khan who governed Kerman, Sistan and Kandahar provinces from 1596 to 1621 under Safavid Shah Abbas)²⁷⁸

²⁷⁸ "Ganj Ali Khan Bath Photo - Ali Majdfar," n.d., <http://www.pbase.com/image/120393039>.

2.4.2 Significant changes in urban form and influence on social functions in Iranian cities

Iranian society was affected by major economic, social, cultural and political transformations because of Reza Shah's modernization programme (roughly after 1930) and this had a significant influence on Iranian life. European experts have been employed to plan modern Iran and for this reason the improvement plans had an exogenous basis. The Reza Shah urban modernization was started with the introduction of renewal programmes, from Rasht in the north to Bandar Abbas in the south²⁷⁹. Without any attention to historical growth patterns or observance of native cultural values the principles of urban renewal were applied for the majority parts²⁸⁰. The urban image main changes started with the creating of street systems to provide spaces for the driving needs of society after the arrival of the automobile. Street widening began in 1933 after the passing of the Municipalities law of 1930. The old urban fabric was torn by the networks of axial streets²⁸¹. This phenomenon started in Tehran and spread across the country, and ever since, Tehran's model of urban development has been applied to other cities²⁸². These new developments caused the urban structure to lose its integrity. Consequently, the main elements of the traditional city started to fragment and gradually lose their function and efficiency. Detached and, in some cases, isolated by the newly built boulevards, the bazaar was no more the main commercial axis of the city. A new feature called the Passage (shopping mall) was introduced into the urban structure which became an additional threat to the survival of the bazaar. Inaccessibility to motor vehicles was another main reason for the decline of the bazaars²⁸³. Many retailers left the bazaar because they wanted to be located along the newly-built boulevards. Social functions diminished in the new shopping areas because they were mainly stopping points for commercial purposes. The Maidan (town square) was forgotten, so the new urban plan lacked a Maidan (town square). There is no public space in the new urban pattern with a traditional town square function.

²⁷⁹ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁸⁰ Ibid.

²⁸¹ Habibi, *از شار تا شهر: تحلیل تاریخی از مفاهیم شهر و سیمای کالبدی یک تفکر و تصور*, [From Pre City to City: A Historical Analysis of City and Its Physical Image].

²⁸² Ibid.

²⁸³ Shieh, *یا شهر و منطقه در ایران*, [City and Region in Iran]. Tehran.

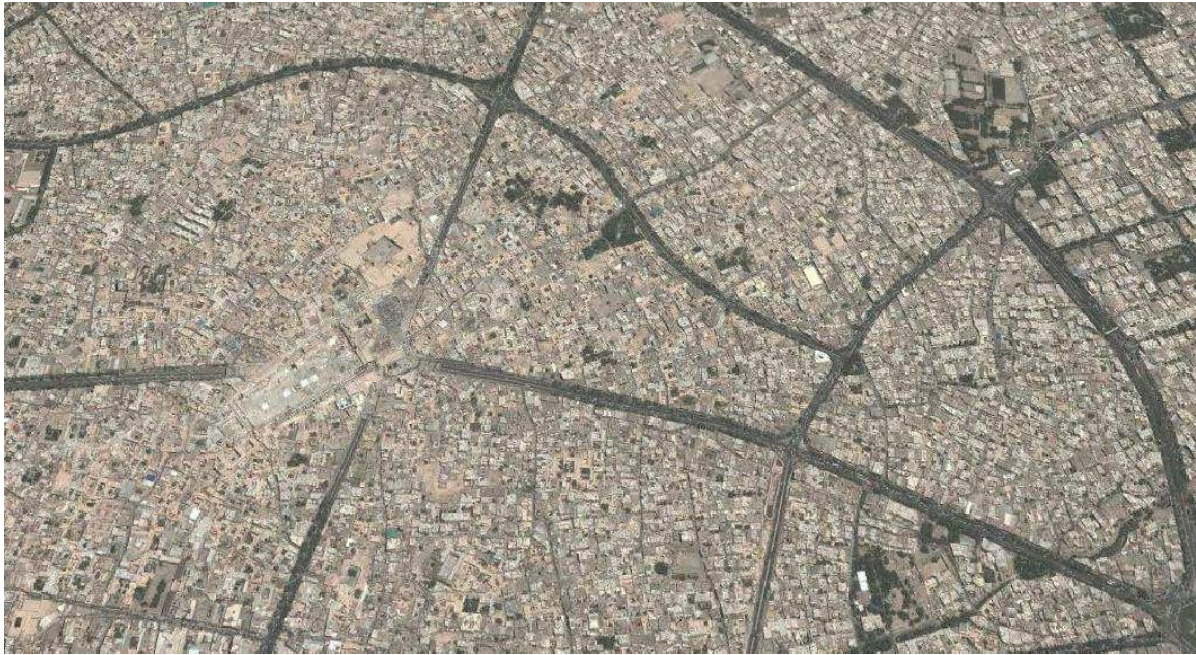


Figure 4: the urban pattern of Isfahan which shows the phenomenon of cutting the historic pattern by a new layout of streets in the Pahlavi period (from google map)

In traditional cities neighbourhoods merged with each other but in the contemporary city there are no combined or integrated neighbourhoods²⁸⁴. The historic neighbourhood structure was torn apart by the newly-constructed streets and the newly-developed neighbourhoods were developed according to the grid pattern. The fundamental elements of traditional neighbourhoods, which were described in the previous section, have been lost. The neighbourhoods are not self-contained urban elements anymore and the neighbourhoods' social structure has started to change²⁸⁵. In the new neighbourhood, spatial segregation, based on ethnicity and religion, disappeared, but the new neighbourhoods became segregated in accordance with economic status and this phenomenon was the initial point for the socio-economic polarization of Iranian cities that continues until now²⁸⁶. In the new neighbourhood system, the activity areas are separated from the communities therefore the residents spend much less time in their locality and this has influenced social relations among the local population.

²⁸⁴ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁸⁵ Ibid.

²⁸⁶ Ali Madanipour, "Urban Planning and Development in Tehran," *Cities* 23, no. 6 (2006): 433–38; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

The sense of attachment to the traditional quarter is significantly low and current neighbourhoods are experiencing a high rate of turnover²⁸⁷. Cities are heavily car-oriented and lacking in sufficient open and public spaces for socialization and recreation, and the neighbourhoods are fragmented by street networks. As a result, Iranian cities have lost their unity and integrity²⁸⁸.

In traditional cities pathways were designed with pedestrian needs in mind and with some consideration for the principles of environmental comfort. Currently, streetscapes have been built for cars and priority is given to transportation, therefore streets are unsafe for pedestrians²⁸⁹. In the traditional cities urban planning was developed in a way that generated outdoor spaces. These spaces were relatively protected from harsh weather conditions, but in the new urban developments these values are not reflected and uniform countrywide dimensions are used in every city with no attention to local conditions²⁹⁰. In the new street patterns, principles of hierarchy are also not considered and this has reduced the hierarchical arrangement in public and private spaces. A combination of these issues has changed the street's function as a pedestrian-friendly environment which is appropriate for socializing, playing, and casual encounters²⁹¹.

The authority of the mosque in Iranian cities significantly decreased after modernization. Three factors caused the decline in the functions of the Mosques. Firstly, the partitions in the traditional urban design and structure disconnected it from its supplementary elements such as the bazaar, hammam (public baths), and religious school. The second important reason was that the community was gradually secularized²⁹² and attending to mosque also substantially declined²⁹³. Finally, the complementary elements of the Mosques lost their function. The traditional educational system was downgraded (with the exception of religious schools) after the

²⁸⁷ Shieh, *با شهر و منطقه در ایران* [City and Region in Iran]. Tehran.; Esmail Shieh, Ayyoob Sharifi, and Mojtaba Rafieian, "Identification of Factors That Assure Quality of Residential Environments, Using Environmental Assessment Indices: A Comparative Study of Two of Tehran's Neighborhoods (Zafaranih & Khaniabad)," *International Journal of Architectural Engineering & Urban Planning* 21, no. 2 (2011); Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁸⁸ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁸⁹ Ibid.

²⁹⁰ Ibid.

²⁹¹ Ibid.

²⁹² Farhad Khosrokhavar, "The New Religiosity in Iran," *Social Compass* 54, no. 3 (2007): 453–63.

²⁹³ Gunes Murat Tezcur, Taghi Azadarmaki, and Mehri Bahar, "Religious Participation among Muslims: Iranian Exceptionalism," *Critique: Critical Middle Eastern Studies* 15, no. 3 (2006): 217–32.

appearance of secular schools and higher education institutes. The Hammās (public paths) also lost their attraction after Iranian houses were equipped with bathrooms²⁹⁴.

The Zurkhanais is another social element that was affected by the strong changes in the social, cultural, economic, and political structures of contemporary Iranian society and there was a fundamental change in people's thinking and behaviour. These transformations ensured that the Zurkhana did not follow its own course and nowadays it is mainly considered a historical heritage²⁹⁵.

Besides the physical changes, one important factor influenced the social, economic and cultural conditions of the cities. The increasing migration from rural to urban locations which was begun during the Mohammad Reza Shah's land reforms of the 1960's, released significant numbers of the rural population from agriculture, and the Iran-Iraq war that forced the residents of the war-affected areas to migrate to other cities where they could purchase land to build their own homes in accordance with the Urban Land Act of 1987. These new settlers were mainly attracted to the informal sector and the consumer-oriented industries²⁹⁶. These newcomers have led to many problems. Iranian cities suffer from a lack of social cohesion polarization. The rate of unemployment is high and many people are involved in informal business activities. In 2006, 10.5 percent of the urban population was living in slums or informal settlements²⁹⁷. Urban neighbourhoods are also coping with diverse other problems such as, housing, water supply, traffic jams, security, health, etc. These differences and gaps in the community have boosted the crime rate, caused a sense of insecurity, weakened community relationships, reduced the sense of mutual trust, and produced a resistance to civic participation²⁹⁸.

²⁹⁴ Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁹⁵ A Bulukbashi, "نقش و کارکرد اجتماعات زورخانه در جامعه سنتی ایران," *Hafiz*, 9, 2004; Sharifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

²⁹⁶ Madanipour, "Urban Planning and Development in Tehran."

²⁹⁷ SCI, "The National Population and Housing Census. Statistical Center of Iran," 2006.

²⁹⁸ Lamyā Rostami Tabrizi and Ali Madanipour, "Crime and the City: Domestic Burglary and the Built Environment in Tehran," *Habitat International* 30, no. 4 (2006): 932–44.

Conclusion

The following advantages emphasize the most vital features of traditional cities. These features are useable as lessons learned from the traditional urban form of Iranian cities to improve the situations of contemporary cities²⁹⁹:

- Integrity of urban structure:
- Centrality of Mahalleh (neighbourhood):
- Cohesive role of bazaar:
- Hierarchy of path networks:
- Context-sensitivity of urban design

Additionally, the following disadvantages of the contemporary form of Iranian cities influence social function.

- Destroying centrality of Mahallaeh (neighbourhood)
- Fragment structure and elements
- Significant decline the role of mosques
- Lack of hierarchy in street network
- Car-orientated network and unfriendly environment for pedestrians
- Lack of sufficient open and public spaces
- The historic neighbourhood structure of street networks ruined, destroying the permeability of the neighbourhoods
- Lack of integration between neighbourhoods

²⁹⁹ Harifi and Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities."

2.5 Conclusion

The first chapter gave us a brief definition of sustainable development and indicated when sustainability started to be a specific topic in most arguments and discussions. In this section after describing the main pillar of sustainability (economic, environmental and social) we focused on social sustainability. Different definitions are highlighted for social sustainability (table 2 shows the definitions from different authors). The key words of this study are 'social sustainability, neighbourhood and townscape, therefore, the second section of the literature review provides us with many definitions of the neighbourhood concept and townscape characters and with many studies about urban structure and sustainability, and it identifies the compact city with mixed land use as the accepted and most sustainable form among the majority of the arguments. Urban social sustainability is another topic which is discussed in the literature review as well as how urban form affects social sustainability. Following this discussion, the high and low density of the city environment as the two main examples of urban form are debated and finally density is identified as the most amenable form for social sustainability. As the framework of this study, accessibility (access to employment, facilities and public transport), safety and security, sense of place, social interaction and community spirit are identified as the criteria of social sustainability that take account of townscape features and need to be accessed for this research. We also pinpoint five features of townscape that improve social sustainability. These features are: a place with identity, a successful public realm, successful movement with filtered permeability, a place with legibility, and mixed-land use with density. We need to assess these five features to evaluate the townscape of Iranian historic neighbourhoods. In the final section of the literature review we consider the traditional townscape of Iranian cities and the contemporary layout. This part highlights the advantages of traditional urban models and the declining social function of contemporary Iranian cities.

CHAPTER 3: RESEARCH METHODOLOGY

Introduction

This chapter attempts to highlight the designed methodology of the research after reviewing the research questions and is going to explain, firstly, the reasons for choosing case study method as research and following this it will be explained that mixed research method of quantitative and qualitative methodologies will be used in this study. Secondly, the details and processes of the methodology will be in three stages of data collection, analysis and evaluation.

3.1 Reviewing the Research Questions

This research aims to provide a greater view and develop a better understanding of social life condition in Iranian cities historic neighbourhoods and also helps to create a model to achieve design solutions for social sustainability in Iranian cities historic neighbourhoods.

The main questions addressed in this study are:

Q1) Are the historic neighbourhoods of Iranian cities with traditional urban forms socially sustainable?

- Identifying the criteria for social sustainability which are most relevant to townscape design and urban forms on the neighbourhood scale.
- Assessing the criteria for the social sustainability of resident's feeling in historic neighbourhoods.

By interviewing a large sample of three different groups of local residents from different sex groups (see section 3.2.3.1.1), this study will evaluate the social sustainability level in the case study.

Q2) Are townscapes of historic neighbourhoods in Iranian cities amenable to social sustainability?

- Reviewing the literature and identifying the features of the neighbourhood townscape that improves or creates social sustainability.
- Appraisal of the features of the historic neighbourhoods' townscape to find the level of amenability of the features to social sustainability.

The researcher will use walking strategy to collect the qualitative visual data (pictures) for an evaluation of the level of amenability of townscape in the case study.

Q3) How can social sustainability be improved in the historic neighbourhoods of Iranian cities?

- Identifying the current opportunities and constraints of the townscape of historic quarters
- Recommending solutions after identifying the opportunities and constraints in the features of urban constructions

By reviewing the results of the evaluation of the elements of townscape the researcher will be able to identify the opportunities and constraints relating to every element.

Following this identification, the researcher will be able to recommend the guidelines for each element and this study will finally be in a position to implement the design solutions for improving social sustainability in the case study.

3.2 Case Study Method

Researcher Robert K. Yin defines “the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”³⁰⁰. The case study method allows a researcher to directly investigate the data within a specific context. In the majority of cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study³⁰¹. Case studies, in their true essence, explore and examine real contemporary phenomena through detailed contextual analysis of a restricted number of events or conditions, and their relationships³⁰².

Case study research brings us an understanding of a complex issue or object and can expand experience or add strength to what is already known through previous research. “Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships. Researchers have used the case study research method for many years across a variety of disciplines. Social scientists, in particular, have made wide use of this qualitative research method to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods”³⁰³.

³⁰⁰ Robert K. Yin, *Case Study Research: Design and Methods*, vol. 5 (Sage, 1984). Page 23

³⁰¹ Zaidah Zainal, “Case Study as a Research Method,” *Jurnal Kemanusiaan*, no. 9 (June 2007): 1–6.

³⁰² Ibid.

³⁰³ Susan K Soy, “The Case Study as a Research Method,” Unpublished paper, (1997), Page1
<<https://www.ischool.utexas.edu/~ssoy/usesusers/l391d1b.htm>>.

3.2.1 Case Study Chosen

This study aims to assess and find design solutions to improve social sustainability in Iranian historic neighbourhoods. Therefore, after studying many such locations in different cities, a historic neighbourhood in Isfahan was finally chosen. Isfahan is one of the most important historic cities in Iran and in this study the Juibareh neighbourhood was selected as the case study of this research. Juibareh is one of the most important quarters of Isfahan. Juibareh's origin is associated with the Archaemenids period and the immigration of the Jews of Babylon, according to the Kourosh order. The Jews had been residing there until the 5th century A.D and at that time it was called Darolyahood but thereafter it was named Jahanbareh and Juibareh. Below we explain the main reasons for choosing Juibareh as a case study:

- A historic neighbourhood which was sustainable for a long time but is now in decline
- Juibareh is located in one of the most historic cities and enjoys the prime position compared with other Iranian cities because of its maintenance of the historic sites and buildings.
- Isfahan is visited by more tourists than any other city in Iran
- High density traditional urban form
- Connection to the main historic axis of Isfahan
- location in a historic city
- The main core of Isfahan and the oldest part of the city is still alive
- Decline of social function in most Iranian historic neighbourhoods and this quarter is a good example of this phenomenon.
- Immigration original stakeholders from this neighbourhood
- Many significant and exciting historic buildings in this area
- Connection with the most visited historic parts of Isfahan while this area does not have tourist visitors.
- Although many people have moved from this area, it still has good potential to be a successful place to live in because of its location in the city.
- Unattractive to live in for the younger generation
- Increasing quality of life in historic sectors

3.2.2 Mixed research methods for Looking at the Case study

Mixed methods research has been established as a third methodological movement over the past twenty years, complementing the existing traditions of quantitative and qualitative movements³⁰⁴.

"Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical opinions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone"³⁰⁵.

Mixed method studies attempt to bring together methods from different paradigms. This kind of integration of qualitative and quantitative methods is also sometimes referred to as multi-strategy research.

Multi-method studies use different ways of data collection and analysis within a single research paradigm. For example, you might conduct a qualitative study in which you observe a place and also interview people. In this study the combination of structured interview as a quantitative method and observation of the place, as well as the use of qualitative data and methods, is employed as a research methodology.

3.2.2.1 Quantitative method

Aliaga and Gunderson (2000)³⁰⁶ defined "quantitative research as explaining phenomena by collecting numerical data that are analysed using mathematically-based methods (in particular statistics)".

Quantitative research is that which uses numerical analysis. In essence, this method converts the data into numbers. The researcher knows beforehand what he/she is looking for and all the features of the study are carefully created before the data is collected. The aim of quantitative research is to develop and use mathematical models, theories or hypotheses affecting the

³⁰⁴ Abbas Tashakkori and Charles Teddlie, *Handbook of Mixed Methods in Social & Behavioral Research* (Sage, 2003).

³⁰⁵ John W. Creswell and Vicki L. Plano Clark, "UNDERSTANDING MIXED METHODS RESEARCH," in *Designing and Conducting Mixed Methods Research* (Wiley Online Library, 2007). Page 5

³⁰⁶ Martha Aliaga and Brenda Gunderson, *Interactive Statistics* (Prentice Hall, 2000).

phenomena³⁰⁷. This kind of method is a specific phenomenon as particular questions seem to be answered immediately using quantitative methods.

The greatest advantage of quantitative research is that it gives quantifiable, reliable data that are normally generalizable to the higher population. In quantitative analysis researchers allow the testing of particular hypotheses, as opposed to qualitative research, which is more heuristic³⁰⁸.

The greatest disadvantage of the quantitative method is that it decontextualizes human behaviour in a way that does not consider the event from its real-world situation and ignores the effects of variables that have not been comprised in the model. This method also lacks the depth and richness of data that is present with qualitative research. Because there are so many participants using quantitative methods, it is impossible to know the details about each and every one³⁰⁹.

In this study we wanted to question many people from different groups and religions therefore the qualitative method was chosen to interview the local residents.

3.2.2.2 Qualitative Method

“Qualitative research is empirical research where the data are not in the form of numbers”³¹⁰. Qualitative researchers study objects in their natural settings, trying to make sense of phenomena or interpret them, in terms of the meanings people bring to them. The qualitative method comprises the studied use and collection of a variety of empirical materials such as the case study, interview, observation, personal experience, introspection, life story, historical, interaction, and visual texts that explain routine and problematic moments and meanings in individuals' lives. Accordingly, qualitative researchers use a wide range of interrelated methods, wanting always to get a better fix on the subject matter at hand³¹¹.

Qualitative research, based on a philosophical premise, is generally interpretative, that is, it is concerned with how the social world is experienced, understood, interpreted or produced. On the basis of the data generation of this method, which is flexible and sensitive to the social context in which it is created (instead of being strictly standardized, structured, or eliminated from real life) and based on methods of analysis and explanation which involve perceptions of complexity, detail and context. The aims of qualitative research are to produce rounded understandings by means of

³⁰⁷ Margaret L. Andersen and Howard Francis Taylor, *Sociology: The Essentials* (CengageBrain. com, 2007).

³⁰⁸ Ibid.

³⁰⁹ Ibid.

³¹⁰ Keith F. Punch, *Introduction to Social Research: Quantitative and Qualitative Approaches* (Sage, 1998). Page 4

³¹¹ Norman Kent Denzin and Yvonna Sessions Lincoln, *The Sage Handbook of Qualitative Research* (Sage, 1994). Page 2

rich, contextual and detailed data. Qualitative research usually uses some type of quantification, but statistical styles of analysis are not seen as main³¹².

Qualitative research mainly works with two sorts of data. Verbal data are collected in semi-structured interviews or as narratives. Visual data result from applying the various observational methods, ranging from participant and non-participant observation and analysing photos and films³¹³. In this study the qualitative data are visual data, therefore, in the next section we will review the different literature about visual methods. In this study the qualitative method will be employed to assess the urban form and physical context features of the neighbourhood and in continue we will explain more about the method of collection, analysis and interpretation which will be used in this research.

3.2.2.2.1 Visual method

Vision refers to what the human eye is physiologically able of seeing. On the other hand, vision is conceived in a variety of ways: how we see, how we are able, allowed, or made to see, how we see this seeing and unseeing. The visual is the most fundamental of all the senses³¹⁴.

Visual research is related to the organization, production and interpretation of imagery. Analytical perspectives include sociology, media studies, psychology and cultural geography. The visual method is used to study a variety of topics ranging from gender studies, community and power to spatial relationships, and spectatorship. Visual studies have taken a particularly meaningful role in educational research in the last three decades. One of the strengths of visual research is the use of technology to slow down and repeat observations and encourage deeper reflection on perception and meaning³¹⁵. "This is important since visual acuity questions the connotation, denotation and significance of observations that are too often taken for granted"³¹⁶.

Visual images and technologies such as video, film, photography, art, drawing and sculpture produce and signify knowledge in qualitative social research. This includes using the visual as a documenting tool to produce visual records.

³¹² Jennifer Mason, *Qualitative Researching* (Sage, 1996). Page 4

³¹³ Uwe Flick, *An Introduction to Qualitative Research* (SAGE, 1998). Page 11-12

³¹⁴ Gillian Rose, *Visual Methodologies: An Introduction to Researching with Visual Materials* (SAGE, 2012).

³¹⁵ Raymond Patrick McDermott, *Kids Make Sense: An Ethnographic Account of the Interactional Management of Success and Failure in One First-Grade Classroom* (Department of Anthropology, Stanford University, 1977).

³¹⁶ Jon Prosser, "Visual Methods and the Visual Culture of Schools," *Visual Studies* 22, no. 1 (2007): 13–30.

3.2.3 Data Collection techniques

This section describes the two different kinds of data collection of this study. This study has quantitative and qualitative data and for both we will use two different data collection techniques. The following two sections will describe the data collection methods.

3.2.3.1 Structured interview

The structured interview is a quantitative research method. The objective is to ensure that each interview is organized with precisely the same questions and the same instructions. This ensures that the responses can be reliably collected and that comparisons can be made with confidence between sample subgroups or between various sessions.

The aim of the structured interview is that of gathering data from large samples so as to ensure consistency of responses. A structured method is premised on the view that the meanings and assumptions underlying the questions will be clear and understood by the respondents. This approach lacks the free flow of a friendly conversation (as in an unstructured Interview) but it delivers the accuracy and reliability required in certain circumstances. Fixed format interview prepared in advance are put in the same order to each interviewee³¹⁷.

The strengths of a structured interview are that:³¹⁸

- The researchers allow for the assessing of the level of understanding a respondent has about a specific topic.
- This type of research method is easy to arrange or regulate.
- It can be used as a powerful form of foundational assessment and can be used to discover how an interviewee feels about a particular topic.
- This method is easy to perform for a large sample of people. It should also be fairly easy to simplify your findings from the sample to the general population.
- The interviewees are asked the same question using the same method. This makes it easy to repeat.
- This method delivers a reliable source of quantitative data

The weaknesses of a structured interview are that:³¹⁹

- It can be time-consuming in large samples because the researcher needs to attend for each interview

³¹⁷ Lee Bryant, "Structured Interviews," Page 1,

³¹⁸ Ibid.

³¹⁹ Ibid.

- It is dependent on the quality of the questions, so the data must be reliable. The questions must not change and must all continue the same.
- A comprehensive pre-plan is necessary.
- It is difficult for the researcher to examine complicated issues and opinions. Even where flexible questions are used.

This method is usually quite reliable, for example, an interview can be easily repeated. However, this will depend on the type and delivery.

The majority of interview questions seek to elicit information about attitudes and opinions, perspectives and meanings, the very stuff of much of both psychology and sociology. Interviews are also in common use as a means of selection and are a powerful means of obtaining information and gaining insights. As a result, they are widely used.

The structured interview has been chosen in this research because we want to know the feelings of the local residents about the level of social sustainability and it is important to interview many local residents because the diverse nature of the people living in the area. The results of a large number of respondents are more reliable than those of a small number of residents and with more perceptive answers.

Four aspects of social sustainability: accessibility, safety and security, sense of place and social interaction and community spirit were described in section 2.3.1.1. These factors will be assessed by a structured interview which comprises four sections. In each section there are many questions about specific criteria. In section 3.2.1.3 we will explain how we want to analyse our structured interviews.

3.2.3.1.1 Interviews Implementation

It has been established that the structured interview has been chosen as a data collection method for the quantitative data. This section will give some brief descriptions of the process of interview implementation related to the interview structure, the choosing of interviewees, the interview process, the translation of interviews and certain ethical considerations.

- **Interview's structure**

Each structured interview in this research contains six sections and each section comprises many questions. Below we describe the interview's sections and questions.

1. In the first section we deal with **sex, age, religion, nationality, occupation** and **name**, if he/she prefers. There is a question in section one about the length of residency but

we only interviewed people who had been living in this area for two years or more. In next section we will discuss why we only chose people who had been living in this area for more than two years.

2. The second section of the interview aims to assess *the views of local area*. In this section there are three sub-sections and seven questions.
3. The third section of the interview aims to assess *Accessibility* (access to employment, facilities and amenities). In this section there are three sub-sections and eight questions
4. The fourth section of the interview seeks to assess *safety and security*. There are eight sub-sections and sixteen questions.
5. The fifth section concerns the assessment of the sense of place. There are two sub-sections and seven questions.
6. The sixth section attempts to assess *social interaction and community spirit*. There are three sub-sections and eleven questions.

- **Choosing interviewees**

Different groups of people are living in this area: Jews, foreign nationality workers and Moslem Shiah residents form three such groups. Almost 10% of Iranian Jews, 10% of Afghani Soni and 80% of Iranian Shiah are living here. In this study 60 people will be interviewed. We classify people into two groups: those less than 40 years of age and those older than 40 years. Also half of these local residents who will be interviewed are women. The religious classification of this research consists of 12 Jews, 12 Afghani and 36 Siah. The interview will be conducted by a researcher and a female partner for women. The interviewees are the local residents of the neighbourhood (case study) and an attempt is made to interview people from all parts of the neighbourhood. Those to be interviewed also need to be residents for more than two years because a tenancy of two years or less would not support sustainable communities. There is no motivation for the occupants to invest in their homes and communities if their residency or tenancy is only two years or less³²⁰. Generally speaking, neighbourhoods and communities would be broken up if the number of short-term residencies increased³²¹.

³²⁰ Abigail Davies, "Shaping Housing and Community Agendas, CIH Localism Bill Briefing Report Stage," 2011,

³²¹ Ibid.

Interviewees	Male older than 40 years old	Male between 20 to 40 years old	Female older than 40 years old	Female between 20 to 40 years old
Jews residents with more than 2 years' residency	3	3	3	3
Afghani nationality residents with more than 2 years' residency	3	3	3	3
Shiah Moslem residents with more than 2 years' residency	9	9	9	9
Total number of interviewees	15	15	15	15

Table 6: the numbers and different groups of the residents who will be interviewed

- **Interview's process**

In this study sixty participants from among the local residents of the neighbourhood will be chosen. This study has female interviewees; therefore, the researcher will need to bring a female partner to interview the female groups of interviewees. All the male interviewees will be interviewed by the researcher. In order to find suitable interviewees the researcher will firstly try to interview people who walk, work or gather in the main parts of the neighbourhood. It is not possible to find enough interviewees with this method because this study aims to interview a large number of the residents who have lived in the area for two years or more. Thus, the researcher will try to find acceptable interviewees by knocking on the doors of residential property in the neighbourhood. The researcher will try to approach the people who walk, work or gather in the main areas and will enquire if they are residents of the neighbourhood. If the person is female the researcher's partner will ask this question. After finding that the person is a resident, he/she will be asked how long they have been living there. We will continue the interview if he/she answers "Two years or more". At the next stage the researcher will introduce himself to the interviewee and will give him a one- sided information sheet. The information sheet will contain the research aims and explain why this participant is needed, to what extent he/she can be useful, and the researcher's contact information. We predict that every interview takes 45 minutes and we promise that we will not take any photo of the interviewees during the interview and will not record his/her voice.

- **Translation interviews**

This study is in the English language so the interview provided will be in English, but the case study concerns an Iranian historic neighbourhood, therefore a translated version from English into Farsi will also be provided. After finishing the interviews they will be translated again from Farsi into English because all the subsequent steps (analysing and interpreting) data need to be in English.

- **Ethical considerations**

For this study ethical approval will be provided by the researcher through the University of Sheffield. It is necessary before starting the interview that the interviewees be informed verbally that this interview is completely voluntary and he/she can leave the interview at any stage and also that they are not obliged to answer any questions they do not like. They will also be informed that during the interview we will not take any photos and will not record their voice. Furthermore, the interview will not reveal anything that is particularly personal and the questions will not be of a sensitive or personal nature. .

3.2.3.2 Observation

Observation is a fundamental method of finding out about the world around us. Human beings are very well equipped to pick up specified information about our environment via our senses. Although observation is an approach of data collection for research objectives, it is more than just looking or listening³²².

Research is a “systematic enquiry made public”³²³. On the basis of this definition, observation must be selective. We are constantly bombarded by huge amounts of sensorial information. Human beings are really good at selectively attending to what is understood as most useful to us. Observation controls this ability; methodical observation produces accurate planning of what we want to observe. Additionally, with the aim of making observation public, seeing or hearing has to be recorded by some method to allow the information to be analysed and interpreted³²⁴. Observation in contemporary educational and social research deals with highly complex social phenomena and provides major challenges for the researcher. For Observation it needs to recognize the observation method and also determine the observing tool.

In this study observation will be used for qualitative data collection. The qualitative data comprise photos from the physical context of the neighbourhood. For the observation case study we need to determine what tool we want to use and which method. In the next two sections it will be explained that the walking used as an observing tool and serial vision will also be used as an observational method to collect the data.

3.2.3.2.1 Walking as a tool for observation

“Walking is the best way to explore and exploit the city”³²⁵. Walking is a fundamental human activity and method of interacting with the environment. Walking has attracted the attention of poets, essayists, artists, philosophers and social theorists³²⁶.

“Walking is a ‘mode of experiencing place’ and the city. It is a multifaceted activity and a temporal practice, which has an impact on design; for example, urban walking has yet to be fully understood and engaged with”³²⁷.

³²² Lawrence Stenhouse, *An Introduction to Curriculum Research and Development*, vol. 46 (Heinemann London, 1975).

³²³ Ibid.

³²⁴ “What Is Observation? - University of Strathclyde,” n.d., Page 1
<http://www.strath.ac.uk/aer/materials/3datacollection/unit5/whatisobservation/>.

³²⁵ Iain Sinclair, *Lights Out for the Territory* (Penguin UK, 1997). Page 4

³²⁶ Rebecca Solnit and A. Wanderlust, *History of Walking* (New York, Penguin Books, 2000).

³²⁷ FILIPA MATOS WUNDERLICH, “Walking and Rhythmicity: Sensing Urban Space,” *Journal of Urban Design* 13, no. 1 (2008): 125–39..

Walking is a kind of moving through urban space that enables people to sense their bodies and the features of the environment³²⁸. We move continuously and rhythmically while crossing urban place with one foot-after-the other. Walking is an experience with potential as an aesthetic, creative or simply insightful practice. Through walking we sensorily and reflectively interact with the urban environment and consolidate our relationship with urban places³²⁹.

The objective is to point to walking as an aesthetic tool capable of explaining the urban spaces that frequently have a nature still demanding comprehension, in order to be filled with meaning rather than designed³³⁰. "Walking then turns out to be a tool which, precisely because of the simultaneous reading and writing of space intrinsic to it, lends itself to attending to and interacting with the mutability of those spaces, so as to intervene in their continuous becoming by acting in the field, in the here and now of their transformation, sharing from the inside in the mutations of these spaces that defy the conventional tools of contemporary design"³³¹. From the literature about walking, we can say that walking can be used as a powerful tool to observe urban place, therefore, walking will be chosen as a tool to collect the data for this research.

3.2.3.2.2 Serial vision as a method for observation

Gordon Cullen developed the term serial vision to illustrate what a pedestrian experiences when moving through a space. The pedestrian's view continually changes when moving through a curving pathway, arriving at a courtyard, or turning a corner. This changing view creates a sense of discovery and drama,. Cullen writes³³², "A long straight road has little impact because the initial view is soon digested and becomes monotonous"³³³. "Serial vision" is the understanding that what we experience as we walk through towns is comprised of both what we see and what we expect to see in the emerging view³³⁴.

The role of designer is to manage elements of the built environment in ways that provide an emotional impact³³⁵. Cullen takes the feelings related with the experience of the existing viewpoint and the expectation of the next viewpoint³³⁶. Shaping the relationship between the two parts of the visual experience (existing view and the emerging view) provides an emotional

³²⁸ David Seamon, "Phenomenology, Place, Environment, and Architecture: A Review of the Literature," *Kansas State University*, 2000. Page 149

³²⁹ MATOS WUNDERLICH, "Walking and Rhythmicity." Page 126

³³⁰ Careri Francesco, *Walkscapes: Walking as an Aesthetic Practice = El Andar Como Practica Estetica*. (Barcelona: Editorial Gustava Gili, GG, 2001). Page 26

³³¹ Ibid. Page 26

³³² Gordon Cullen, *The Concise Townscape*. Page 11

³³³ Blake Roberts, "Serial Vision: The Dynamic Downtown | Hauge Brueck Associates, LLC," 2012,

³³⁴ Gordon Cullen, *The Concise Townscape*. Page 11

³³⁵ Ibid. Page 12

³³⁶ Roberts, "Serial Vision: The Dynamic Downtown | Hauge Brueck Associates, LLC."

impact. Cullen used an architectural drawing technique to illustrate every image of the serial vision but in this study a series of photographs will be used and a sequence of pictures will be taken. In the visual arts, architecture and urban design, a sequence is a series of images and a certain space-time experience. A city or a neighbourhood can only be experienced as a sequence of pictures.

The idea of the sequence of pictures in urban design is the idea of looking at the environment as a collection of images. Analysis is aimed at detecting and categorizing these pictures and design is aimed at making pictures. This means this activity is aimed at the perception of the place.

3.2.3.2.2.1 Implementation of the walking method

We stated in the last two sections that walking will be used to capture a sequence of pictures. Visual data (in this study, pictures) will be collected from various parts of the neighbourhood but before implementing the walking activity the following stages need to be considered. Below we illustrate the different stages of walking.

- **Capturing the data tool**

Photography was chosen as the main way to record, document and capture pictures when walking.

- **Identify the aims**

Before starting to walk and take the sequence of pictures the aim of walking needs to be identified and what we want to capture and analyse by the walking and serial pictures. Section 2.3.2 identified the features of townscape which improve accessibility (access to employment and facilities), safety and security, sense of place and social interaction and community spirit. These features are:

- A Place with its own identity
- A successful and attractive public realm
- A successful movement network with filtered permeability
- A Place with Legibility
- Mixed land use with density

Therefore in this study five elements of townscape will be assessed. These factors are:

1. Identity of place
2. Public realm
3. Movement
4. Legibility

5. Land use

Each of these elements has many sub-elements to assess. The aim of walking is to capture the components of the townscape elements. In section 4.2.2 (Collecting and Clustering Walking Data) we will explain the components of each element.

- **How to start and finish**

There are many roads and pathways in this area. Walking will start from the two main roads of the neighbourhood and continue to all the roads and routes of the area. In each part a sequence of pictures will be taken. Taking pictures will start from the beginning of the road. The researcher will take the photos and walk round all parts of the neighbourhood. After capturing the pictures from inside the area, the researcher will walk along the broad main streets and will take the photos. Although there is no priority for walking, because all of the walking areas will be assessed separately, the researcher will be free to choose the primary roads to walk. The researcher will decide when he needs to finish capturing pictures of each sector on the basis of the changing conditions. The important point is that the entire physical context of every quarter needs to be captured on photo and when showing these pictures in sequence they are understandable by people who will only read the final report of the walk-about.

3.2.4 Analytical Methods

One of the problems of the analysis of case study data is dealing with the volume and variety of data collected. These difficulties can be decreased if the research has a general strategy for analysing the data. This will indicate what to analyse and why, and will help to ensure that the data collection activities are appropriate and support the way in which the evidence is to be analysed. Data analysis first focuses on discovering regularities or patterns within the case study data. The first task is, therefore, to categorise and index the information according to the research questions. Based on the mixed methods research of this study, the analytical techniques section included both qualitative and quantitative categories and both data will be analysed separately.

3.2.4.1 Interviews analysis

The advantage of quantitative data analysis is about evaluation because it delivers quantifiable and easy to understand results. Quantitative data can be analysed using many different techniques. All the interviews will be conducted in the Farsi language and they will need to be translated into English by the researcher. In each interview there are two kinds of questions. Some of the answers only have three choices: yes, no and don't know and other kind of question has five or six of options to choose from, with fixed responses ranging from very negative to very positive. When analysing this kind of interview question each of the sixty answers of the interviewees will be entered into an excel file which can tabulate the results for each question. The questions, which have three brief choices: yes, no and don't know, will be analysed on a percentage basis of the different respondents. For example, for one question there were 60% yes, 30% no and 10% don't know. The results of these questions will be shown by a graph which will be taken from the excel software. Furthermore, the average rating score of these questions will be calculated. The average rating score will be used for the final comparison.

The majority of the interview questions have five of six short fixed responses, ranging from very negative to very positive, among the choice of options. These kinds of questions will be analysed using two different statically methods. Firstly, the results will be shown by means of different percentages for each short answer to the questions. For example the answers to a question are: 5% strongly agree, 20% agree, 50% disagree, 15% strongly disagree and 10% don't know. The results of the questions like this example will be shown on a graph from the excel software and can be interpreted and evaluated easily. For these questions we also use another analytical method which is that of calculating the average rating score of the question. In order to calculate the *average rating score* of the questions we will need to identify the number of interviewees' answers for each option and their rating range, for example, 1 to 4 (1 for strongly disagree and 4 for strongly agree)

and the *total number of interviewees* (don't know answers need to be removed for each question). The average rating of each question will be in the form of a numeral datum between the ratings and the range. This numeral datum is very useful because we can easily compare the results. We especially want to conduct the questionnaire using the four criteria of social sustainability (accessibility, safety and security, sense of place and social interaction and community spirit).

3.2.4.2 Walking results analysis

In Section 3.2.3.2.2.1 we explained the walking implementation details and how and why we use walking. After observing all the areas covered by the case study and showing the leaner sequence of pictures for each part we will divide up all the walking sectors and each will be shown on a sheet of paper. Each sheet will have a series of sequenced pictures and a small map showing the direction and location of the outing as well as where the photos were taken. After sorting, grouping and arranging the pictures of each quarter, the walking sheet needs to be explained by the researcher photo by photo (see section 4.2.2.2). Every image of the walking sheets below is accompanied by a small description of what the researcher found on his observations. The picture captions have been devised on the basis of what we wanted to achieve by the promenade. We mentioned the objectives of the walk which were to access the elements below:

1. Identity of a place
2. Public realm
3. Movement
4. Legibility
5. Land use

Before to starting to walk and take pictures we need to find out the elements of these five factors. This study will focus solely on those elements which are linked to townscape and they will be analysed according to the physical context of the factors. The components of the five elements of townscape are shown in Table 7, Table 8, Table 9, Table 10 and Table 11. All these elements will be analysed through photo sequences which will be taken while walking round all parts of the area.

Identity elements	<ul style="list-style-type: none"> • Surviving historic road pattern • Surviving historic buildings and elements • The use of prevalent historic materials, building methods and details • Harmony in architectural design and material of the buildings • Distinctive image and character • Physical Features which have been lost • Significant landmarks • Significant view, vistas and panoramas
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Table 7: The elements of identity which will be analysed through sequence of pictures

Public realm elements	<ul style="list-style-type: none"> • Pavements, kerbs and steps (condition, quality and maintenance) • The condition of buildings frontage • The shops frontage • Planting on the roadsides (trees, planters, grassed areas, flowers and borders) • Street furniture (seats, bins, bollards, tree grilles and railings) • Signage and advertisement banners (interpretative, instructive, informative, and directional) • Lighting (roads, paths and sidewalks) • Lighting (green spaces and public spaces) • Public art and features (permanent and temporary works, fountains and graphics) • Safety and security equipment • Public space, quality, use and management • Traffic installations (including street markings, parking meters, traffic signals) • Green open space and other semi-natural features
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Table 8: The elements of public realm which will be analysed through sequence of pictures

Movement elements	<ul style="list-style-type: none"> • Public transport services and accessibility • Car use including access and circulation and traffic flows • Cycle use, including routes and facilities • On street parking • Parking lots • Pedestrian movements • Accessibility for disabled people, including gradients and obstructions • Pedestrian movement permeability inside the neighbourhood • Pedestrian movement permeability with adjacent neighbourhoods
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Table 9: The elements of movement which will be analysed through sequence of pictures

Legibility elements	<ul style="list-style-type: none"> • Nodes (gateway, entry and exit points) • Nodes (neighbourhood centre, important junctions and interaction points) • Edges (buildings frontage , shops frontage) • Path (roads, routes and pedestrian ways) • Landmarks (important buildings, historic building, important corners)
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Table 10: The elements of legibility which will be analysed through sequence of pictures

Land use elements	<ul style="list-style-type: none"> • The neighbourhood form • Distribution and amounts of land uses • The housing types • The buildings height (scale)
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Table 11: The elements of land use which will be analysed through sequence of pictures

The Tables 7, 8, 9, 10 and 11 illustrate the elements of townscape. Before walking evaluation options need to be provided. Before we start to apply the research method these evaluation options for every element will be distributed (see section 4.3.2). For the evaluation of each element we have defined some evaluation options. The table below is an example:

Element	Evaluation options and colours
Surviving historic elements and maintenance condition	A Historic element with good maintenance
	A Historic element with reasonable maintenance
	A Historic element with poor maintenance
	A Historic element with really poor maintenance

Table 12: a sample of analysing an element

Table 12 shows how surviving historic elements (an element of identity) will be analysed. For different evaluation options different colours have been chosen and this method will help to analyse the walking and mapping results. The researcher in each walking sheet will describe the elements of each townscape element on the basis of the evaluation options (see section 4.2.2.2). After walking and collecting data from the neighbourhood 30 to 40 walking parts will be created to depict the neighbourhood and the observational surveys will be interpreted by the researcher (see section 4.2.2.2). After that, for each walking part the analytical process will be provided (see section 4.3.2) and every element of Tables 7, 8, 9, 10 and 11 will be analysed (see section 4.3.2)

3.2.5 Interpretation and evaluation of the results

After analysing the interviews and walking results it is time to interpret the results. In this research quantitative and qualitative data will be analysed and interpreted separately. As seen so far, the evaluation study follows the process from “data collection” through “data analysis” to “interpretation of results.”

3.2.5.1 Interpretation and evaluation of interviews

Firstly, each question will be analysed and after noting the results will be interpreted and evaluated. The interviews comprise five sections: view of local area, accessibility, safety and security, sense of place and social interaction and community spirit. In every section there are many questions. In the second stage, after an evaluation of each question, those in each of the five sections will be interpreted together and final assessment for the four criteria of social sustainability (accessibility, safety and security, sense of place and social interaction and community) will be identified (see Chapter 5).

3.2.5.2 Mapping, Interpretation and evaluation of walking results

After analysing the walking results, the data need to be interpreted and a final evaluation of the elements which were shown in Tables 7, 8, 9, 10, and 11 reached (see section 3.2.4.2). In this study the results of the analysis will be mapped before the interpretation (see Chapter 6). The analytical maps will be really useful and easy to interpret and evaluate.

- **Mapping the results**

Mapping is producing graphic illustrations of information using spatial relations within the graphic to embody some connections within the data. Mapping is a really useful technique for demonstrating the results. Also, all the results can be seen together and easily compared. Another advantage of mapping the results is that of being able to see the results of the data and location together and finding out the location of the collected and analysed data. Mapping is a necessary part of urban design analysis. In this research, mapping will be used to illustrate the results of the analysis. We mentioned in section 3.2.3.2.1 that, after implementing the walking method, we will have 30 to 40 walking units. In the mapping section after studying the results of each element we will create a map from them. Thus, after mapping all the data, 30 to 40 maps will be designed and they will be ready for interpretation and evaluation. The method of mapping in this study is unique.

- **Interpretation and evaluation**

After creating many maps from the results, the time has come to interpret and evaluate each element. We will have 30 to 40 coloured maps. The interpretation will be carried out on the basis of the information on the maps. For example, with regard to building conditions, after mapping the results we will find which areas of the case study have buildings in poor or good condition and where the majority of the poorly maintained buildings are located. After the interpretation process, the researcher will evaluate the item (see Chapter 6).

- **Illustrating opportunities, constraints and guides for future development**

When the evaluation is complete, we will have some outstanding information about the good and poor possibilities attached to each element. Therefore, in chapter 6 we will demonstrate the positive and negative aspects of each element because one of the questions in this study relates to the potential and limitations of the design of the Iranian historic neighbourhood.

In chapter 6 after identifying the advantages and disadvantages of the traditional quarters, it will be recommended some guides for future development. The solutions will come from the opportunities and constraints associated with each element.

3.3 Conclusion

A case study method was chosen for this research and the Juibareh quarter, was selected to represent the historic neighbourhoods in Isfahan. Because of the two main aims of the study, a mixed quantitative and qualitative method was adopted for the assessment of the social sustainability level and the degree of amenability of such neighbourhoods to social sustainability. For the quantitative method, a structured interview will be used to collect the data from the large sample of local residents (sixty interviewees). For the qualitative method, an observation technique will be used to collect the data. In addition, walking will be used as an observation tool and serial vision as an observing method to collect the visual data for the case study. The analytical section indicated that the interviews will be analysed. The results of the interview analysis will be interpreted on the basis of the different percentages of the positive and negative answers for each question; also the average rating will be used for a final comparison of the results. After the evaluation of the interviews, the level of social sustainability in the neighbourhood will be identified. After collecting the qualitative data during the walking through the area covered by the case study and taking a sequence of pictures, the researcher will provide an observation for each walking sector. Every observation survey will be analysed manually by using the prepared analytical tables for each element of townscape and finally the results will be mapped, interpreted and evaluated. Following the evaluation of each element of the neighbourhood townscape, this study will be able to calculate the level of the historic neighbourhood's amenability and by identifying the pros and cons of each element; the researcher will detail the guidelines for future development and for improving its social sustainability.

CHAPTER 4: JUIBAREH A CASE STUDY OF A NEIGHBOURHOOD

Introduction

This chapter comprises three main sections. The first section will describe the case study information and provide a brief description of Isfahan and particularly the Juibareh neighbourhood, which has been chosen as the case study of this research. The second section will explain the data collection process for the case study and the final section will exemplify the analytical stage of the collected data.

4.1 Case Study information

This section furnishes a summary of the information about the case study.

4.1.1 Isfahan

4.1.1.1 Location

Iran is a country located in south west Asia. It has a population of over 74 million. Iran shares borders with Azerbaijan and Armenia to the north-west; the Caspian Sea to the north; Turkmenistan to the north-east; Pakistan and Afghanistan to the east; Turkey and Iraq to the west; and finally the waters of the Persian Gulf and the Gulf of Oman to the south. Iran is also one of the principal countries of the Middle East³³⁷.



Figure 5: the position of Iran in Middle East³³⁸

³³⁷ S. Shafaghi, *جغرافیای اصفهان [Geography of Isfahan]* (The University of Isfahan, 2003).

³³⁸ "Middle East Maps - Perry-Castañeda Map Collection - UT Library Online," n.d., http://www.lib.utexas.edu/maps/middle_east.html.

Isfahan is the capital of the province of the same name. The Persians called it Nesf-e Jahan (Half the World). It is one of the oldest cities in Iran, and is located 414 km south of Tehran and 481 km north of Shiraz. This 2500-year-old city served as Persia's capital from 1598 to 1722. Isfahan was at a crossroad of international trade and diplomacy, and therefore was a kaleidoscope of resident languages, religions and customs. The city is known for its silver filigree and metal work. It is renowned not only for the abundance of great historical monuments, but also for its Life-Giving River, the Zayandeh-Rood, which has given the city its rare beauty and fertile land. Isfahan is filled with old gardens and some of the best sights in Iran³³⁹.



Figure 6: the location of Isfahan province and Isfahan city in Iran³⁴⁰

4.1.1.2 Geography and climate

The city is located in the lush plain of the Zayandeh River, among the foothills of the Zagros mountain range. The city enjoys a temperate climate and regular seasons. No geological obstacles exist within 90 km north of Isfahan, thus allowing cool northern winds to blow from this direction. Situated at 1,590 metres (5,217 ft) above sea level, Isfahan is still very hot during the summer with a maximum typically around 36 °C (97 °F). However, with low humidity

³³⁹ Shafaghi, *جغرافیای اصفهان [Geography of Isfahan]*.

³⁴⁰ "Iran Map | Map of Iran | Iran Ways | Iran Races | Iran 'S Ways Map | Iran Roughness Map | Iran map.key2persia.com," n.d., <http://en.key2persia.com/iran-travel-guide/about-iran/iran-map/>.

and moderate temperatures at night, the climate can be very pleasant. During the winter, days are mild but nights can be very cold and snow is not unknown. However, on the whole, Isfahan's climate is extremely dry. Its annual precipitation of 113 millimetres (4.4 in) is only about half that of Tehran or Mashhad and only a quarter that of the more exposed Kermanshah³⁴¹.

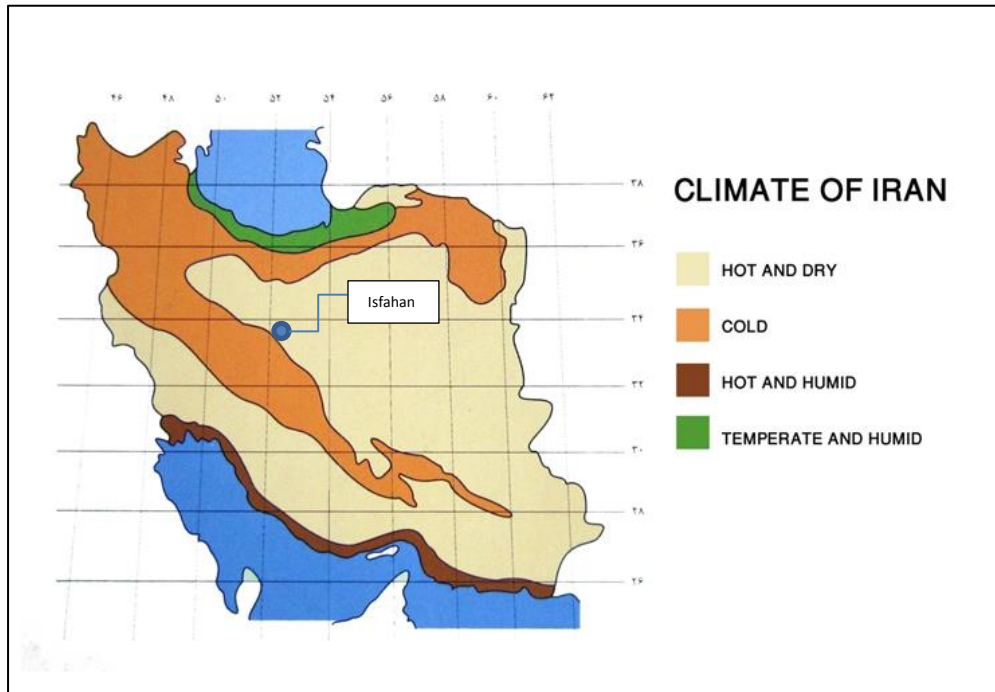


Figure 7: shows the climate of different regions of Iran and the location of Isfahan with its hot and dry climate³⁴²

The northern part of Iran is covered by dense rain forests called Shomal or the Jungles of Iran. The eastern part consists mostly of desert basins such as the Dasht-e Kavir, Iran's largest desert is in the north-central portion of the country, and the Dasht-e Lut, in the east. There are also some salt lakes. This is because the mountain ranges are too high for rain clouds to reach the region. The only large plains are found along the coast of the Caspian Sea and at the northern end of the Persian Gulf, where Iran borders the mouth of the Shatt al-Arab (or the Arvand Rood) river. Smaller, discontinuous plains are found along the remaining coast of the Persian Gulf, the Strait of Hormuz and the Sea of Oman³⁴³.

³⁴¹ Shafaghi, جغرافیای اصفهان [Geography of Isfahan].

³⁴² "Geography of Iran - Wikipedia, the Free Encyclopedia," n.d., http://en.wikipedia.org/wiki/Geography_of_Iran.

³⁴³ Shafaghi, جغرافیای اصفهان [Geography of Isfahan].

Isfahan Climate												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max. temperature (°C)	8	12	16	22	28	33	37	36	32	25	17	11
Min. temperature (°C)	-4	-2	3	8	12	17	19	18	13	8	3	-2
Precipitation (mm)	15	10	25	15	5	0	0	0	0	3	15	20

Table 13: Isfahan temperatures in during the year, source ³⁴⁴

4.1.1.3 Demographic information

Isfahan's population during different periods of its history up till the present is shown in the table below.

Period	Year	Population
The beginning of the Mogul empire	1223	100,000
Safavieh empire (Abbas, king at the time)	1609	600,000
Ghajar empire	1816	250,000
	1871	50,000
	1877	64,860
Pahlavi empire	1901	70,000
	1924	89,850
	1941	240,598
	1944	250,000
	1956	254,876
	1966	424,045
	1976	671,510
Islamic republic (after the revolution of 1979 until now)	1986	986,753
	1989	1,119,850
	1991	1,165,494
	1996	1,310,659
	2006	1,624,838
	2011	1,796,967

Table 14: population of Isfahan at different periods of time ³⁴⁵

³⁴⁴ Ibid.

We can see from the data in the table above that the population of Isfahan increased dramatically during the Safavid Empire. At that time, Isfahan was the largest Islamic city and had the highest population but later the population started to decline from 600,000 to 64,860 during the late Ghajar Empire. After the modernization of the Iranian cities, the population of Isfahan started to grow and now it has reached nearly two million people.

4.1.1.4 History, growth and the concept of Isfahan at different periods

- Pre-History

The history of Isfahan can be traced back to the Palaeolithic period. In recent Archaeological discoveries, archaeologists have found artefacts dating back to the Palaeolithic, Mesolithic, Neolithic, Bronze and Iron ages³⁴⁶.

- From the Elamites to Arab Times

Ancient Isfahan was part of the Elamite Empire. Under the name of Aspadana it became one of the principal towns of the Median dynasty, when Iranian Medes settled there. Subsequently, the province became part of the Achaemenid Empire and after the liberation of Iran from Macedonian occupation by the Arsacids, it became part of the Parthian Empire. Isfahan was the centre and capital city of a large province, which was administered by Arsacid governors. In the Sassanid era, Isfahan was governed by the "Espoohrans" or members of seven noble Iranian families who had important royal positions, and served as the residence of these noble families as well. Moreover, in this period Isfahan was a military centre with strong fortifications. There were large populations of Jews and Christians concentrated around Isfahan at that time. The accent of the Isfahan natives is similar to that of native Persian Jews. This city was occupied by the Arabs after the final defeat of the Iranians³⁴⁷.

- Arab Times

Isfahan, like other cities of Iran, fell under the rule of the Arabs until the Abbasid era, being administered to by Al-Mansur. In the 10th century, under the Buwayhid Dynasty, Isfahan soon regained its importance. In the reign of Malik Shah I of the Seljuk dyansty, Isfahan was again selected as the capital and another golden age commenced. In this period, Isfahan was one of the most thriving and important cities of the world. The famous Persian philosopher Avicenna lived and taught there in the 11th century. This city was raided and the inhabitants massacred by the

³⁴⁵ "جمعیت شهر اصفهان" n.d.,

http://www.isfahan.ir/ShowPage.aspx?page_=form&order=show&lang=1&sub=0&PageId=346&tempname=mooarefi.

³⁴⁶ Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity : The Sufi Tradition in Persian Architecture*, 2nd ed. (Kazi Publications, 1973).

³⁴⁷ Reza Abouei, "Urban Planning of Isfahan in the Seventeenth Century," *Planum*, May 2004.

Mongols in the 13th century. These were followed by Timur in 1387. However, as the result of its suitable geographic situation, Isfahan flourished again especially during the Safavid dynasty, when it developed considerably. The golden age of Isfahan happened in the 16th century under Shah Abbas the Great (1587-1629), who made it the new capital of the Safavid dynasty. During the reign of Shah Abbas I, who unified Persia, Isfahan reached the pinnacle of power.

Shah Abbas paid attention to the development and beauty of Isfahan because of the rivalry that existed between Isfahan and Constantinople as the Capital of the Ottoman Empire (1299–1922), while he did not have any rivalry with London or Paris. Therefore, Shah Abbas decided to beautify Isfahan so that foreign tourists, merchants and ambassadors would be attracted to it. Isfahan had parks, libraries and mosques that amazed the Europeans, who had not seen anything like this at home. The Persians called it Nesf-e-Jahan, Half the world; meaning that to see it was to see half the world. In its heyday it was also one of the largest metropolises with a population of one million; 163 mosques, 48 religious schools, 1,801 shops and 263 public baths³⁴⁸.

In 1722, it was raided by the Afghans after a long siege, which left much of the city in ruins. Although the Afghans were the primary cause of Isfahan's decline, this can also be attributed to the development of maritime commerce by European merchants from such countries as the Netherlands. Isfahan's wealth originated in its role as a chief way-station along the trans-Asia trade route, but trade dwindled as the cheaper sea routes increased in popularity for transporting commodities between Asia and Europe³⁴⁹.

Gardens and green spaces were the main elements of the cityscape in the new city sections.

In order to create sustainable green belts, the Safavids had built channels (Maadi is the local name of these channels or water canals) which branched out from the Zayandehrood and made it possible for water to flow throughout the city. This invention created sustainable green spaces in the new central sector.

³⁴⁸ William Bayne Fisher, Peter Jackson, and Laurence Lockhart, *The Cambridge History of Iran* (Cambridge University Press, 1986); Ardalan and Bakhtiar, *The Sense of Unity*; Reza Abouei, "Urban Planning of Isfahan in the Seventeenth Century."

³⁴⁹ Reza Abouei, "Urban Planning of Isfahan in the Seventeenth Century"; Fisher, Jackson, and Lockhart, *The Cambridge History of Iran*; Ardalan and Bakhtiar, *The Sense of Unity*.

Maps 8, 9, 10 and 11 show the limits and growth of Isfahan at different periods:

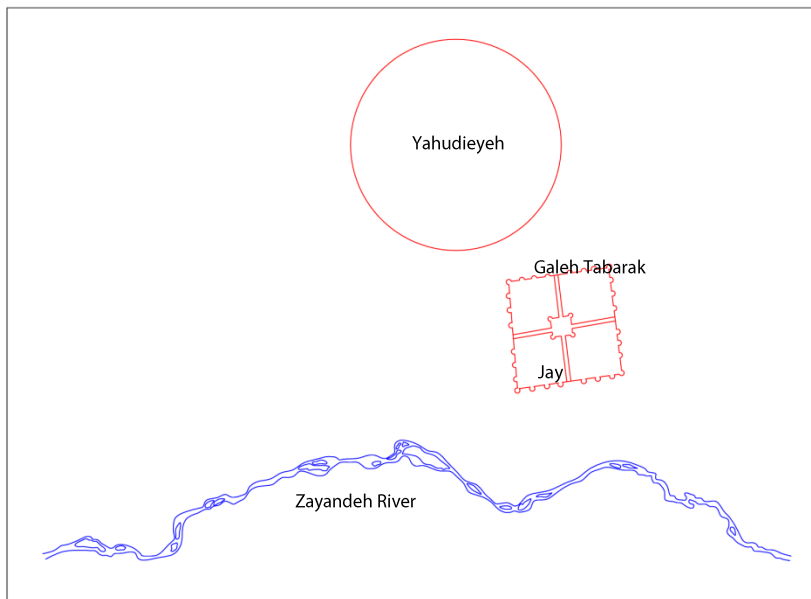


Figure 8: Isfahan limits during the Pre-Saljuq Empire 10th Century³⁵⁰

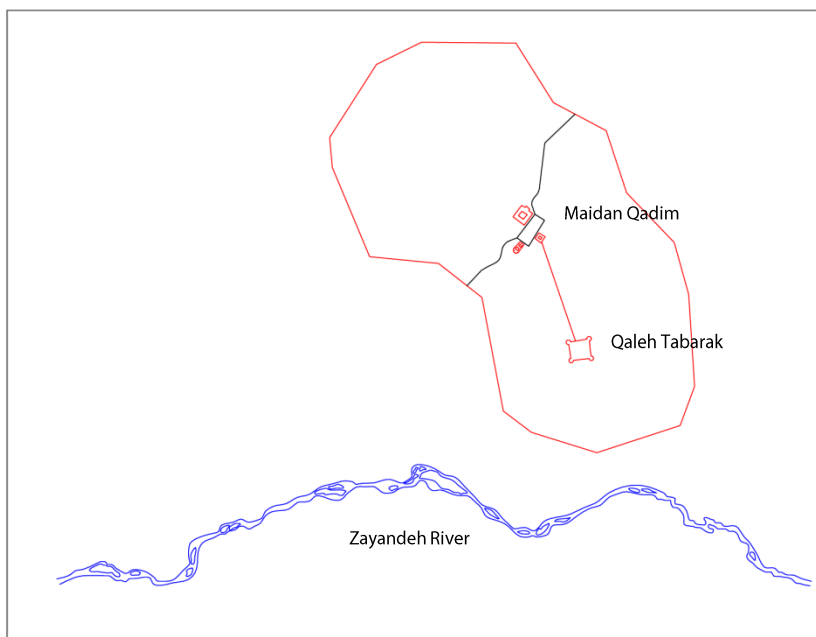


Figure 9: Isfahan limits during the Saljuq Empire 12th century³⁵¹

³⁵⁰ Redrawing by author after Ardalan and Bakhtiar, *The Sense of Unity*.

³⁵¹ Redrawing by author after Ibid.

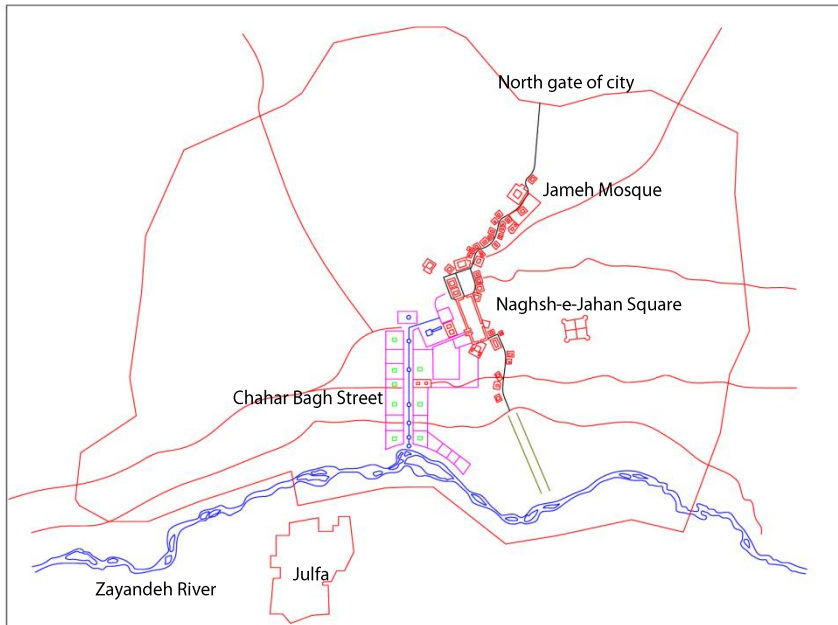
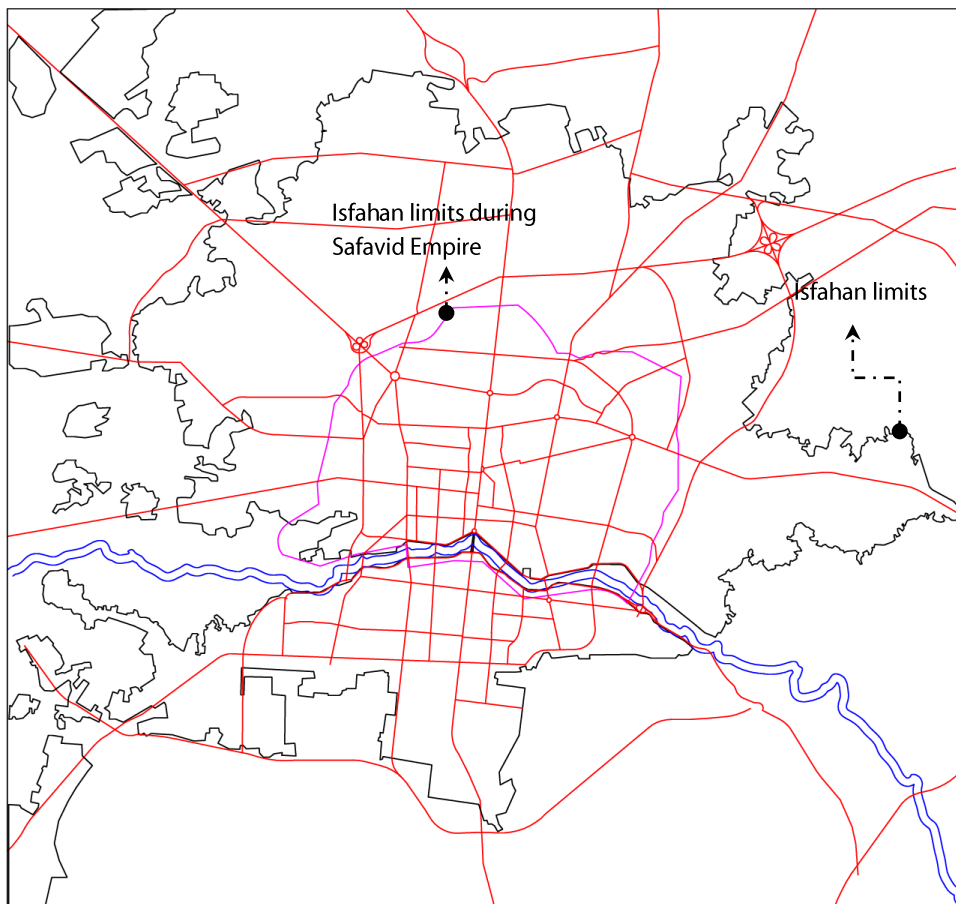


Figure 10: The map above which is Isfahan limits during Safavid period³⁵²

Figure 11: the recent Isfahan limits (last decade) and compare with Safavid Empire period limits³⁵³



³⁵² Redrawing by author after Ibid.

³⁵³ Redrawing by author after "File:Isfahan City Map.svg - Wikipedia, the Free Encyclopedia," n.d., http://en.wikipedia.org/wiki/File:Isfahan_city_map.svg.

4.1.1.5 Some of the most important monuments:

Isfahan is one of the historic cities in Iran. This city was the capital during the Safavid Empire (16th century). At that time Isfahan was one of the most Islamic cities in the world. The city significantly changed at the time of the Safavid Empire and many historic buildings and monuments were built to testify to the power of the Safavid Empire. In Isfahan there are also many surviving historic buildings and memorials dating from before the Safavid era but the majority of the monuments belong to the Safavid period. Most of these historic buildings and features of Isfahan can be seen below. One of the most important historic monuments is Naghsh-e-Jahan square with its many outstanding historic buildings such as the Imam mosque, the Sheikh Lutfollah Mosque and the Ali Qapu palace (The Royal Palace). Furthermore, Isfahan has many notable historic bridges. The pictures exhibit some of these historic monuments.



Picture 8: Naqsh-e Jahan Square also known as "Shah Square" or "Imam Square" - 1602



Picture 9: Shah Mosque known as the Imam mosque- 1629



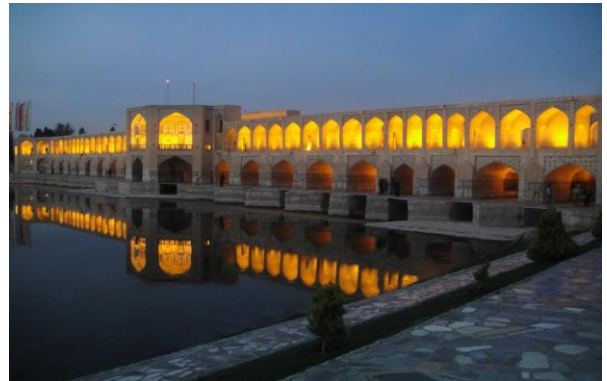
Picture 10: Sheikh Lutfollah Mosque - 1618



Picture 11: Ali Qapu (The Royal Palace) - Early 17th Century



Picture 12: Si-o-Seh Pol (The Bridge of 33 Arches) - 1602



Picture 13: Pol-e Khaju(Khaju Bridge) - 1650³⁵⁴

³⁵⁴ "Panoramio - Photo of Pole Khajoo (by Ahmad Parsaei)," n.d., <http://www.panoramio.com/photo/57799660>.

4.1.1.6 Essential structure of Isfahan:

- Zayandeh-Rood River
- Chaharbagh Street

The essential structure of Isfahan in the Safavid period and at present is exemplified by two major axes of development: first, the north-south axis running along the old backbone of the city, which was built parallel to the main route of the bazaar and extended by way of Chaharbagh street to the south of the river; and second, the east-west axis following the Zayandeh-Rood river and its artificial branches, or madi's. Whereas the first axis of development shaped the built-up area of Isfahan, the second provided natural features with their influence on urban life. Chaharbagh Street was formed to impart a special identity to the new districts of city. It was conceived in order to set up a rivalry between the new areas of the city and the Seljuqid centre (organic section) of city. This street was designed with spatial features and special visual elements to form a new public walkway for Isfahan.



Picture 14: Zayandeh river in Isfahan



Picture 15: Chaharbagh Boulevard - 1596³⁵⁵

³⁵⁵ "File:Charbagh isfahan.JPG - Wikipedia, the Free Encyclopedia," n.d., http://en.wikipedia.org/wiki/File:Charbagh_isfahan.JPG.

4.1.2 Juibareh

This section gives us some information about the neighbourhood. This particular quarter is part of a large area in Isfahan called Juibareh which has now been divided into small neighbourhoods. In this study we choose that part of the south sector which is connected to the bazaar.

4.1.2.1 Location

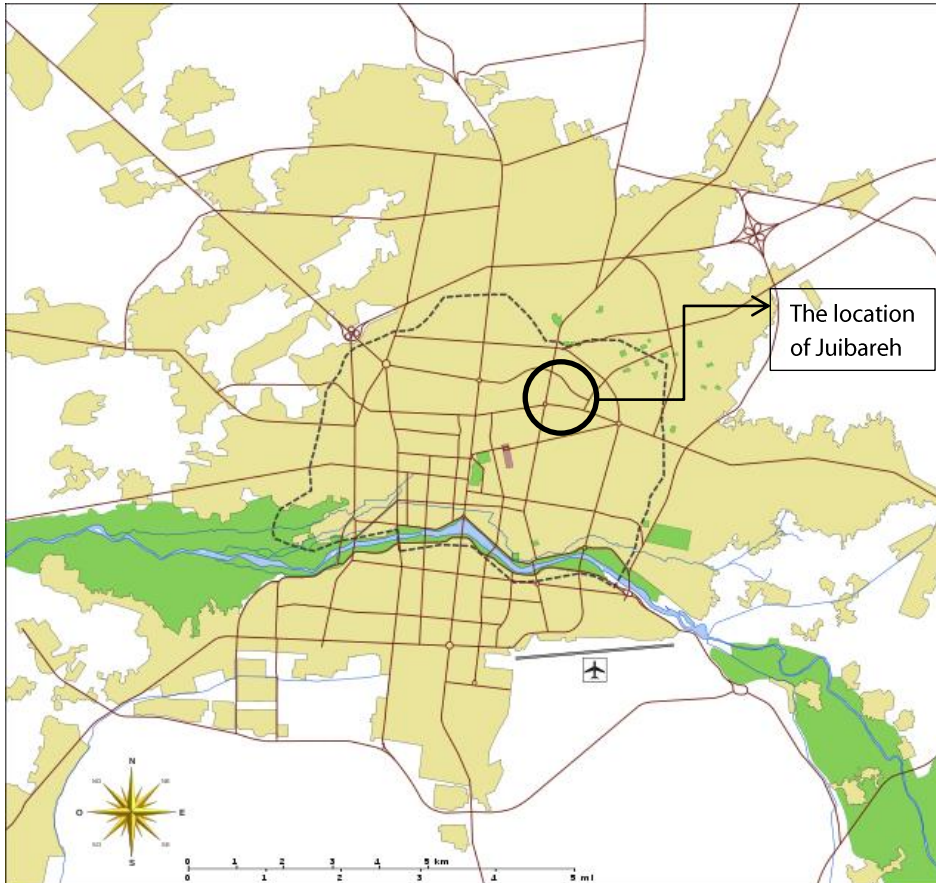


Figure 12: the location of Juibareh in Isfahan³⁵⁶

Juibareh is the oldest part of Isfahan. The map above shows the location of Juibareh in Isfahan. These city locales are part of the most historic plan of Isfahan and are also connected to the main bazaar. Through the bazaar we can reach the biggest town square in Iran which is the Naghsh-e-Jahan square with its many ancient monuments. Kamal Street to the north, Valiasr Street to the south, Hatef Street to the west form the neighbourhood boundary and constitute the case study of this research. The map below shows the limits of the case study. This area has a good location because it is connected to the main bazaar of Isfahan.

³⁵⁶ "File:Isfahan City Map.svg - Wikipedia, the Free Encyclopedia."

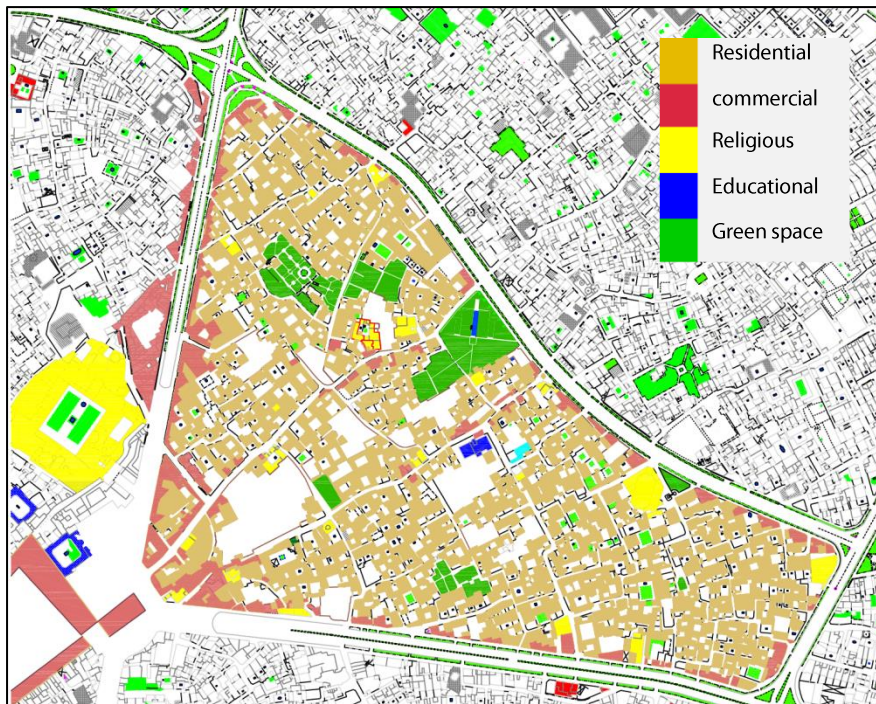


Figure 13: the map of Juibareh which shows the limit and distribution of land use

4.1.2.2 History and historic buildings and elements.

This area is the main core of Isfahan. Juibareh's origin relates to the Achaemenids period and the immigration of Jews to Babylon, according the Kourosh order. The Jews had been residing there until the 5th century A.D and at that time it was called Darolyahood but thereafter it was named Jahanbareh and Juibareh³⁵⁷. In this area there are many surviving historic buildings. Some of these are significant and there are also some important historic monuments in the city. In the Atigh square there is an old mosque from the Saljuc Empire (picture 17) and the Darolziafeh Minarets which is a historic building with two minarets (picture 18). There are also many ancient mosques and synagogues in this area. Most of the synagogues are not in good condition and there are many old houses which are delapidated. Between the neighbourhood and the bazaar there was a square called the Meidan Kohneh. This was completely destroyed during mondernization of the Iranian cities (Pahlavi time) and a new project is under construction of the same size and design as the old square. Picture 19 is a assumptive picture from the old square (Meidan Kohneh) and picture 20 is the new square (Meidan Atigh) which is being rebuilt. The new square is part of a regeneration building project which is attempting to replicate the old squares as public spaces where cars can move freely by making use of underpassess which criss-cross this area. This project was designed by the Naghshe Jahan consultant company. The maps below show the changing

³⁵⁷ Shafaghi, *جغرافیای اصفهان* [Geography of Isfahan].

urban landscape during the modernization of Isfahan and the destroying of the old square (Meidan Kohneh).



Figure 14: The old square (Meidan Kohneh) at the beginning of Islam (7th century)

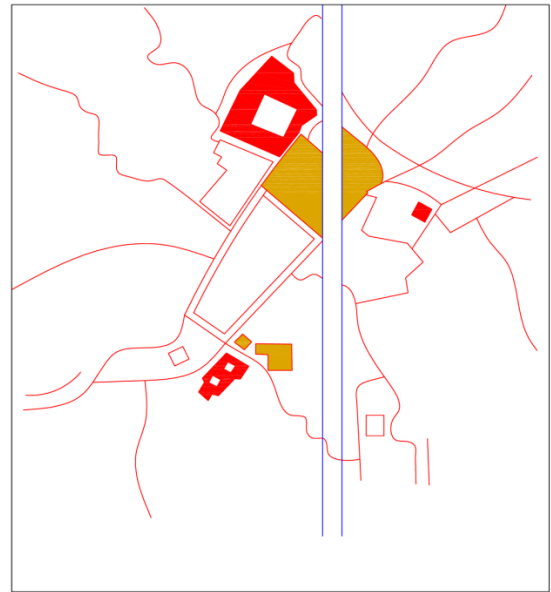


Figure 16: the old square and new street in the Reza Shah period (1926 to 1933)

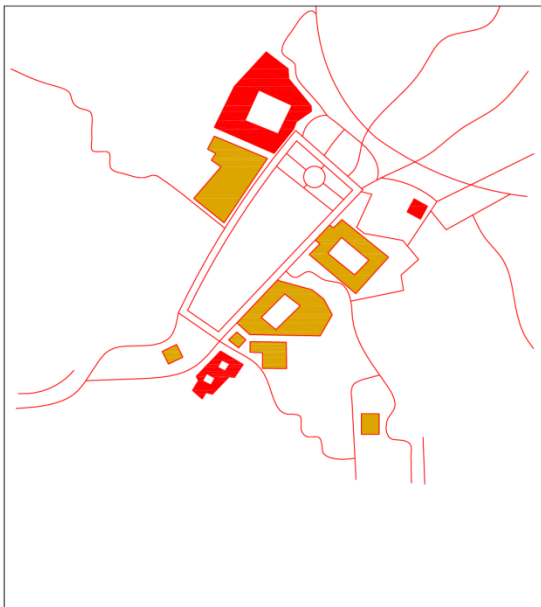


Figure 15: The old square during the Saljuc Empire (10th century)

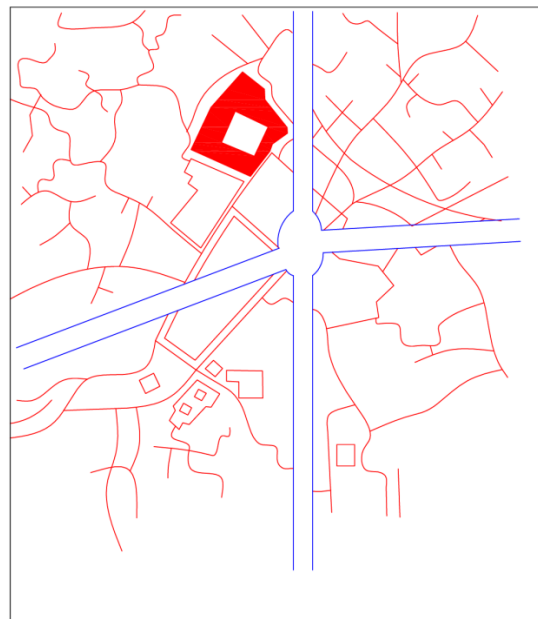


Figure 17: the old square (Meidan Kohneh) of the town before starting to construct the new square (Meidan Atigh)

These maps above show how the new urbanization and constructing of the new street pattern destroyed the historic pattern of Iranian cities. We discussed this phenomenon in section 2.4.2.

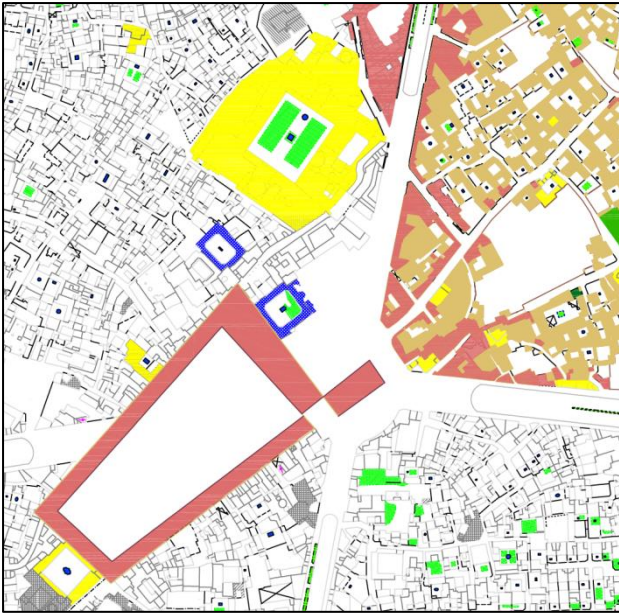


Figure 18: the new square (Meidan Atigh)



Picture 16: Jameh Mosque



Picture 17: Darolziafeh Minarets



Picture 18: The assumptive picture of Old Meidan in the Saljuc Empire period



Picture 19: Atigh square (new square)

4.1.2.3 Population and social aspects of Juibareh

The population of all parts of Juibareh in the final census was 3,625 people, while the case study area and the small south neighbourhood make up 40% of the total population. In this area 12.6% of the residents are Iranian Jews, 8% Afghani Soni and 77.4% Iranian Shiah. The population of this area declined during the last three decades and the average age is higher than that of the city (Isfahan)³⁵⁸. The elderly population, some grown-ups and most of young generation have moved from this area. This kind of historic neighbourhood is faced with another problem which is settling the new, low-income residents, such as the rural and Afghani workers. This phenomenon has caused a dramatic change in the social life of this neighbourhood. The typical worker enjoys the highest rate of residents' jobs (30%)³⁵⁹. Furthermore, this area has high rate of illiteracy among the residents (26.8%) compared to the city as a whole. Another big problem of this low-quality area is the high number of drug-addicted people³⁶⁰.

4.1.2.4 The form and physical aspects of Juibareh

The urban layout of this area is still a traditional urban form with narrow and tortuous roads and pathways and also many impasses with limited access for cars. There are also many roofed passageways (small tunnels) which are part of the neighbourhood identity (see picture 20 and 21). The houses in some parts are connected to each other by the roofs. This area is famous in Isfahan as having the most underdeveloped houses in the city³⁶¹. This quarter compared with other historic communities does not have imposing houses because it was formerly a Jewish ghetto and the Jews were not allowed to own stately houses with decorated façades. The maintenance situation in this area is really poor and there are many derelict sites as a result of demolishing the ancient houses and also many old-fashioned dwellings that are in ruins (see pictures 22 and 23). The overall impression of the neighbourhood and even of some historic buildings is of physical decay.

³⁵⁸ Ibid.

³⁵⁹ Ibid.

³⁶⁰ Ibid.

³⁶¹ Ibid.



Picture 20: roofed pathway



Picture 21: roofed pathways



Picture 22: ruined area



Picture 23: ruined area



Figure 19: A map from Juibareh which the location of samples photos above

4.2 Data Collection

This study uses a mixed methodology. The quantitative method is used for assessment of the social sustainability level and the qualitative method is used for the evaluation of the urban form and physical context of this historic neighbourhood. Data collection for each method is different. For the quantitative method a structured interview is used for data collection and walking with serial vision equipment is used for the qualitative method.

4.2.1 Collecting Interviews Data

A structured interview is used for data collection techniques in quantitative method. Before conducting the interview we identified the number of candidates, which age group and which religious group needed to be interviewed. With that in mind, we devised an interview comprising five groups of questions.

4.2.1.1 Interview structure

Each structured interview in this research contains six sections and each section comprises many questions. A script of the interview is given in Appendix 1. Below we display the interviews sections and sub-sections.

1. First section elicits information about sex, age, religion, nationality, occupation and name if he/she prefers.
2. View of local area:
3. Accessibility:
4. Safety and Security:
5. Sense of place:
6. Social interaction and community spirit:

View of local area:

In this section seven questions are posed about the physical environment of the neighbourhood. When asking these questions in this part we were looking for the residents' feelings about the physical environment, design and maintenance of the area.

- **Signage:** Signs are any kind of visual graphics created to display information to a particular audience. This is typically manifest in the form of way-finding information in places such as

streets or inside/outside of buildings³⁶². In this part of the interview three questions are put to the residents about the signage of their neighbourhood and we are looking for their responses about the overall signage of the area.

- **Maintenance:** Neighbourhood maintenance means the process of keeping the physical environment in good condition. In this section, we ask the residents three questions about the maintenance conditions of this neighbourhood.
- **Design:** Design means the buildings, architectural form and also public and private spaces such as streets. By asking the residents a single question about their overall impression of the design quality of the neighbourhood, we hope to obtain an overview of their feelings.

Accessibility:

Accessibility to facilities and employment are identified as the main criteria for the social sustainability which is related to urban form. Therefore, to assess the level of accessibility we followed a structured interview. Finally, the interviewees were asked fifteen questions in three parts:

- **Public transport:** trains, buses and other forms of transport which are available to the public, run on fixed routes and charging set fares. This area only has bus services. Therefore, we ask the interviewee about bus services and their accessibility. In this part, by asking the residents two questions we are trying to ascertain the main form of transport
- **Facilities:** Any use of land, whether publicly or privately owned, for utilities, communications, or any use which is necessary for the health and safety of the general public. Seven questions are put to the interviewees. These questions are about the neighbourhood facilities and in what they consist social and leisure, medical, sports, communal, religious, educational and security.
- **Employment:** this means the possibilities of finding a job or establishing a business in the area. In the employment section six questions are put to the interviewees in order to assess what they feel about business activities, finding a job and establishing a business.

Safety and Security:

Safety and security is a fundamental concern in a neighbourhood. The residents would rather live in a safe and secure place without the presence of thieves, burglars or vandals. We identified safety

³⁶² "Signage," *Wikipedia, the Free Encyclopedia*, November 22, 2013, <http://en.wikipedia.org/w/index.php?title=Signage&oldid=581487376>.

and security as the second criterion for social sustainability. To assess this criterion we asked sixteen questions in eight sections. The elements of safety and security are described below.

- **The feeling of safety by day and night when walking alone:** to feel free from harm when walking is an important part of safety and security. The feeling of safety while walking helps to increase the level of social sustainability and resident can communicate. We asked the interviewees two questions about the safety level when they want to walk in the neighbourhood alone. .
- **Lighting conditions:** The good lighting of a place plays a necessary part in achieving safety. A location with good lighting attracts people to use it at night. Iranian people like to enjoy a night life because of the environmental conditions (hot days and cool nights). The lighting conditions on pedestrian sidewalks, walkways, green spaces, public spaces and building entrances will be assessed by asking three questions.
- **Security equipment:** The existence of security equipment helps to increase safety and security. Therefore, the condition of security equipment needs to be assessed. Security equipment includes security cameras, emergency services and security bases such as police stations.
- **Neighbourhood form and physical conditions:** This is a historic neighbourhood with a dense structure. The narrow lanes and a really dense combination of houses and narrow pathways are attributes of the historic neighbourhood in Iranian cities. Although this density helps to increase social sustainability, there are many features that might create an unsafe environment. For example, a small narrow passageway or a tortuous path can be unsafe when someone wants to walk alone. Another factor which may create an unsafe area is the physical condition of the neighbourhood. This is a historic area with many derelict houses as well as many ruined areas and construction sites.
- **Car movement problems:** For improving social sustainability pedestrians need to walk safely and not conflict with cars. A pedestrian-friendly environment encourages people to walk and with increasing walkability in an area the level of social interaction will grow. To achieve a more pedestrian-friendly area we need to have good car movement. This is really important because if there is a conflict between pedestrians and cars it creates an insecure environment for walking. This neighbourhood has a historical pattern and all the roads inside this area are narrow and do not have sufficient space for pedestrian Traffic congestion is a problem in this neighbourhood.
- **Neighbourhood pollution:** Rubbish, litter and the noise level cause most pollution in every neighbourhood. This historic quarter has a compact layout and most parts make it difficult to

access by car. The residents also have difficulty in disposing of the rubbish and some do not bin their refuse properly. This causes an accumulation of litter. There are also two large building sites (working for a big project in the vicinity of this neighbourhood) which create piles of rubbish and construction waste.

- **Antisocial behaviour:** “Anti-social behaviour is conduct that lacks consideration for others and may cause harm to society, whether intentionally or through negligence. This is the opposite of pro-social behaviour, which helps or benefits society”³⁶³. Anti-social behaviour is any sort of action that goes against the norms established by society. We have chosen three behaviours (vandalism such as graffiti, teenagers hanging around and alcohol or drug use) because these are the most common forms of antisocial behaviour in Iranian cities neighbourhood that create an unsafe environment.
- **Crime:** “Sustainability will not achieve its full potential unless it explicitly includes measures to address the ubiquitous problems of crime and the fear of crime within the community,”³⁶⁴ Consequently, it is necessary to assess the level of crime in this neighbourhood.

Sense of places:

Sense of place is one of the main criteria of social sustainability. In this study, sense of place has been chosen as a third criterion for social sustainability because it takes the urban setting into account. To achieve social continuity in a neighbourhood, the residents need to feel a sense of belonging. Those with a greater feeling of belonging communicate more and try to enjoy a better social life with other residents. Also they feel responsible for their area. Community attachment and place attachment are the two factors of sense of place.

- **Community attachment:** Community attachment is calculated on a scale made by summing up the six scale items together. The six items used are from Reitzes’s research findings regarding identification with the community³⁶⁵. The six statements assess the level of agreement (strongly disagree, disagree, no opinion, agree, and strongly agree). We asked the interviewees “When I’m in my neighbourhood I feel:
1- I’m in a place that is my home,
2- I’m in a place that holds a lot of meaning to me,

³⁶³ Kathleen Stassen Berger, *The Developing Person Through Childhood and Adolescence*, 6th ed. (Worth Publishers, 2003),

³⁶⁴ Paul Cozens, “Planning, Crime and Urban Sustainability,” 2007, 3.

³⁶⁵ Tester et al., “Sense of Place among Atlanta Public Housing Residents”; Donald C. Reitzes, “Urban Identification and Downtown Activities: A Social Psychological Approach,” *Social Psychology Quarterly* 49, no. 2 (June 1, 1986): 167–79.

- 3- I'm in a place where I belong,
- 4- I'm in a place I'd miss if I had to leave,
- 5- I'm in a place I am proud of, and
- 6- I'm in a place that's important to me

- **Place attachment:** "Place attachment is an affective bond that people establish with specific areas where they prefer to remain and where they feel comfortable and safe." ³⁶⁶ In this research we assessed the level of place attachment in the residents' feelings. To do this, we asked just one question³⁶⁷.

Social interaction and community spirit:

The fourth criterion of social sustainability which we identified as needing to be assessed in this study was social interaction and community spirit. Social interaction is the capacity of two or more people to interact, communicate or acknowledge one another with each being conscious of the other's intentions when performing any action. We describe this criterion in section 2.3.1.1.4. For the purposes of an evaluation of the level of social interaction and community spirit in this study we selected three factors.

- **Social and cultural activities:** It was essential to find out what social and cultural activities take place in this area. Therefore we asked two questions to assess them..
- **Community-based organizations and groups:** Community-based organizations are non-profits civil societies that work within a single local community³⁶⁸. Typical community organizations are divided into the following groups: community-service and action, educational, health, personal growth and progress, social welfare and group support for the disadvantaged³⁶⁹. To achieve community spirit every place needs to have community organizations and groups.
- **Satisfaction, trust, knowledge and support among the residents:** Satisfaction, trust, knowledge and support are four criteria which every local society needs to have to achieve social sustainability. Thus, in final section of the interview we asked seven questions to determine the level of satisfaction, trust, knowledge and support among the neighbourhood residents.

³⁶⁶ Bernardo Hernández et al., "Place Attachment and Place Identity in Natives and Non-Natives," *Journal of Environmental Psychology* 27, no. 4 (December 2007): 310–19,

³⁶⁷ Tester et al., "Sense of Place among Atlanta Public Housing Residents."

³⁶⁸ James Jennings, "Community-Based Organisations and the Non-Profit Sectors in Massachusetts: Where Do We Go from Here," *Tufts University, Massachusetts. Retrieved April 24 (2005): 2012.*

³⁶⁹ Ibid.

4.2.1.2 The stages of interview

This section describes the different stages of the interview, from choosing the interviewees to translating the interviews from Farsi into English.

- **Choosing the interviewees**

The table below shows the groups and numbers of people we wanted to interview.

Interviewees	Male older than 40 years	Male between 20 and 40 years old	Female older than 40 years	Female between 20 and 40 years old
Jewish residents with residency of more than 2 years	3	3	3	3
Afghani nationality residents with more than 2 years residency	3	3	3	3
Shiah Moslem residents with more than 2 years residency	9	9	9	9
Total number of interviewees	15	15	15	15

Table 15: the numbers and different groups of residents who will be interviewed

We can see from data in the table above that we interviewed sixty local residents of this neighbourhood. In this locality there are three groups of residents. In section 4.2.1 we fully described the residents and their religion. We also divided the two groups aged between 20 and 40 and those older than 40 and the residents interviewed had to have more than two years' residency. We tried to find people to interview from almost every part of the neighbourhood. On the basis of the data from Table 15, we had planned to interview twelve Jews but we could only find eight Jewish residents and all of them were over 40 years of age: five males and three females. Also, from among the Afghani residents we were only able to interview eight males and four females under 40 because the Afghani residents were so religious. Another limitation of this study was that of interviewing the female group. The researcher had a female partner to question the females because in Iranian culture it is extremely hard to have a long conversation between a male and a female if they do not know each other.

The table below reveals the actual numbers in the different groups of residents interviewed:

Interviewees	Male older than 40 years	Male between 20 and 40 years old	Female older than 40	Female between 20 and 40 years old
Jewish residents with residency of more than 2 years	5	0	3	0
Afghani nationality residents with more than 2 years' residency	4	4	0	4
Shiah Moslem residents with more than 2 years' residency	11	11	12	11
Total number of interviewees	15	15	15	15

Table 16: actual numbers in the different groups who were interviewed

- **Interviewing process**

All of the interviews were carried out by the researcher, except for those in the female group whose interview was conducted by a female partner. Firstly, the researcher tried to find people from people from among those walking or working in the area. He tried to approach people walking in the neighbourhood and asked them if they were residents. If the person was female the researcher's partner approached them. If he/she answered yes, the second question asked was, How long have you been living here? We were looking for people who had lived in the area for more than two years. After finding such a person, the researcher introduced himself and gave the interviewee a one-sided information sheet (See Appendixes 2). This was contained details about the research, such as the research aims: why this particular person had been invited to participate; how useful the participant could be, and the researcher contact information was mentioned. Each interview took roughly 40 to 50 minutes. During that time, the researcher refrained from taking any photo of the interviewee and did not record his/her voice. Interviewing the local residents was done in two different sessions because the researcher had difficulty in going to Isfahan. Each session took three days.

- **Ethical considerations**

For this study ethical approval was provided by the researcher through the University of Sheffield (See Appendix 6). Before researcher started each interview, the interviewee was informed verbally that the interview was completely voluntary and that he/she could leave at any stage and there was no compulsion to respond to any question that they did not like. They were also informed that the interview was confidential, anonymous and without any photography or voice recording. Furthermore, the researcher tried to convince the interviewees that the interview would not elicit anything particularly personal and the questions were not of a sensitive nature or private character.

- **Translation interviews**

In this case study of a neighbourhood in an Iranian city with Farsi as the residents' language, the interviews were originally provided in English; consequently a translated version from English into Farsi was given. All the interviews as well as the information sheet were conducted in the Farsi language (See Appendix 3). After we finished the interviews we translated them into English once again. The analysis of the interviews was performed through the medium of English.

4.2.2 Collecting Observational Data

In the second part of the research a qualitative method was used to assess the urban design and context the features of the physical. The study aim was to ascertain if the design and context of the ancient quarter were amenable to social sustainability. In chapter 3, section 3.2.3.2 we discussed the possibility of using a combination of the serial vision method and walking as a qualitative technique for collecting the data.

4.2.2.1 The townscape elements which will be analysed and evaluated by the collected visual data

Before we started to walk and take the photos, we had to identify the objective of the observation and what we needed to see in order to evaluate the visual data.

We mentioned in Chapter 3 that the aims of the qualitative method were to evaluate the townscape elements of the neighbourhood. Five elements were identified. In section 3.2.4.2; Tables 7, 8, 9, 10 and 11 show the details. However, it is necessary to explain what the components are. Thus, we provide a short description of each one in the following paragraph.

1. Identify

Nine components (sub-elements) have been identified for evaluation purposes. More elements could have been given but these are sufficient for this case study.

- **Surviving historic road patterns, plot subdivisions:** This is an ancient quarter and any sign of an historic pattern helps to highlight the identity of the neighbourhood, for example, the exiting historic roads, routes and pathways.
- **Surviving historic buildings and monuments:** The historic buildings and monuments are also part of the identity of a place. This study contains every historic building and monument located in this area.
- **The use of common historic materials, styles and details in new buildings:** In an historic area, the existence of new buildings which have been constructed in a past style or use antique materials helps to define the place's identity. The edifices that are constructed in a bygone style or use archaic materials and those that revive dated building styles in the neighbourhood also confer a special character..
- **Harmony in architectural design and material of the buildings:** The existing harmony in the architectural style of the buildings can create a place with a specific character. We thus need to identify those parts of the neighbourhood where such architectural harmony of design still exists.

- **Distinct image and character:** Those places which have distinctive features are easily recognized. During the walking task we must, therefore, take note of every quarter that has a distinct image, simply because most parts of the city are virtually identical.
- **Physical features which have been lost:** The physical features that have been lost are part of the place's identity and many locations are famous because of these features. In order to find such elements we used background information and, during the walk, we identified their whereabouts. The maps were also useful for pinpointing their exact position. in the neighbourhood.
- **Significant landmark:** is a man-made or natural element with significant image compare to its background that can be used for direction finding and are often visible from a long distance. We identified all the buildings and monuments that act as significant landmarks in the area.
- **Significant view, vistas and panoramas:** refer to large and beautiful sights of an area of land, water or a whole city. The existing significant views and vistas are part of the identity in a place.

2. Public realm

We have identified nine items to evaluate the public realm. These are a feature of most studies.

- **Pavements, kerbs and steps:** Pavement is the hard surface of a road, street or sidewalk. The kerb is a stone edging to a pavement or raised path and the steps refer to the doorsteps or shop steps in this area.
- **The building condition:** During the walk we can only see the façade of the buildings therefore this assessment is only for the frontages and anything seen from the road. Furthermore, in the course of the walk, we identified the location of ruined areas.
- **The shop frontages:** For this item we focused solely on everything to do with the shop frontages which we saw during the walk. The shop signs were also included in this assessment.
- **Planting on the roadside:** The roadside is a narrow strip of grass or plants and sometimes also trees located between the carriageway (roadway) curb (or road surface edge or shoulder) and the boundary (right-of-way line) of a road³⁷⁰.

³⁷⁰ "Worthington, OH - Official Website - Street Trees / Tree Lawn," n.d., <http://www.worthington.org/index.aspx?NID=299>.

- **Street furniture:** Street furniture consists of objects and pieces of equipment installed in streets and roads for different purposes. Any kind of seating facilities, bins, bollards and flowerboxes are classified as street furniture and we observed them during our stroll in the area³⁷¹.
- **Advertising board:** A panel for the display of advertisements in streets or in public spaces which people can see.
- **Lighting (roads, pathways and sidewalks):** equipment in the roads pathways or sidewalks for producing light for people so that they can see where they are going.
- **Lighting (green spaces, public spaces):** equipment in green or public spaces for providing light for people so that they can use these areas after dark.
- **Public art:** is art in any media that has been designed and implemented with the intention of being acted in the public realm, usually outside and accessible to all³⁷². This includes any kind of permanent or temporary works, fountains and graphics which are public, such as a sculpture or wall painting.
- **Safety and security equipment: this** is any kind of security facilities, such as a police station, public CCTV.
- **Public space, quality, use and management:** "A public space is a social space that is generally open and accessible to people"³⁷³. It is one of the main elements of the public realm.
- **Traffic installations:** These are defined as any kind of street marking, traffic light, traffic signals and pedestrian crossing.
- **Green space and other semi-natural features:** They are designated as "An area of grass, trees, or other vegetation set apart for recreational or aesthetic purposes in an otherwise urban environment"³⁷⁴.

³⁷¹ "Street Furniture Noun - Definition in the British English Dictionary & Thesaurus - Cambridge Dictionaries Online," n.d., <http://dictionary.cambridge.org/dictionary/british/street-furniture>.

³⁷² "Public Art - Wikipedia, the Free Encyclopedia," n.d., http://en.wikipedia.org/wiki/Public_Art.

³⁷³ "Public Space - Wikipedia, the Free Encyclopedia," n.d., http://en.wikipedia.org/wiki/Public_Space.

³⁷⁴ "Green Space: Definition of Green Space in Oxford Dictionary (British & World English)," n.d., <http://www.oxforddictionaries.com/definition/english/green-space>.

3. Movement

Successful movement with filtered permeability, which improves social sustainability in a neighbourhood, has been identified as the third feature of a place. Thus, movement as a factor of urban design needs to be assessed. To evaluate movement in this area we identified nine elements. These are briefly defined below.

- **Public transport services and accessibility:** trains, buses and other forms of transport which are available to the public, run on fixed routes and charge set fares³⁷⁵. This area only has bus services.
- **Car use including access, circulation and traffic flows:** A public way or road along with the houses or buildings which runs through the city, usually with a sidewalk or sidewalks³⁷⁶. A specific space for car movement, which is exclusively for cars, and the volume of traffic flow.
- **Cycle use, including routes and facilities:** “a special path for the exclusive use of cyclists” and facilities to park the bicycle³⁷⁷.
- **On street parking:** A specific space for parking on the roadsides which can be designed and marked with proper facilities such as a parking meter.
- **Parking lots:** “An area for parking motor vehicles”³⁷⁸ Sometime it is a well-designed space with good facilities and good design for car parking.
- **Pedestrian movements:** A specific path or sidewalk exclusively for pedestrian movement.
- **Accessibility for disabled people, including gradients and obstructions:** there exist a well-defined alternative of steps, resting places, adapted signs and kerb drops..
- **Pedestrian movement: permeability with adjacent neighbourhoods:** “Permeability or connectivity describes the degree to which urban forms permit (or restrict) movement of people or vehicles in different directions”³⁷⁹. In this study we focused on filtered permeability. This is a priority for pedestrians and cycles. This element of movement

³⁷⁵ “Public Transport Noun - Definition in the British English Dictionary & Thesaurus - Cambridge Dictionaries Online,” accessed March 17, 2014, <http://dictionary.cambridge.org/dictionary/british/public-transport>.

³⁷⁶ “Street - Definition of Street by the Free Online Dictionary, Thesaurus and Encyclopedia.,” accessed March 17, 2014, <http://www.thefreedictionary.com/street>.

³⁷⁷ “Collins English Dictionary | Always Free Online,” n.d., <http://www.collinsdictionary.com/dictionary/english/cycle-path>.

³⁷⁸ “Parking Lot - Definition of Parking Lot by the Free Online Dictionary, Thesaurus and Encyclopedia.,” n.d., <http://www.thefreedictionary.com/parking+lot>.

³⁷⁹ Susan Handy, Xinyu Cao, and Patricia Mokhtarian, “Correlation or Causality between the Built Environment and Travel Behavior? Evidence from Northern California,” *Transportation Research Part D: Transport and Environment* 10, no. 6 (2005): 427–44.

concerns the level of the roads and paths, permeability and connectivity for walking, in the main areas inside the neighbourhood.

- **Pedestrian movement and permeability inside the neighbourhood:** This refers to the level of permeability and connectivity for pedestrians with the adjacent area with safe pathways, pedestrians crossing or pedestrian bridges, on the main streets on the borders of the area. When assessing this element we will find out if this area has connections with adjacent areas for pedestrian movements or not.

4. Legibility

A place with legibility is the fourth feature of townscape which improves social sustainability. For an assessment of the legibility of the area we follow Kevin Lynch's method in this study. Lynch identified five elements to evaluate legibility. These include: nodes, edges, landmarks, paths and districts³⁸⁰. This research deals with a small neighbourhood; therefore we merely adapt the four elements of legibility for our purposes. There is a brief description of each of these items below.

- **Nodes:** "are points, the strategic spots in a city into which an observer can enter, and which are intensive foci to and from where he is travelling. They may be primary junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character, as a street-corner, hangout or an enclosed square"³⁸¹

For this study we identified two groups of nodes:

1- Gateway, entry and exit points:

2- Neighbourhood centre, important junctions and interaction points

- **Edges:** are "the linear elements not used or considered as paths by the observer. They are boundaries between two phases: linear breaks in continuity: shores, railroad cuts, edges of development, walls"³⁸². In this study, we classify the buildings' and shops' frontage on the roadsides as edges of the area.
- **Landmarks:** are "another type of point-reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply-defined physical

³⁸⁰ Lynch, *The Image of the City*, 1960.

³⁸¹ Kevin Lynch, *The Image of the City* (MIT Press, 1960); "A.3 Urban Character & Legibility," n.d., <https://www.rudi.net/books/5290>.

³⁸² Lynch, *The Image of the City*, 1960; "A.3 Urban Character & Legibility."

object, such as a building, sign, store, or mountain³⁸³. In this study we classify important buildings, historic buildings and important new corners as landmarks.

- **Paths:** are “the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads³⁸⁴. In this study we classify the roads, routes and pedestrian ways inside the neighbourhood as paths.

5- Land use

Mixed land use is the fifth feature of a place which improves social sustainability. We identified four elements to assess the land use of the area. Below, brief descriptions of these elements are given.

- **Neighbourhood form:** “The pattern of the neighbourhood is the way the different functions and elements of the settlement are distributed and mixed together spatially”.
- **Distribution and amounts of land use:** land use is the way of using land by humans. The number of different land uses and their location in neighbourhood comprises any kind of land use such as residential, commercial, educational, health, sports, cultural and social.
- **Variety of housing types:** “Houses can be built in a large variety of configurations. A basic division is between free-standing or single-family houses and various types of attached or multi-user dwellings³⁸⁵.”
- **Building height (scale):** “The building height is the vertical distance from the average elevation of the proposed finished grade along the wall of a building or structure to the highest point of the roof, for flat roofs³⁸⁶”. In this area all the roofs are flat.

³⁸³ Lynch, *The Image of the City*, 1960; “A.3 Urban Character & Legibility.”

³⁸⁴ Lynch, *The Image of the City*, 1960; “A.3 Urban Character & Legibility.”

³⁸⁵ “List of House Types,” *Wikipedia, the Free Encyclopedia*, n.d., http://en.wikipedia.org/w/index.php?title=List_of_house_types&oldid=599691920.

³⁸⁶ “Land Use Glossary | Square Feet Blog Commercial Real Estate Blog,” n.d., <http://www.squarefeetblog.com/resources/land-use-glossary/>.

4.2.2.2 Walking through Juibareh and observational survey

For the collection of visual data, the researcher walked through all parts of the neighbourhood and used a camera as a capturing device. A map was needed .to provide a starting-point for every sector, to take a series of pictures. All photos in the sequences were related to each other. The walk was designed to assess the elements which are described in the previous section.

- Figure below shows all the walking sectors that the researcher covered in this neighbourhood.



Figure 20: segmentation the walking sectors

The Figure shows the 38 walking sectors that were created after the researcher had walked the neighbourhood. There was no priority for covering a specific area but the researcher started from the two main roads inside the neighbourhood and the sectors inside the area and walked as far as the borders. Every starting and changing point was really important because we wanted to analyse

each zone differently and it was necessary to separate at a particular point. The researcher determined where each walk started and finished.

After walking and taking a series of pictures of the neighbourhood, 38 sectors were created. At the next stage it was necessary to group every walk zone and show the photos of each sector on a separated sheet. The researcher provided a walk sheet for every walk zone. The sequence of pictures belonging to each area and a sketch map showing the walking route and the locations where the researcher took the photos were recorded on the walk sheet. Also under every picture of the sequence there was a description written by the researcher. The captions to the photos on the walk sheet are to put them in context, as these are the urban features that this study aims to assess. At the analysis stage the researcher used these clues to analyse these items. This section puts on show 17 walk sheets and the rest show in Appendix 4. These comprise the sequence of photos, descriptions and a small map of the walk and the locations in the neighbourhood where the photos were taken.

4.2.2.3 Observational Survey

Observational Survey for part 1:



1: This is the main road and also main entry to the neighbourhood. Walking into this road both sides are shopping units. Poor pavement material is obvious.



2: Continuing to walk and arriving at the main road of this neighbourhood. Shopping units have got poor maintained frontage in both sides and poor accessibility for disabled.



3: on both sides of the road there are shopping units with poor quality facades and poor shopping signs. After walking 100 yards we reach a mosque on right side of road. This mosque works as a landmark.



4: There is no street furniture such as bins and seats but these shops create a vibrant atmosphere for this entry. Pedestrian movement is really bad and there is no specific space for pedestrian movement and also no cycle route.



5: Continuing to walk there is a node with a historic house on the left corner which is used as a storeroom while this house could be regenerated and used for social activity. There are no traffic lights and pedestrian crossing in this junction. House and shops in this node have



6: Continuing to walk and pass the house, no side trees on side walk in this road. Opposite the house on right side of the road there is a massive empty space with a temporary barrier in front.



7: In the corner of this space there remains a building. This building is really poorly maintained and needs to be demolished. This empty space is used as a concrete building site and makes a lot of mess in this neighbourhood such as pollution, noise and traffic.



8: This space has been created from the ruins of the old buildings; therefore, the coherence of historic pattern in this part of the neighbourhood is destroyed but is a really good opportunity to provide a public space with neighbourhood requirements especially social facilities.



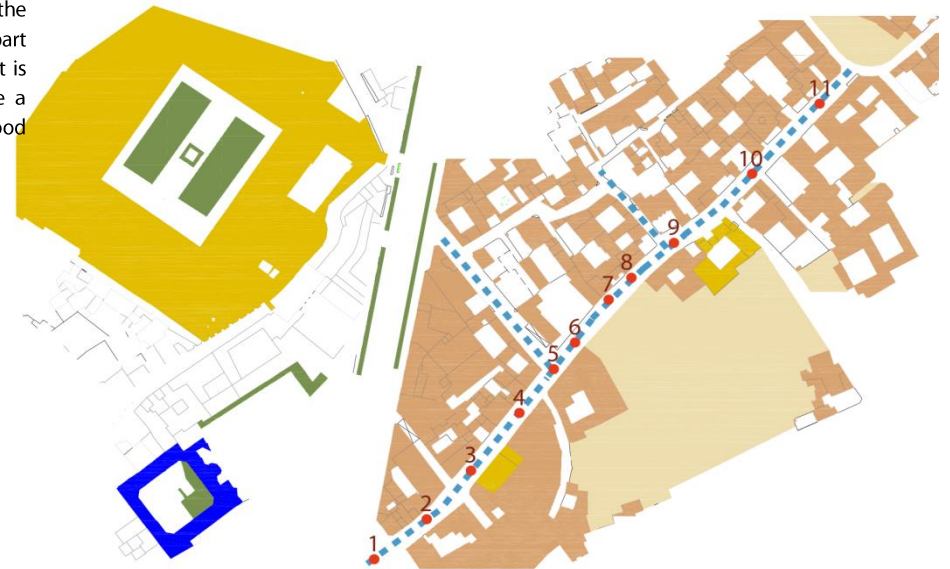
9: Continuing to walk and pass this space there is no sidewalk and no trees in this road and is extremely hard pedestrian movement especially in busy times of this neighbourhood.



10: Continuing to walk 100 meters after an empty space, on the left side there is an old synagogue, this synagogue has been unused for a long time. The coherence between historic and new building is poor and new building constructions do not have coherence with historic pattern.



11: Continuing to walk and arriving at Seh Rah Mahigiry junction which is the most important junction of this neighbourhood and is used as a car park.



Observational Survey for part 2:



12: Arriving at the She Rah Mahigiri junction, in the past there was a stream inside this neighbourhood and this node was a point where people collected water unfortunately now there is no sign of that stream. In this node there are some shopping units on both sides and empty spaces from destroyed housing. This node has the potential to be a neighbourhood centre because it is the junction of five main roads and has accessibility from all sides of this neighbourhood. Also there is a big empty space that can be used for public space. This node has strong legibility in this neighbourhood. It is a historic asset of this neighbourhood but now is a poorly maintained junction.



13: Continuing to walk, crossing Seh Rah Mahigiry node on the left side there are ruin old houses and on right side some shopping units with poor signage.



14: On both sides of the road there are shopping units which have been unused for a long time. Unfinished and poorly maintained frontage is seen on both sides of this road also poorly maintained pavement is seen.



15: There are no sidewalks, no cycle routes or no street furniture. Disabled also have problems to use this road because there is no specific way for the disabled. Road lighting is inadequate especially shops and houses



16: Conflict among users is one of the biggest problems especially movement warning. Lack of specific spaces for car parking is a problem and causes user conflict.



17: Continuing to walk and arriving at a big ruined space. There are two old synagogues both sides of this space and in the back of this space there is a park with landscape. These empty spaces with two historic houses can be used for public space for example public art with an historic pattern around and are also close to a green space. These two synagogues are part of neighbourhood heritage. This empty space is used as a car park.



18: Continuing to walk after that space, passing two small shopping units and reaching a good size green space.



19: This green space is very well located in the entry of this road from the north side of this neighbourhood. Good sidewalks, good lighting, seating furniture are advantages of this green space. This entry point can be a vibrant point with this green space.



20: From the left side of this green space on the main road continue to walk and finally reach the end of this neighbourhood.



Observational Survey for part 3:



1: This is one of the main roads of this neighbourhood from south and new square. This part of the neighbourhood used to be part of the bazar and was connected to the bazar but now has been separated from the main bazar.



2: Arrive at this road. New restoration has been done on commercial units like old style bazar. This part has been designed just for pedestrians but is seen in this picture being used for parking spaces and motorcycles can easily drive here.



3: Continue to walk and arrive at the bazar there is good environment like an old bazar with new reconstruction. Shops are active in this part and good quality design and good maintenance help to attract people.



4: This bazar still needs to have more consideration and is part of historic pattern. Also this part is legible in this neighbourhood and increases the legibility of the neighbourhood.



5: Follow this bazar and after passing a bend arrive at a straight part. Shops in this part need to have a good banner. Some shops do not even have a sign and banner. On the right side a temporary wall has been constructed but this wall reduces the quality of this small bazar.



6: The problem with those shops is the lack of disabled accessibility and disabled people have difficulty to access the shops.



7: Reach the last arch of the bazar. There is a nice view of a historic road behind the arch.



8: This road has been regenerated by the government. This road is the second main road of this neighbourhood and crosses this area.



9: Arrive at regenerated road with flagstone floor and also both edges are reconstructed. On the left side there is a new wall behind this wall there is a big empty space. This road is part of the regeneration project which has been done in this neighbourhood.



10: Continue to walk and reach an old historic caravansary. This caravansary is a historic element and can work as a landmark. The entrance and outside facades of this caravansary have been reconstructed



11: Inside this caravansary there are many units around a beautiful courtyard. These units have different kinds of workshop functions. This caravansary has good potential to be a strong character of this neighbourhood.



12: Continue to walk along this road. Although this road has been regenerated there is not enough space for parking and pedestrians. Also there is no disabled pathway.



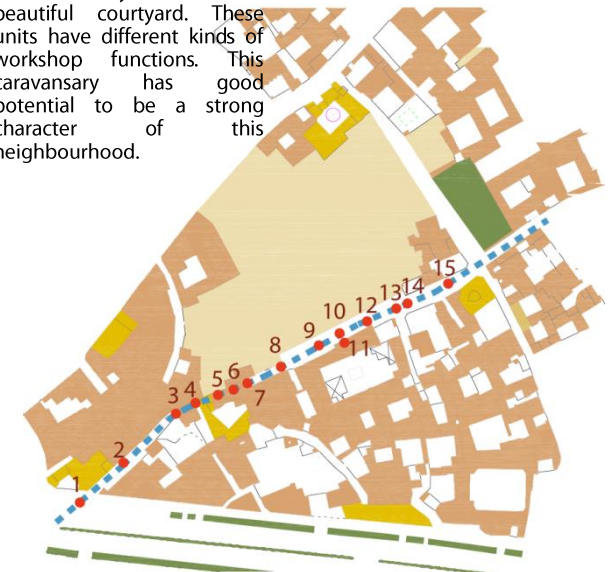
13: The buildings frontages have been recovered like old style and create beautiful edges on the both side of this road. In this part of the neighbourhood the buildings' design and style have really good coherence and show the identity of this neighbourhood.



14: One good point about this street is roadside trees while on most roads of this neighbourhood there are no roadside trees but this picture shows how roadside trees increase the quality of the space.



15: Continue to walk and reach a small junction. In this junction there is a small green space. Unfortunately again a car has parked on sidewalk and has occupied all space. This is a common problem in this area.



Observational Survey for part 4:



1: Arrive at the junction. This junction can be a successful junction because there is a small green space on the corner. This green space has reasonable design quality. Keeping an old wall and recovering the wall are good points of this space. A good quality public space in this space helps to attract people.



2: Flagstone material used in the pavement and thatch material applied to the facades recently (two years ago) and this regeneration has totally been done on the base of identity of this neighbourhood. This is a successful picture of this neighbourhood. Unfortunately pedestrian sidewalk is unusable.



3: In some parts the pedestrian sidewalk has been removed on this road. No specific space for off street parking is another problem. The sidewalk in some parts has been occupied by cars. Confliction of users is a problem.



4: The coherence between old buildings and new buildings is good. Continue to walk and reach an empty space in the right side which is used for parking and all facades around this space have been regenerated by new thatch material.



5: This is an empty space which is used as a car park. This is a positive point but with some trees and greenery this space would be more successful.



6: In the straight ahead an arched corridor is seen. This road is really attractive and encourages walking.



7: Continue to walk toward this arch. Before this corridor again there is well maintained private parking which has got a chain gate. This space can be used for small sitting area. Some trees help to increase the quality.



8: Arrive at arched corridor, this is a small and beautiful shopping area and is part of this neighbourhood.



9: Pass this corridor. There is a small junction with a beautiful regenerated historic building in the right corner and a mosque in the left. These two attractive buildings increase the legibility of this road and both are historic elements of this neighbourhood.



10: Continue to walk and pass these two buildings. Interrupted sidewalk is a negative point on the right side but coherence and continuity of edges are positive points. An arch is seen at the end of the view.



11: Arrive at a small bazar or shopping area with good image and maintenance. But confliction of users is a problem and need to have more consideration. Traffic flows in the road in the morning and afternoon which is a big problem.



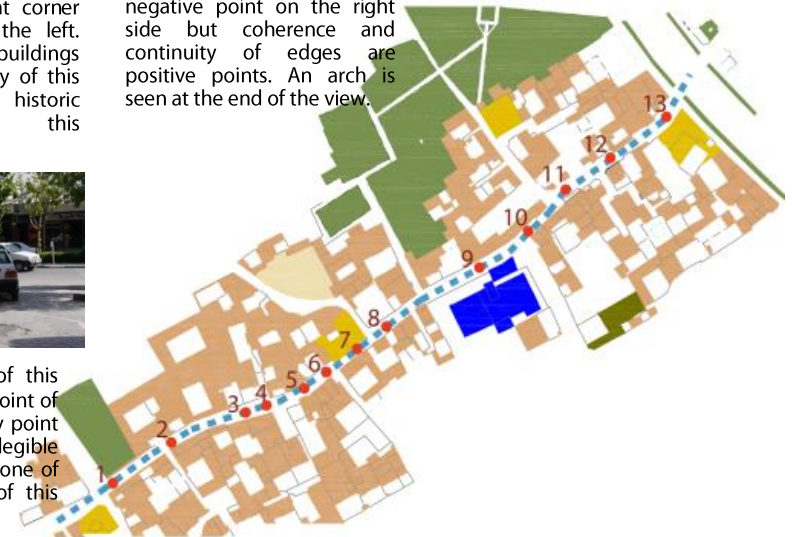
12: Continue to walk and pass this small bazar. Both sides are recovered by a new layer of thatch and are residential. Lack of specific space for cycles is a problem.



13: This part of the road gets narrow. This causes many problems with pedestrian movement and car movement.



14: Reach the end of this road. This is the entry point of Kamal Street. This entry point needs to be more legible because this road was one of the two main roads of this neighbourhood.



Observational survey for part 5:



1: After Seh Rah mahigiri node continue to walk and reach to a junction. In this junction walk into the left side road, no pedestrian space and conflict user are problems.



2: Continue to walk on this road. Poor maintained building and poor pavement are problems gain. Lighting is really poor.



3: This road is not busy road. After walking 40 yards reach to a green space.



4: This green space very well located between residential areas and has access from both sides. This green space very well maintained. There is historic house inside this space. This building has been regenerated and is a historic element. The building can be a landmark and makes this space more legible. One of the problem in this space is lack of disable accessibility and disable people have difficulty with steps to go in this space.



5: Continue to walk and after 50 meters the road change to narrower rout. The new buildings in this part have good maintenance but pavements are poor quality.



6: Arrival to a narrow part of the road. This narrow road makes a good atmosphere for walking in shadow.



7: This road is dangerous for pedestrian because there is space for just one car and if a car comes into this road there is no space for pedestrian but hopefully this is a low traffic road.



8: Continue to walk and after 50 meters the road gets wider again. There is small junction.



9: In this junction there are three choices to choose first one is straight and two in both sides. In the corner the unfinished facades is unattractive.



10: Continue to walk in the straightway this is a narrow rout. Follow this rout a view of historic arc can be seen in the end of this view.



11: Reach to the end there are many shops in here. These shops make this point more active and also help to improve safety of this neighbourhood. Lack of parking space is problem.



12: This is the border of this neighbourhood and other side of this main street one of the bazaar entry is seen. This part of neighbourhood connected to main bazar of Isfahan. The good point of this picture is preventing car movement. Three guards are seen in this picture.



Observational survey for part 6:



1: Start to walk from Seh Rah Mahigiti junction which is the most important junction of this neighbourhood and continue to walk. On the left side of the road there is a small shop which looks active on this road and on the left side of the road there are some houses with poor maintenance.



2: Continue to walk. Reach a small junction. Keep walking straight. There is no sidewalk. Confliction of users is a problem again. There are three new building blocks which have got good quality design and maintenance on the right side.



3: Reach a green space with a lot of greenery and it has been well maintained. This part of the road is a perfect for walking because of green space and wall shadow but unfortunately there are no pedestrian space and sidewalk.



4: This beautiful green space changed the environment of this part and also there is historic building inside this space. This well maintained building helps to increase legibility and also is part of this neighbourhood identity. The problems of this green space are lack of good furniture (such as facilities for playing children), poor lightening equipment and lack of public art.



5: Follow the road, this part of the road cross between two beautiful green spaces and is highly potential point of this neighbourhood. Both green edges help to increase the legibility of the area.



6: Green space in the right side is the same left one. Location, greenery, maintenance and accessibility by residents are advantages of this green space and lack of furniture and good lightening are the problems.



7: Passing two green space and continue to walk, no specific spaces for parking is problem here but because of getting narrow in the end helps to reduce traffic flow here.



8: After walking 40 yards reach to a narrow part of the road.



9: Arrival to the historic path way with poor maintenance and poor pavement but with absolutely good environment for walking (full of shadow). The only problem is when car comes into this way there is no space for pedestrian. This part should be just pedestrian way.



10: After passing the beautiful part reach to a bend with sign of a historic mosque in the end of view.



11: Follow the road and reach to another historic element of this neighbourhood on the right side. There is historic mosque makes here more legible and also can work as a landmark. New building around have reasonable quality and design.



12: Continue to walk and reach to the end of the road.



13: This is end of this part or can say the entry point of this border of the neighbourhood. There is shop on the corner but the entry point is not a vibrant entry and could be more legible point with that historic mosque.



Observational survey for part 19:



1: This is an historic building in the main regenerated road. Beside this building there is a junction. Take the road to the left.



2: Continue walking until you arrive at the left side of the road. There is a side walk but it has not been completed. This sidewalk causes difficulty for the disabled.



3: On the left there is a deserted space. The walls around it have been covered with new material. Some rubbish can be seen in this space. This space could be converted into a small sitting area with outdoor furniture and some trees.



4: Follow the road, which is wide in this part. The buildings however, are of poor quality. This road could do with some sidewalks and roadside trees.



5: 50 yards on there is a narrower section in which the buildings are run-down.



6: When you reach a junction, you will see some signs of a historic pattern but unfortunately the pattern of neighbourhood is really outmoded and most of



7: On the left an old house can be seen, which is in really poor condition. The position of this house shows the original ground level of neighbourhood.



8: The buildings on both sides of this lane are in really poor condition and lack maintenance



9: Pass this junction to reach to a massive empty space, which was developed after destroying the old pattern of this area. This space is suitable for a new housing project.



10: At the far end of this space is a typical roofed pathway. The buildings around about are in really poor condition.



11: This roofed pathway is part of this neighbourhood identity and this kind of way is seen in this neighbourhood. This pathway is usable just by pedestrian and bike not car.



12: Behind this roofed way there is a beautiful green space. This is very well located between small groups of houses. This space is a successful example of how to use this kind of green expanse. There are some outdoor furniture in this area but more is needed to entice the residents to use it.



Observational survey for part 20:



1: Further on, a car is seen in this picture. This green space needs a small playground for the children to be more successful.



2: The buildings around this space need more maintenance. The walls have unfinished surfaces. With good quality materials covering the walls this green space would be more memorable and legible.



3: Continue walking and pass this open space. A small narrow lane exits from this side. There is no access by car because the route is so narrow.



4: The buildings around this small lane have poor facades and need more maintenance. Poor road surface and a lack of good lighting are problems here.



5: You now pass a narrow section of the street and arrive at a wider part. A good quality new building is in this stretch of the road.



6: Continue walking past the bend after the new building until you reach a straight part of the road. The unfinished facades create a non-legible image of the road.



7: The road gets narrower. The poor-quality pavements, the competition between the cars and the pedestrians are negative points.



8: After walking 50 yards you reach a junction. The buildings frontages are poor here.



9: There is more room on the right side of the road, and the quality of the buildings is better than in previous parts. But this street needs roadside trees and a sidewalk.



10: After the junction, continue straight on till you reach another junction. A historic building is on the corner. This has been repaired and the facades freshly plastered.



11: On the left of this junction there is road with well-kept edges which needs more lights because it is dark at night. Cars and pedestrians compete for space.



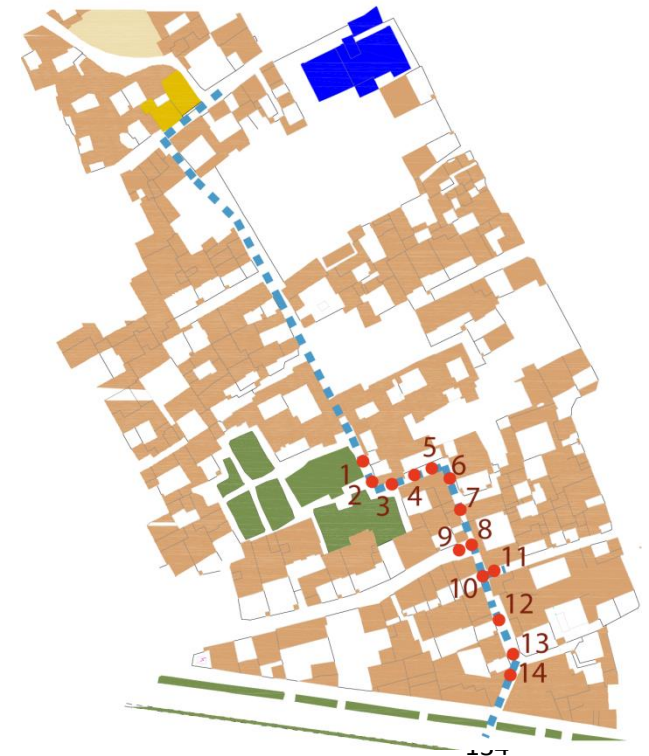
12: This road gets wider again. This part of the road needs trees and a sidewalk. The houses are of reasonable quality.



13: Keep going until you reach a junction with poor edges. Lack of maintenance is evident.



14: Take the road on the right which joins the main boundary street. There is a mosque at the end on the right. Unfortunately, it has no disabled access.



Observational survey for part 21:



1: Start to walk along this road there is a school at the beginning which is the only one in this neighbourhood. It has new buildings which are of reasonable design quality.



2: Continue to walk on this road which is broad. The surrounding buildings are of reasonable quality but lack roadside trees sidewalks and disabled access. These are the negative points of this part of the road.



3: After walking about 40 yards you reach a mosque at the end of this section. The mosque is not a historic building but it can work as a landmark in this road.



4: Pass this mosque and you reach to a narrow part. This part is not usable by car. It also needs lighting equipment.



5: Continue to walk along the narrow pathway. The buildings need more maintenance.



6: Pass the bend and you arrive at a wider area. The road gets wider. This road is long road and buildings in this road have reasonable condition. This road needs trees on roadside.



7: This road passes from a residential area with a combination of new and old houses. Some houses need more maintenance and the lighting equipment is poor.



8: After 40 yards you reach a small junction. On the left there is road with buildings have different condition. An unfinished facade is seen at the beginning of the road and a new block of six-floor apartments at the end. This building has a good quality of design.



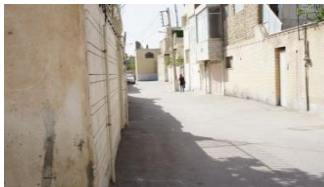
9: Pass the junction until you reach the end. The building quality gets lower here and there are more run-down houses compared with the beginning of this part.



10: At the end of the street there is small junction with a narrow lane. Some badly-kept old-style houses and a minaret can be seen in the distance. This view proves how a strong character can help the legibility of a place.



11: When you reach a bend, the road is still wide but the buildings do not have a good aspect.



12: Continue walking and pass two bends. This part of the road is wide. The buildings are newer. This road has little traffic so pedestrians have not difficulty in walking. With some good sidewalks and roadside trees this road would be perfect for pedestrians and would attract the residents to walk



13: After walking 100 yards you reach a narrower part with lower quality buildings. Many cars are parked on the left-hand side of the road and occupy walking spaces.



14: On reaching this junction, one of the roads goes straight on and reaches the main street and boundary. This road is used for parking by people who come to use the shops on the main street.



15: The condition of the two walls that are seen in this picture is really bad. Lack of maintenance is a problem with these old walls. Also a lack of street furniture (bins) accounts for the rubbish that has collected on the corner of this junction.



Observational survey for part 22:



1: Continue to walk past the junction. In both side there are old poorly maintained walls.



2: Continue until you reach a bend. The buildings in this area are a combination of new and old. The new ones are of reasonable quality but the old houses are crumbling.



3: An dilapidated house is on the corner and an empty yard is seen behind this house.



4: Continue to walk till you reach to an empty space. This is an empty space which is common and has been created by demolishing old houses. This enclosure is used for parking. This area needs green space and vegetation.



5: Pass this empty space and you reach a narrower part but which is still usable by car. A red covered house is in the picture. Using colour on the facades is a good way to create a more attractive place.



6: This house needs maintenance but the coloured facades blend in well with historic pattern of this neighbourhood. This kind of policy can create new identity for the place.



7: Pass the red house and you arrive at a wider part of this road, The buildings in this area are new and of good quality design but the road needs trees and sidewalks.



8: Continue to walk, The road is little traffic road and pedestrians have no difficulty in walking.



Observational survey for part 23:



1: After about 20 yards you reach a house next to a small short road on the right. This space with some greenery, trees and furniture will represent an attractive environment in this area.



2: After this open area continue to walk as far as a junction. A good quality design new building creates a better image of this neighbourhood which looks attractive and liveable in.



3: At this junction look to the left. The buildings at the end of this road are of lower quality but are still reasonable.



4: This time take the road on the right. Parked cars on both sides of the road impede the movement of pedestrians.



5: This road goes on to the far end. Many cars use the entry point as a parking lot. They belong to the people who have businesses on the main street (Kamal Street).



6: There is a big historic religious building with two big minarets at the entry point.



7: These two minarets (Darolziafeh) are a significant landmark in this area which it provides with a really strong character. This monument is very much part of the neighbourhood identity. It is also an important historic monument.



8: The good point about this mosque is the existence of public art and good size space in front. This space has trees, a sitting area and a beautiful fountain. This access point is an attractive feature.



Observational survey for part 24:



1: A historic building in the left and another well-maintained building on the right form an imposing entrance to this road. These buildings are used as landmarks.



2: Continue to walk till you reach a small junction. Look at the right side. The buildings are in reasonable condition.



3: When you come to the end of the road, you can see old-fashioned architecture on the right-



4: You now arrive at a narrow lane. This pathway follows the historic pattern. Unfortunately the existing buildings are outmoded and need maintenance.



5: This house is really old but if it is renovated it can become an enduring historic monument. This house is an integral part of the neighbourhood identity and can act as a landmark.



6: Pass this house and you reach a wider area. In this part cars can come. The buildings are still in good condition but the road needs roadside trees.



7: Continue to walk till you reach to another bend. The buildings are well-appointed..



8: The road surface is of poor quality and has collected some water. This road is not busy road and the traffic flow is low therefore pedestrians do not have difficulty in walking.



9: At the end of the road there is junction. The buildings here are of lesser quality compared with those at the beginning of the road. The junction needs pedestrian spaces because of traffic flow in the next road.



10: Go to the left first. The buildings need more maintenance. At the end of the street a mosque is seen and the road g



11: This part of the road is steep and uphill. It is also narrow and could cause problems between pedestrians and cars.



12: This is the view of the road on the previous walk. In this picture a small bazaar can be seen.



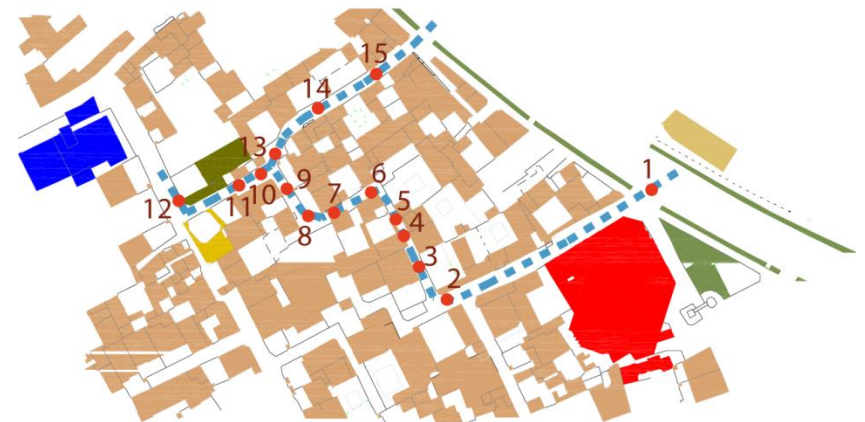
13: Go back to the junction and choose the road on the right this time. This road goes towards the main street. The new buildings on the right are of good quality design but on the left they are poor.



14: This road needs roadside trees and also sidewalks to create a better environment. The pavement quality is poor.



15: After walking 50 yards you reach the end of the road. The end of this road joins the main street and boundary of this neighbourhood.



Observational survey for part 25:



1: Start to walk from the main landmark of this neighbourhood. This is a really huge minaret. This is a historic monument with a strong character and is used as a landmark for this district.



2: Continue to walk under this minaret. This historic landmark is a part of the neighbourhood identity. The minaret is in good condition compared to other historic buildings in this quarter.



3: Continue to walk and pass a big minaret until you arrive at a wide road with many new buildings and a few old houses.



4: After walking 20 meters you reach to a junction, All the buildings in this road are of reasonable quality and design but their style is uncoordinated. They use different materials and different colours (no harmony in design).



5: This road needs some trees. There is space to incorporate roadside trees or for putting some trees at the entrance to the houses.



6: Go past this junction until you reach the end where there is a bend, there is a wall in the right side with no plaster covering.



7: in this part the houses are still in reasonable condition. The pavement needs more maintenance.



8: When you reach a bend you will see a house which has a good quality of design and is well-maintained. This road is usable by car



9: The road gets narrower and still has enough space for car movement but pedestrians need to be careful.



10: A view of some trees can be seen at the end of the road. This view attracts people to walk towards this space.



11: You arrive at good size open space with some trees and a small lot for parking. This space is enclosed by residential blocks so it makes a really safe environment for children to play and for the residents to engage in social activity. This could be one of the successful parts of this



12: This green space is beautiful and attractive but needs some outdoor furniture and a small playground. There are several examples of this kind of space in this neighbourhood, therefore they should form part of the



Observational survey for part 34:



1: This is the main street and the south boundary of this neighbourhood. There are many shops in this road. Every unit is commercial.



2: Continue to walk on the sidewalk which is flanked by trees. The pavement material is fine and is well-looked after. This side walk is safe for pedestrians. The shops are in good condition.



3: The problem here is motorbikes which are highly dangerous for pedestrians.



4: Continue walking until you reach a junction. Two cars are seen in the picture and they are badly parked in front of the road that leads to the neighbourhood.



5: This is an access point of the road. Many cars are parked at the beginning of this road and it is completely full on the right side of the road. This common action causes a conflict between cars and pedestrians especially at the beginning because of the traffic flow.



6: Pass this junction and continue walking. The sidewalk is excellent. Although the shops are using sidewalk space there is enough space for pedestrians. In this main street most buildings have two or three floors. The ground level is mostly commercial and the first floor is residential.



7: In some part of this side walk shops have occupied all the sidewalk space. This is a problem but is not permanent. In this picture there is bank on the corner of good design and quality but it does not fit in well with the architectural design of this neighbourhood.



8: The problem with the sidewalk and edges in this area is a lack of identity. This is the same as most street in Isfahan. This sidewalk needs to show that it is part of the neighbourhood. Instead of increasing coherence, this side road completely isolated this neighbourhood.



9: Continue walking, Some barriers are seen. These are useful to prevent car movement in this space but they cannot do the same for motorbikes and cycles..



10: When you reach the main junction the quality of the pavement, roadside trees and shops is fine. The good size and shade of the sidewalk are positive points .



11: Continue to walk. The sidewalk turns to the left, Follow the sidewalk There is a bank with good design and quality here.



12: Lack of disabled access and facilities is a common problem on this side walk. Continue to the eastern boundary of the neighbourhood.



13: When you reach a small junction, parked cars at the beginning of the road on the left plus a sidewalk cause problem and make access difficult for pedestrians.



14: These main streets (boundaries) with roadside trees and sidewalks have encircled this neighbourhood so that it is like an island.



Observational survey for part 35:



1: After walking 100 yards on the side walk you will hopefully reach a building with no commercial land use. This is an important building and acts as a landmark in this part.



2: Continue to walk alongside the mosque. This mosque has a really good design quality and a perfectly maintained condition.



3: There are many motorbikes on the side walk. Parked motorbikes create an unattractive environment, as well as making it unsafe for pedestrians



4: The only problem with this beautiful mosque is a lack of disabled access.



5: After passing the mosque you arrive at Kamal Street (north boundary of the neighbourhood). In this part, because of a construction project, the sidewalk has been covered with protective scaffolding.



6: Continue past the construction site. This sidewalk is narrower than previous one. A shop can be seen with three steps and Access is difficult for disabled.



7: You reach a junction with well-maintained shops on the corner and two roads that connect with the neighbourhood. Two barriers are seen to prevent cars entering but motorbikes and cycles are still able to drive on the sidewalk.



8: This is the view of the road which leads into the neighbourhood. The buildings at the beginning are badly designed, with unfinished facades.



9: Pass this junction and shop and continue on your way. Many shops with no signs can be seen and the sidewalk is in good condition with roadside trees.



10: After walking 50 yards you reach a part with no shops. This street does not have many shops like the previous one.



11: You come to a wall on the left of the side walk. This wall surrounds private land but needs plastering because it reduces the quality of the sidewalk. In this view two tall minarets are seen in the ..



12: You now reach an important historic monument in the neighbourhood: the minaret. This minaret has a strong character and makes this street more legible. It is a prominent landmark.



13: At the front of this mosque and minaret there is good sized space with lots of trees and greenery. But this space needs more outdoor furniture. Its positive point is a beautiful fountain This small piece of public art makes this space more attractive



Observational survey for part 37:



1: This is the main street and the boundary of this neighbourhood on the north side (Kamal Street). A good sidewalk with trees and a safe environment for pedestrians are the advantages of this street.



2: Continue walking till you reach a bus stop. This is in good quality and design. The pavement material is also good.



3: On this street there are many shops every 40 yards but they are mostly supermarkets. The quality of the shop banners is good on this street.



4: After walking 150 yards you reach a road which goes inside the neighbourhood. The problem with this street is that it makes the neighbourhood like an island. This kind of street has sliced through the historic layout.



5: Continue walking till you reach a shop. There is a telephone box in the corner. It seems this street has good buildings.



6: This sidewalk is good for walking.



7: You reach a green space which is part of green area around the main junction. The size, quality and maintenance are really good. This space needs to complement the sidewalk. With a well-designed resting area this space would be more attractive.



8: Continue to walk, changing direction. The quality of the pavement is fine. The sidewalk is in a good environment for walking. There are two toy shops in this picture.



9: Follow the bend and continue to walk. It is still the same quality but one of the big problems about the shops and sidewalk is the lack of accessibility for disabled people. Even from the street to the sidewalk there is no ramp.



10: When you arrive at the next street and western boundary of the neighbourhood, there is a bus stop of reasonable quality and a barrier to control bike



11: The street is completely commercial and every unit is a shop. This edge increases the legibility.



12: The problem with this sidewalk is that it is not wide enough in this part because there are many shops here. Most of them encroach on the sidewalk space.



13: Continue to walk. Some outdoor furniture is seen. Some shops here have old facades and they need maintenance.



14: The good point about this sidewalk is the placing of barriers at some points to prevent car and bike traffic. However, bikes still manage to invade the sidewalk so these barriers need redesigning.



15: Continue on your way until you reach a taxi rank. This stopping point is separated from moving vehicles by a low barrier. The sidewalk is still a shopping line.



Observational survey for part 38:



1: Continue to walk till you reach a wider part. Some motorbikes have been parked on the sidewalk. Motorbike movement in the pedestrian space is a common problem here and in most parts of the city.



2: This route enters the neighbourhood. Three barriers are used to prevent car movement. This is a good strategy. But the quality of the pavement and the shop advertisements is poor.



3: Continue to walk straight on as far as a small concrete wall. From this point there is an underpass. It is part of a big project and the concrete wall has been built to protect pedestrians.



4: The sidewalk is wider here and has more space for pedestrians. The land use is still commercial.



5: In this picture an underpass is seen. The quality of the pavement is acceptable but the lack of disabled accessibility is a problem again.



6: You reach one of the roads that go inside the neighbourhood. Cars cannot leave but it seems they can exit from the neighbourhood side. There are many shops and shopping centres on both sides of the street. This is a vibrant entry point for the neighbourhood.



7: After the two shopping centres the sidewalk is still the same quality and design. The presence of motorbikes is once again a problem.



8: You arrive at an open area which could become a public space but its take-over by cars has changed the image of this area. People do not feel safe to sit down here and this is not yet a proper public space.



9: This is supposed to be a public space but its take-over by cars has changed the image of this area. People do not feel safe to sit down here and this is not yet a proper public space.



10: There are some flowerboxes in this picture and they are reasonably well designed but their random choice of location is a drawback.



11: Continue walking. This is a massive unplanned space. Again, the intervention of cars is a big problem. This space has the potential to be a successful public area considering the size of the city.



12: On the right-hand side is located the Jameh mosque of Isfahan. This mosque is one of the historic monuments in this neighbourhood and Isfahan. The buildings around this mosque have been demolished because of the new project. The mosque has a strong character and has increased the legibility of this area. In this panoramic picture the mosque can be seen but again car interference is a drawback. There is some street furniture but it is not enough for this big space. Moreover, its location and design needs more thought.



13: Go past the mosque until you reach the new construction site. This project is a new public square to replace the old one. This has both advantages and disadvantages for the neighbourhood.



4.3 Data Analysis

After collecting the data of this study using two different research methods, it is time to analyse it. In this research we have two different types of data: quantitative and qualitative. In chapter 4.2 we talked about how to collect the data. We gathered the quantitative data through a structured interview. For the collection of the qualitative data we used a walk tool and a serial method. In the next two sections we will describe how we analysed both the quantitative and qualitative data of this study.

4.3.1 Analysing Interviews data

A pre-planned structured interview (see Appendix 1) was used to collect the quantitative data. We employed the quantitative research method to assess the criteria of social sustainability which affect the urban design. From the literature review in section 2.3.1, we concluded that accessibility (access to employment, facilities and amenities), safety and security, sense of place and social interaction and community spirit were the four criteria of social sustainability that we needed to assess in this neighbourhood.

In section 4.2.1 we explained how we collected the interview data. Each interview comprises six sections. These are:

1. First section identifies sex, age, religion, nationality, occupation and name, if he/she so wish.
2. View of local area
3. Accessibility
4. Safety and Security
5. Sense of place
6. Social interaction and community spirit

We provided an Excel file to analyse the interviews. We downloaded all the questions into the Excel file. For a better and easier understanding we created a sheet for each section of the interview. In the Excel file there were five sheets with a view of the local area featuring its, accessibility, safety and security, sense of place and social interaction and community spirit. After inputting all the collected interview data, we were easily able to compute the results. We managed to get a graph of the results for every question from the Excel file.

In the first section of the interviews we identified the interviewee by sex, age, religion and nationality. We mentioned that we were interviewing people who had been resident in this neighbourhood for more than two years.

In the next five sections we posed three different types of question:

1- The first consisted of three options. These were: *yes*, *no* and *don't know*. For example, the question below:

Are there signs or maps identifying where you are? (street, building, neighbourhood)

Yes No don't know

In order to analyse the first type of question we put the number of interviews for each answer in the Excel file. The results for these questions were easy to interpret and evaluate on the basis of the percentage for each answer in the Excel file. We also calculated the average rating score for this kind of question.

The rating average was calculated as follows, where:

w = weight of answer choice

x = response count for answer choice (yes and no)

$(x_1w_1 + x_2w_2)/total = \text{Average rating}$

Total = Total number of interviewees – the number of interviewees who responded 'don't know'

Yes, rating scale (2)

No, rating scale (1)

2- The second type of question had options for answers ranging from 'really negative to really positive'. The questions below are samples:

How well is the place maintained?

Very good Good Satisfactory Poor Very poor don't know

What is the speed or volume of road traffic like? (conflict between cars and pedestrians)

Very big problem Fairly big problem Minor problem No problem at all Don't know

How far do you agree with: I'm in a place where I belong?

Strongly agree Agree Average Disagree Strongly disagree

We also imported the data for these kinds of questions into the Excel file and we evaluated the questions on the percentage basis of each short answer. We also calculated an average rating score for this type of question. So, for these questions, we had a graph from Excel and an average rating score. The average rating scale is really useful because after evaluating every question of

each subsection we needed to evaluate the main section by looking at the sub-sections together. This provided a table containing the average rating score numbers for each question.

The average rating score of the questions calculated a weighted average based on the weight assigned to each choice of answer.

The rating average is calculated as follows, where:

w = weight of answer choice

x = response count for answer choice

$(x_1w_1 + x_2w_2 + x_3w_3 \dots + x_nw_n)/total = \text{Average rating}$

Total = the number of interviewees

For these questions, we used a 5-point rating scale. The weights assigned to each answer choice are shown in parentheses:

Strongly Agree, rating scale is (5)

Agree, rating scale is (4)

Average, rating scale is (3)

Disagree, rating scale is (2)

Strongly Disagree, rating scale is (1)

For all questions of this type for calculating the average rating scale we need to remove the number of interviewees who answered *don't know*.

3- The third type of question are those that do not have an option choice from really negative to really positive but have a list of short options for specific subjects. The question below is of this kind.

What is your main form of transport?

Car/motorcycle Public transport (buses and trains) Cycling Walking Never go out Other

These questions were evaluated on the basis of the results from the Excel file which was a graph. This graph showed different percentages for different answers and from the results, the researcher was easily able to interpret and evaluate the question.

After evaluating each question of the interview on the basis of the results from the Excel file and also calculating the average rating scale for most of them, we needed to interpret the questions that belonged to section and the sub-section. At next step of the analysis of the interviews, we provided a table for the main sections: view of local area, accessibility, safety and security, sense of place and social interaction and community spirit and all the results of every section are shown together because this research aims to evaluate accessibility, safety and security, sense of place and social interaction and community spirit. In Chapter 6 we will show and briefly interpret the tables from the results of the main section analysis.

4.3.2 Analysis of Observational Data

In this section every detail of the townscape elements will be analysed. The five main elements of the townscape were classified as identity, public realm, movement, legibility and land use. In this section the analytical method used for the walking sectors will be explained. In the following section a complete analysis of walking sector 2 are given. The Figure below shows the location of sector 2 in the neighbourhood. We employed this method for all 38 walking sectors.

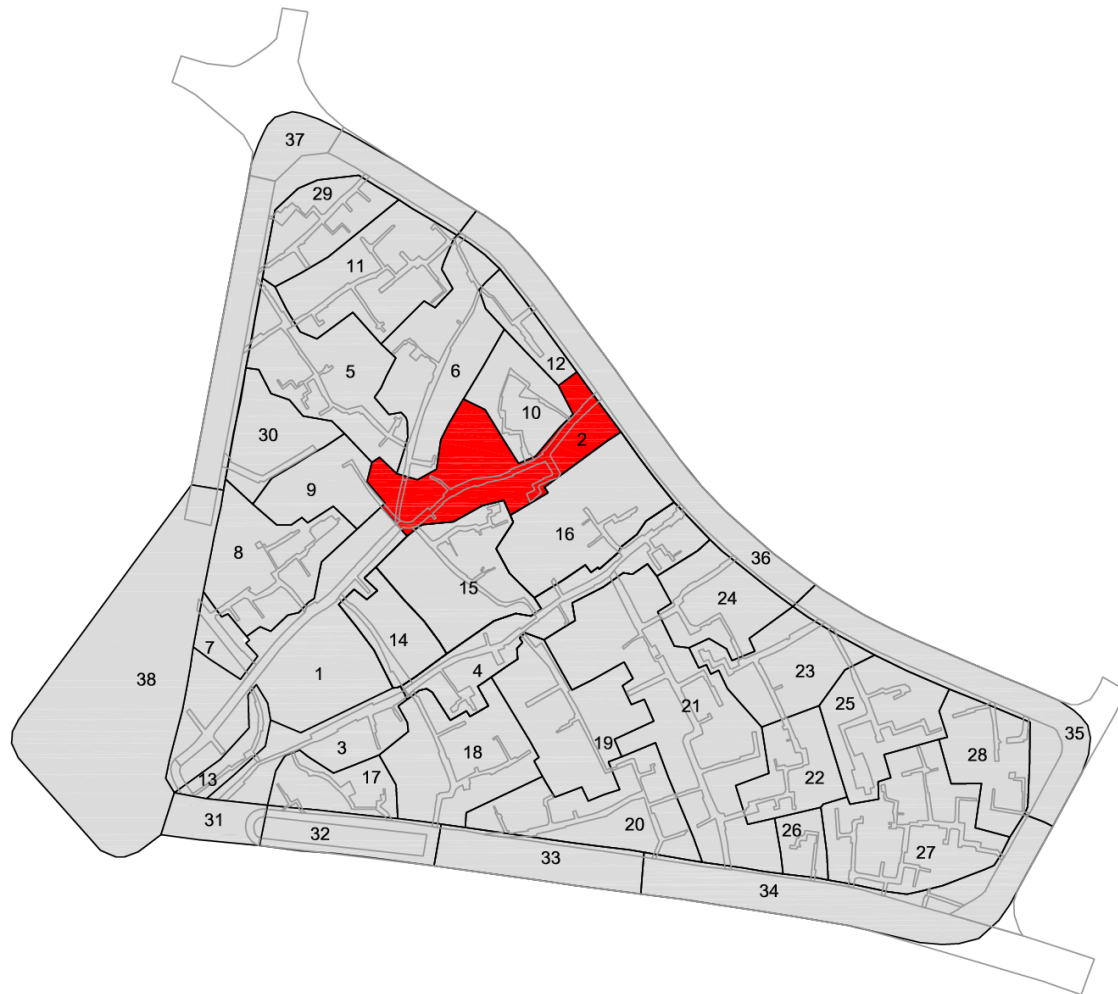


Figure 21: the location of sector 2 in the neighbourhood

In Appendix 5 an example of manual analysis is given also in the next five sections 38 Figures will be shown and these will explain the method of analysing the elements of identity, public realm, movement, legibility and land use. Firstly, each Figure will exemplify the options, procedures and colours or line-types, secondly there will be an analysed sample photo and thirdly an analysed map will be given with an evaluation of the element.

4.3.2.1 Analysing the identity elements in part 2

Every element of the identity which had been described in section 4.2.2.1 in this section will be analysed. For every element a Figure has been illustrated. In the Figures evaluation option and colours or line-types, description, analysed picture and mapped results are given.

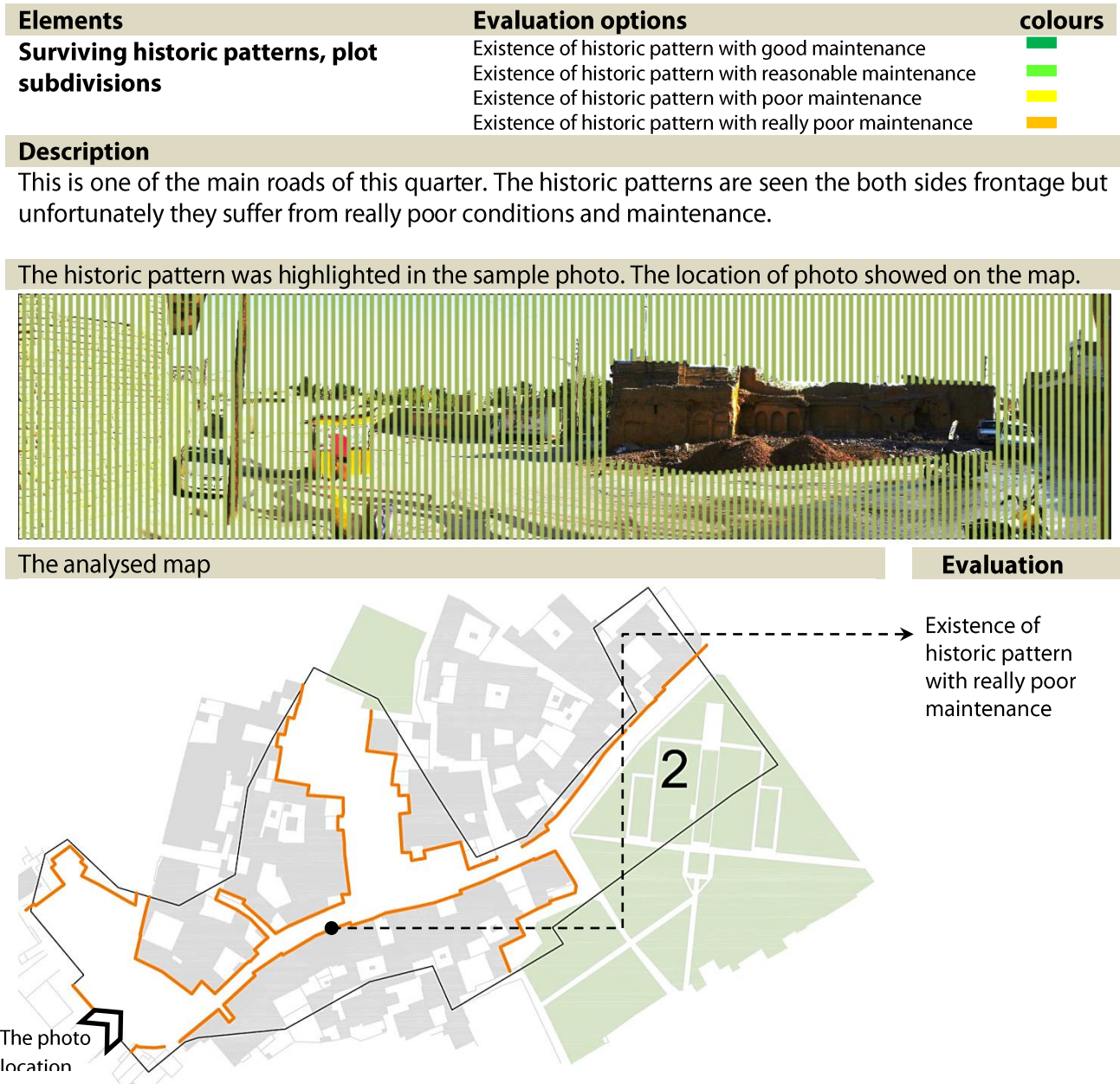






Figure 22: The analysis of existence of the historic pattern in part 2

Elements	Evaluation options and colours	
Surviving historic buildings and elements	Historic element with good maintenance	
	Historic element with reasonable maintenance	
	Historic element with poor maintenance	
	Historic element with really poor maintenance	

Description
 There are two historic synagogues which are shown in the picture. They are poorly maintained and are in poor condition. The buildings around them are in ruins and are now virtually an empty space.

The two historic synagogues were highlighted on the sample photo ↓



The analysed map

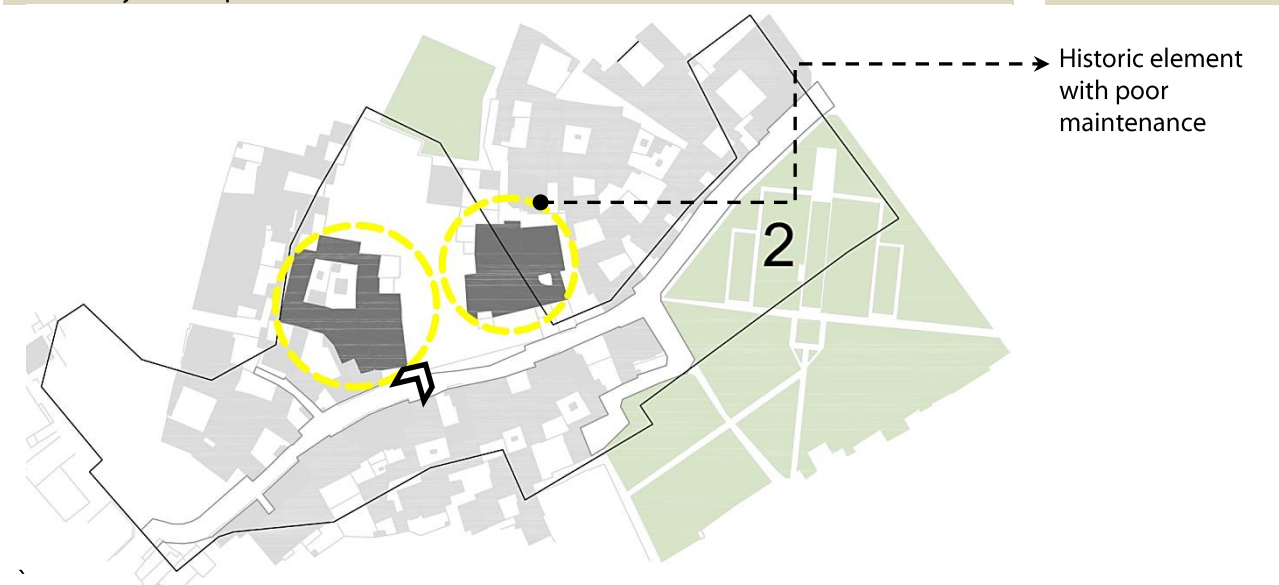


Figure 23: The analysis of historic buildings and elements in part 2

Elements	Evaluation options	colours
The use of prevalent historic materials, styles and details in new buildings	The frontage lines where there are new buildings uses the prevalent historic materials and building methods.	█
	The frontage line where there are no new buildings uses the prevalent historic materials and building methods.	█

Description
 There are no new buildings in this part which were made with historic materials or in a historic style.



Figure 24: The analysis of using use of prevalent historic materials and styles in part 2

Elements	Evaluation options	colours
Harmony in architectural design and material of the buildings	Good harmony in architectural design and material of the buildings frontages in majority parts	■
	Existence of harmony in architectural design and material of the buildings frontages in some parts.	■
	No harmony in architectural design and material of the buildings frontages in majority parts.	■

Description

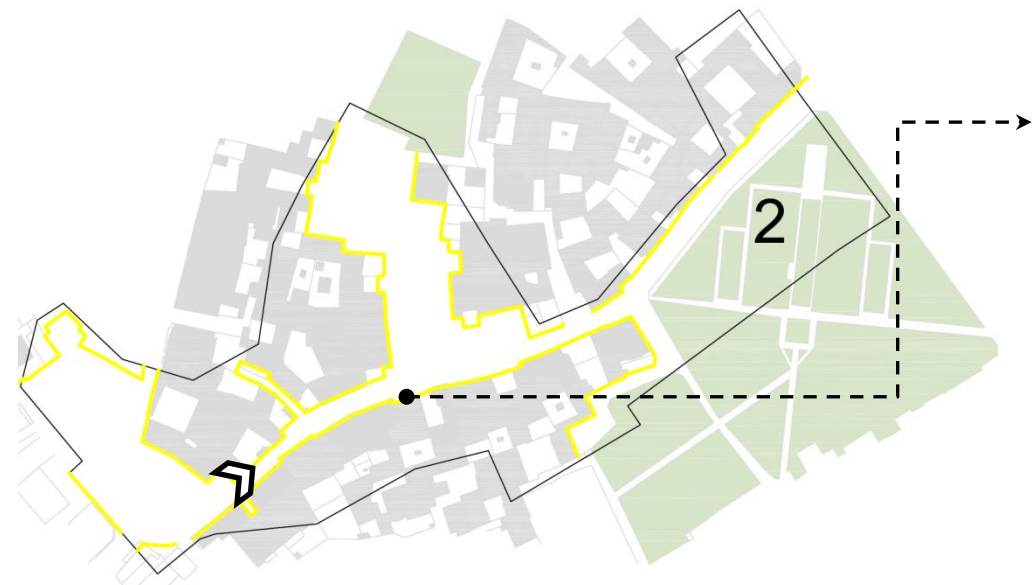
The buildings in this part of the neighbourhood do not enjoy harmony of architectural design and materials. There are many buildings with unfinished facades and many obsolete buildings with different materials and colours on the facades.

The difference between buildings which are highlighted by different colours on a sample photo





The analysed map

Evaluation



No harmony in architectural design and material of the buildings in most parts

Figure 25: The analysis of the harmony among the architectural designs of buildings in part 2

Elements	Evaluation options	colours
A distinct image and character	The space or road that has distinct image and character	
	The space or road that does not have distinct character and image	

Description

In this part of the neighbourhood we do not see a distinctive image or character. The image of this part is the same as that of many neighbourhoods with poor conditions.

A sample photo from part 2 which shows the non-existence of the Distinct image and character ↓



The limits of part

Evaluation



The road does not have distinctive character and image

Figure 26: the analysis of a distinct image in part 2

Elements

Significant physical Features which have been lost

Evaluation procedure

For this element, before starting to walk, the location of every lost feature of the case study will be identified and during the observation the visual data will be collected from the locations.

Description

At this junction (Seh Rah Mahigiri junction) there was a stream and people collected water but now there is no sign of the stream which has been lost forever.

The location of the lost feature highlighted on the photo of Seh Rah Mahigiri junction



The analysed map



Figure 27: the analysis of the lost significant features in part 2

Elements

Significant landmarks

Evaluation procedure

For this element every buildings, element or corner that have significant character will be recorded on the map during observation Juibareh.

Description

There is no significant landmark in this part of the neighbourhood.

The limit of part 2 and evaluation of this element on the map

Evaluation

There is no significant landmark



Figure 28: the analysis of significant landmarks in part 2

Elements

Significant view, vistas and panoramas

Evaluation procedure

For this element significant view will be recorded from each walking sector

Description

There is no significant view or vista in this part of the neighbourhood.

The analysed map







Evaluation

There are no significant views, vistas or panorama

Figure 29: the analysis of significant views in part 2

4.3.2.2 Analysing public realm elements in part 2

In this section thirteen elements of the public realm of part 2 are analysed and a Figure illustrates the analytical process for each element.

Elements	Evaluation options	colours
Pavements	Space, road or pathway with good condition and maintenance pavements	
	Space, road or pathway with reasonable condition and maintenance pavements	
	Space, road or pathway with poor condition and maintenance pavements	
	Space, road or pathway with really poor condition and maintenance pavements	

Description

The quality of the pavements is really poor in this part of the main road. Lack of maintenances can be seen.

The pavement of the road highlighted on a sample photo from part2



The analysed map

Evaluation

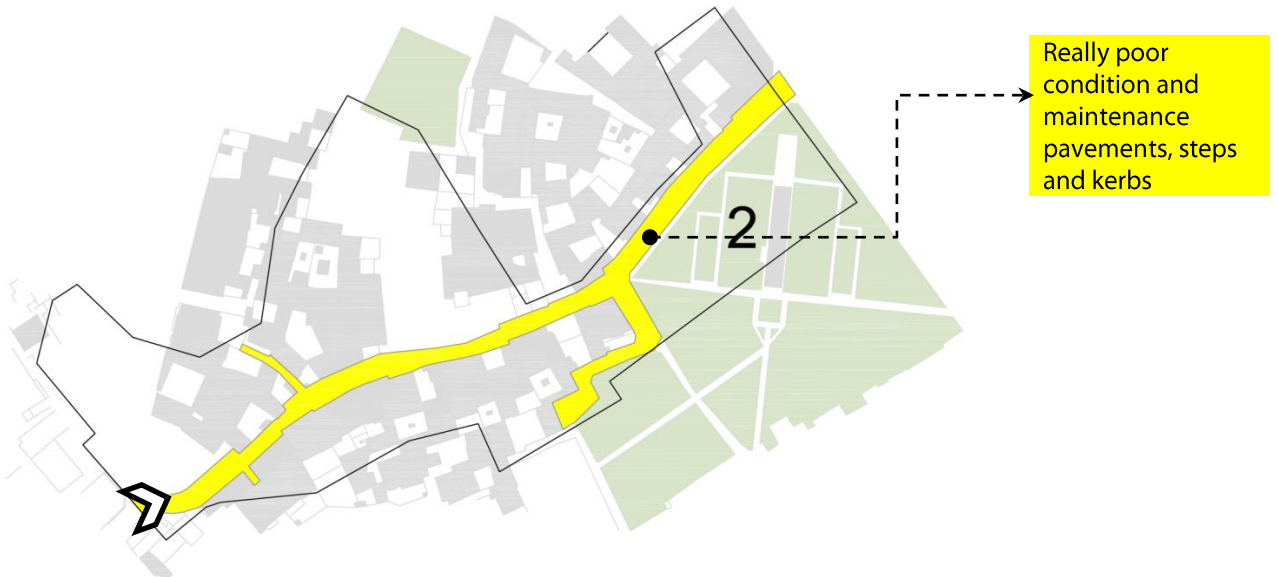


Figure 30: the analysis of pavement condition in part 2

Elements	Evaluation options	colours
The condition of the buildings frontages	Good condition, quality, maintenance buildings frontages	■
	Reasonable condition, quality and average maintenance buildings frontages	■
	Poor condition, quality and low maintenance buildings frontages	■
	Really poor condition, obsoleted building with lack of maintenance buildings frontages	■

Description

The majority of buildings in this part are in poor condition and their maintenance is mediocre. Also there are two big ruined areas in this part which are shown in the photos. Many historic buildings have been demolished and have left empty spaces.

The building frontages highlighted on a sample photo (photo 1)



The location of the first empty space was highlighted on the photo (photo 2)



The location of the second empty space highlighted on the photo (photo 3)



The analysed map

Evaluation



Figure 31: the analysis of the condition of building frontages in part 2

Elements	Evaluation options	colours
Shops front age	The shops with good condition, quality and design	■
	The shops with reasonable condition, quality and design frontages	■
	Existence shops with poor quality condition, quality and design	■
	Existence shops with really poor condition, quality and design	■

Description
 In this part of the neighbourhood there some shops but they have poor frontage design with inferior signs. This photo shows their condition.

The shop frontages highlighted on the sample photo from part2

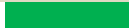

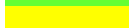




The analysed photo

Evaluation



Figure 32: the analysis of the shops frontages in part 2

Elements	Evaluation options	colours
Roadside greenery	Road with good quality planting on the roadsides	
	Road with reasonable quality planting on the roadsides	
	Road with poor quality planting on the roadsides	
	Road with really poor planting on the roadsides	
	Road with no planting on the roadsides	

Description

There are no trees on the roadsides or any planting, as can be seen in the sample photo.

The photo of road without roadside greenery in part 2



The analysed map

Evaluation



Figure 33: the analysis of roadsides greenery in part 2

Elements	Evaluation options	colours
Street furniture	Road or space with enough furniture with good condition and design	
	Road or space with A few numbers furniture with reasonable condition and design	
	Road or space with Enough furniture with reasonable condition and design	
	Road or space with A few numbers furniture with reasonable condition and design	
	Road or space with Enough furniture with poor condition and design	
	Road or space with A few numbers furniture with poor condition and design	
	Road or space with Enough furniture with really poor condition and design	
	Road or space with A few numbers furniture with really poor condition and design	
	Road or space with Lack of street furniture	

Description
 There is no seating and no bins in this part of the neighbourhood but there is a green space with a few reasonable condition furniture at the end of road.

The photo shows the green space with a few reasonable benches and bins.



The analysed map **Evaluation**

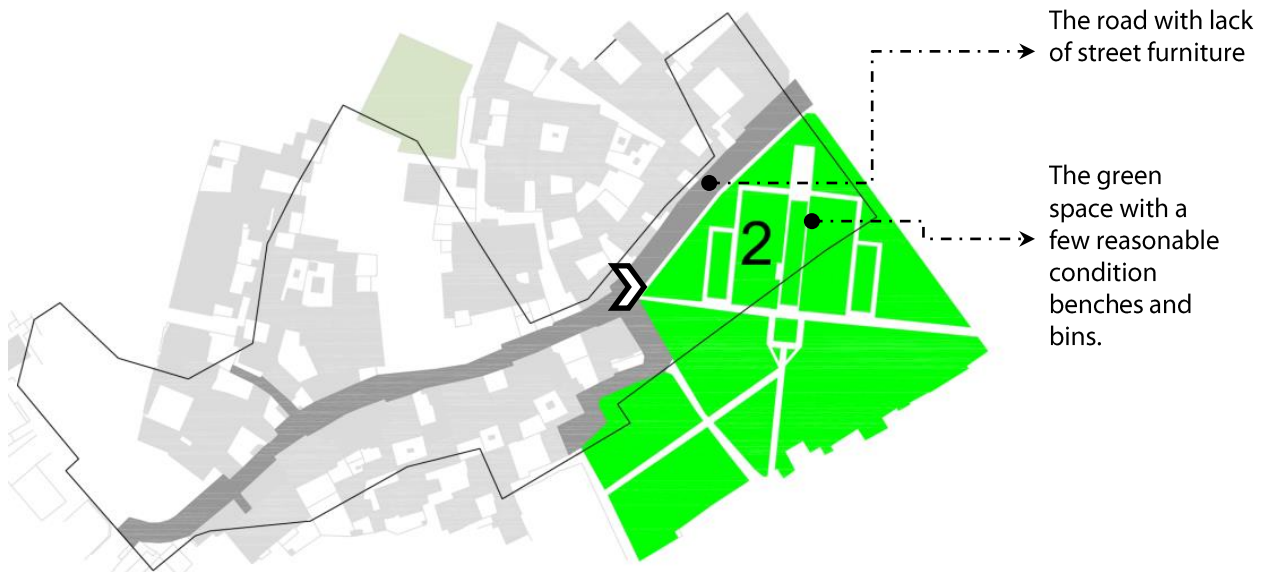







Figure 34: the analysis of the state of street furniture in part 2

Elements	Evaluation options	colours
Advertisements boards	Road or space with Good condition, quality, design and good information	
	Road or space with Reasonable condition, quality, design and limited information	
	Road or space with Poor condition, quality, design and poor information	
	Road or space with Really poor condition, quality, design	
	Road or space with no advertisement banners and boards	

Description

There are no advertisements boards in this part of the neighbourhood.

The analysed map

Evaluation

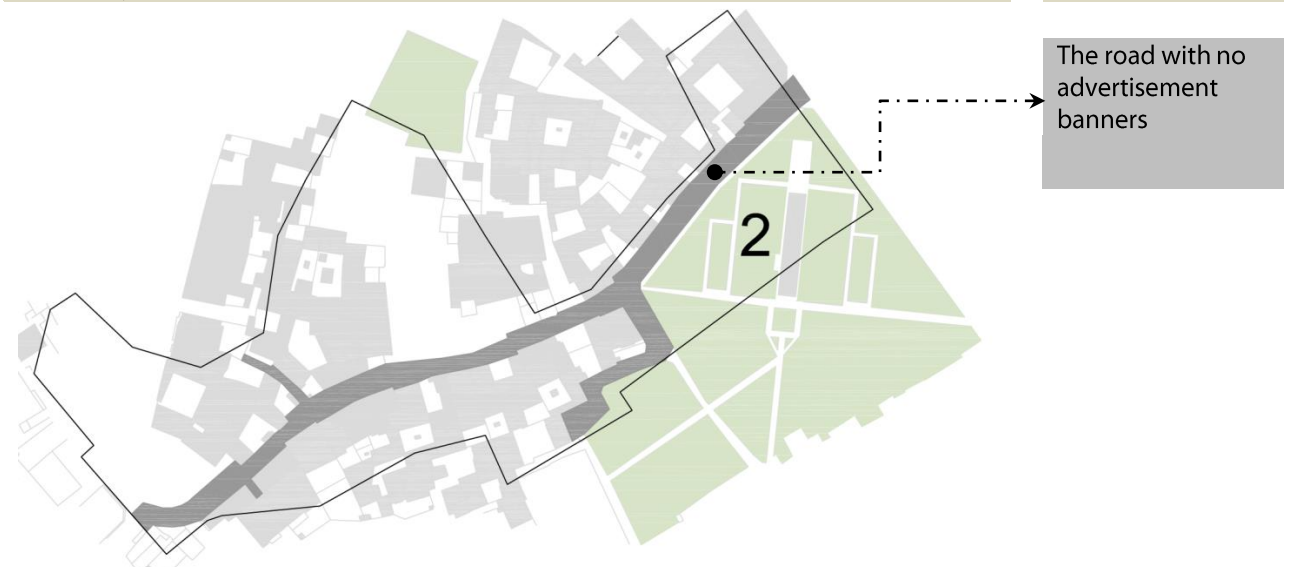






Figure 35: the analysis of advertisements boards condition in part 2

Elements	Evaluation options	colours
Lighting on roadsides, pathways and sidewalks	Enough lighting with good quality and design lighting	
	Reasonable quantity with reasonable quality and design lighting	
	Reasonable quantity but poor quality and design lighting	
	Very few poor lighting quality and design lighting	

Description
 The lighting design and quality is low-grade in this part of the main road and a jumble of electricity cables is seen but there are enough lighting poles.

The lighting highlighted on the sample photo from part2



The analysed map

Evaluation

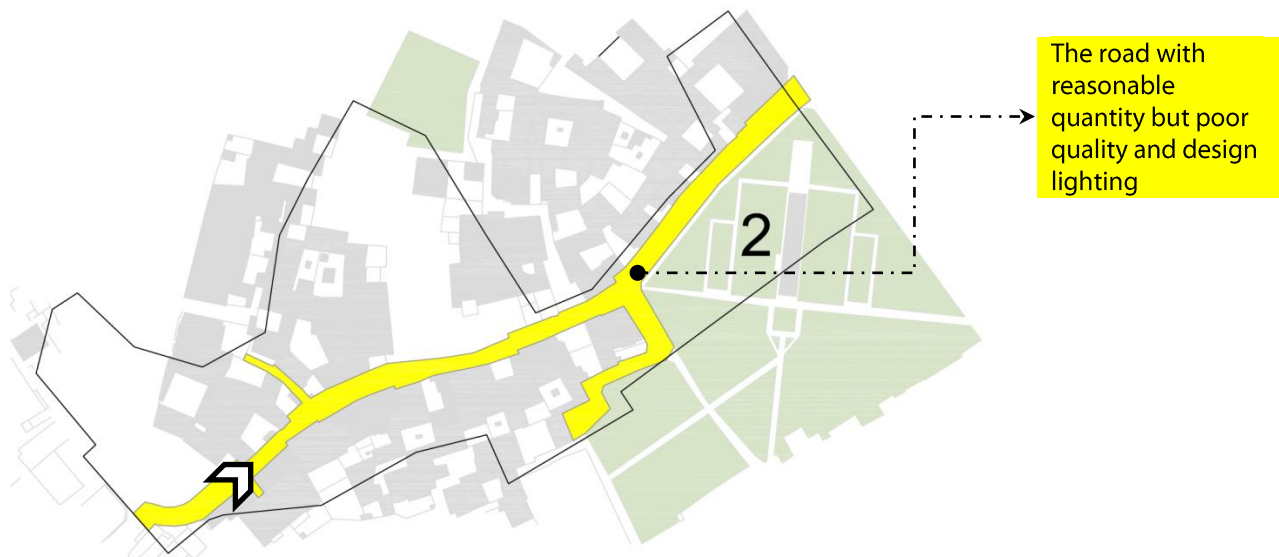






Figure 36: the analysis of the state of roadside lighting in part 2

Elements	Evaluation options	colours
Lighting on public spaces and green spaces	Enough lighting with good quality and design lighting	
	Reasonable quantity with reasonable quality and design lighting	
	Reasonable quantity but poor quality and design lighting	
	Very few poor lighting quality and design lighting	

Description
 The lighting design and quality is reasonable grade in this green space and there are enough lighting poles.

The green space lighting highlighted on the sample photo (photo 1)



The green space lighting highlighted on the sample photo (photo 2)



The analysed map

Evaluation



Figure 37: the analysis of green spaces lighting in part 2

Elements

Public art (permanent and temporary works, fountains and graphics)

Evaluation procedure

For this element during observation of Juibareh every public art and even temporary art works will be identified and recorded on the map.

Description

There is no public art in this part even temporary public art.

The analysed map



Evaluation

There is no public art

Figure 38: the analysis of public arts in part 2

Elements

Safety and security equipment

Evaluation procedure

For this element during observation of Juibareh every public art and even temporary art work will be identified and recorded on the map.

Description

There is no public safety and security equipment in this part of the neighbourhood.


The analysed map



Evaluation

There is no safety and security equipment.

Figure 39: the analysis of safety and security in part 2

Elements	Evaluation options	colours
Public space, quality, use and management	Good quality, design and maintenance public space with regularity Reasonable quality, design and maintenance public space with regularity Poor quality, design and maintenance public space with irregularity Really poor design and maintenance public space with irregularity Under construction public space	

Description
 There is no public space in this part of the neighbourhood.

The analysed map

Evaluation



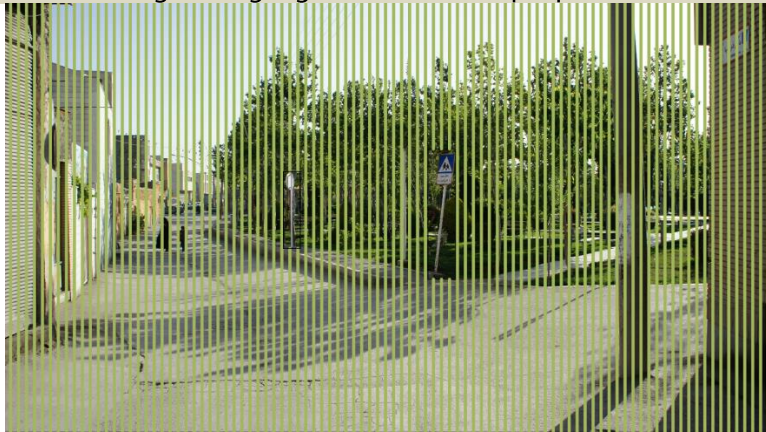
Figure 40: the analysis of public spaces in part 2

Elements	Evaluation options	colours
Traffic installations (including street markings, parking meters, traffic signals)	Roads with enough good traffic installations	Dark Blue
	Roads with very few number good traffic installations	Light Blue
	Roads with enough reasonable traffic installations	Green
	Roads with very few number reasonable traffic installations	Light Green
	Roads with enough poor traffic installations	Yellow
	Roads with very few numbers poor traffic installations	Orange
	Roads with enough really poor traffic installations	Brown
	Roads with very few numbers really poor traffic installations	Grey

Description

We do not see any traffic installations like street markings, parking metres or parking markings. There are just a few traffic signals with poor quality. Also there are two impasses with no traffic signals.

The traffic signals highlighted on the sample photo







The analysed map

Evaluation



Figure 41: the analysis of traffic installation in part 2

Elements	Evaluation options	colours
Green spaces and other semi-natural features	Green spaces with good quality, maintenance and design	
	Green spaces with reasonable quality, maintenance and design	
	Green spaces with poor quality, maintenance and design	
	Green spaces with really poor quality, maintenance and design	

Description

In this part of the neighbourhood at the end of main road there is a good quality design green spaces with good maintenance.

The green space highlighted on the sample photo





The analysed map



Figure 42: the analysis of green spaces in part 2

4.3.2.3 Analysing movement elements in part 2

Nine elements are identified for movement. This section provides nine Figures which comprise the analytical stages of these elements in part 2 of the walking sectors.

Elements	Evaluation options	Line-types
Public transport services and accessibility (bus)	The roads with bus routes, services and stops	
	The roads with no bus routes, services and stops	

Description

There are no bus routes inside the neighbourhood. Therefore the road does not have bus routes and services. The main streets around the area have bus routes and stops.

The analysed map

Evaluation

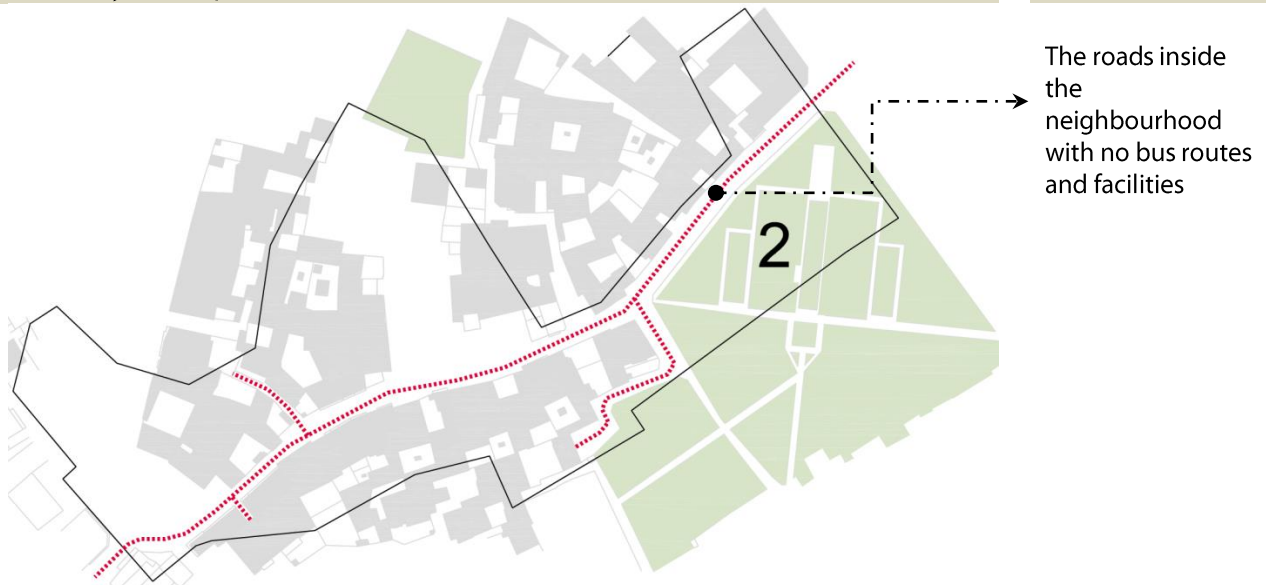


Figure 43: the analysis of bus routes and stops in part 2

Elements	Evaluation options	Line-types
Car use including access and circulation and traffic flows	The underpass roads and wider that 9mm with good traffic	
	The roads wider than 9m with proper sidewalks and good traffic flow and cars circulation flow	
	The roads between 5m to 9m (the most parts) with no sidewalks, busy during specific times and many difficulties for cars circulation	
	The narrow roads less than 5mm (the most parts) with no sidewalks, low traffic and really hard car circulation flow	
	The impasse routes and hard to circulate or unusable by cars	
	Really narrow routes unusable by car and usable just for pedestrians	

Description
 Traffic flow is not high in this road. This road is busy in the morning between 7:30 to 9 am and afternoon 4:30 to 6pm. This is part of the main road of this neighbourhood. The big problem with car movement is that allocated spaces for both sides car circulation have not been recognized and there is a need to design spaces for car movement.

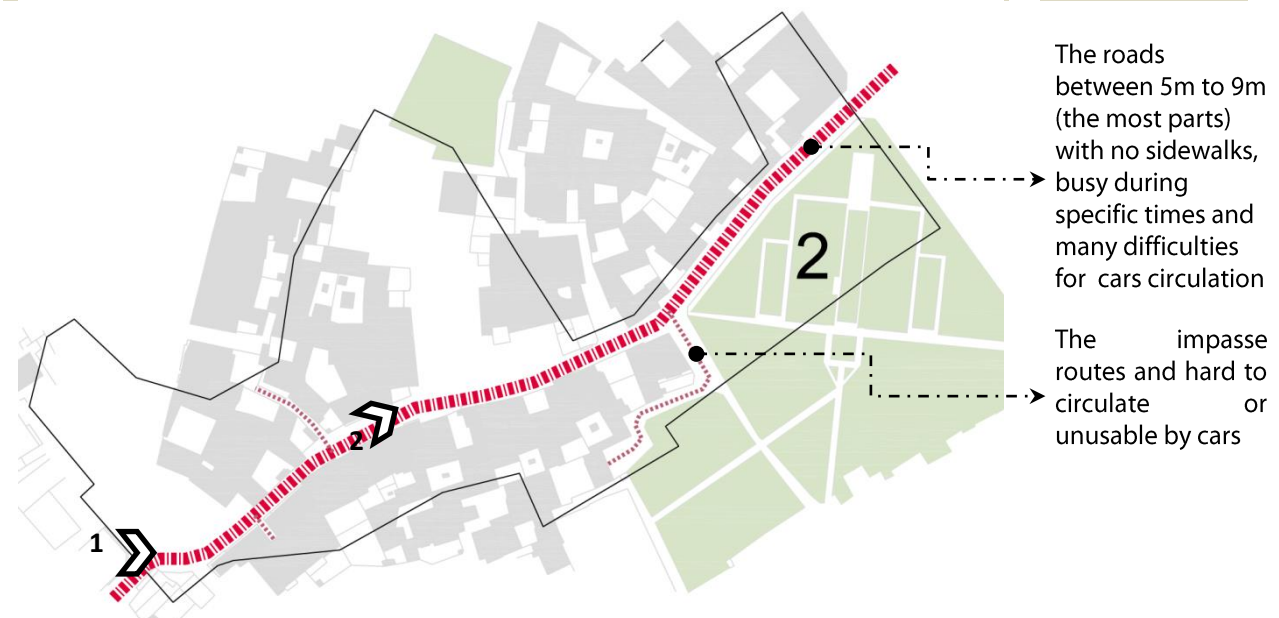


Figure 44: the analysis of cars movement in part 2

Elements	Evaluation options	Line-types
Cycle use, including routes and facilities	The main street with no cycle routes on roadsides while they are main streets and busy	
	The main roads inside the area with no cycle routes and many difficulties for cycling in busy times of cars movement	
	The narrow roads with no cycle routes but are not busy roads and are fairly safe for cycling	

Description

There are no specific lanes for cycling and also no facilities in this part of the neighbourhood.

The road with no cycle space highlighted on the sample photo



The analysed map

Evaluation

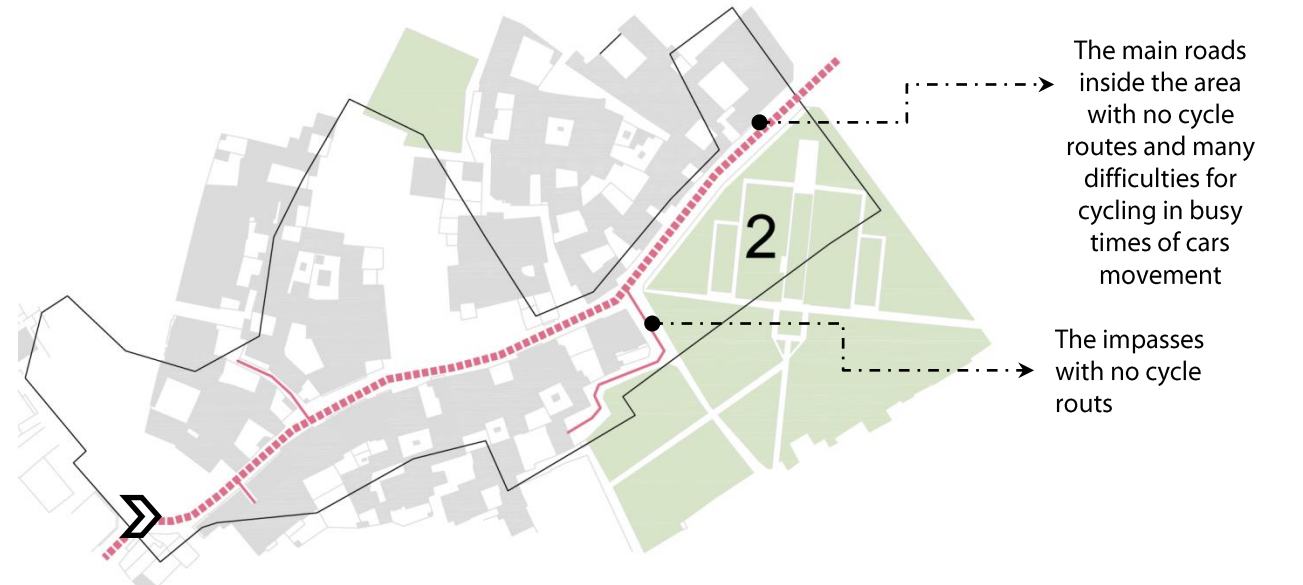


Figure 45: the analysis of cycle routes and movement in part 2

Elements	Evaluation options	Line-types
On street parking	The main street with enough spaces for parking on roadsides with no marking and facilities on roadsides	
	The main roads with 5m to 9m wide and no specific spaces for parking and parked cars create irregularity	
	The roads with 5m to 9m wide and no specific spaces for parking and parked cars create irregularity but not busy roads	
	The road with less than 4m wide in most parts and no specific spaces for and parked car nearly block the road or really difficult for car	
	Really narrow pathway impossible for cars movement and cars parking	
	Impasse and hard or impossible for parking because the road is really narrow (less than 4m) and parked car blocks the impasse	

Description
 There is no proper space for on parking on the roadside. This road needs parking marks because during the rush hour parked and moving cars cause chaos. Cars parked with no order can be seen in the photo.

The road with no on street parking spaces highlighted on the sample photos Photo 2 ↓



The analysed map **Evaluation**

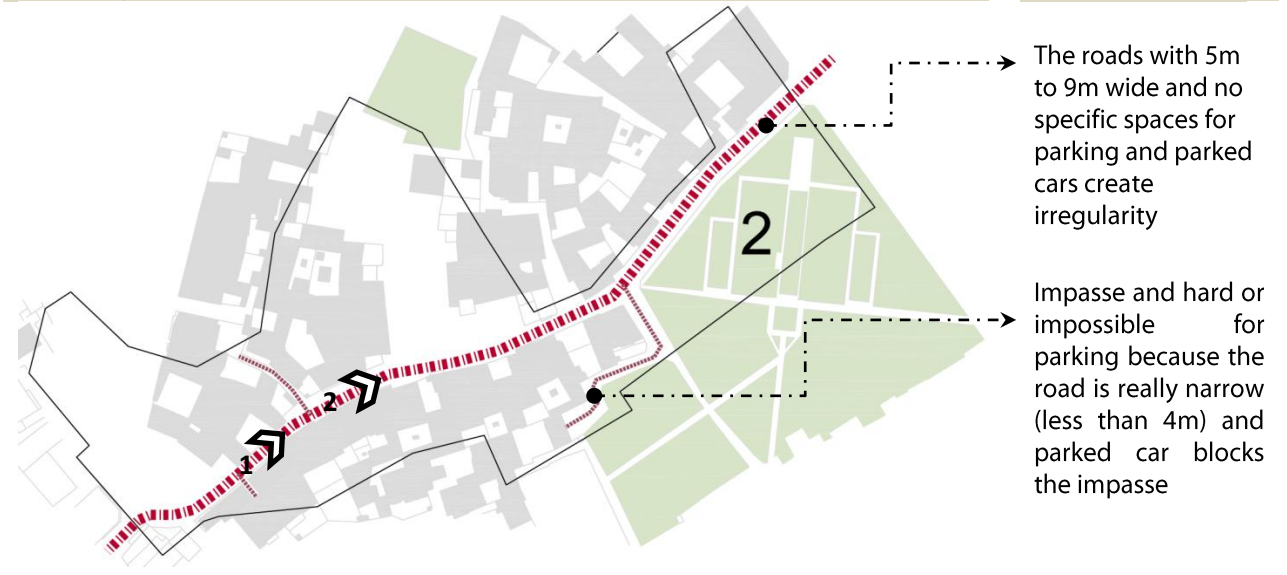







Figure 46: the analysis of on street parkings in part 2

Elements	Evaluation options	colours
Parking lots	Good design and maintenance parking lot with facilities	
	Reasonable design and maintenance parking lot with facilities	
	Poor design and maintenance parking lot without facilities	
	Really poor design and maintenance parking lot without facilities	
	Empty space which used as a parking lot and not designed	

Description
 There are two empty spaces in this area. Both are used as car parks with no facilities. There are just two kiosks which sell parking tickets.

The location of the first empty space highlighted on the sample photo (photo 1)



The location of the second empty space highlighted on the sample photo (photo 2)



The analysed map

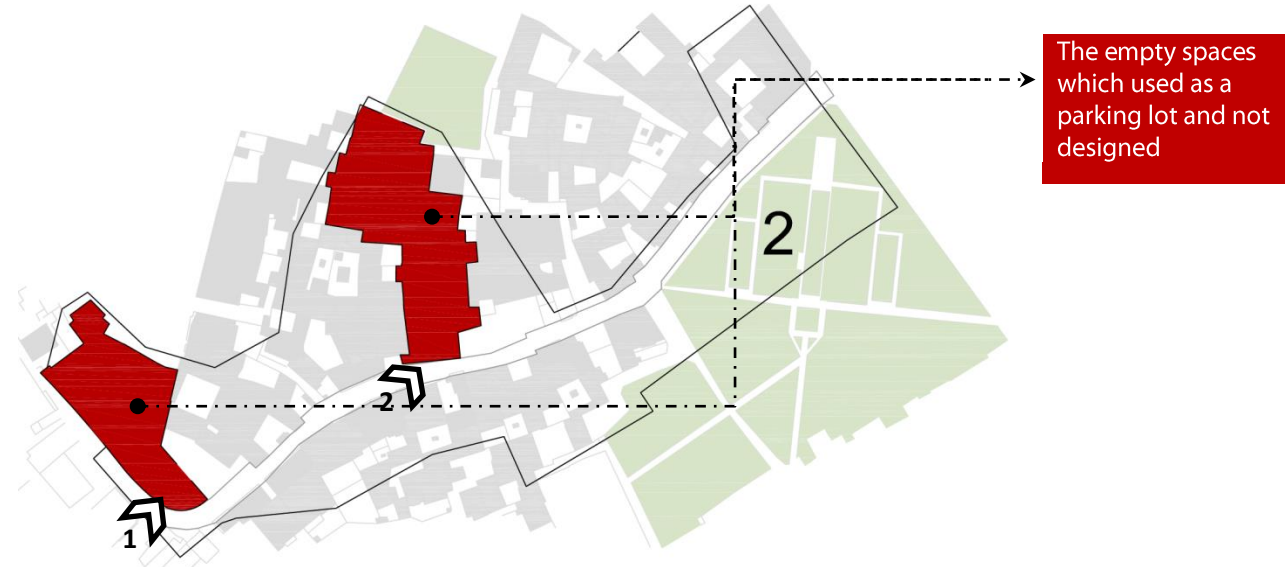


Figure 47: the analysis of parking lots in part 2

Elements	Evaluation options	Line-types
Pedestrian movements	Public space which is just for pedestrian	
	Existence of good and safe sidewalks with no car intervention on the road	
	The road between 5m to 9m and lack of sidewalks on the roadsides, unsafe for walking because of traffic flow in specific times.	
	The roads between 5m to 9m with improper and Interrupted sidewalks on the roadsides and busy in specific in times	
	The narrow road (less than 4m), little space for pedestrian when car coming but not busy road	
	Really narrow road or part of road (just for a car), dangerous for pedestrian and not busy road	
	Really narrow route, usable just by pedestrians	
	The cul-de-sacs with different wide and the most of them unusable by car but good for pedestrian because of low car movement	

Description
 There are no pedestrian sidewalks or any specific walking space in this road and car circulation is a big problem when pedestrians want to walk in this road. Pedestrian movement is dangerous during busy traffic times. Also there are two impasses with safe environment for pedestrian.

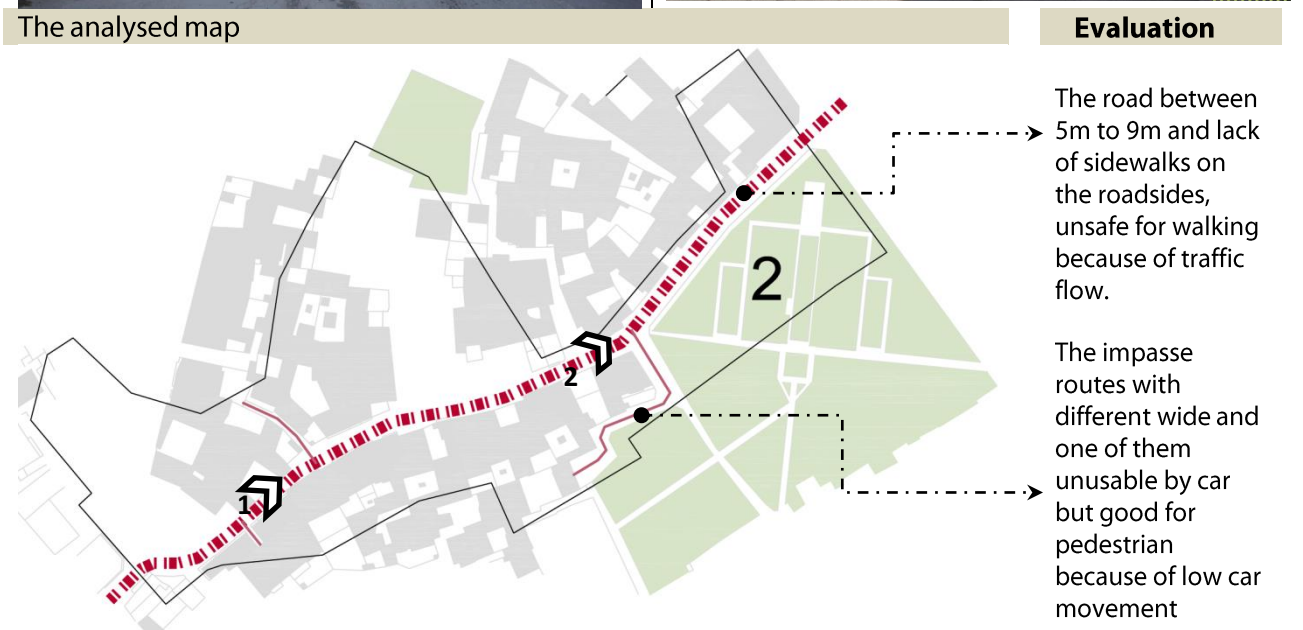



Figure 48: the analysis of pedestrian movement in part 2

Elements	Evaluation options	colours
disabled people, including gradients and obstructions	Good design and maintenance parking lot with facilities Reasonable design and maintenance parking lot with facilities Poor design and maintenance parking lot without facilities Really poor design and maintenance parking lot without facilities Empty space which used as a parking lot and not designed	

Description
 The shops do not have disabled access. There are no facilities for disabled people in this part of the neighbourhood.

The shops with no disabled access highlighted on the sample photo from part2



The analysed map

Evaluation

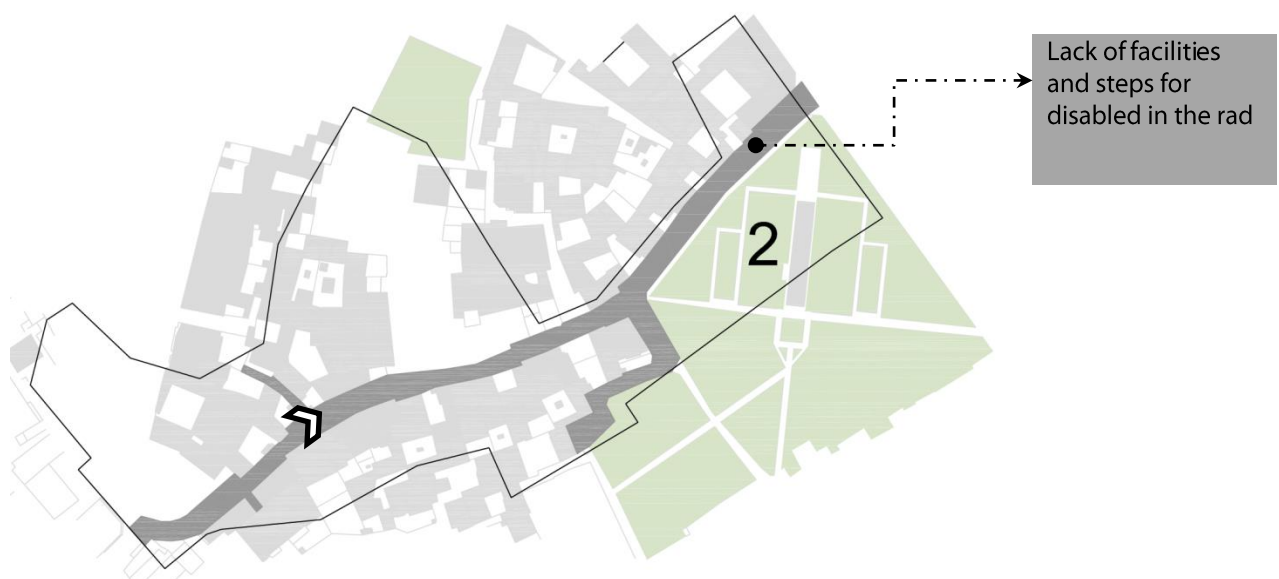


Figure 49: the analysis of disabled services and access in part 2

Elements	Evaluation options	Line-types
Permeability of pedestrian movement inside the neighbourhood	The main roads of the neighbourhood which pass the main parts of the neighbourhood	
	Good and direct connection to the main parts through this road for pedestrians	
	Not direct connections to main roads and parts but connected to some roads which are connected to the main parts of the neighbourhood	
	Isolated from other parts of the neighbourhood and not connected to the main parts and pedestrians need to go through the neighbourhood borders to access the main parts	

Description`

This is the part of main road and connected to the main junction and most roads of the neighbourhood join this road.

The main road highlighted on the sample photo



The analysed map

Evaluation

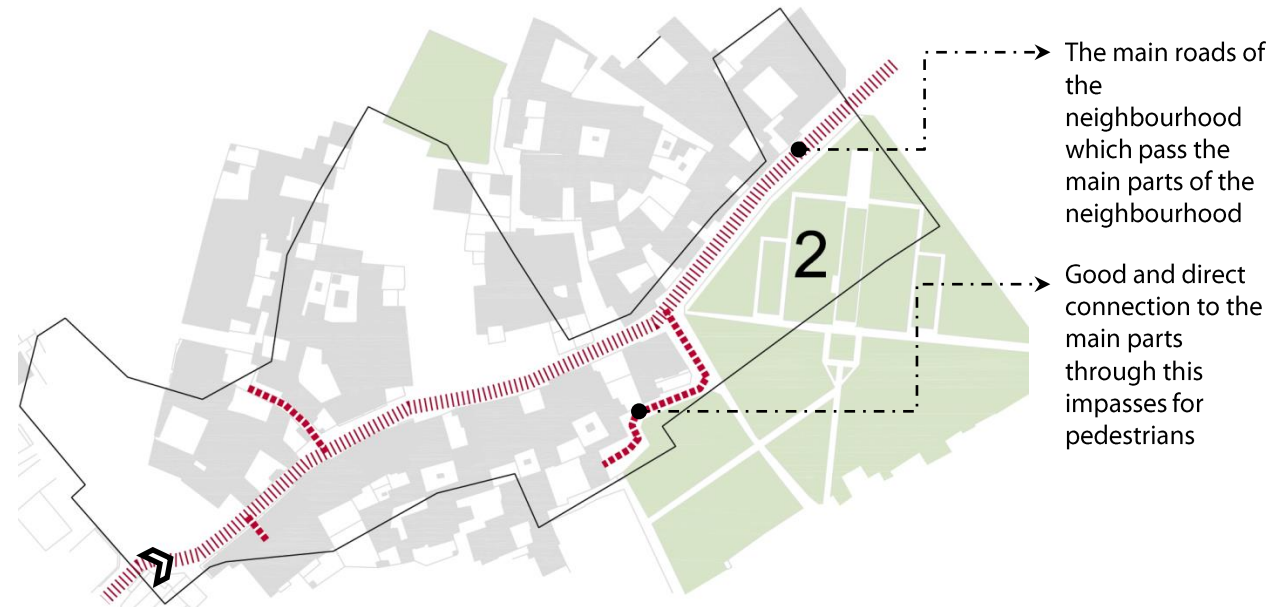


Figure 50: the analysis of pedestrian movement permeability inside the area in part 2

Elements

Pedestrian movement permeability with adjacent neighbourhoods

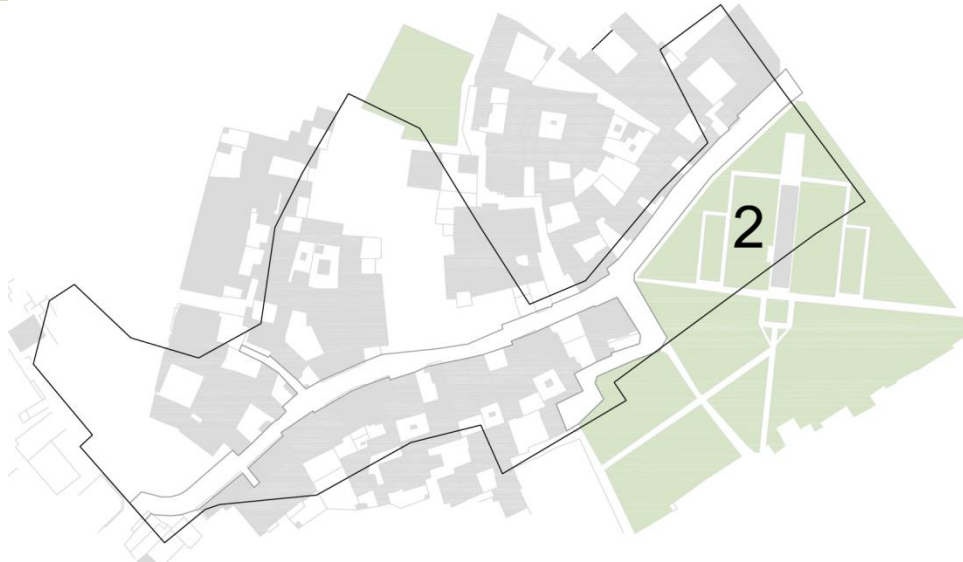
Evaluation procedure

To evaluate this element of movement we only observed the main boundary streets. We identified every pedestrian crossing and bridge as well as the situation of the neighbourhood pedestrian links with the adjacent areas by way of the boundary.

Description

This is a walking part inside the neighbourhood and it does not need to be analysed for this element of movement.

The analysed map






Evaluation

Dose not need analysis for this element

Figure 51: the analysis of pedesrian movement permeability with adjacent areas in part 2

4.3.2.4 Analysing the Legibility elements in part 2

This section illustrates the analytical stages of walking part 2 for the five elements of legibility. Five Figures explain this section.

Elements	Evaluation options and colours	
Nodes (gateway, entry and exit points)	Vibrant, recognizable and distinct entry or exit point connected to the main part	
	Less vibrant entry or exit point but recognizable and access to the main part through this point	
	Unrecognizable entry or exit point but the main parts of the neighbourhood accessible through this point.	

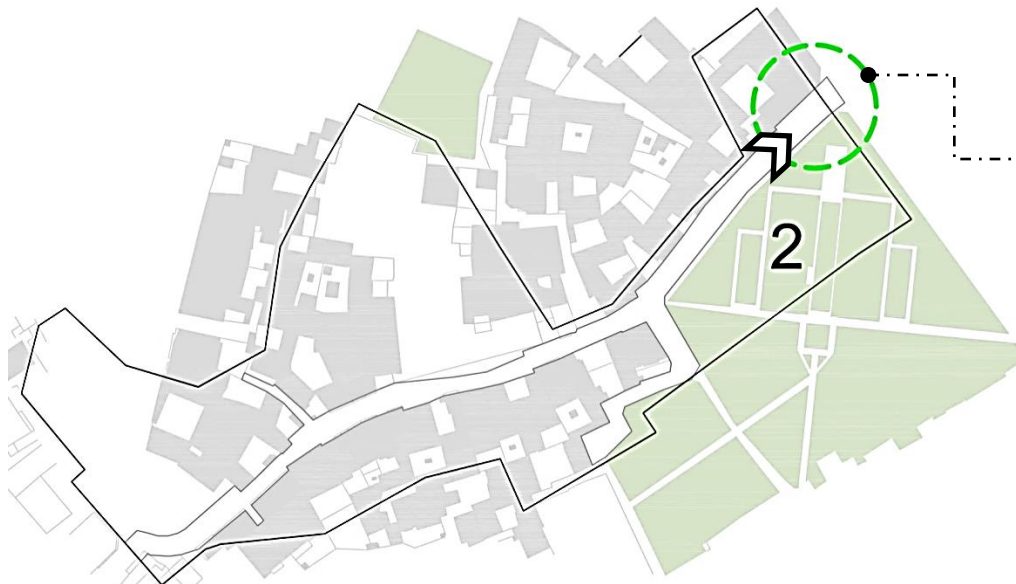
Description

This is the entry or exit point of the neighbourhood main road from north. This is not vibrant point but recognizable and is one of the neighbourhood main access point.

The entry or exit point highlighted on the photo from the part2







The analysed map



Evaluation

Less vibrant entry or exit point but recognizable and access to the main part through this point

Figure 52: the analysis of entry or exit points in part 2

Elements	Evaluation options	colours
Nodes (neighbourhood centre, important junctions and interaction point)	A gathering and interaction point for local people	
	Important junction with legible and recognizable elements and image	
	Important junction without legible and recognizable elements and image	
	Less important junction with legible and recognizable elements and image	

Description
 There is an important junction in this part of the neighbourhood and many roads cross it. It used to belong to the main section of the neighbourhood but nowadays does not have a recognizable image as it is not in good condition.

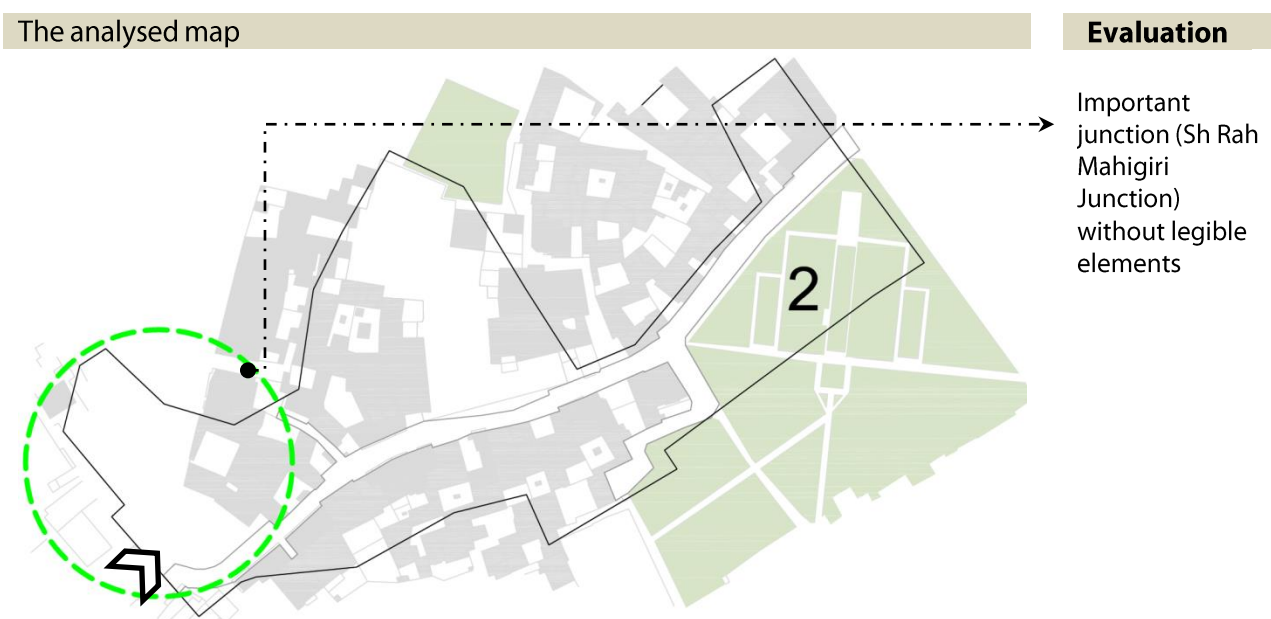
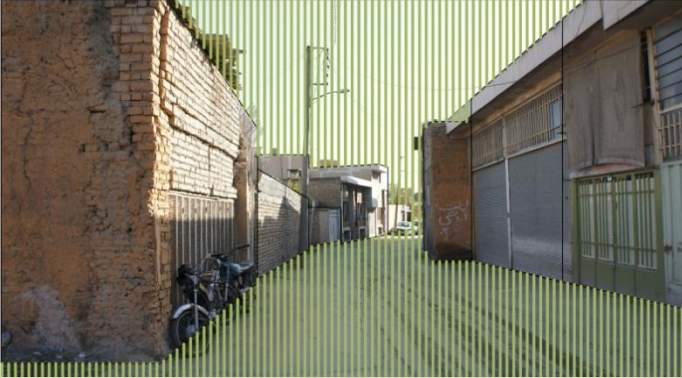


Figure 53: the analysis of junction legibility in part 2

Elements	Evaluation options	colours
Edges (frontage line, roadside)	Attractive and continuous edge with strong distinctive image and coherence among materials and design in all part of the buildings frontage	■
	The buildings frontage in some parts have coherence among materials, design and colours	■
	Non continuous frontage with incoherence among materials, design and colours in all parts of the buildings frontage	■

Description
 In this part of the area the side edges are not continuous. They have different types of building frontage with different materials, colours and design and neither side presents an attractive image that would invite people to look for them.

The sides edges highlighted on the photo from the part2








The analysed map

Evaluation



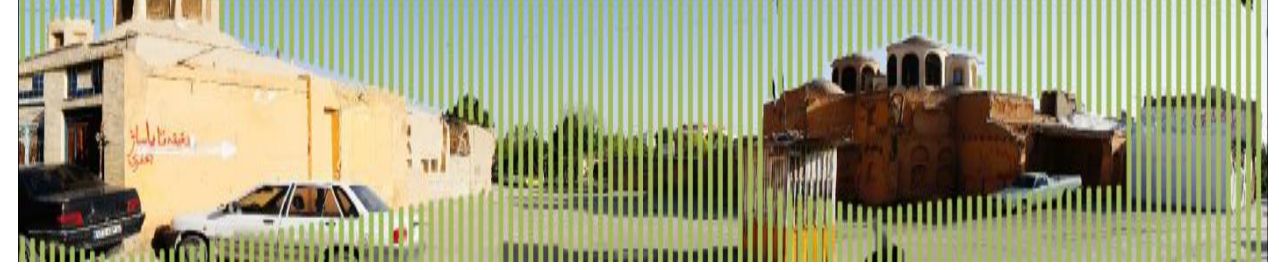
Figure 54: the analysis of edges legibility in part 2

Elements	Evaluation options	colours
Landmarks (important buildings, historic building, important corners)	The building, historic building, element and corner which have significant character and are really distinct	
	The historic building and element with good maintenance which do not have significant character but they are distinct	
	The historic building and elements with poor maintenance which are can be more distinct with good maintenance	
	Important buildings such as mosques, cultural or educational buildings, governmental building which are distinctive	
	Important buildings such as mosques, cultural or educational buildings, governmental building which are not distinctive	

Description

There are two historic synagogues in this part of the neighbourhood which are badly maintained but they can work as landmarks in this area.

The landmarks highlighted on the photo



The analysed map

Evaluation

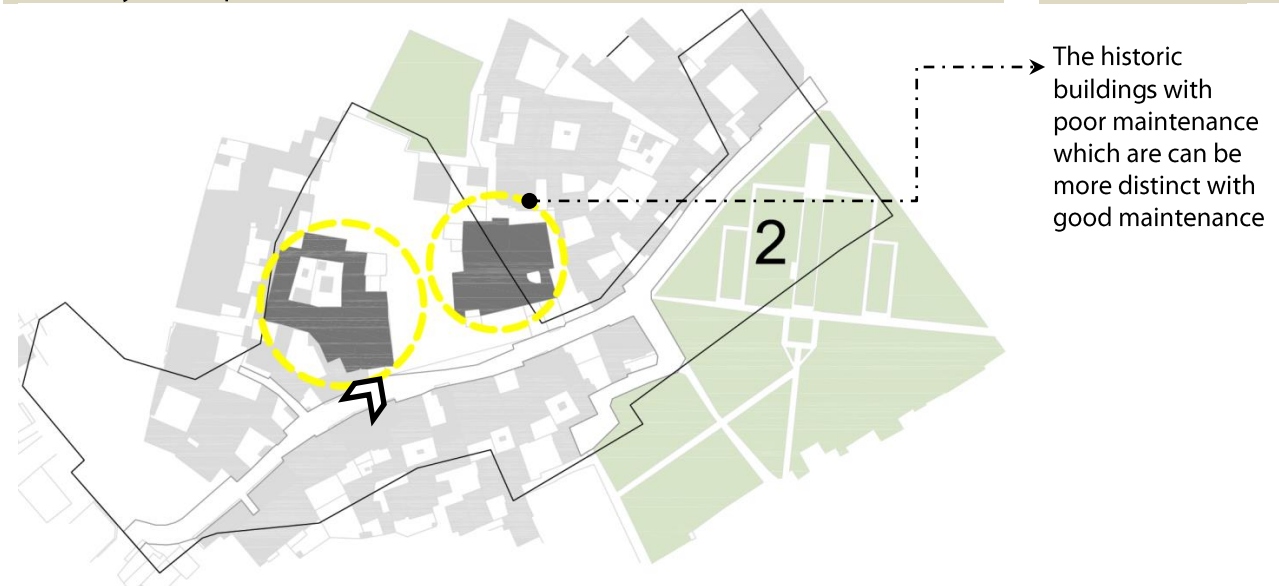


Figure 55: the analysis of landmarks in part 2

Elements	Evaluation options	Line-types
Path (roads, routes and pathways)	Roads or pathways which play significant role and legible character in the area and cross main parts of the area	
	Roads or pathways which have less important roles and are not legible but they have direct access to the important	
	The roads and pathways which do not have significant role and are not legible but they have indirect access to the main	
	Roads or pathways which are Impasses and do not have significant roles and are not legible	

Description
 This is part of the main road of the quarter, where it plays a significant role, as it is connected to most neighbourhood sectors. Moreover, most of the minor roads and pathways are connected to this road. Also there are two pathways which are Impasses and do not have significant roles and are not legible.

The legible path highlighted on the sample photo



The map shows the evaluation of this element

Evaluation

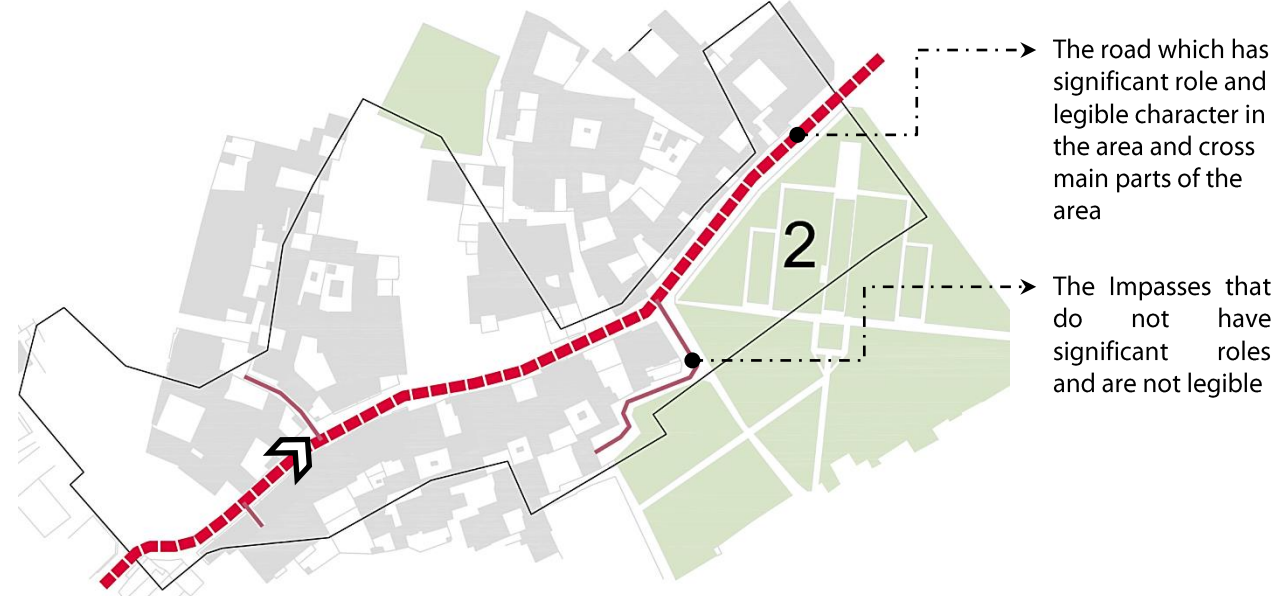





Figure 56: the analysis of paths legibility in part 2

4.3.2.5 Analysing Land use elements in part 2

In this section four elements of land use for part 2 have been analysed and the analytical stages illustrated in the four Figures below.

Elements	Evaluation options	Line-types
The neighbourhood form	High-density traditional layout is characterised by narrow roads, pathways and dense plot subdivisions	
	However, the empty spaces resulting from demolished buildings affect the shape of the neighbourhood. In parts 5, 6, 10 and 2 these vacant plots are converted into green spaces	
	The main streets have cut across the traditional urban arrangement and destroyed the Integrated pattern of the neighbourhood	

Description

This part of the neighbourhood still has a dense historic layout with narrow roads and dead ends but this pattern is being ruined. Two empty spaces have already been created by the demolition of ancient buildings.

Density pattern highlighted on the sample photo



The analysed map



Evaluation

- High density which is existence of narrow roads, pathway and dense plot subdivisions
- The green space was built after demolishing historic pattern
- The empty spaces after demolishing the neighbourhood pattern

Figure 57: the analysis of the neighbourhood form in part 2

Elements

Distribution and amounts of land uses

Evaluation procedure

For this element with using a land use map from Juibareh and also by observing the neighbourhood land use will be identified.

Description

This part of neighbourhood has fair diversity of land use. Many shops in the area and there are two synagogues at the end of road. There are also many houses in this district. Furthermore there is a green space in the end of this road. Religious

Residential and commercial buildings highlighted on the photo (photo 1)



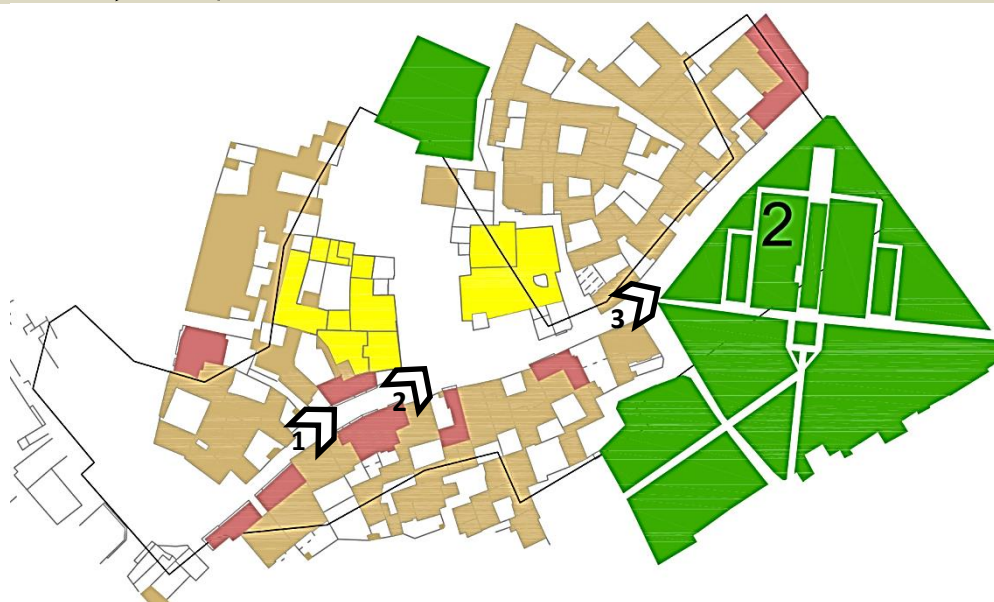
Religious buildings highlighted on the photo (photo 2)



The green space highlighted on the photo (photo 3)



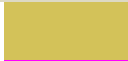

The analysed map



Evaluation

- Residential
- Commercial
- Religious
- Green space

Figure 58: the analysis of distribution and amounts of land uses in part 2

Elements	Evaluation options	colours
The housing type	The neighbourhood's typical houses mostly with one dwelling	
	The blocks of residential flat with more than four family dwellings	

Description
 The majority of the houses are typical neighbourhood one dwellings family.

The typical houses highlighted on the sample photo





The analysed map

Evaluation

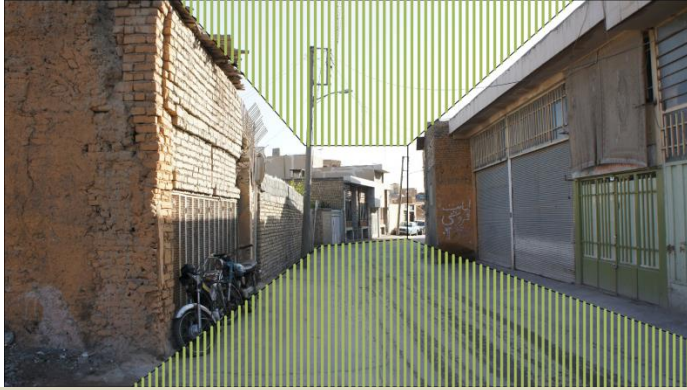


Figure 59: the analysis of housing types in part 2

Elements	Evaluation options	colours
The buildings height (scale)	The building are less than 2 levels height	
	The buildings are between 3 to 4 levels height	

Description
 The scale of the buildings in this part is not high and all of them are less than two levels.

The scale of buildings with less than two levels highlighted on the photo



The analysed map

Evaluation



Figure 60: the analysis of the buildings height in part 2

4.4 Conclusion

This chapter first provided some information about the case study which was a historic neighbourhood in Isfahan. In the second section, we described two different processes of collection for quantitative and qualitative data. For quantitative data a structured interview was used and sixty interviews with local residents were completed. There were some limitations to the collection of data, such as calculating the actual numbers of Jews and Afghani female interviewees, because we could not find the actual interviewees that we described in Table 15. Table 16 shows the actual groups and numbers of those interviewed. For the qualitative data we observed the neighbourhood by using the serial vision method. Before we started to walk, we identified the elements of the townscape which are in the visual data. In section 4.2.2 these elements are briefly defined. We captured many linear sequences of pictures by walking through all parts of the neighbourhood. After collecting and grouping the data we provided 38 observational surveys for all the walking parts. The twenty sheets of the observation surveys are given in section 4.2.2.2 and the rest are in Appendix 4. The researcher in observational surveys explained the pictures by dint of analysing the elements of the townscape elements and their components (In section 4.2.2.1). Following the collection data the analytical stages of interpreting the interviews and the walking data were explained. The interview questions were analysed question by question and after analysing the questions we provided a graph and a table for each question. These results will be shown in the Chapter 5 and be ready for interpreting and evaluation. In order to analyse the observational surveys of walking the researcher analysed every elements of the townscape. All the visual data of the neighbourhood were analysed manually and will be mapped, interpreted and evaluated in the Chapter 6.

CHAPTER 5: THE LOCAL PEOPLES' VIEWS

(Interpretation and Evaluation of Interviews)

Introduction

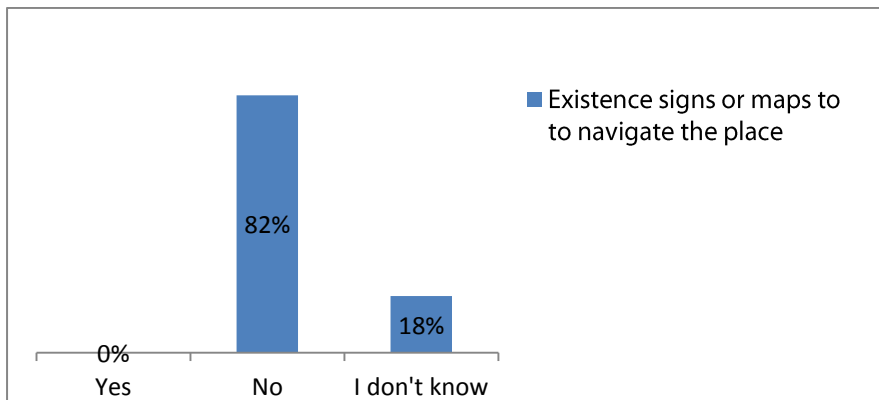
After discussion about social sustainability and urban context in the literature review (see chapter 2) four criteria of social sustainability were identified which are most relevant to townscape features. These four criteria are *accessibility (access to employment and facilities)*, *safety and security*, *sense of place* and *community spirit and social interaction*.

It was decided that the best method to adopt for this investigation was to interview people who live in this neighbourhood. In chapter 4 we fully described how the interviews were conducted. After that, the process of analysing the interviews was described. After analysing the data in this Chapter and every question of the interview on the basis of the results from the analytical stage shown in the graphs and tables, these will be interpreted and evaluated.

5.1.1 View of local area

Signage: In this part of the interview we asked the residents three questions about the signage of this neighbourhood. We were looking for the residents' responses about the overall signage of this area.

- After asking Q1 (Are there signs or maps identifying where you are? (Street, building, neighbourhood)) Graph 1 below illustrates the results:



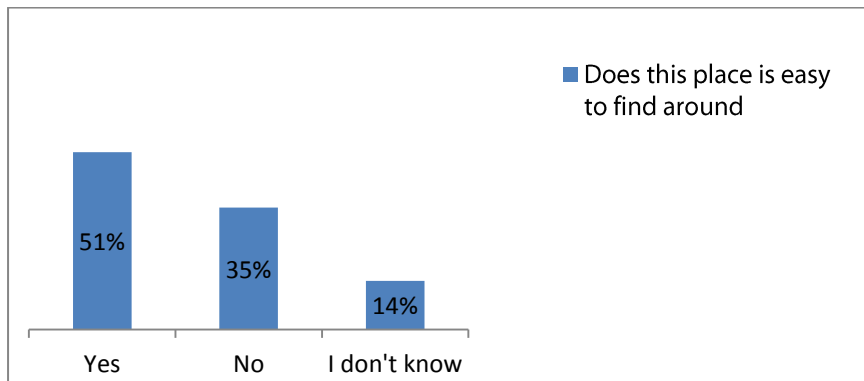
Graph 1: the results of existence signs or maps

	Yes	No	Total	Average rate	Rating scale
Existence signs or maps	0%	82%			
	0	0	49	1	(1-2)

Table 17: the average rating about existence signs or maps

82% of those who were interviewed indicated that there were no signs or maps in this neighbourhood. Strong evidence of a lack of signs and maps was found in this chart. 11% of those interviewed did not know or understand this question and if we wanted to decide according to those who answered this question by saying yes or no, we reach a significant result of 100% answering no, which means there are no signs or maps identifying the neighbourhood Graph 1. Also from the data in Table 17 we can see that the average rating scale of this question is 1, so there is strong evidence of a shortage of signs and maps in this neighbourhood.

- In Q2 (If you weren't familiar with this place, would it be easy to find your way around?)



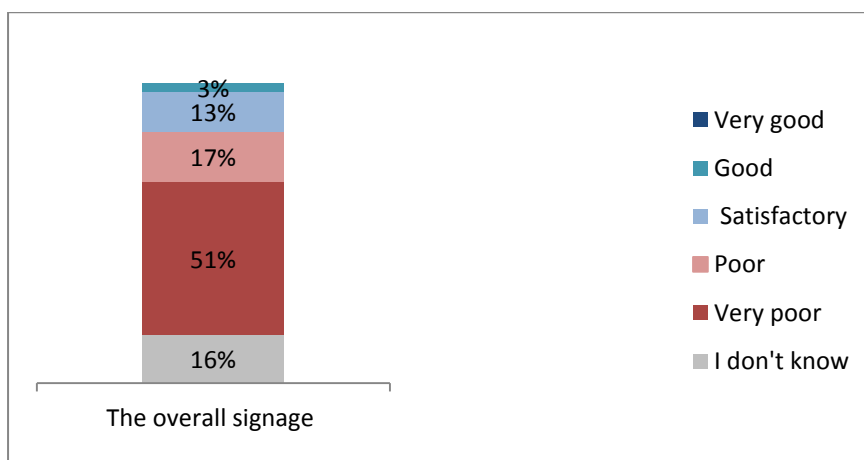
Graph 2: the rate of interviewees that believe this area is easy to find

	Yes	No	Total	Average rate	Rating scale
Is this place easy to find around	51%	35%			
	31	21	52	1.59	(1-2)

Table 18: the average rating of interviewees' respondents that this place is easy to find

It is clear from Graph 2 that the majority of the respondents/those who responded felt that this neighbourhood was easy to find for someone not familiar with the area. If the response to this question was don't know, it was, not taken into account in the result, The results show that 60% of the responses are that this place is legible for visitors and 40% not legible. Also the average rating score of 1.59 is evidence that the residents believe the neighbourhood is easy to find one's way around (see Table 18) The results, as shown in the chart and table above, indicating that the residents feel this place is legible for visitors.

- After asking Q3 (what is your overall impression of the signage in this place?) Graph 3 below illustrates the results:



Graph 3: the results of overall signage

	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
The overall signage	0%	3%	13%	17%	51%	51	1.62	(1-5)
	0	2	8	10	31	51		

Table 19: the average rating of the overall signage

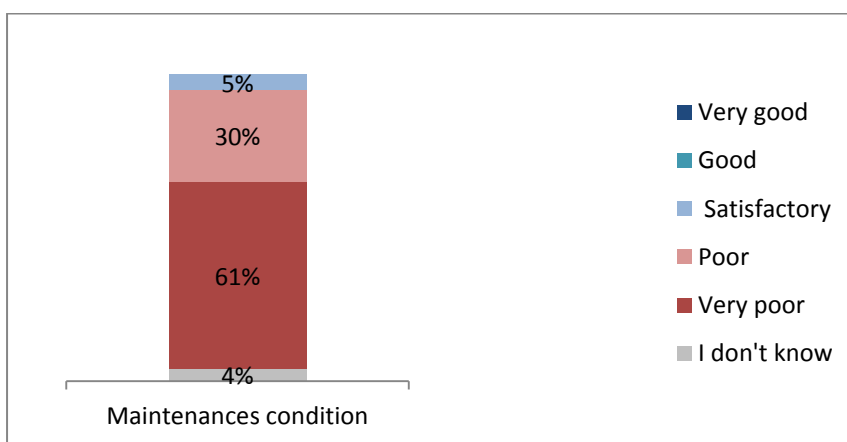
The evaluation of this question is done with six short answers (very good, good, satisfactory, poor, very poor and don't know). We put six answers because interviewees have more choices to choose from and the choice is easier but for the evaluation two negative responses (very poor and poor) were used and three positive responses (satisfactory, good and very good) were also counted. Because of this combination of negative and positive responses it is decided better and easier to come to a decision. In this kind of question we ignore those who responded don't know. Apart from the percentage of respondents we calculated the average rating scale which can be seen in Table 19.

In this question we are looking for the overall signage of this neighbourhood. The majority of respondents (68%) felt that the signage of this area was poor or very poor. Just 16% of the residents answered: satisfactory (13%) and good (3%). Furthermore the average rating of this question was calculated as 1.62. This average rating scale is strong evidence that the neighbourhood has poor signs.

Maintenance:

In this part, the residents were asked three questions. After analysing the results, we found out about the maintenance quality and people's feelings about important repairs that this area needs.

- Q4 (How well is the place maintained?) is about this upkeep of the neighbourhood. The results are shown below in Graph 4.



Graph 4: the results of the neighbourhood maintenance

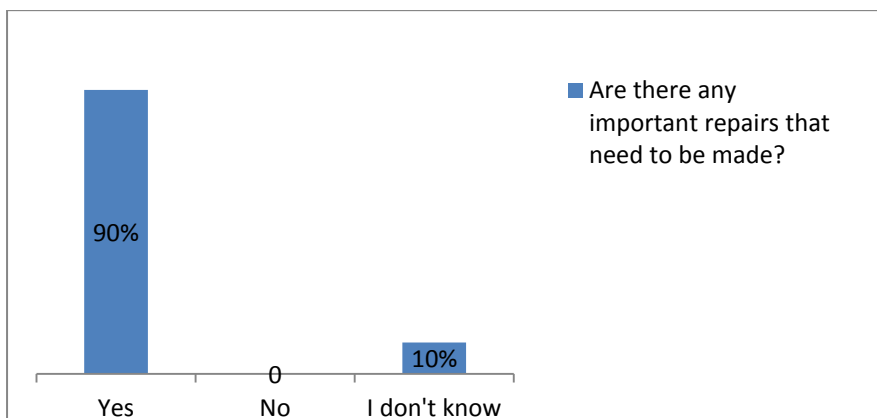
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Maintenance Condition	0%	0%	5%	30%	61%	58	1.43	(1-5)

Table 20: the average rating for maintenance condition

Most of respondents (91% of the interviewees) felt that maintenance of this neighbourhood are very poor or poor. Strong evidence of low maintenance was found when Q4 (How well is the place maintained?) was put to those who lived in this area. Just 5% of interviewees were satisfied with maintenance of the neighbourhood. From the results in Table 20, we can see that the average rating was very low with a score of. 1.43 Thus, we can see from the results in Graph 4 and Table 20 that the residents felt their neighbourhood was poorly maintained.

Q5 (Are there any important repairs that need to be made?) was then put to the interviewees, because we wanted to find out what the residents thought about the need for important repairs in their area.

- This question was looking for what the residents felt about the level of obsolescence in their neighbourhood. This is a poorly maintained historic neighbourhood in city of Isfahan.



Graph 5: the rating of the interviewees concerning important repairs that need to be made in the neighbourhood

	Yes	No	Total	Average rate	Rating scale
Does this place need important repairs?	54%	0%	54	2	(1-2)

Table 21: the average rating of the respondents that important repairs are needed in this neighbourhood

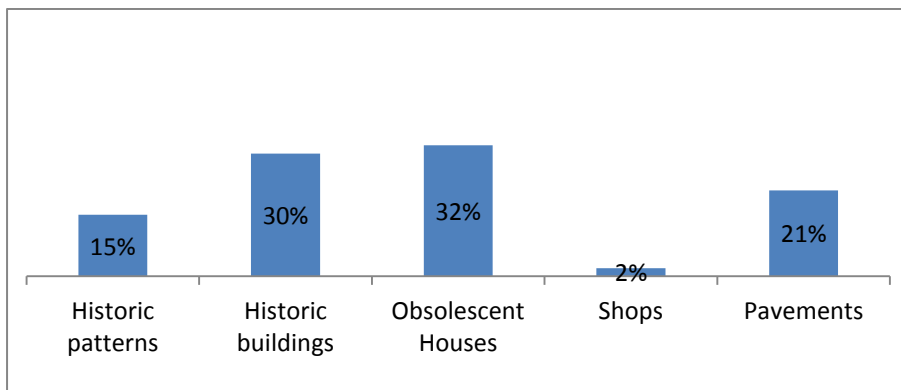
There many neglected buildings in this area and many houses are dilapidated, so the aim of Q5 was to ascertain the residents' feelings about this deterioration. In addition to the three answers (yes, no and don't know), we asked what specific repair needed to be done. The responses rates (Graph 5) were 90% yes (need repair), 0% no (no need for repair) and 10% don't know. This is a

significant result. The average rating scale was also calculated and the score was 2. The mean score for the ruined nature of this area was 2 and the results indicate that the neighbourhood needs many important repairs. Graph 5 and Table 21 bear this out.

We should mention that the statistical test also revealed that repairs were urgently needed this area.

- Q6 asked: What repairs (to historic buildings, historic pattern, obsolescent houses, shops and pavements) are needed exactly? The answers are below:

After counting the people's comments, Graph 6 below shows the results:



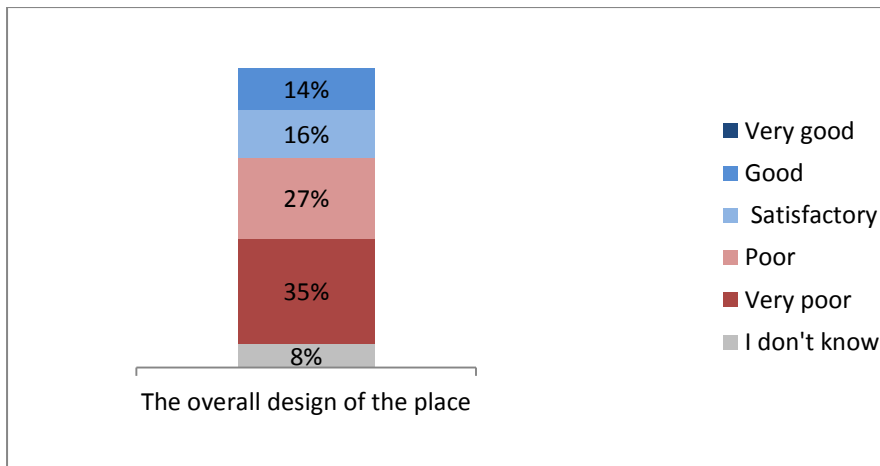
Graph 6: the important repairs that the neighbourhood needs

From Graph 6 we can see that the historic buildings (historic houses, mosques and synagogues) and ramshackle houses have high rates of 30% and 32%. This is a historic, low-maintenance neighbourhood. Graph 6 provides strong evidence (90% of the people interviewed) that this place needs many important repairs. After the ruined houses and historic buildings, the residents felt that the pavements (with 21% responses) were in second-rate repair. The state of disrepair of the historic architecture, which gives the neighbourhood its identity, needs to be looked into. 15% of those interviewed believed that it required renovation.

Design:

By asking people a single question about their general impression of the design quality we were able to assess the overall design of place. This part is looking for overview of resident's feelings about the condition of the neighbourhood.

The interviewees were asked (Q7) what is your impression of the overall design of the place (New pattern?) and the results are shown in Graph 7 and Table 22:



Graph 7: the interviewees' impression of the overall design of the neighbourhood

	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
The overall design	0%	14%	16%	27%	35%	55	2.09	(1-5)
	0	8	10	16	21			

Table 22: the average rating of the overall design

From the data in Graph 7, it is clear that 62% of the interviewees believed the overall design of new layout was poor or very poor. Furthermore the average rating scale score was 2.09, less than half the desired score, which means that the interviewees believed this neighbourhood was poorly designed.

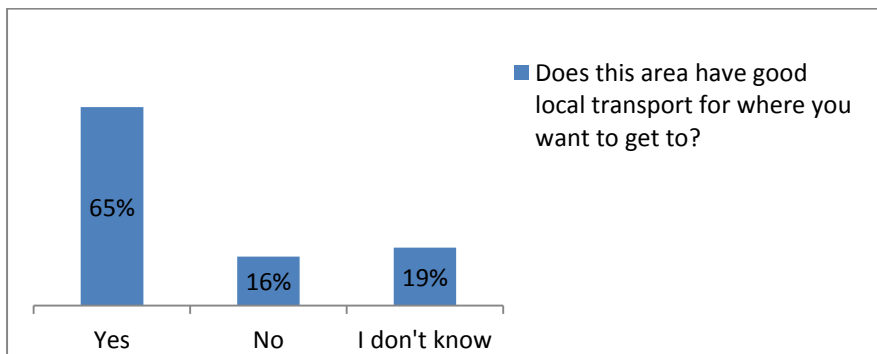
After the evaluation of the signage, maintenance and design of the neighbourhood, the table below gives a summary of the results.

5.1.2 Accessibility (access to employment and facilities)

Access to public transport:

In this part, by asking the residents two questions we first assessed the state of the public transport and after that the main form of transport used by the local residents.

- Graph 8 contains the results for Q5 (Would you say this area has good public transport (bus) routes, services and facilities?):



Graph 8: the interviewees' rating as to whether this area has good local transport or not

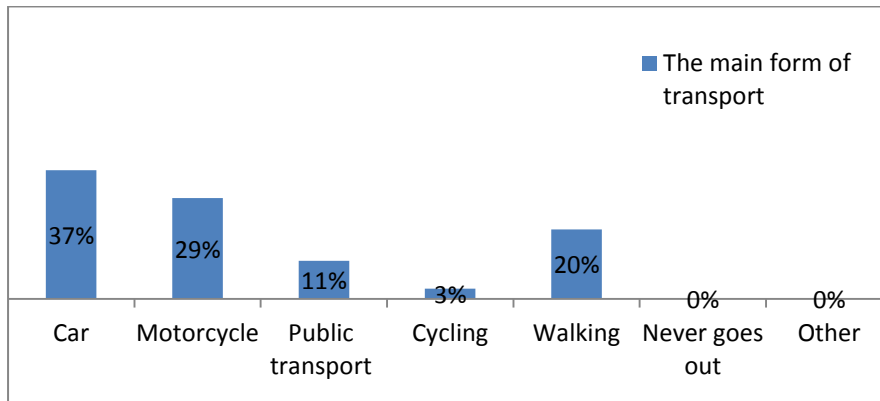
	Yes	No	Total	Average rating	Rating scale
Does this area have good local transport	65%	16%	49	1.79	(1-2)

Table 23: the average rating of the respondents about local transport

Most respondents felt that this neighbourhood had good access to bus services. Approximately a quarter of those interviewed did not comment on this question and didn't know anything about public transport in this area. Those residents who answered yes for this question (Almost two-thirds of the participants (65%) said yes) believed this neighbourhood had good access to bus services because of its location near the three main border streets of this area. There are many bus stops in these three streets. From the results of the graph and table above, we can see that this neighbourhood has good local transport.

After Q8 (Would you say this area has good local transport for where you want to get to?) another question was asked about what is the inhabitants' main transport. In Q9 (what is the main form of transport?) we were hoping to discover how the residents move round this area and find what was the main kind of transport in the neighbourhood.

- Q9 asked the interviewees what is the main form of transport? and the results are shown in the graph below:



Graph 9: the results of the main form of residents' transport

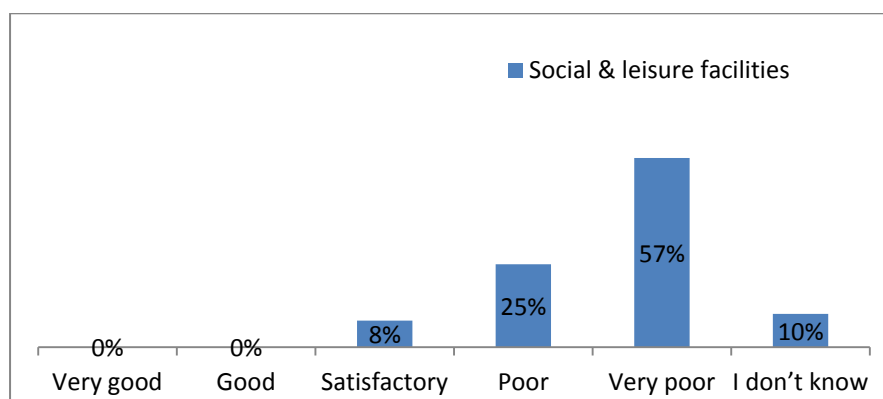
From Graph 9 we can see the results of Q8 (what is your main form of transport?). All those interviewed answered this question, choosing from a list: car, motorcycle, public transport, cycling or walking. 37% of those who were interviewed indicated that they used car as their main transport, which was the highest percentage. Public transport rated 11%. Unfortunately, this was the second lowest rate after cycling, whose rate was 3%. The motorcycle was the second main form of transport. 29% of the interviewees used the motorcycle as their main transport. Among those who chose the motorcycle, some mentioned that they could not afford to buy a car. Walking was rated at 20% as the third form of transport. This group of residents were mostly older people. Comparing the results of Q8 (Would you say this area has good public transport (bus) routes, services and facilities?) with those of Q9 (what is their main transport?) shows that although this area has good access to bus services, the majority of those interviewed answered that they used a car or motorcycle and did not use the bus as their main form of transport. This is a common problem in the majority of Iranian cities where the car is the main form of transport.

Facilities:

In this part, eight questions were put to the interviewees, from which we assessed the residents' response rating for the neighbourhood facilities (social and leisure, shopping, medical, sport, communal, religious, educational, cultural and security).

Social & leisure facilities

- By posed Q10 (How are the social and leisure facilities for people like you?) to find out about the quality of social and leisure facilities in the neighbourhood.



Graph 10: the results from the interviewees' responses about the medical facilities

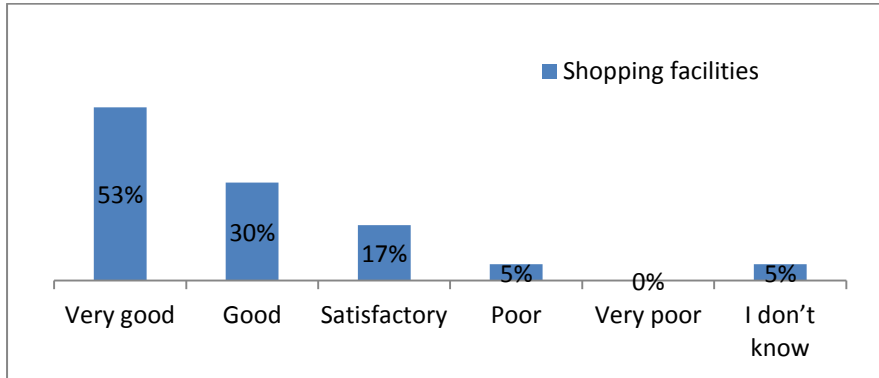
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Social and Leisure facilities	0%	0%	8%	25%	57%	54	1.40	(1-5)

Table 24: the average rating of the social and leisure facilities

From graph 10 above, it is clear that 82% of the interviewees answered that the social and leisure facilities in this neighbourhood were very poor (57%) or poor (25%). The average rating score was 1.4 which is very low (see Table 24). Strong evidence was found of a deficit in social and leisure facilities. Most of those who responded: very poor or poor, believed that this area was lacking in social and leisure facilities. The results, as shown in Graph 10 and Table 24, indicate that the neighbourhood is deficient in social and leisure facilities.

Shopping facilities:

- Q11 asked the interviewees: What are the shopping facilities like? and the results appear in Graph 11 and Table 25:



Graph 11: the results of the interviewees' responses about shopping facilities

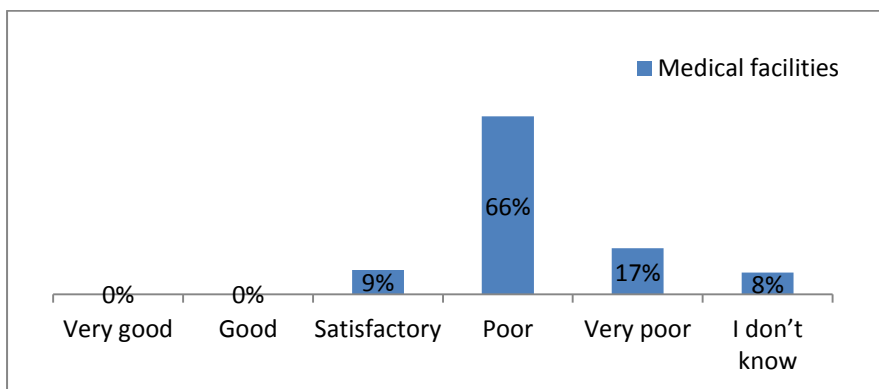
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Shopping facilities	53%	30%	17%	5%	0%	57	4.28	(1-5)

Table 25: the average rating score of the shopping facilities

From Graph 11 above we can see that 83% of the interviewees believed that the neighbourhood had good access to the shopping facilities. The average rating score was 4.28 (see Table 25), which is strong evidence of fair accessibility to shopping facilities. Thus, the results of Graph 11 and Table 25) demonstrate that the residents of this neighbourhood are well provided with easily reached shopping facilities.

Medical facilities:

- To assess the level of medical facilities we asked Q12: How are the medical facilities? The results displayed in Graph 12 plus the average rating were calculated and are shown in Table 27:



Graph 12: the results of interviewees' responses about medical facilities

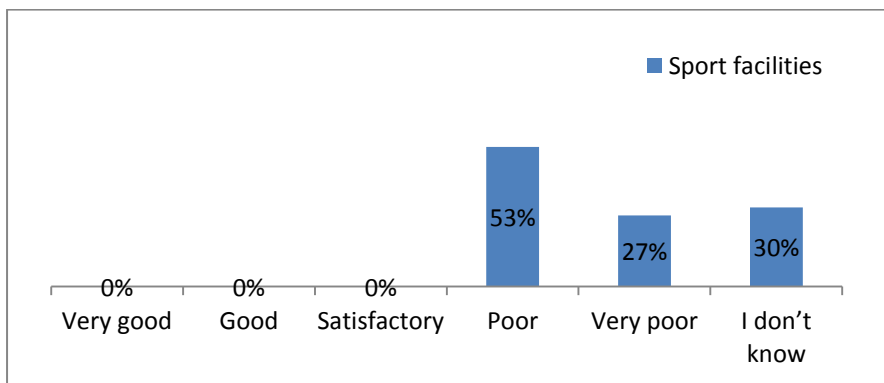
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Medical facilities	0%	0%	9%	66%	17%	55	1.90	(1-5)

Table 26: the average rating for medical facilities

It is apparent from the graph that very few people answered 'satisfactory' (9%), while the majority of the residents interviewed stated that the medical facilities were poor or very poor (83% in total). Furthermore, the average rating score was 1.9 and confirmed that in this area the local inhabitants have poor access to medical facilities.

Sport facilities:

- Q13 asked to local residents who were interviewed: How are the sport facilities? Graph 13 and Table 27 illustrate the results:



Graph 13: the results of interviewees' responses about sport facilities

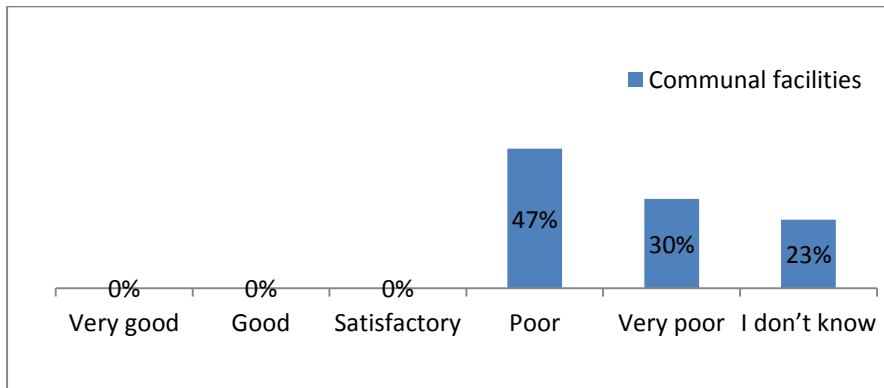
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Sport facilities	0%	0%	0%	53%	27%	48	1.66	(1-5)

Table 27: the average rating score of the sporting facilities

As can be seen from the graph above, 30% of the interviewees were ignorant about the sports facilities in this area. The rest answered either poor (53%) or very poor (27%). The average rating score was 1.66 and this is strong evidence that the amount of sporting facilities is very low. Thus, the local residents answered that they had poor access to sporting facilities.

Communal facilities:

- For an assessment of the communal facilities, we asked Q14 (How are the communal facilities?). The results are shown below:



Graph 14: the results of interviewees' responses concerning the communal facilities

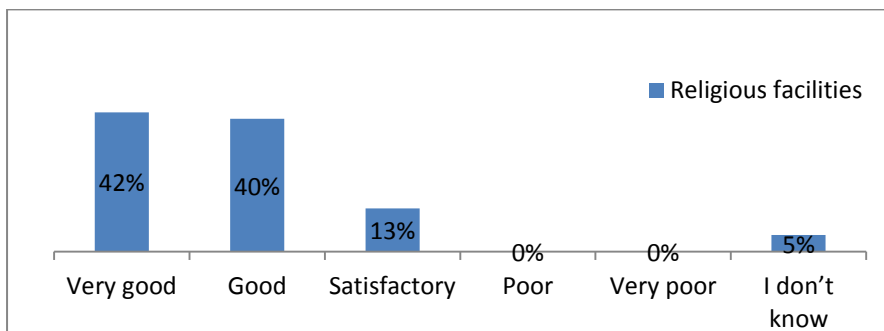
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Communal facilities	0%	0%	0%	47%	30%			
	0	0	5	28	18	46	1.60	(1-5)

Table 28: the average rating score for the communal facilities

Graph 14 shows that most responded poor (47%) or very poor (30%) which is a strong indication of the shortage of communal facilities in this neighbourhood. 23% of the interviewees were unaware of the existence of communal facilities. Moreover, the average rating score was 1.6 (see Table 28) which suggests a lack of communal spaces in this area.

Religious facilities:

- Q15 asked to interviewees: How are the religious facilities?) The results were different from most of the other amenities. Graph 15 and Table 29 illustrate the results:



Graph 15: the results of interviewees' answers about the religious facilities

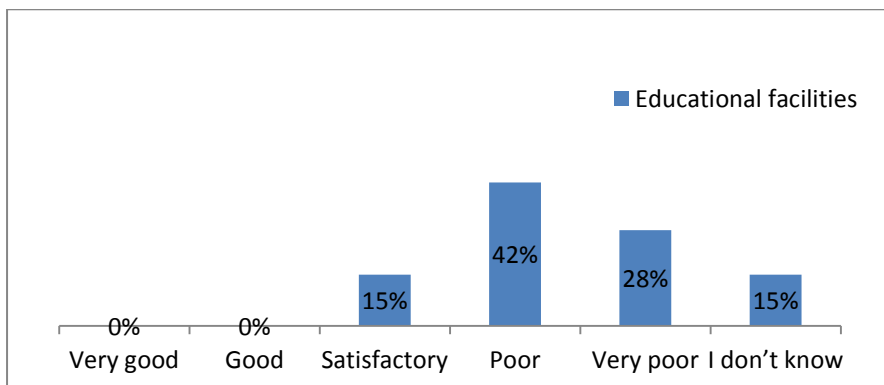
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Religious facilities	42%	40%	13%	0%	0%	57	4.29	(1-5)

Table 29: the average rating score of the religious resources

Strong confirmation of satisfactory accessibility to religious facilities was found, as can be seen from the data in Graph 15 and Table 29. We can be seen, 82% of the interviewees stated that the religious facilities in this area were excellent and a score of 4.29 for the average rating confirms this area has very acceptable religious facilities. As a result, there can be no doubt that the neighbourhood has first class religious facilities for both Moslems and Jews.

Educational facilities:

- The educational facilities are other amenities which have been assessed in this study. We asked Q16: How are the educational facilities? and the results obtained from the interviews are illustrated in Graph 16 and Table 30:



Graph 16: the results of the interviewees' answers concerning educational facilities

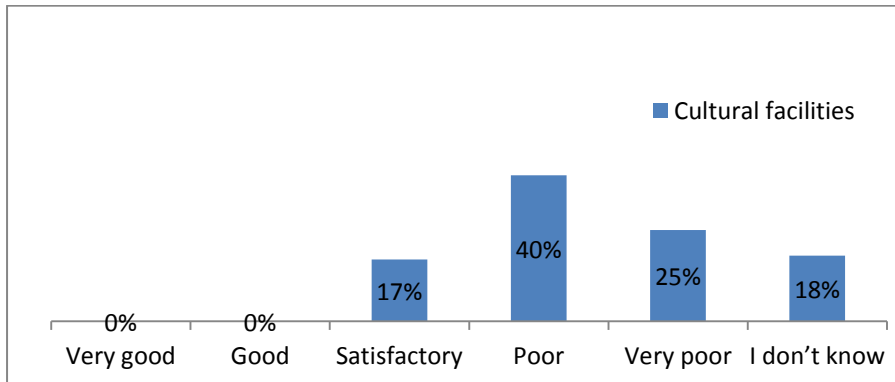
	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Educational facilities	0%	0%	15%	42%	28%	51	1.84	(1-5)

Table 30: the average rating score for the educational facilities

It is clear from the data in Graph 16 that the majority of the local residents who were interviewed responded that this neighbourhood had poor or really poor educational facilities (68% of the interviewees). A minority of the participants (15%) indicated that educational facilities were satisfactory. We calculated the average rating and which is shown in Table 30. The average rating score was 1.84, which is close to the lowest rate. This score strongly implies poor educational facilities.

Cultural facilities:

- Q17 (How are the cultural facilities?) was put to the interviewees to assess the quality of the cultural facilities. Graph 17 and Table 31 reveal the results:



Graph 17: the results of the interviewees' responses about the cultural facilities

	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Cultural facilities	0%	0%	17%	40%	25%	49	1.89	(1-5)

Table 31: the average rating score for the cultural facilities

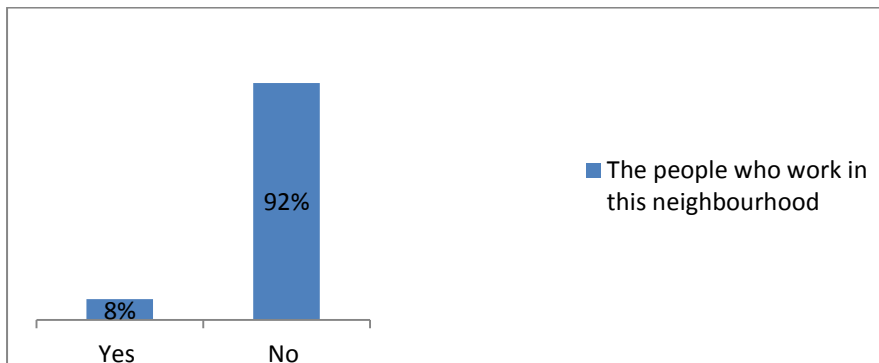
From the graph above we can see that only a small number of respondents (17%) indicated that the cultural facilities were satisfactory. Indeed, most responded the cultural facilities were poor or really poor (65%). The data from Table 31 shows that the average rating score was 1.89. These results indicate that the cultural facilities in this neighbourhood are not up to scratch.

Access to employment

This area is connected to the main business centre of Isfahan (bazaar). In the three main border streets of the neighbourhood there are many shops and lots of people from other parts of Isfahan come here to do their shopping. This part of the city seems to have good business activities and there exist good opportunities for finding jobs. Consequently, we investigated the possibilities of landing a job or establishing a business

In this part, we asked the interviewees six questions. In the first three we asked people about whether they worked here, for how long and did they like the idea of working as well as living here. In question four we enquired about business activities in the area and the fifth and sixth questions were about job and business opportunities.

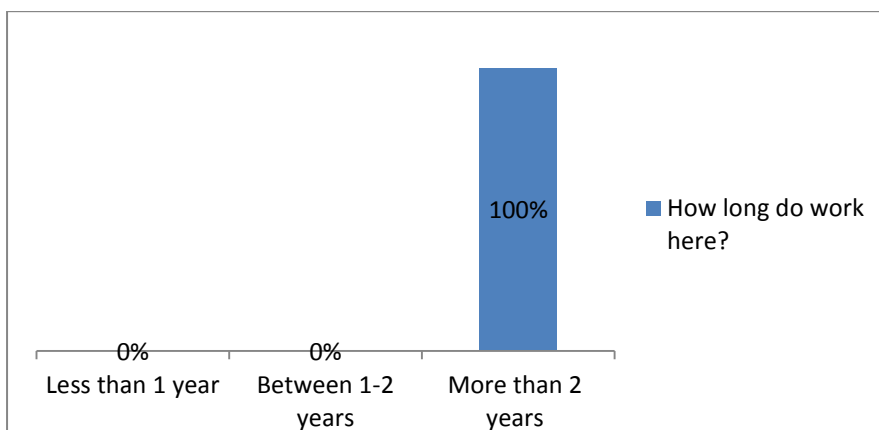
- Q18 asked to interviewees: Do you work in this neighbourhood? The replies are below:



Graph 18: the rate of interviewees who work in this neighbourhood

It can be seen from the data in Graph 18 that only a small number of respondents indicated that they work here (8% of the interviewees).

- Q19 asked the interviewees who had answered yes to Q18: How long have you worked here? Below are the results:

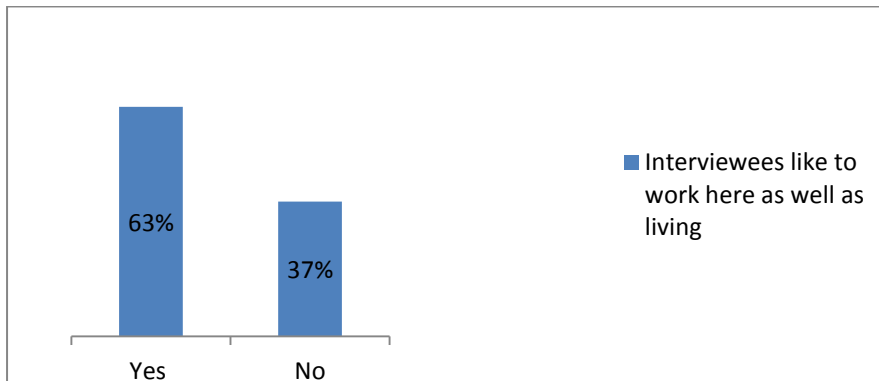


Graph 19: How long they had been working?

All of these people (8% of interviewees) who answered yes to this question indicating that they had worked here for more than 2 years. The results show that these people have had a stable business for more than two years.

After Q18 and Q19 we asked to interviewees Q20: Do you like working as well as living here? to ascertain the number of residents who liked to work in this area.

- Q20 asked to people: Do you like to work here as well as living? Graph 20 below shows the results:



Graph 20: the rate of participants that like to work as well as live here

Almost two-thirds of the participants (63%) said that liked to work in this area. They positively preferred to live and work in this neighbourhood. We looked at the interviewees' responses and saw that all those who worked in this area (8% of the interviewees) answered yes to this question. Only 37% of the respondents indicated that they do not like to work as well as live in the area.

	Yes	No	Total	Average rate	Rating scale
Residents who like work here	65%	16%			
	39	10	49	1.79	(1-2)

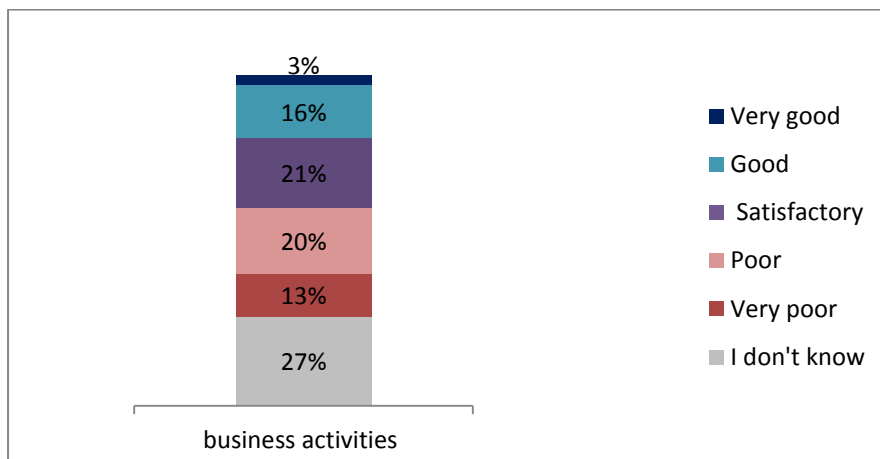
Table 32: the average rating residents who like to work here as well as living

Furthermore, the average rating score was 1.79, which shows that most of the residents interviewed liked to work and live in this area.

After first part of the business activity assessment we found that only a small number of respondents worked here while the majority of the participants liked to work in the area where they lived.

In the second part of this assessment we wanted to find out what the residents thought about the business activity situation. Q21 asked the interviewees: What do you think about business activities here?

- Graph 21 below gives the answers:



Graph 21: the results of interviewees' responses concerning business activities

	Very good	Good	Satisfactory	Poor	Very poor	Total	Average rate	Rating scale
Business activities	3%	16%	21%	20%	13%	44	2.72	(1-5)

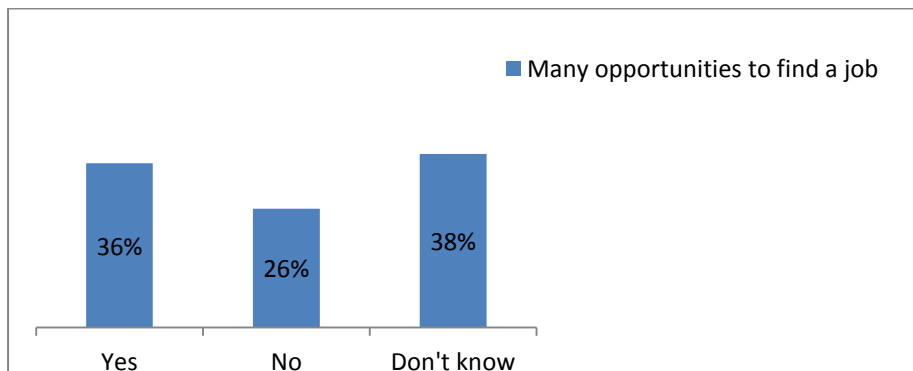
Table 33: the average rating for business activities

Most of those (27%) who responded to this question did not know about business activity in this area. The overall response to this question was positive (3% very good, 16% good and 21% satisfactory). Table 33 shows the average rating score as 2.72. This is a little higher than half the rating scale (2.5). From the results of Graph 21 and Table 33 we can see that the residents felt that this neighbourhood enjoyed satisfactory business activity.

An interesting point about the results of Table 33 is that the people who answered very poor (13%) or poor (20%) were those who worked here. This means that the residents who work in this area believe their business activity is poor.

After finding out what the interviewees think about the business activities we asked them two questions about their hopes of finding a job and establishing a business in this area.

- Q22 asked to local residents: Would you say this area has many job opportunities?) The results can be seen below:



Graph 22: the results of finding a job in this area

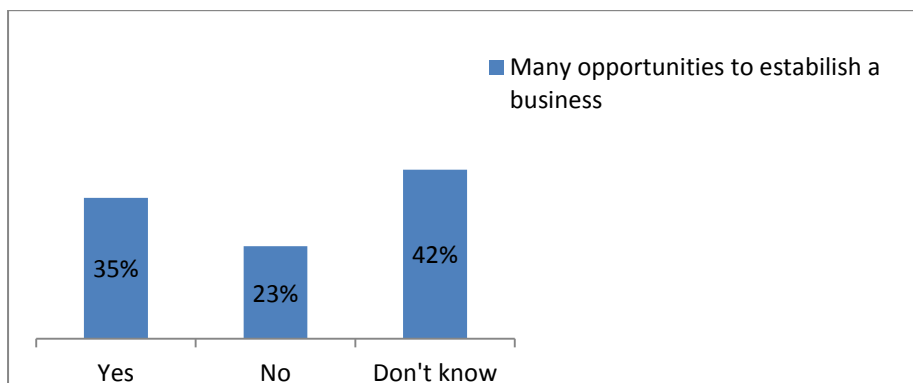
	Yes	No	Total	Average rate	Rating scale
Job finding opportunities	36%	26%	38	1.57	(1-2)

Table 34: the average rating score for finding a job

From the data in Graph 22 we can see that 38% of the interviewees knew nothing about this question, but almost one-third (36%) answered yes, that they believed there were many opportunities to find a job in this area, while 26% believed that it was hard to find a job. Furthermore, the average rating score was 1.57, which is slightly higher than average. The overall result of this question is quite positive.

The final question of this part was about existing opportunities to establish a business.

- In Q23 we asked the interviewees: Would you say this area has many opportunities to establish a business or around the neighbourhood? The results are shown in Graph 23 and Table 35:



Graph 23: the results of establishing a business in this area

	Yes	No	Total	Average rate	Rating scale
Business establishing opportunities	35%	26%	35	1.6	(1-2)

Table 35: the average rating score for establishing a business

It can be seen from the results that many interviewees (42%), knew nothing about this question the same as Q22. On the other hand, 35% answered yes and 23% no, which means that more people believed that in this area there were fair opportunities to establish a business. Also, the average rating score was 1.6: evidence that the result of this question was reasonably positive.

5.1.3 Safety and Security

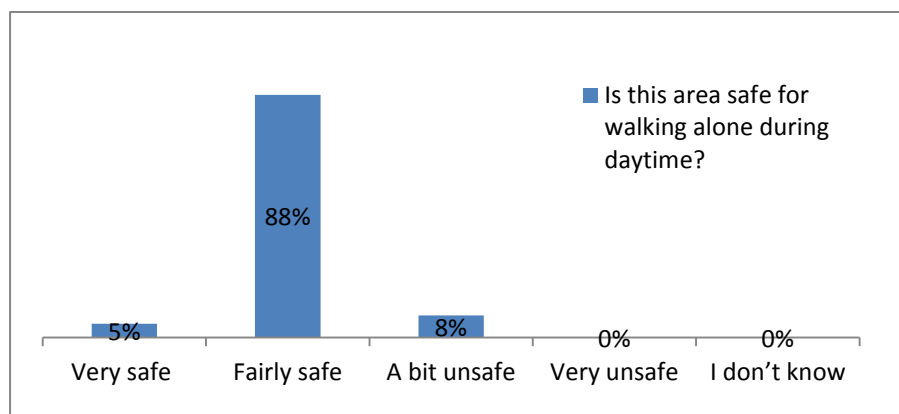
Security is an essential element in every neighbourhood. In this section, the interviewees were asked sixteen questions divided into seven groups.

The assessment of the residents' feelings concerning safety and security was done using seven groups of questions related to; feeling safe during the day and at night, lighting conditions, safety and security equipment, neighbourhood form and physical condition, car movement problems, antisocial behaviour and crime. By asking different questions in each group we assessed these seven groups. The results show the residents' opinion about the level of safety and security.

Feeling of safety when walking during the day and at night:

To feel safe when walking is an important part of safety and security. Feelings of safety help to increase the level of social sustainability and the residents can communicate. In this part, we asked the interviewees two questions. By asking Q24 (How safe do you feel when walking alone in this area during the daytime?), we found the level of feeling safe during the day and by asking Q25 (How safe do you feel walking alone in this area after dark?), we found the level of feeling safe after dark.

- Q24 asked the interviewees: How safe do you feel walking alone in this area during daytime? and Graph 24 below gives the results:



Graph 24: the rate of the residents' feeling of safety in the day time

	Very safe	Fairly safe	A bit unsafe	Very unsafe	Total	Average rate	Rating Scale
Is this are safe for walking alone during daytime?	5%	88%	8%	0%	60	2.71	(1-4)
	3	47	5	0			

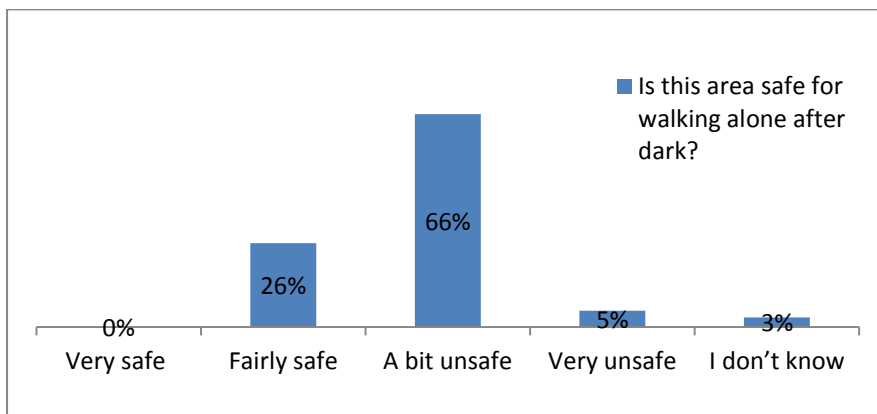
Table 36: the average rating of safety for walking alone in the day time

An evaluation of this question was made using five short answers. These answers were: very safe, fairly safe, a bit unsafe, very unsafe and don't know. We assessed this question on the basis of the maximum rate and calculated the average rating scale (see Table 36).

In this research we interviewed thirty females and thirty males. When the residents were asked Q24: How safe do you feel walking alone in this area during daytime? The majority (88%) felt that the neighbourhood was safe for walking during the daytime. Furthermore, the average rating score was 2.71 which is close enough to 4, which is strong evidence for a feeling of safety in the daytime (Table 36 and Graph 24). Only a small number of respondents indicated that this area was a bit unsafe for walking in the daytime. An interesting point is that this minority of residents were female (8% of the interviewees).

After confirming the results of Q24, we asked to interviewees Q25: How safe do you feel walking alone in this area after dark? Here we wanted to find out how people felt about safety when walking at night.

- Graph 25 gives the results:



Graph 25: how safe the residents feel about after dark

	Very safe	Fairly safe	A bit unsafe	Very unsafe	Total	Average rate	Rating Scale
Is this area safe for walking alone after dark?	0%	26%	66%	5%	58	2.22	(1-4)

Table 37 : the average rating for safety when walking alone after dark

An evaluation was carried out in the same way as for Q24, with six short answers. The results were slightly different to those of Q24 for Q25: How safe do you feel walking alone in this area after dark? Almost two-thirds of the participants (66%) said it was a bit unsafe and a small number (5%) felt this area was very unsafe at night. The average rating score was 2.22, slightly less than those (2.5) who felt the neighbourhood was a little unsafe for walking after dark. It is interesting to note

that further analysis showed that all the female interviewees answered that it was a bit unsafe or very unsafe. This means that 100% of the females felt this area was unsafe for walking at night. The results in Table 36 and Graph 25 show that the residents felt this area was safe for walking in the daytime and unsafe after dark.

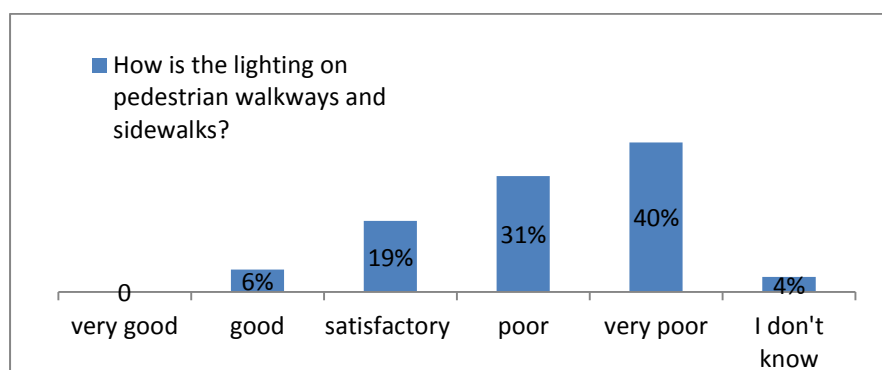
Lighting:

Lighting condition effects safety and security on the neighbourhood. If an area has proper lighting, people can go to walk in night and they feel safer when they want to use their area after dark. Also in Iranian culture night life is really common. People like to go out in night after a hot day. A place with good lighting helps resident enjoy their night also residents socialize. Good lighting increase safety and improve social life.

In this part there are three questions. On asking Q26 (How is the lighting on pedestrian walkways and sidewalks?) we found the lighting condition of the walkways and sidewalks. We repeated the same for the lighting condition of green, open and public spaces by asking Q27 (How is the lighting on green spaces, main junctions and public spaces?) In the third question (Q28) we found out about the lighting conditions at the entrance to homes and other buildings.

These three questions were assessed by contrasting the positive short answers (very good, good and satisfactory) with the negative ones (poor and very poor) and calculating the average rating scores. This was needed when we showed the final summary and comparison of the results.

- Q26 (How is the lighting on pedestrian walkways, sidewalks and roadsides?) was posed to the interviewees and Graph 26 shows the results:



Graph 26: the results of the lighting conditions on pedestrian walkways and sidewalks

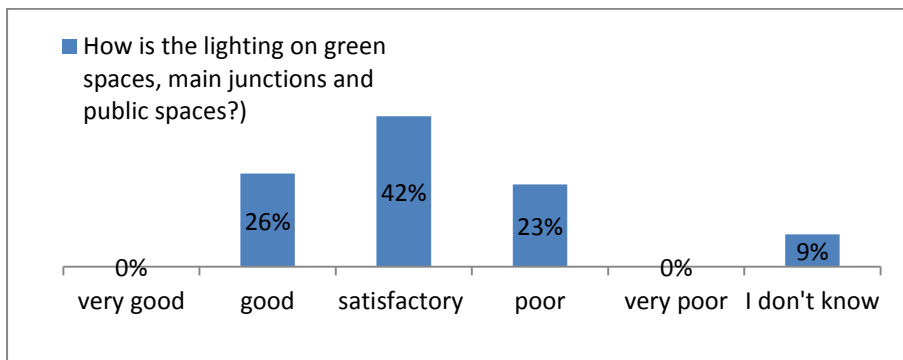
	Very good	good	satisfactory	poor	Very poor	Total	Average rate	Rating scale
Lighting on pedestrian walkways and sidewalks	0%	6%	19%	31%	40%	58	1.91	(1-5)

Table 38: the average rating for lighting on pedestrian walkways and sidewalks

71% of those interviewed indicated that the pedestrian walkways and roadsides had poor lighting (40%, very poor and 31%, poor). Only 25% of the respondents indicated that the pedestrian walkways and sidewalks had good lighting. The average rating score was 1.91 which is close to the lowest rate. The overall response to this question was poor. This means the lighting on the walkways and roadsides was in poor condition in this neighbourhood.

Q27 asked: How is the lighting on green spaces, main junctions and public spaces?

- Graph 27 and Table 39 demonstrate the results:



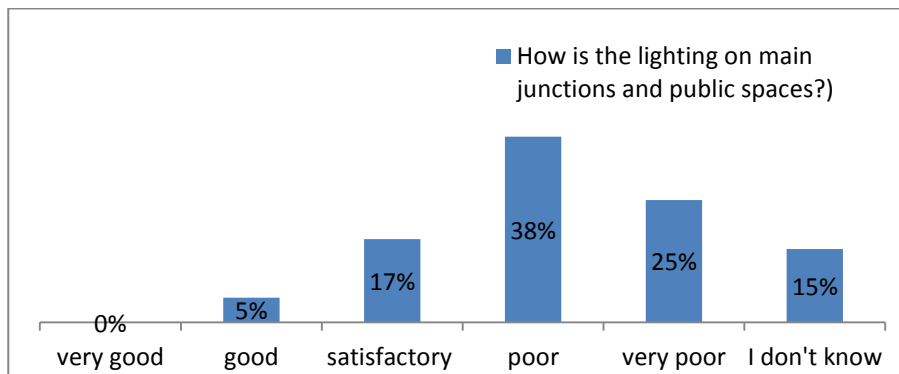
Graph 27: the results of the lighting conditions of green spaces

	Very good	good	satisfactory	poor	Very poor	Total	Average rate	Rating Scale
Lighting on green spaces	0%	26%	42%	23%	0%	55	3.03	(1-5)

Table 39: the average rating for the lighting of green spaces

In this area there are no public spaces but there are some green areas as well as one main junction. Thus, the interviewees responded to this question on the basis of the green space lighting and the main junction. It is clear from Graph 27 that 68% of those who were interviewed indicated that the lighting conditions in the green spaces were good. 26% answered good, while 42% said satisfactory. A smaller number (23%) indicated that the green spaces had poor lighting. Moreover, the data from Table 39 shows that the average rating score was 3.03 (a little higher than half the score).

- By asking Q28 (How is the lighting on main junctions and public spaces?) we assessed the lighting conditions of the main junctions and public spaces:



Graph 28: the results of the lighting conditions of the main junctions and public spaces

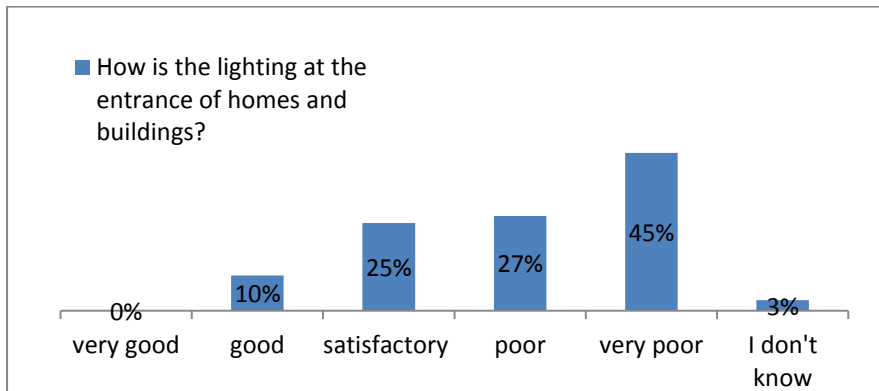
	Very good	good	satisfactory	poor	Very poor	Total	Average rate	Rating Scale
Lighting on public spaces and main junctions	0%	5%	17%	38%	25%	51	2.01	(1-5)

Table 40: the average rating for the lighting of the main junctions and public spaces

In this area there is a public space and a main junction. The results of the interviewees' answers are shown in the graph and table above. It can be seen the data from Graph 28 that the majority of the responses were 'poor' and 'really poor' for 63% of the interviewees. Only a small number answered that the lighting conditions in the public space and main junction were satisfactory. Furthermore, the average rating score was 2.01 which is lower than half the score which means that the public space and Seh Rah Maihigiri junction had poor lighting conditions.

After confirming the good lighting of the green spaces and the poor lighting of the pedestrian walkways and sidewalks, we asked the interviewees Q29.

The results of Q29 (How is the lighting at the entrance of homes and buildings?) are shown in Graph 29 and Table 41:



Graph 29: the results of the lighting conditions of the home and building entrances

	Very good	good	satisfactory	poor	Very poor	Total	Average rate	Rating Scale
Lighting at the entrances of homes and buildings	0%	10%	25%	27%	35%			
	0	6	15	16	21	58	2.10	(1-5)

Table 41: the average rating for the lighting at the entrances of homes and buildings

From the data in the graph above, it is clear that 72% of those who were interviewed indicated that the house and building entrances had poor lighting. The response rate was 72% for poor (45% very poor and 27% poor) and 35% for good (25% satisfactory and 10% good). From the data in Table 41 we can see that the average rating score was 2.10 which is close to the lowest scale (1). The overall response to this question was poor (the rating score was 2.10) which means there was poor lighting in the home and buildings entrances.

The results of this investigation show that the lighting conditions were poor in pedestrian walkways and sidewalks as well as homes and building entrances but green spaces had good lighting in this neighbourhood. Moreover, the public space and main junction of this area (Seh Rah Mahigiri junction) had poor lighting.

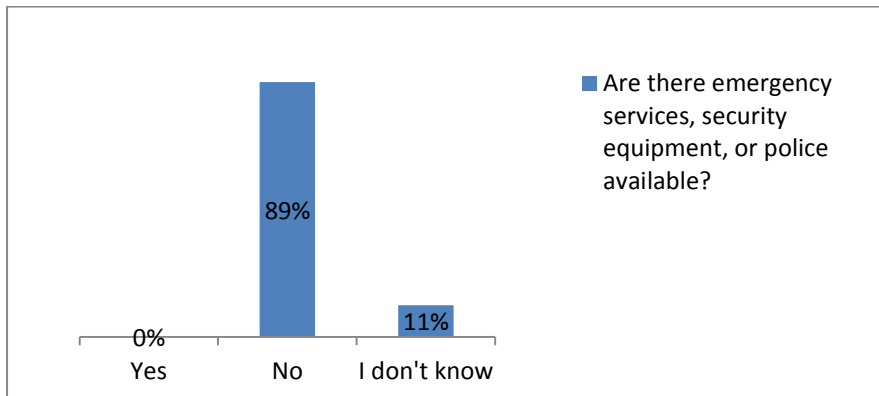
Security equipment:

Home and neighbourhood security are important for most residents. This is because residential crimes, such as burglaries and home invasions, are very real threats not only to one's property, but also to the whole neighbourhood safety. In this part of the safety and security assessment we want to find out about the condition of the security equipment in this neighbourhood. The security

facilities contain security cameras, emergency services and security centre such as the police station.

We asked to interviewees Q30 (Are there emergency services, security equipment, or police stations in the neighbourhood?) with three short answers: yes, no and don't know.

- The graph below shows the results for Q30:



Graph 30: the result for the existing security equipment, emergency services and police station

	Yes	No	Total	Average rate	Rating scale
Availability of emergency services, security and police station	0%	89%	53	1	(1-2)

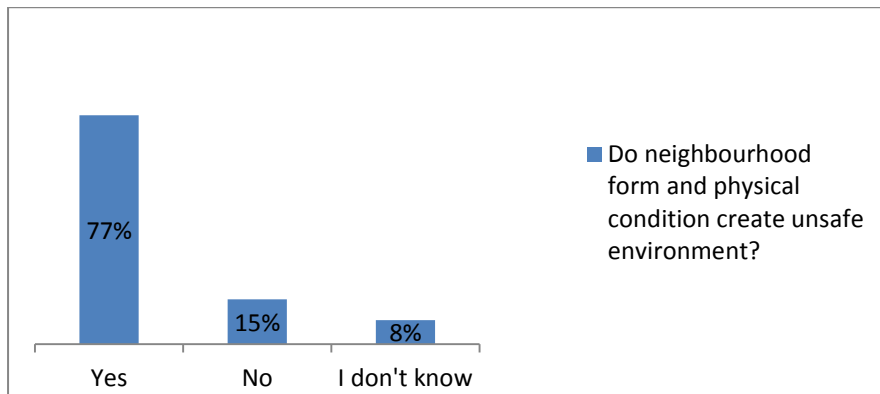
Table 42: the average rating for the availability of emergency services, security and police stations

It can be seen from the data in Graph 30 that the majority of the respondents felt that there were no security services or equipment in this area. Moreover, the average rating score was 1. This indicated that there was strong evidence of a lack of security equipment, as Table 42 demonstrates.

Neighbourhood form and physical condition:

In this part we wanted to find out about which attribute of the neighbourhood form and physical condition increased insecurity in this area. For that purpose, we asked two questions. In Q31 (Do neighbourhood form and physical condition create an unsafe environment?) we required short answers: yes, no and don't know. We then asked those who had replied yes to Q32 (What exactly is this attribute or condition?)

- The results appear below:



Graph 31: the percentage of those who felt the neighbourhood form and physical condition created an unsafe environment

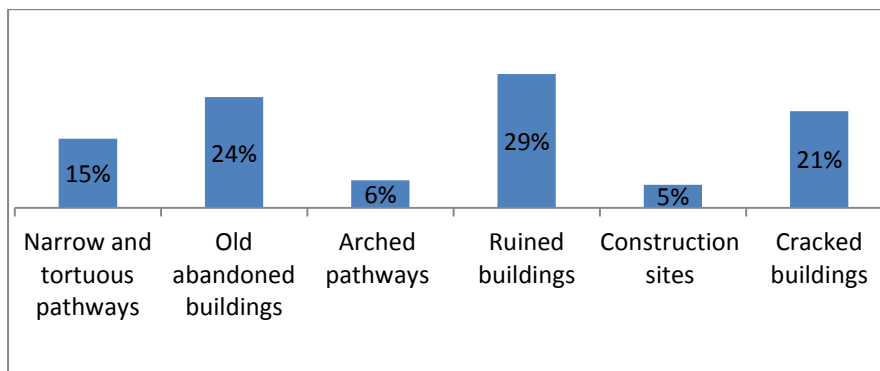
	Yes	No	Total	Average rate	Rating scale
Do neighbourhood form and physical condition create unsafe environment	77%	15%			
	46	9	55	1.83	(2-1)

Table 43: the average rating of those who felt the neighbourhood form and physical condition created an unsafe environment

A minority of the participants (15%) indicated the neighbourhood form and physical layout did not affect safety but most (77%) answered yes to this question. The score 1.83 for the average rating means that those who were interviewed believed the neighbourhood's physical context caused many security problems. Most of the female interviewees answered yes to this question. The data in Graph 31 and Table 43 provide strong evidence that the compact form and physical ground plan of the neighbourhood created an unsafe area, especially for women.

Following the results of Q31 (Do neighbourhood form and physical condition create unsafe environment?) we asked the interviewees who had answered yes,, to explain in more detail what feature or condition created an unsafe area. We only required them to name one factor.#

- The responses to Q32 are shown below:



Graph 32: the results for the attributes and conditions that create an unsafe environment

The interviewees offered different comments: narrow and tortuous pathways, old abandoned buildings, arched pathways, ruined buildings, construction sites, cracked buildings. There were various comments: narrow and tortuous pathways (15%), as well as arched walkways (6%). 20% of the interviewees felt that these two features of the neighbourhood's compact form created insecurity. The other responses related to the physical condition of the zone. This is a historical neighbourhood which is really run-down. There are many ruined and crumbling buildings in this area. The highest rate applies to the ruined buildings with 29%. It is thought that the ruined buildings are a good place for undesirables to hide and this causes anxiety. There are many old, abandoned buildings in this neighbourhood and 24% of the residents interviewed believed that such houses create an unsafe environment for the area. 21% of the interviewees mentioned the dilapidated buildings because they were concerned about the vandalising of their homes. A minority believed that the construction sites (5%) made this place unsafe.

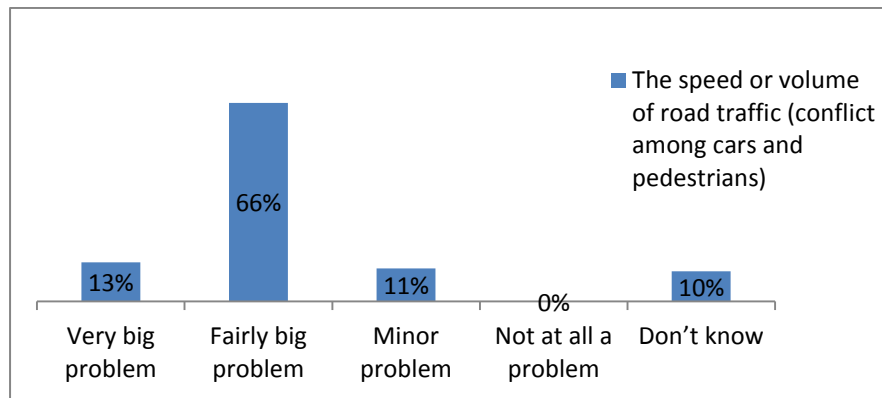
The poor physical condition of the neighbourhood (21% rundown buildings, 29% ruined buildings, 24% old, abandoned buildings and 5% construction sites) has a greater impact on the creation of an unsafe environment than the dense form of neighbourhood (21%), narrow and tortuous pathways (15%) or arched walkways (6%).

Car movement problems:

This is a historic neighbourhood with dense ground plan. Most of roads are narrow but some are unusable by car. Pedestrians have a problem with car circulation because there is not enough space for walking, so pedestrians face difficulties. The two main roads of this quarter are access roads for the bazaar and commercial sector in the south of the area. Consequently, in the morning and afternoon when work starts and finishes these two roads have really heavy traffic. It seems

that pedestrians and cars vie for space in this area. We asked the interviewees about car movement in this part and what the residents felt about this problem.

- Q33 asked the interviewees about the speed and volume of road traffic: the conflict between cars and pedestrians. The graph and table below demonstrate the results:



Graph 33: the result of cars movement and the problem with pedestrians

	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average rate	Rating Scale
Car movement problem	13%	66%	11%	0%	54	3.01	(1-4)

Table 44: the average rating for the car movement problem

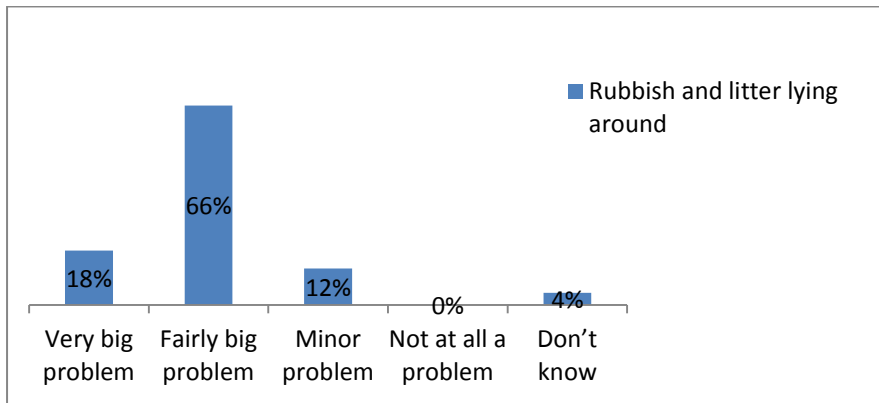
Almost two-thirds of the participants (66%) said that car movement was a fairly big problem. Only a small number (11%) indicated that this was a minor difficulty. In addition to this majority, 13% of the interviewees responded that car movement was very big problem for pedestrians and created a really unsafe environment for walking. The average rating score is shown in Table 44. The score was 3.01 and close to the highest scale. This is strong evidence that car movement causes the residents to feel this area is unsafe.

Neighbourhood pollutions:

Rubbish, litter and the level of noise constitute the main pollution in every neighbourhood.

In the first question we asked people about rubbish and litter. This historic neighbourhood is densely packed with narrow streets, so in most parts, it is difficult for cars to manoeuvre. As a result, the residents have difficulty in disposing of their rubbish and some residents are careless when throwing it out. This causes an accumulation of refuse. Also, there are two big construction sites here (working for a large project in the vicinity). This creates a lot of trash and construction waste. In this section we find what the residents feel about this problem.

- Q34 asked to interviewees: Does abandoned rubbish and litter cause problems? The results obtained are shown below:



Graph 34: the results for problems with rubbish and litter lying around

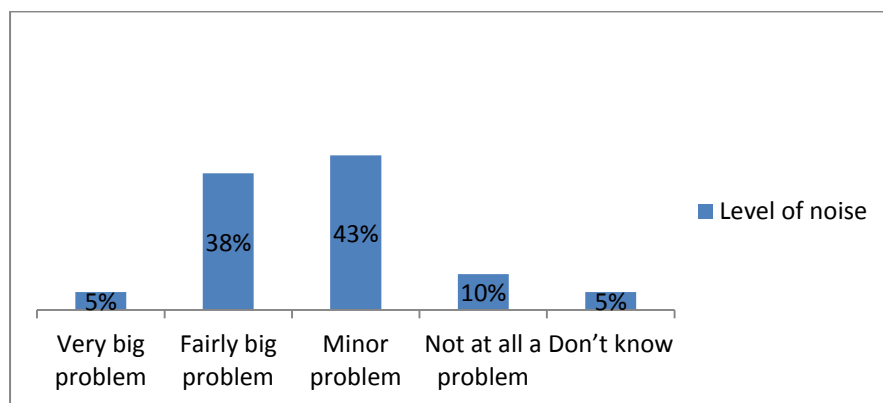
	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average rate	Rating Scale
Rubbish and litter problems	18%	66%	12%	0%	58	3.03	(4-1)

Table 45: the average rating for rubbish and litter problems

As can be seen from the graph above, most interviewees responded that rubbish and litter caused a fairly big problem (66%) while 10% said that it was a very big problem. The overall response to this question was negative and we found that rubbish and litter were a big problem. Only a small number of residents (12%) said this was not a big problem. Moreover, the rating scale was 3.03, which means that rubbish and litter are a fairly big headache.

The second problem was the level of noise. Noise is a common problem in the area which is located next to the main streets, main junctions and the busiest part of the district. The two main roads in this area are really busy and create chaos and noise. Also, construction activities produce a lot of noise and dirt. It seems that the noise level can causes problems for the residents. To ascertain the extent of the problem we asked the interviewees Q35.

- The results of Q35 (Is there a problem with the level of noise?) are shown in the graph and table below:



Graph 35: the results of the problem with level of noise

	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average rate	Rating Scale
Noise problem	5%	38%	42%	10%	57	2.40	(4-1)

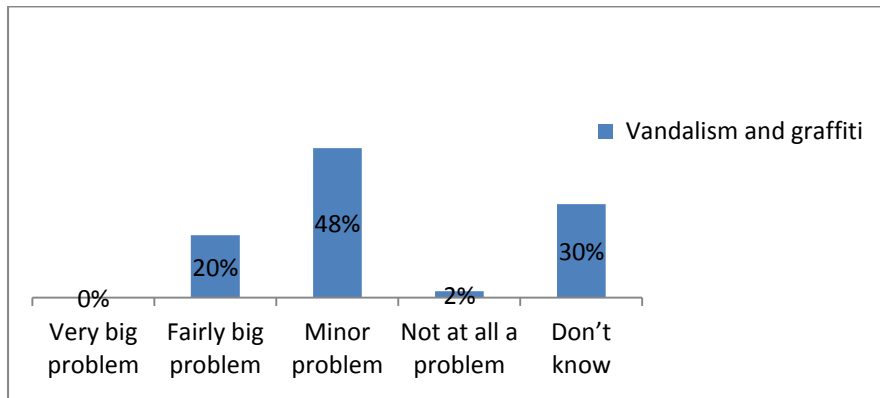
Table 46: the average rating of the noise problem

In response to Question 35, there are two groups of answers. Approximately half of the respondents indicated that noise was a big problem and the other half said it was a minor irritant. There are completely opposite answers, but the percentage of people who responded that it was a minor problem or no problem at all was slightly more. (53% minor problem versus 43% big problem). The average rating score was 2.4, which is a little lower than half the scale range. Further analysis showed that the interviewees stated that noise was a big problem. They lived in the mains sectors of this area: for example, the shopkeeper in the main junction (Seh Rah Mahigiri junction), or near the two main roads of the neighbourhood. Therefore, we can conclude that in this quarter noise is a big problem for the residents who live in the main sectors or near the main roads and is a minor one for those who live elsewhere.

Antisocial behaviour:

The first types of antisocial behaviour that we want to assess are vandalism and graffiti. In this area there are many drug addicts who hang around the streets and create vandalism. Vandalism and graffiti are seen, especially in the houses next to ruined buildings. We found out what the residents felt about this problem.

- We asked the residents: Do you believe that vandalism and graffiti are problems? (Q36) The results are below:



Graph 36: the response ratings about graffiti and vandalism problems

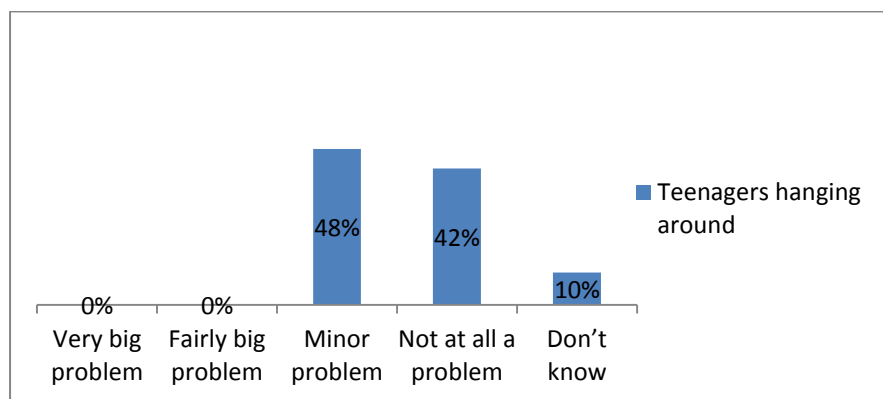
	Very Big problem	Fairly Big problem	Minor problem	Not at all a problem	Total	Average rate	Rating Scale
Graffiti or vandalism problem	0%	20%	48%	2%	42	1.97	(4-1)

Table 47: the average rating for graffiti and vandalism problems

From the Graph 36 above we can see that the response rate was 48% as a minor problem and 20% as a fairly big problem. Also 30% of the interviewees knew nothing about this question. Table 47 shows that the average rating score was 1.97. These results indicate that most residents believed that graffiti and vandalism were minor problems in this historic neighbourhood.

Second: The antisocial behaviour that we wanted to assess in this neighbourhood was related to teenagers hanging around. This is one of the most common problems in every culture and city, especially in areas with low level of family life. Many low income families with numerous children live in this area. Antisocial behaviour is one of the main problems which creates an unsafe environment for the residents. The victims of the teenagers are mostly old people. We asked to interviewees about the overall level of antisocial behaviour in this area.

- Q37 asked: Do you believe the teenagers hanging around in this area is a problem? Graph 37 and Table 48 demonstrate the results:



Graph 37: the extent of the problem of teenagers hanging around

	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average rate	Rating Scale
Teenagers hanging around problem	0%	0%	48%	42%	54	1.53	(4-1)

Table 48: the average rating for the problem of teenagers hanging around

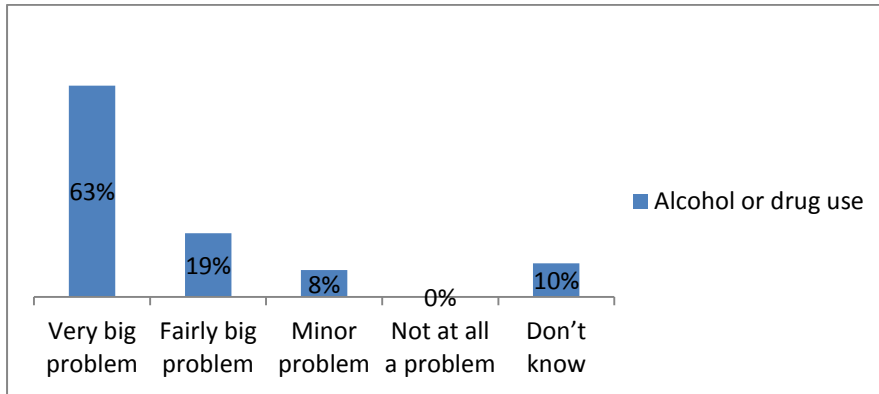
It can be seen from the data in Graph 37 that the majority of respondents felt that antisocial behaviour was a minor problem (48%) - almost half of the interviewees. The rest said that teenagers hanging around was not a problem. The average rating score was 1.53. The overall response to this question indicated that it was a minor problem, so we can say that antisocial behaviour was not big problem and the majority of the residents believed either that it was just a minor problem (48%) or no problem at all (42%).

Third: The antisocial behaviour that we assessed in this neighbourhood was associated with alcohol and drug abuse. Abuse of drugs and alcohol is common among those who display antisocial behaviour. Criminal activities, like assault, theft or even driving offenses may be linked to antisocial behaviours, especially when a person is under the influence of drugs or alcohol.

In this area, we see many drug-addicted people hanging around. Some of them live here but most of them are not residents of the neighbourhood. They come here to buy their drugs because many drug sellers are based in this area or this kind of neighbourhood. The main problem for drug addicts in this area is that there are many dilapidated buildings here and most of them are abandoned by their owners. As we found in Q32 (What is exactly this attribute or condition?), abandoned and ruined buildings create an unsafe environment. Drug-addicted people use these

nasty environmental spaces (ruined buildings) to take the drugs. It is clear that this is an antisocial behaviour problem in this neighbourhood. Therefore we tried to ascertain what the residents felt about these stray junkies. In order to assess the third antisocial behaviour we asked the interviewees Q38 (Do you believe that alcohol or drug users are a problem?).

- The results of Q36 are in Graph 38 and Table 49:



Graph 38: the results of whether the interviewees believed that alcohol or drug use was a problem

	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average Rating	Rating scale
Drug use and drug addicted problems	64%	19%	8%	0%	54	3.61	(4-1)

Table 49: the average rating of the alcohol and drug use problem

From the graph above we can see that almost two-thirds of the participants (63%) said that this antisocial behaviour was a very big problem in this area, while 19% believed it was a fairly big problem. Furthermore, from Table 49 we can see that the average rating score was 3.61. The data from Graph 38 and Table 49 provide strong evidence that this antisocial behaviour (drug use and druggies) was a really big problem. Most of the interviewees were concerned about their kids playing in these rundown buildings, because they were also used for drug taking and as temporary shelters for drug addicted people. Generally speaking, drug use and drug addicts are big problem and create an unsafe environment for the residents.

Antisocial behaviour	Very big problem	Fairly big problem	Minor problem	Not at all a problem	Total	Average Rating	Rating scale
Graffiti or vandalism	0%	20%	48%	2%	42	1.97	1-4
Teenagers hanging around	0%	0%	48%	42%	54	1.53	1-4
Alcohol or drug use	63%	19%	8%	0%	54	3.61	1-4

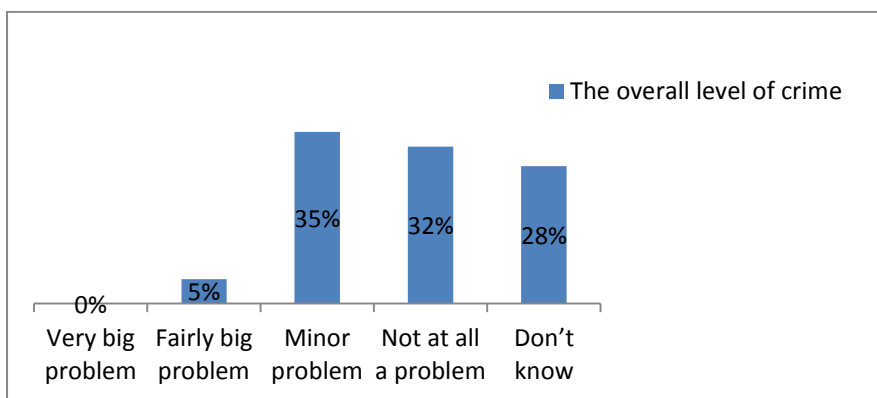
Table 50: rating scale summary of antisocial behaviour problems

Crime:

The assessment of the level of crime is the final part of the safety and security evaluation. This is a necessary part of safety and security. To achieve a safe environment we need to find out the level of crime. There are different kinds of crime that can happen in an area. In this part, we asked the interviewees two questions. In the first, we enquired about the overall level of crime in the district and then what the residents felt about the crime level. Following this, we asked about five common crimes that happen in the neighbourhood. These five crimes were to do with house or flat break-ins and burglary; parked car break-ins and theft; personal experience of theft, mugging; or physical attack and racist assaults (either verbal or physical). In the second question, in addition to these five crimes we put a section for those who were not victims.

- Q39 asked: Do you believe the overall level of crime is a problem?)

The results are shown in Graph 39 and Table 51:



Graph 39: the results for the interviewees' responses about the overall level of crime

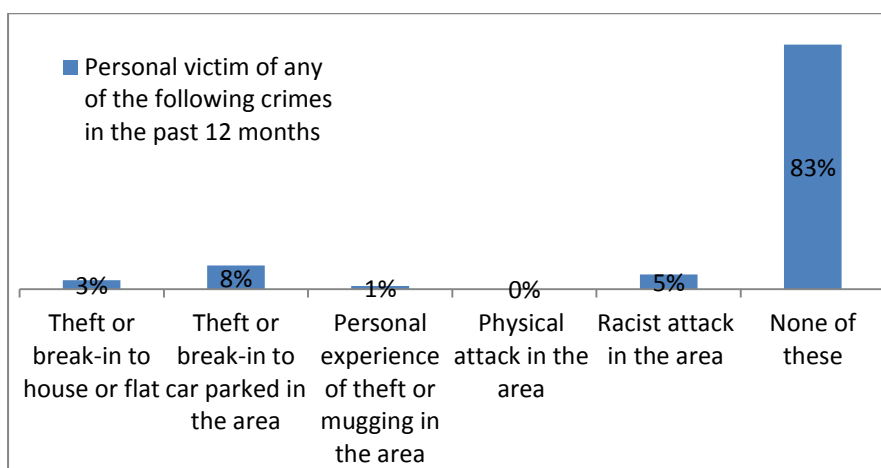
	Very Big problem	Fairly Big problem	Minor problem	Not at all problem	Total	Average Rating	Rating scale
The level of crimes	0%	5%	35%	32%	43	1.62	(1-4)

Table 51: the average rating for the crimes' problem

It can be seen from the data in Graph 39 and Table 51 that only a small number of respondents indicated that crime was a big problem. The overall response to this question was positive and the majority of the interviewees answered that the crime level was a` minor problem (35%) or not a problem (32%). Almost one-third of the participants (28%) did not know about the crime level. Furthermore, the average rating score was 1.62 which is close to the lowest level. Although the results, as shown in Graph 39 and Table 51, indicate that crime is not a big but rather a minor problem in this area, the results show that this is not an entirely crime-free quarter.

We now needed to find the scale of different kinds of offences in this neighbourhood, where the five crimes mentioned were really common. With this in mind, we asked the interviewees Q40: Have you personally been a victim of any of the following crimes in the past 12 months: house or flat break-ins and burglary; parked car break-ins and theft; personal experience of theft, mugging; or physical attack and racist assaults (either verbal or physical)? When evaluating Q40 and the five crimes, we put a final answer (none of these) for those who had not been victim of any kind of crime.

- The results of Q40 are shown in Graph 40 below:



Graph 40: the rate of interviewees who have been victim of following crimes

It is evident from this graph that most of those interviewed (83% of the respondents) had not been victim of any crime but for the five crimes mentioned earlier we can see from the data in the graph above we have victims of other crimes instead of physical attack. The response rate was 3% for

burglary or break-in of house or flat, 8% for theft or break-in of a parked car, 1% for personal experience of theft or mugging and 5% for racist attack (either verbal or physical) in the area. In this research we interviewed ten residents who were from Afghanistan. About 10% of the neighbourhood residents are from Afghanistan because of the low rent houses and proximity to the bazaar. We interviewed those who had been living here for more than two years. An interesting point is that in Q38 (Have you personally been a victim of any of the following crimes in the past 12 months?) those who had been victim of racist attacks (5%) were foreigners. Theft or break-in to a parked car was higher than that of the other five crimes, and involved 8% of the interviewees.

The overall impression was that, in this historic neighbourhood, crime was a minor problem: the majority of the residents interviewed had not been victim of a crime but a small number (17%) had been victims of different crimes. Thus, the crime assessment shows that this area is not completely safe because a low rate of crime still exists.

5.1.4 Sense of place

Sense of place is the second criterion of social sustainability that we assess in this research after safety and security. This is a historic neighbourhood with its own identity. The residents are a combination of three different groups. The first consists of those with a long family history of living in this area. This group is mostly made up of old people. As their children do not live in this area, the majority live alone and they are largely Jews. The second group are low-income residents who cannot afford to live in a better area, so they live here because of low rents. The final group are the Afghans. Most of them came to Iran for temporary for work but have been living here for a long time.

In this part of the interview we want to evaluate the residents' sense of place. This evaluation is divided into two parts. In the first, we asked the interviewees six questions to ascertain their sense of belonging and in the second part we posed a single question to elicit their measure of attachment to the place.

Community attachment:

A sense of place is the feeling of being connected to a particular locality. A feeling of belonging to a place can influence people's sense of identity. Generally, a strong community attachment is positively associated with better self-reported physical and mental health. A strong sense of community attachment also contributes to individual and community welfare.

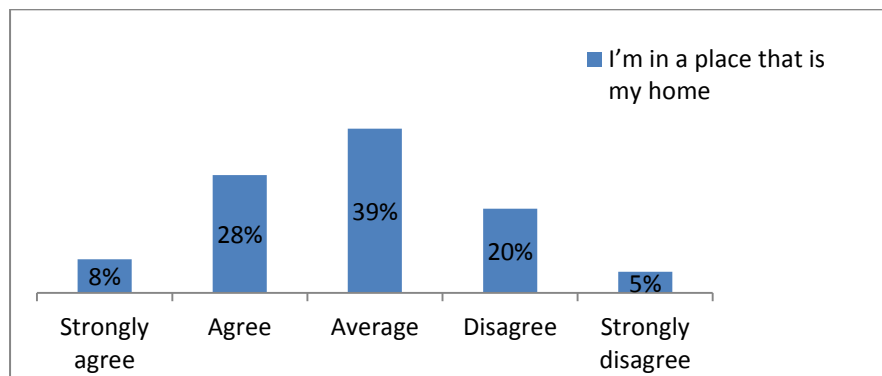
To evaluate community attachment, we had six questions. For each question, using the above method, we calculated the average rating. For each question, the perfect average rating was 5 and the worst 1. After assessing these six questions, the community attachment level was the sum of the six average ratings. We explain the assessment method below.

The level of community attachment=Q1 average rating+Q2 average rating+Q3 average rating+Q4 average rating+Q5 average rating+Q6 average rating

On the basis of this method a score of 30 is the best result and a score 6 is the worst. This means that the highest level of community attachment scores 30 and the lowest, 6.

First of all, we assessed the sixth questions. The results are shown below in six tables.

- We asked the interviewees Q41 (When you are in your neighbourhood, do you feel that it is your home). The results can be seen in Graph 41 and Table 52:



Graph 41: the results of the interviewees' responses that this neighbourhood was their home

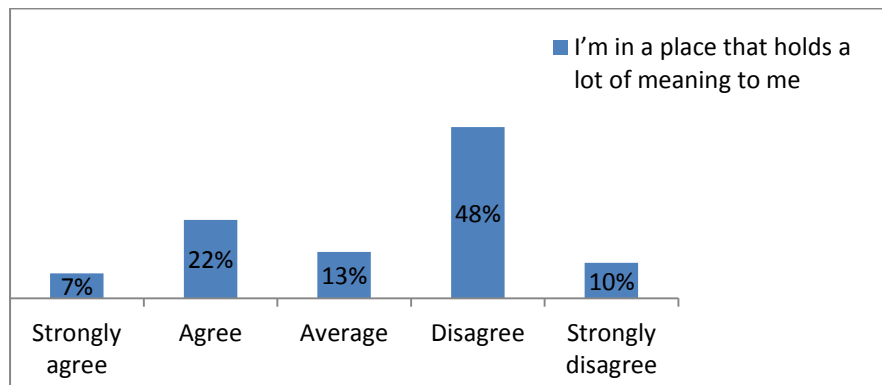
	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place that is my home	8%	28%	39%	20%	5%			
	5	17	23	12	3	60	3.15	(1-5)

Table 52: the average rating of the interviewees' responses that this neighbourhood was their home

It can be seen from the data in Graph 41 that the majority of respondents had an average feeling (39%) that this neighbourhood that was their home. The overall response to this question was very positive because 32% of the respondents agreed or strongly agreed, while 25% disagreed or strongly disagreed. Further statistical tests revealed the average rating score was 3.15 (shown in Table 52). The average rating of 3.15 indicates that most residents in this interview felt that their home was here.

- Q42 asked to residents: When you are in your neighbourhood do you feel that it is your home?

Graph 42 and Table 53 show the results:



Graph 42: the results of the interviewees' responses that this place held a lot of meaning for them

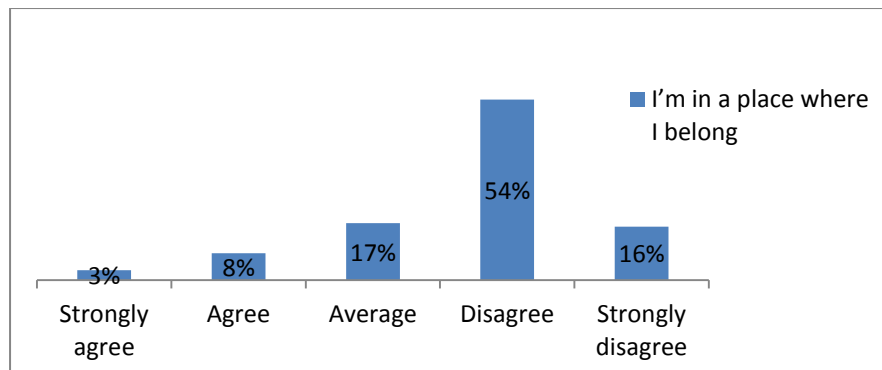
	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place that holds a lot of meaning to me	7%	22%	13%	48%	10%			
	4	13	8	29	6	60	2.66	(1-5)

Table 53: the average rating of the interviewees' responses that this place held a lot of meaning for them

The average rating score for Q42 (When you are in your neighbourhood you feel that is your home) was 2.66. As this was less than 3 it indicated that most interviewees did not feel that this place held a lot of meaning for them. Also, from the data in Graph 42 we can see that those who disagreed with this question were the majority,(48% of the total number of interviewees). Also, 10% of the respondents strongly disagreed. The overall rate of interviewee feeling about this question was negative with an average rating of 2.66.

In next question referred to the interviewees' sense of belonging to this neighbourhood.

- The results of Q43 (When you are in your neighbourhood do you feel that you belong to the place?) are to be found in Graph 43 and Table 54:



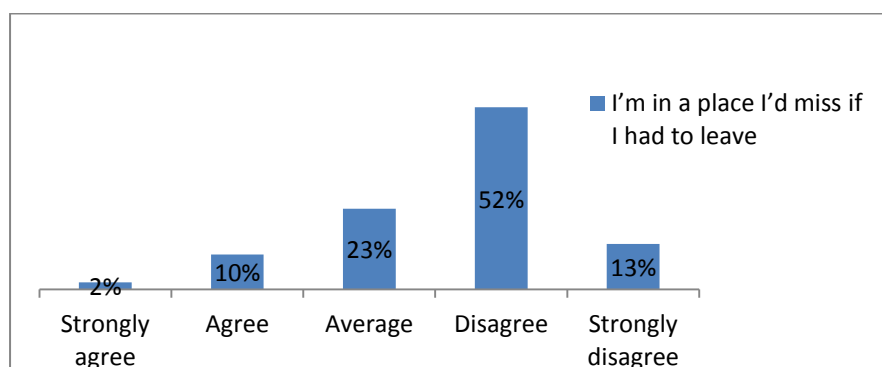
Graph 43: the average rating of interviewee responses that this is the place where they belong

	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place where I belong	3%	8%	17%	54%	16%	60	2.25	(1-5)

Table 54: the average rating of the interviewees' responses that this is the place where they belong

It can be seen from the data in Graph 43 that over half of those interviewed (54%) indicated that they disagreed with Q3 (When you are in your neighbourhood you feel that you belong to this place). Moreover, a minority of participants (16%) indicated that they strongly disagreed. The average rating score was 2.25 and this was strong evidence that most of those interviewed did not feel a sense of belonging to this area. Only a small number of interviewees (8% agreed and 3% strongly agreed) said that they felt they belonged to this neighbourhood.

- Q44 asked the interviewees: When you are in your neighbourhood you feel that you would miss it if you had to leave? In Graph 44 and Table 55 we can see the results:



Graph 44: the results of interviewee responses that they would miss if they had to leave

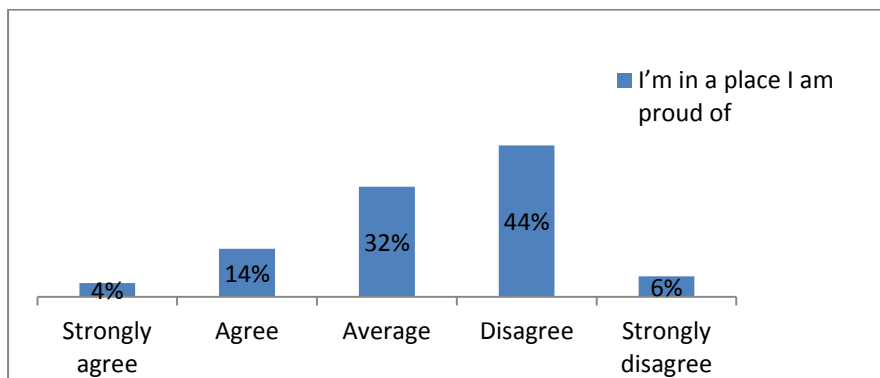
	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place I'd miss if I had to leave	2%	10%	23%	52%	13%			
	1	6	14	31	8	60	2.35	(1-5)

Table 55: the average rating of interviewee responses that they would miss it if they had to leave

The results obtained from the preliminary analysis of the responses to Q44 (When you are in your neighbourhood do you feel that you would miss it if you had to leave?) indicate that the average rating scale was 2.35. This suggests that most residents did not miss this area. We can see from the data in Graph 44 that almost two-thirds of the participants (65%) said that they disagreed with Q44. The overall responses to Q44 were poor, the same as Q43.

We assessed Q41, Q42, Q43 and Q44 in the community attachment section and found that, unlike Q41, (When you are in your neighbourhood you feel that is your home?) the rest of them had an average rating score lower than 3. This means the overall responses to these three statements were negative and the rate of those who disagreed was high. For an evaluation community attachment we also asked Q45 (When you are in your neighbourhood do you feel that you are proud of the place?) and Q46 (When you are in your neighbourhood you feel that this place is important to you?).

- The results of Q45 are in Graph 45 and Table 56 below:



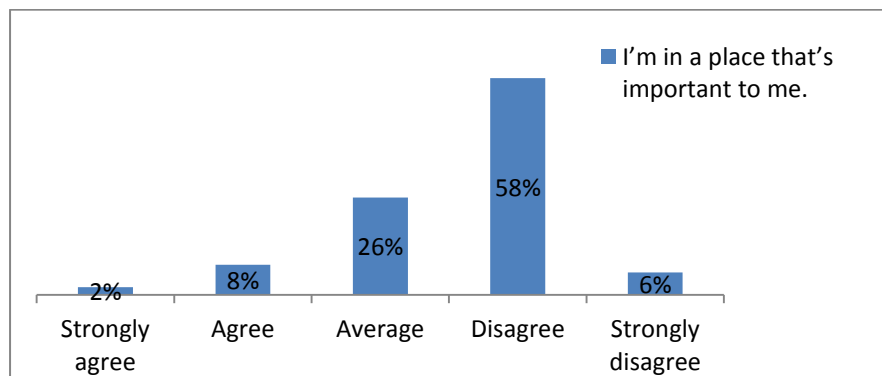
Graph 45: the results of interviewee responses that you are proud of this place

Q5	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place I am proud of	5%	15%	32%	43%	5%			
	3	9	19	26	3	60	2.71	(1-5)

Table 56: the average rating of interviewee responses that you are proud of this place

Data from this table show that 44% of the interviewees disagreed with Q45 (When you are in your neighbourhood do you feel that you proud of this place?). The average rating score was 2.71. This was a negative rate because it was less than average (with rate 3). In response to Question 45, most of those interviewed indicated that they were not proud of this place. A small number (18%) agreed that they were proud of their neighbourhood.

- After Q45 we asked Q46: When you are in your neighbourhood do you feel that you are proud of the place? Graph 46 and Table 57 demonstrate the results:



Graph 46: the results of interviewee responses that this place was important to them

	Strongly agree	Agree	Average	Disagree	Strongly disagree	Total	Average rating	Rating Scale
I'm in a place that's important to me.	2%	8%	26%	57%	7%	60	2.45	(1-5)

Table 57: the average rating of interviewee responses that this place was important to them

Over half of those interviewed disagreed with Q46 (When you are in your neighbourhood do you feel that you are proud of the place?). Also, with an average rating score of 2.45, we can say that for most residents this place was not important to them. From the data in the graph above we see low rates of agreement with this question, with only 10% of the interviewees agreeing with this question.

Statements	Average rating	Rang
Q1-I'm in a place that is my home	3.15	1-5
Q2-I'm in a place that holds a lot of meaning to me	2.66	1-5
Q3-I'm in a place where I belong	2.25	1-5
Q4-I'm in a place I'd miss if I had to leave	2.35	1-5
Q5-I'm in a place I am proud of	2.71	1-5
Q6-I'm in a place that's important to me.	2.45	1-5

Table 58: the all average rating scale of the six statements

In Table 58 we are set out the average ratings of the six statements. For the evaluation of the community attachment scale, we followed the method that we explained at the beginning of this part.

	Score	Rating rang
Community attachment scale	15.57	6-30

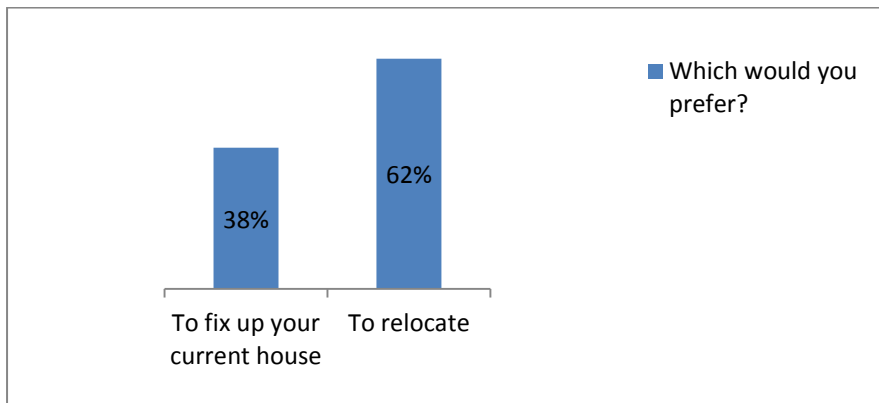
Table 59: community attachment scale for the interviewees' responses

After summing up the six rates from Table 59 we achieved a score of 15.57 (Table 59). The scale ranges from 6 (low community attachment) to 30 (high community attachment), with a sum total of 15.57. As 15.57 is less than 18 (half the score range), this means that the level of community attachment to this area is low.

Place attachment:

Place attachment is the second factor related to sense of place. After assessing community attachment, we rated the place attachment. Place attachment is a feeling that residents have about a place. Some are fond of their neighbourhood and like to live there and another group do not. They live in a place because they have to. It is because of their life circumstances. The second group would move if they could. To assess the place attachment scale in this neighbourhood we asked a single question: We asked: Which would prefer; to fix up your current house or relocate?

- The results of Q47 (Which would you prefer?) can be found in Graph 47 and Table 60 below:



Graph 47: the results of the interviewees' statements about: Which they would prefer

	To fix up current house	To relocate	Total	Average rating	Rating Scale
Place attachment	38%	62%			
	23	37	60	1.38	1-2

Table 60: the average rating for interviewee statements about which they would prefer

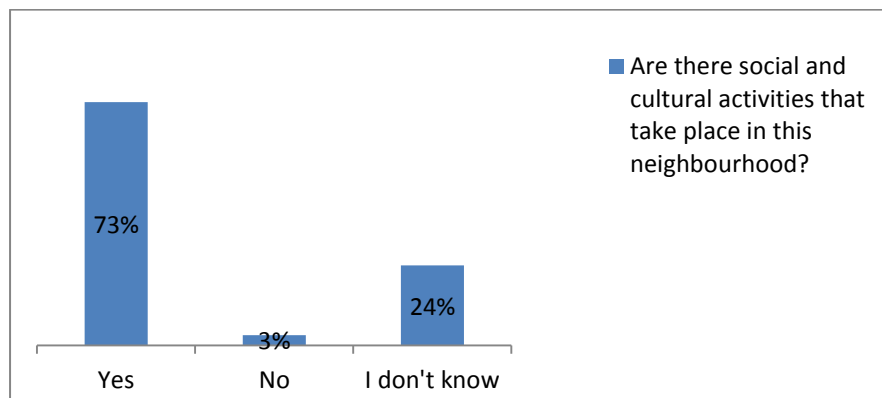
From the graph above we can see that almost two-thirds of the participants (62%) said that they preferred to relocate from this area and a further analysis showed that the average rating was 1.38, which was close to 1 (to relocate). The data from the graph and table shows that the place attachment scale was low and the majority of the interviewees preferred to relocate from the neighbourhood.

5.1.5 Social interaction and community spirit

Social and cultural activities:

In the first part of social interaction and community spirit we needed to find out about the social and cultural activities that took place in this neighbourhood. We asked a single question, namely: Are there any social and cultural activities that take place in this neighbourhood?

The results of Q48 (Are there social and cultural activities that take place in this neighbourhood?) can be seen in Graph 48 and Table 61:



Graph 48: the results of the interviewees' responses about the social and cultural activities that take place in this area

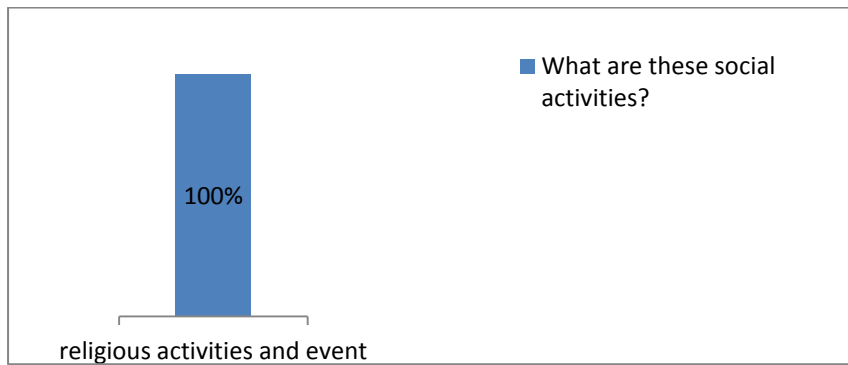
	Yes	No	Total	Average rate	Rating scale
Do social and Cultural activities take place?	73%	3%	46	1.95	(1-2)

Table 61: the average rating of the interviewees responses about the social and cultural activities that are happening

From the graph and table above we can see that the majority of respondents (73%) agreed that social activities took place in this area. Also, the data in Table 61 shows that the average rating was 1.95, providing strong evidence that the residents concurred that social activities happened in the neighbourhood.

After finding the results of Q48, we asked the interviewees Q49 (What are these social activities?) to which they responded 'yes'.

- The results of Q49 (What are these social activities?) are shown in Graph 49:



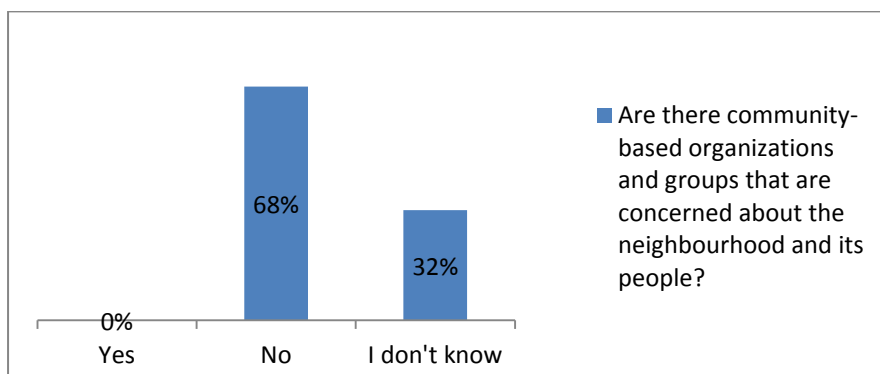
Graph 49: the results of what social activities happen in this neighbourhood

Interestingly, all the interviewees indicated that only religious activities and events took place in this neighbourhood and there was no other kind of social activity..

Community-based organizations and groups:

Community-based organizations and groups were another aspect of the community spirit and social interaction. This was also a necessary part of what we needed to know about the neighbourhood. In this section, like the first, we asked two questions. Q50 inquired: Are there any community-based organizations or groups that are concerned about the neighbourhood and its people? The answer was yes. Q51 then asked: What are these organizations?

- The answers are found below (Q 50):



Graph 50: the results of the interviewees' responses about the existence of community organizations

	Yes	No	Total	Average rate	Rating scale
Existence of community base organization	0%	68%	41	1	(1-2)
	0	41	41	1	(1-2)

Table 62: the average rating for the existence of community organizations and groups

As can be seen from the Graph 50, no one answered yes and this means that the residents denied that there were any community organizations or groups. Almost one-third of the interviewees (32%) said they do not know to this question.

Also from the data in the Table 62 we can see that average rating was 1. This average rating shows that the interviewees indicated that there were no community organizations or groups.

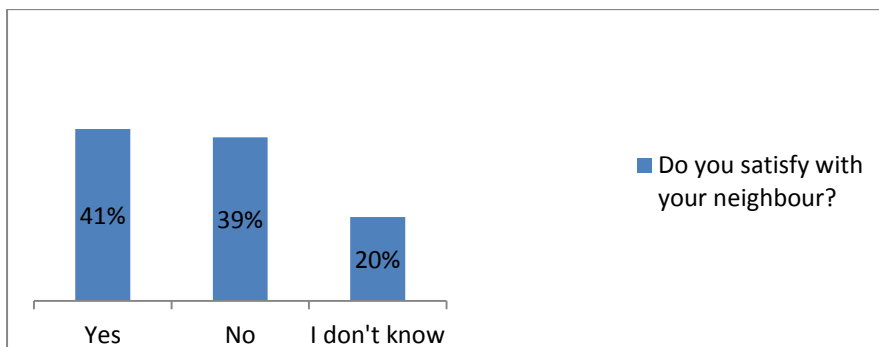
On the basis of these results, from the graph and table above, we did not need to ask Q51 (What are these organizations?).

Knowing, trusting and supporting other residents, plus satisfaction:

This section looked at how many of the local people the respondents knew and trusted, whether they would do favours for them, and vice versa; also the level of neighbourhood satisfaction.

For an evaluation of the satisfaction level of neighbouring we asked two questions to interviewees.

- Q52 asked to local people: Are you satisfied with your neighbour? The results are shown in the graph and table below:



Graph 51: the level of satisfaction with neighbours

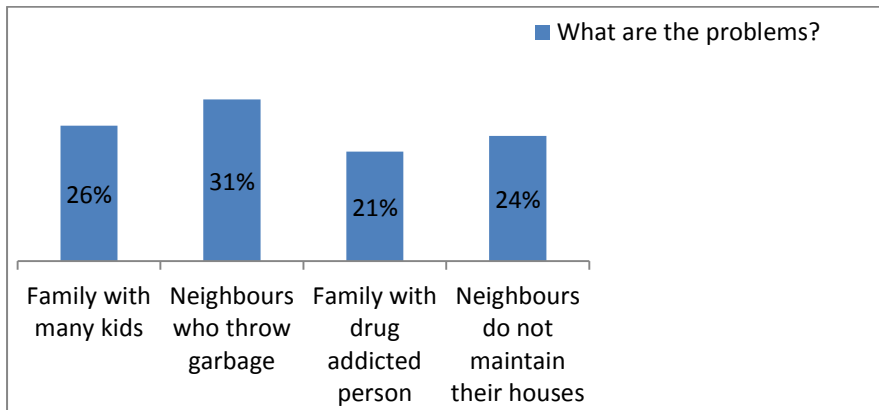
	Yes	No	Total	Average rate	Rating scale
Satisfaction level among residents	41%	39%	48	1.52	(1-2)

Table 63: the average rate of satisfaction

It can be seen from the data in Graph 51 that the satisfaction rate of the residents for their neighbours was quite high. The response rate was 41% satisfied and 39% dissatisfied. We also calculated the average rating (Table 63) which was 1.52. This was slightly higher than average (1.5).

Following the results of Q52, we asked those who had answered 'no' a related question (Q53): What are the problems?

- The results are shown in Graph 52:

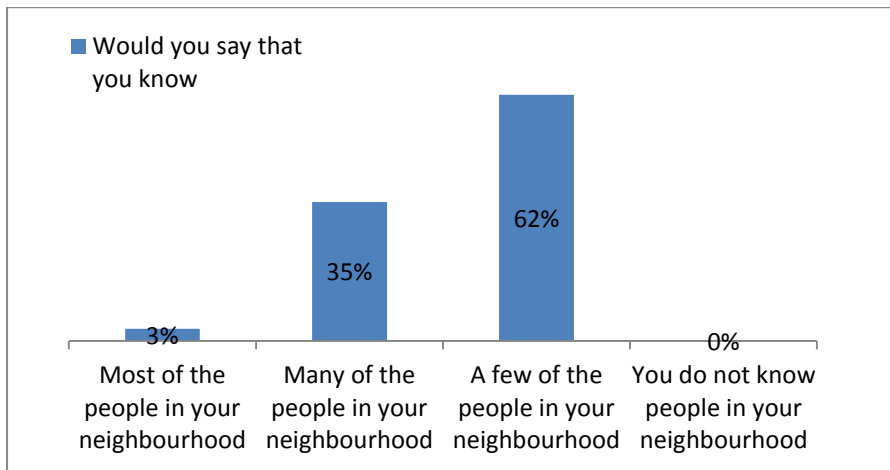


Graph 52: the interviewees' responses concerning their dissatisfaction with their problems

Families with many kids, neighbours who threw garbage in the street, families with drug addicts and neighbours who did not take care of their houses, were the interviewees' comments on Q53 (What are the problems?). The response rate was 31% for neighbours who dumped garbage, 26% for families with many kids, 24% for neighbours did not look after their houses and 21% for families with druggies. All of these problems that local people mentioned had similar rates. Those who flung garbage into the street had the highest rate with 31%.

After assessing the level of satisfaction, we needed to find how many local residents knew and trusted each other. Two questions were asked: Q54 (How many people would you say that you know?) looked at the number of neighbours known and Q55 (Would you say that you trust them?) looked at how many neighbours they trusted.

- The results of Q54 (Would you say that you know them?) are in Graph 53 and Table 64:



Graph 53: the results of the interviewees' statements when asked how many people they knew in the neighbourhood

	Most of the people in your area	Many of the people in your area	A few of the people in your area	You do not know people in your area	Total	Average Rating	Rating scale
Would you say that you know	3%	35%	62%	0%	60	2.41	(1-4)

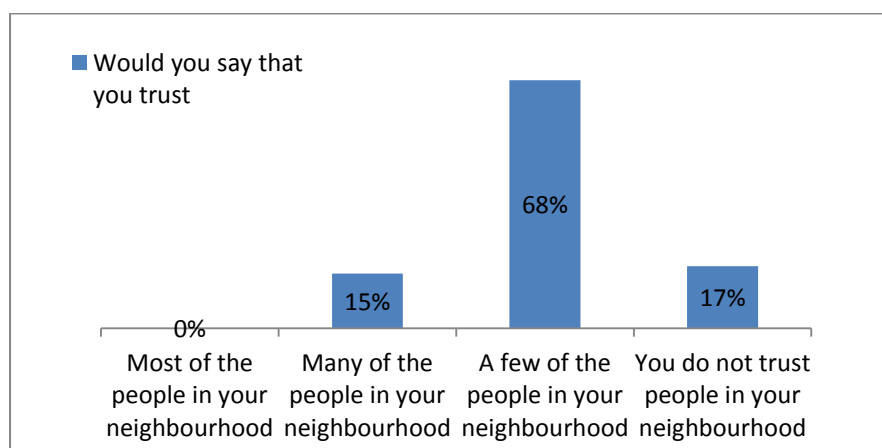
Table 64: the average rating of interviewees' statements when asked them how many people you know in your neighbourhood

It is evident from this graph that the majority of the respondents (62%) said that they knew a few of the people in their area. Data from Table 64 indicate that the average rating score was 2.4 which was slightly lower than the middle range. These results from the graph and table above demonstrate that the majority of the local people who were interviewed knew a few of their neighbours, while 35% knew many of the local people.

Following the results relating to how many of the local people they knew, we also found out about the mutual trust among the local residents.

For an evaluation of Q55 (Would you say that you trust them?) we followed the same criteria as for Q54. We explained how we calculated the average rating for both questions.

- The interviewees were asked: Would you say that you trust them? (Q55) Graph 54 and Table 65 show the results:



Graph 54: the results of the interviewees' statements when asked how many people they trusted in their neighbourhood

	Most of the people in your area	Many of the people in your area	A few of the people in your area	You do not trust people in your area	Total	Average Rating	Rating scale
Would you say that you trust	0%	15%	63%	17%			
	0	9	38	10	60	1.88	(1-4)

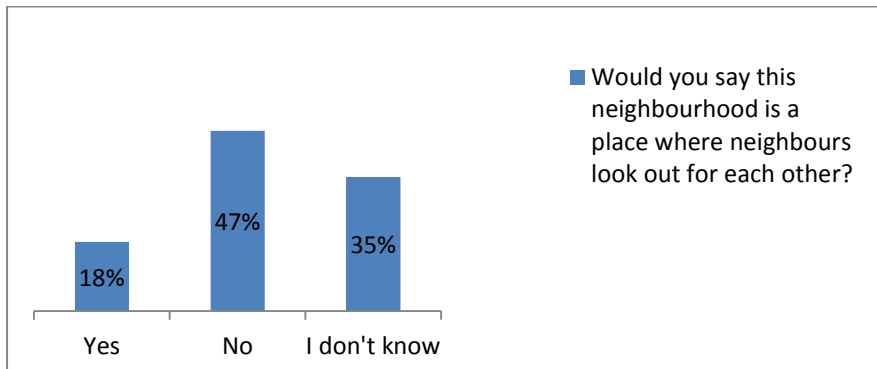
Table 65: the average rating of the interviewees' statements when asked how many people they trusted in their neighbourhood

Graph 54 and Table 65 present the results obtained from the interviewees' statements. It can be seen from these results that almost two-thirds of the participants (68%) said that they trusted a few of the local residents in their neighbourhood. The average rating calculated was 1.88 (shown in Table 42). This is less than 2 (average). These results are evidence that in this neighbourhood the level of trust between the local residents was low and this reduced social interaction and finally social sustainability.

The final section looks at how much the residents support each other. A neighbourhood with a high level of supports increases social interaction. When people who live an area support each other they have more communication and interaction.

In this part we asked the interviewees three questions. After seeing the results and finding the average rating score for each question, and summing up the three average rates, we reached a final score. That score was the average rating score of support in this neighbourhood.

- The interviewees were asked: Would you say this neighbourhood is a place where neighbours look out for each other? (Q56) The results are shown in the Graph and Table below:



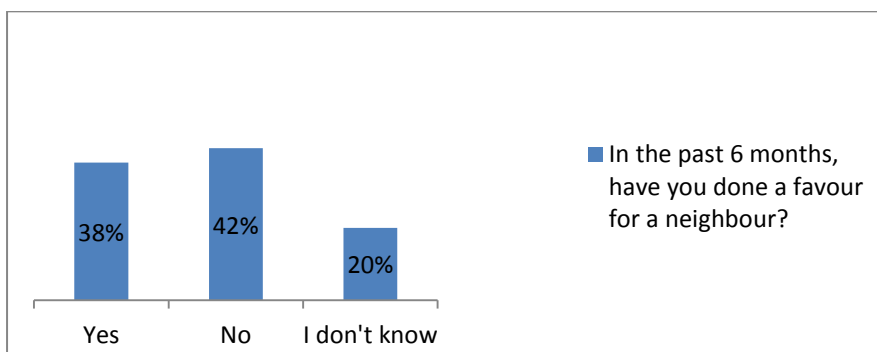
Graph 55: the results of interviewees' responses when asked if this neighbourhood was a place where neighbours looked out for each other

	Yes	No	Total	Average rate	Rating scale
This neighbourhood is a place where neighbours look out for each other	18%	47%	39	1.28	(1-2)

Table 66: average rating for the interviewees' responses when asked if this neighbourhood was a place where neighbours looked out for each other

Graph 55 and Table 66 provide the results of the interviewees' responses. It can be seen that the majority of the answers were no. The average rating for this question was 1.28 (less than the average of 1.5). From this data we can say that in this neighbourhood most of the neighbours did not look out for each other. Almost one-third (35%) replied did not know to this question.

- We asked the interviewees: In the past 6 months, have you done a favour for a neighbour? (Q57) and the results are presented below:



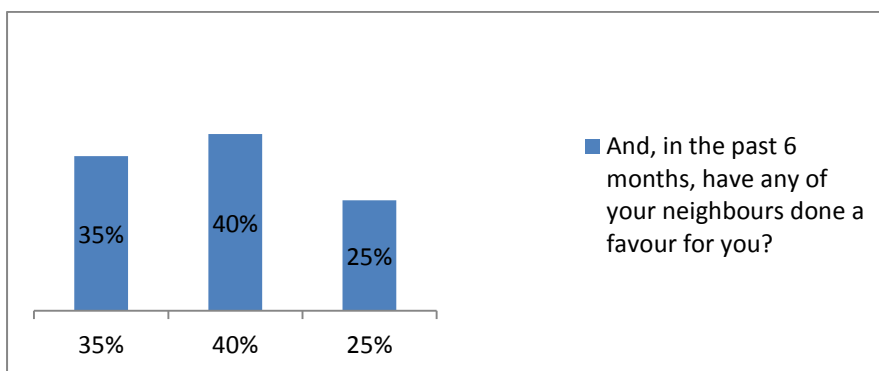
Graph 56: the results of the interviewees' responses when asked: In the past 6 months have you done a favour for a neighbour?

	Yes	No	Total	Average rate	Rating scale
In the past 6 months have you done a favour for a neighbour?	38%	42%	48	1.47	(1-2)

Table 67: the average rating for the interviewees' responses when asked: Have you done a favour for a neighbour in the past 6 months?

From the graph above we can see that the response rate was 42% for no and 38% for yes. The rates of both answers (yes and no) were close, but negative responses of 42% for the interviewees are slightly more. In Table 67 we can see that the average rating was 1.47 which is slightly lower than 1.5 (average scale).

- The results of Q58: In the past 6 months, have any of your neighbours done a favour for you? are shown in Graph 57 and Table 68:



Graph 57: the results of the interviewees' responses when asked: Have any of your neighbours done a favour for you in the past 6 months?

	Yes	No	Total	Average rate	Rating scale
In the past 6 months, have any of your neighbours done a favour for you?	35%	40%	45	1.46	(1-2)

Table 68: the average rating for the interviewees' responses when asked: Have any of your neighbours done a favour for you in the past 6 months?

Again, just as in Q57 (In the past 6 months, have you done a favour for a neighbour?) the rate of negative and positive answers were close but the overall response to this question was negative (with an average rating of 1.46). From the data, in Graph 57 and Table 68, we can see that the average rating (1.46) is less than 1.5. This is a clear indication that the neighbours in this area do not help each other very much.

The average rating of both Q57 (In the past 6 months, have you done a favour for a neighbour?) and Q58 (In the past 6 months, have any of your neighbours done a favour for you?) are nearly the same (1.47 and 1.46).

- The total score of support level shows in Table 69

	Rating Scale	Rang
The level of supportive among local residents	4.21	(3-6)

Table 69: the average level of support among the residents

After summing up the average ratings of Q56, Q57 and Q58 we reached an average rating score of support among the residents. The rating scale was 4.21 and was less than 4.5 (average). This means that in this neighbourhood the level of support among the residents was low. This low level of support in this area would risk decreasing social sustainability.

5.2 Conclusion

The quantitative data, which came from the interviews with the local residents of the Juibareh quarter (the case study), was interpreted and evaluated. We weighed up every question of the five sections of the interview after analysing them. In the first section the residents' view of the local area was evaluated and poor signage, maintenance and design were identified in this neighbourhood. In the second section good access to bus services, shopping, religious facilities and poor access to social, medical, sport, communal, educational amenities were identified as well as the difficulty of finding a job and establishing a business in the neighbourhood. In the third section, after evaluating the safety and security questions, it was decided that this neighbourhood was safe for walking during the day but rather dangerous a little bit unsafe after dark, also many local residents complained about the physical conditions of the neighbourhood which create an unsafe environment. Traffic was a problem for pedestrians. The local residents complained about drug-addicted vagabonds. The level of crime was low but this neighbourhood has not been crime free in the last 12 months. In the fourth section it was revealed that both community attachment and place attachment were a little lower than average. The final section established that religious activities were mere social activities and there were no community groups in this area. The level of satisfaction was a little higher than average while the degree of trust, understanding and support were a little lower than average. The summary of this chapter's results will be given in Chapter 7 with a summarized table for each criterion.

CHAPTER 6: IDENTITY, PUBLIC REALM,
MOVEMENT, LEGIBILITY AND LAND USE IN
JUIBAREH (Interpreting the townscape elements)

Introduction

After the manual analysis the walking data (observational surveys) for every element of identity, public realm, movement, legibility and land use a map from the results has been created. In this section every map will be interpreted and evaluated. After interpreting and evaluating the elements of the neighbourhood's townscape, the positive and negative aspects of every components of townscape will be identified. In this section and also for each component some guides for future development will be suggested.

6.1 An Evaluation of the Identity

We picked out nine elements in this section to assess the identity of the neighbourhood. The level of success of each element will be determined and the positive and negative aspects will be illustrated, as well as the author's suggested guidelines for future development of every component of the townscape elements.

6.1.1 Surviving historic pattern and plot subdivisions

The historic ground plan is a part of this neighbourhood's identity and is also the first element in the evaluation of the identity of a neighbourhood. This is a historic neighbourhood and also the heart of Isfahan. The historic design of Iranian cities is a combination of narrow roads and pathways and a really compact organic arrangement of buildings. Although this is historic pattern and there are many examples of this in the neighbourhood, in this part we assessed the state of the existing historic layout and found which parts exemplified the origins of the neighbourhood. In this assessment the roadside frontages were observed. Thus, the line of frontages was observed and the condition of the existing historic pattern is shown in the map below.

- the results shown in the Figure below:

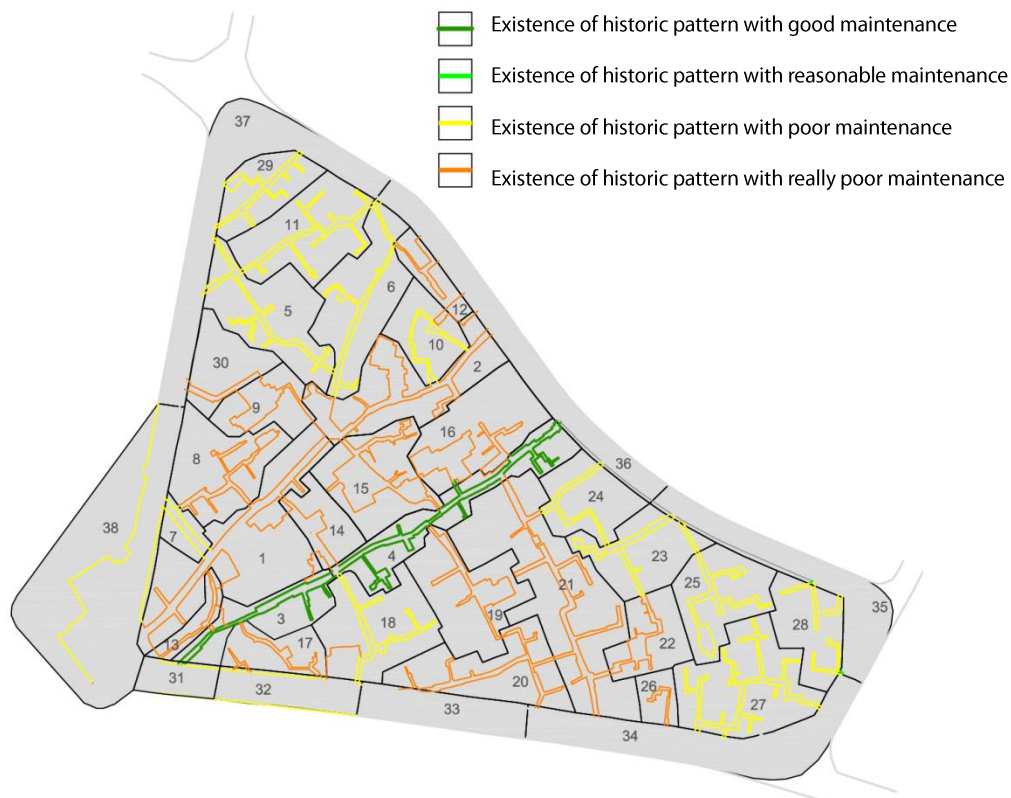


Figure 61: the results of the evaluation of the historic pattern

Although the historic pattern can be seen in most parts of the neighbourhood, it needs to demonstrate the maintenance situation of the historic layout. We allocated four rankings to this

criterion. These are shown with different colours in Figure 61. From this Figure we can see that in most parts of the neighbourhood the state of the existing historic patterns is poor or really poor. The poor frontages lines are shown in yellow or orange. Only sector 3 and 4 have good condition historic layouts. These districts, which are located in the middle of the neighbourhood, have been regenerated. These two parts were renovated by the government six years ago but the rest of the district has been abandoned and there is no sign of any restoration.

Furthermore, in some parts of the neighbourhood there are no signs of any historic plan. These parts are bordered by the main streets of the neighbourhood, which divide the historic pattern and destroy the urban fabric. There are no signs of a historic plan because of the new shops and wide streets. Historic patterns can sometimes be discerned but unfortunately in most parts the historic ground plan are really poor and poor maintenance creates unpleasant image. In order to boost the neighbourhood's historic identity a regeneration project is needed since the present pattern of buildings ranges from poor to really poor.

Opportunities:

- 1- From Figure 61, it can be seen that in all parts of the neighbourhood historic pattern existed. This is a sign of its origin.

2- The historic plan in the Figure below shows the connection with the main bazaar which is the most important historic commercial core of Isfahan.

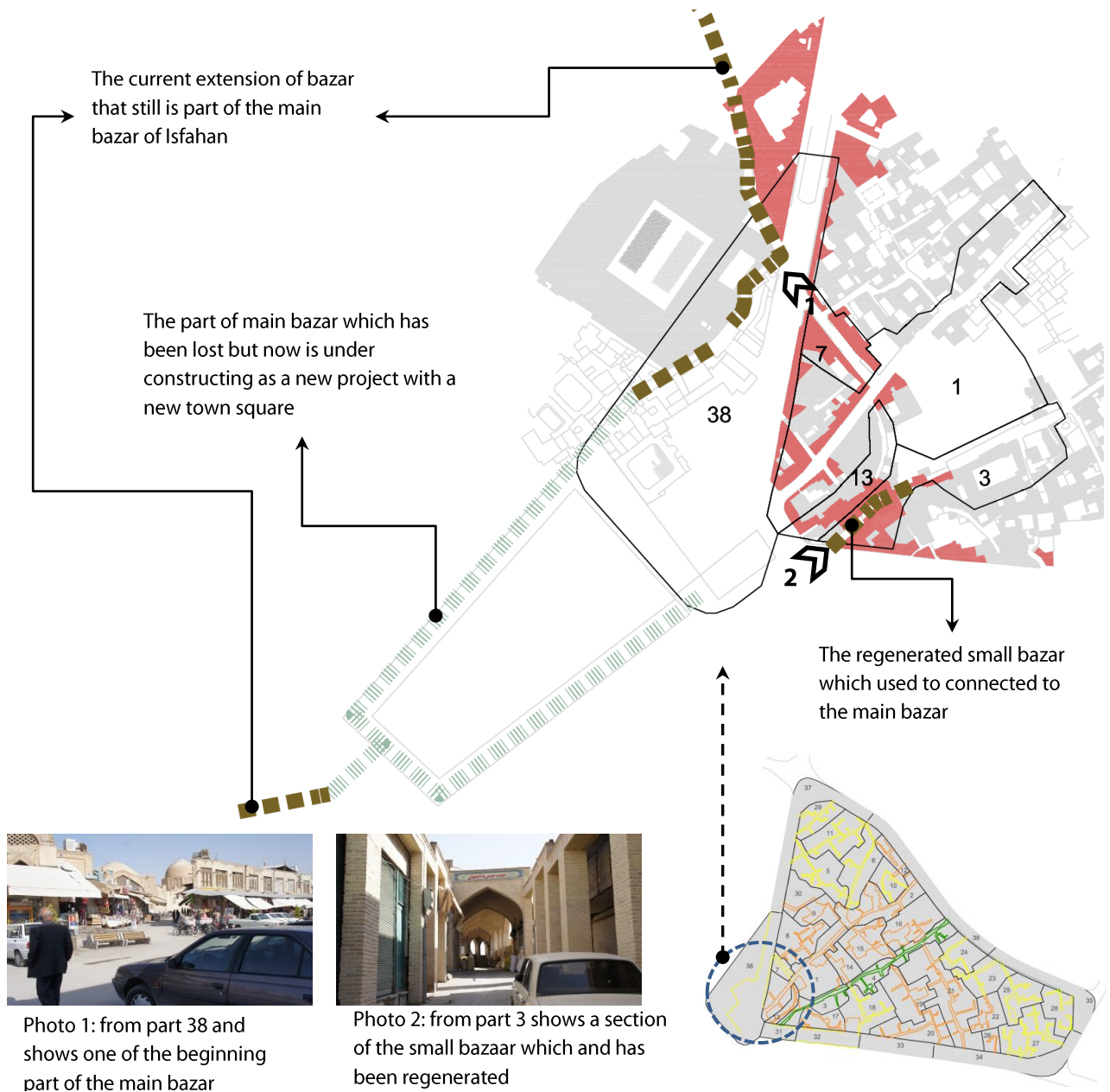


Figure 62: the neighbourhood plan connected to the Isfahan bazaar

3- Parts 3 and 4 have been restored and the historic pattern in these areas is in good condition. These strongly emphasise the neighbourhood's identity.

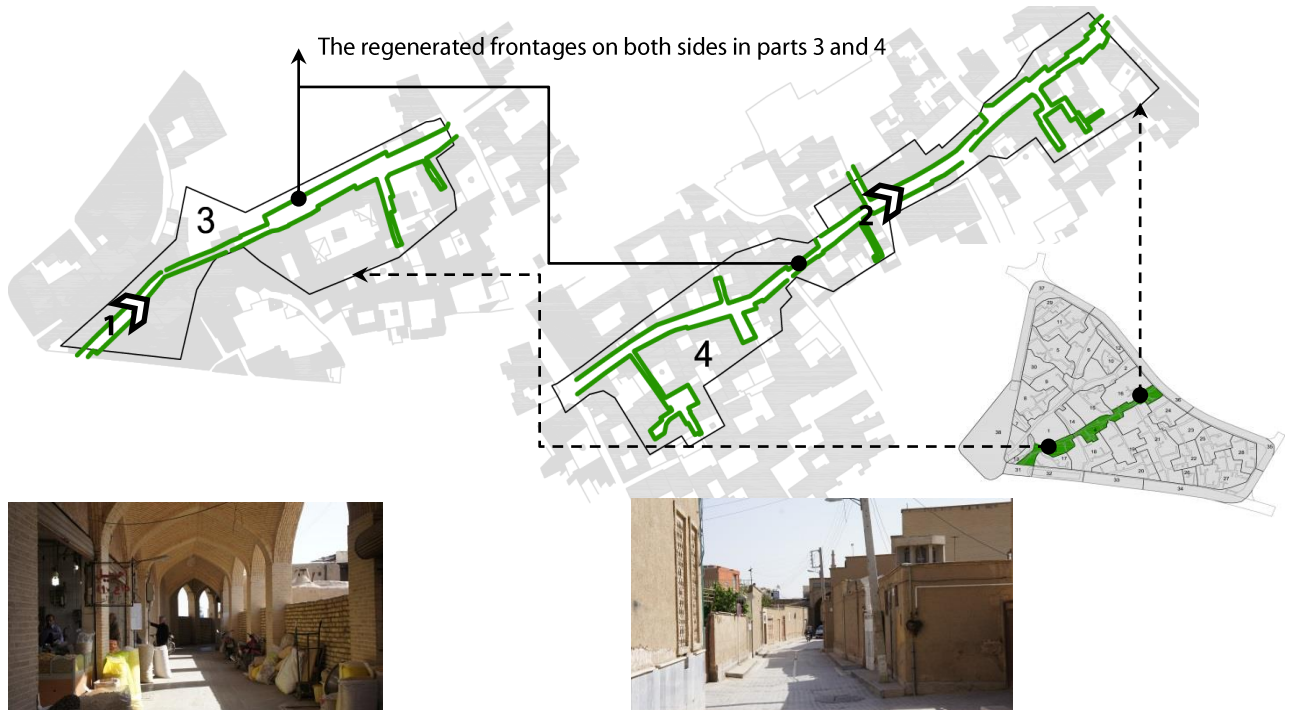


Photo 1: from part 3 and shows the regenerated small

Photo 2: from part 4 and shows the regenerated road

Figure 63: the regenerated road in the neighbourhood which shows the historic pattern in good condition

Constraints:

- 1- In Figure 61 it can be seen that most parts of the neighbourhood, especially those close to the main district, have a really poor historic pattern, as do the line of the frontages shown in orange in Figure 61. Figure 64 is an example of a locality with a really poor historic pattern.

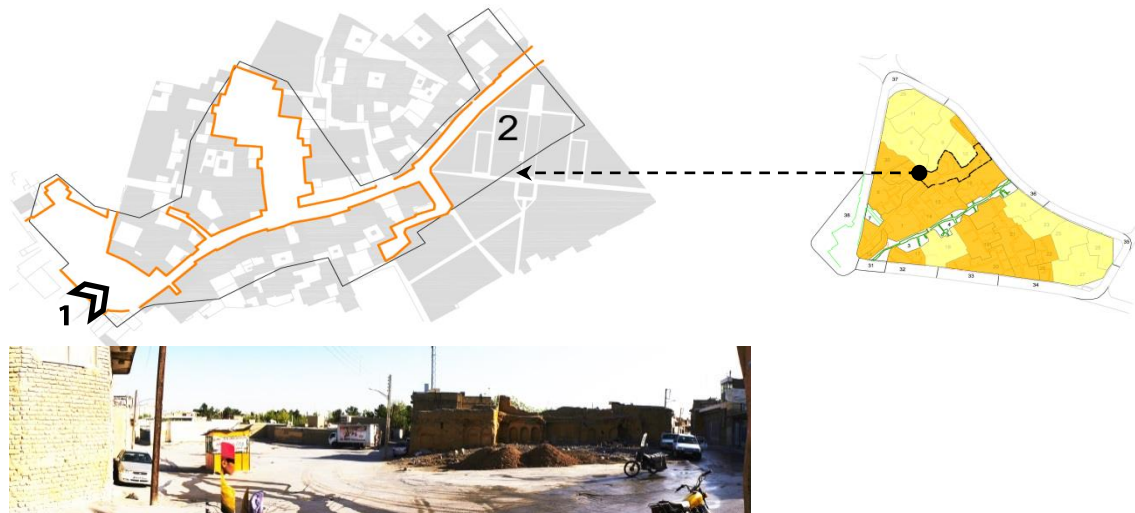


Photo 1: shows really poor condition historic pattern

Figure 64: sector 2 of the walking parts which shows the really poor condition of the historic pattern

- 2- This pattern did not survive In the border streets of the neighbourhood

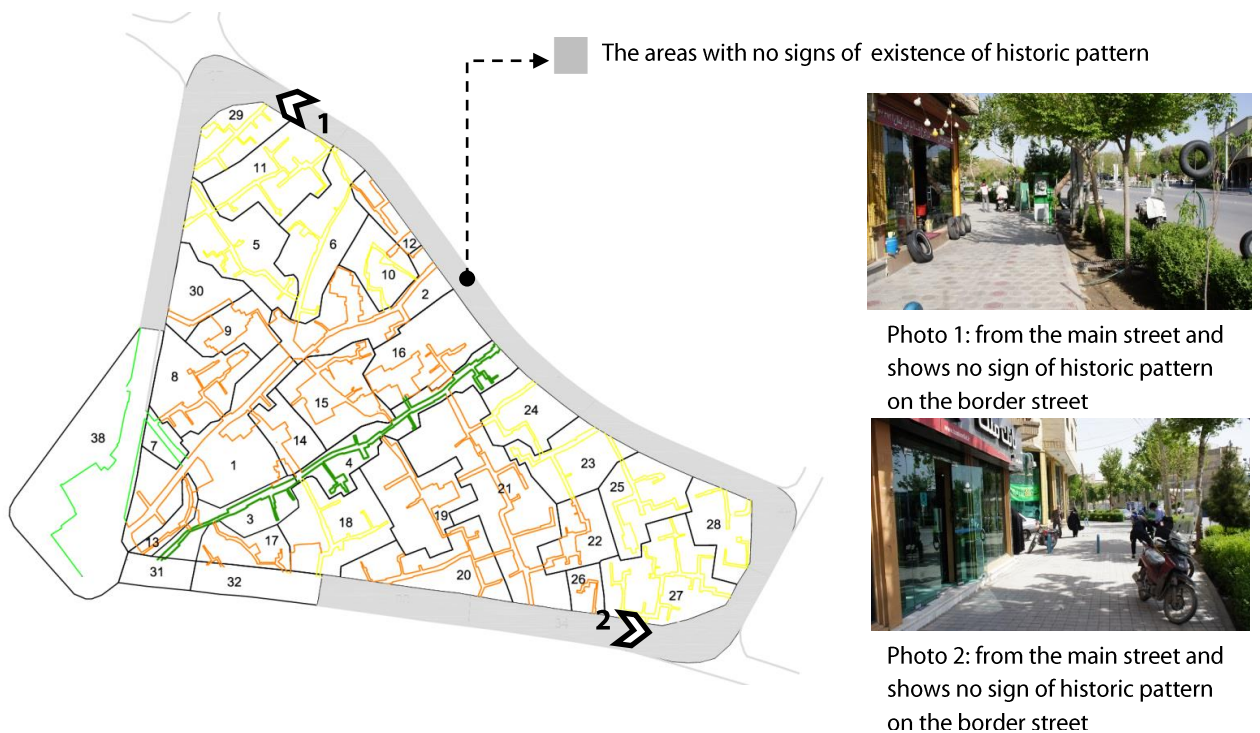


Photo 1: from the main street and shows no sign of historic pattern on the border street



Photo 2: from the main street and shows no sign of historic pattern on the border street

Figure 65: the main bordering streets with no signs of an historic pattern

Guides for future development

- 1-** Regenerating of neighbourhood areas with poor or really poor historic design are shown in Figure 61.
- 2-** Amplifying the connection between the neighbourhood and the main bazaar. Figure 62 shows the connection points which are now disconnected.

6.1.2 Surviving historic buildings and elements:

History is one of the main aspects of urban identity. A place with historic elements has strong character. In many old districts these historic elements have not survived. Therefore, in this part of the assessment of the neighbourhood identity we looked at ancient features.

- The results are shown in the map below:



Figure 66: the results for the historic buildings and elements in the neighbourhood

From the Figure above we can see the locations of the historic elements as well as their maintenance condition. Those in sectors 38, 23, 4 and 6, show in dark green, are in good condition. Unfortunately, there are many historic features that are in poor or really poor condition. This applies mostly to the synagogues and old houses. In the east and south-east of the neighbourhood (sectors 20, 21, 22, 26, 27, 28) there are no historic buildings. Figure 24 demonstrates that there are many historic buildings and other features in this neighbourhood but unfortunately most of them which are located in the middle of the neighbourhood, are in poor condition. Overall, this quarter has many surviving historic elements but to bolster its identity it needs to take more maintenance of its historic monuments.

Opportunities:

- 1- It can be seen from Figure 66 that there are many historic buildings which emphasise the neighbourhood's identity
- 2- There are two significant historic buildings which have a really strong character in the neighbourhood and even in the city

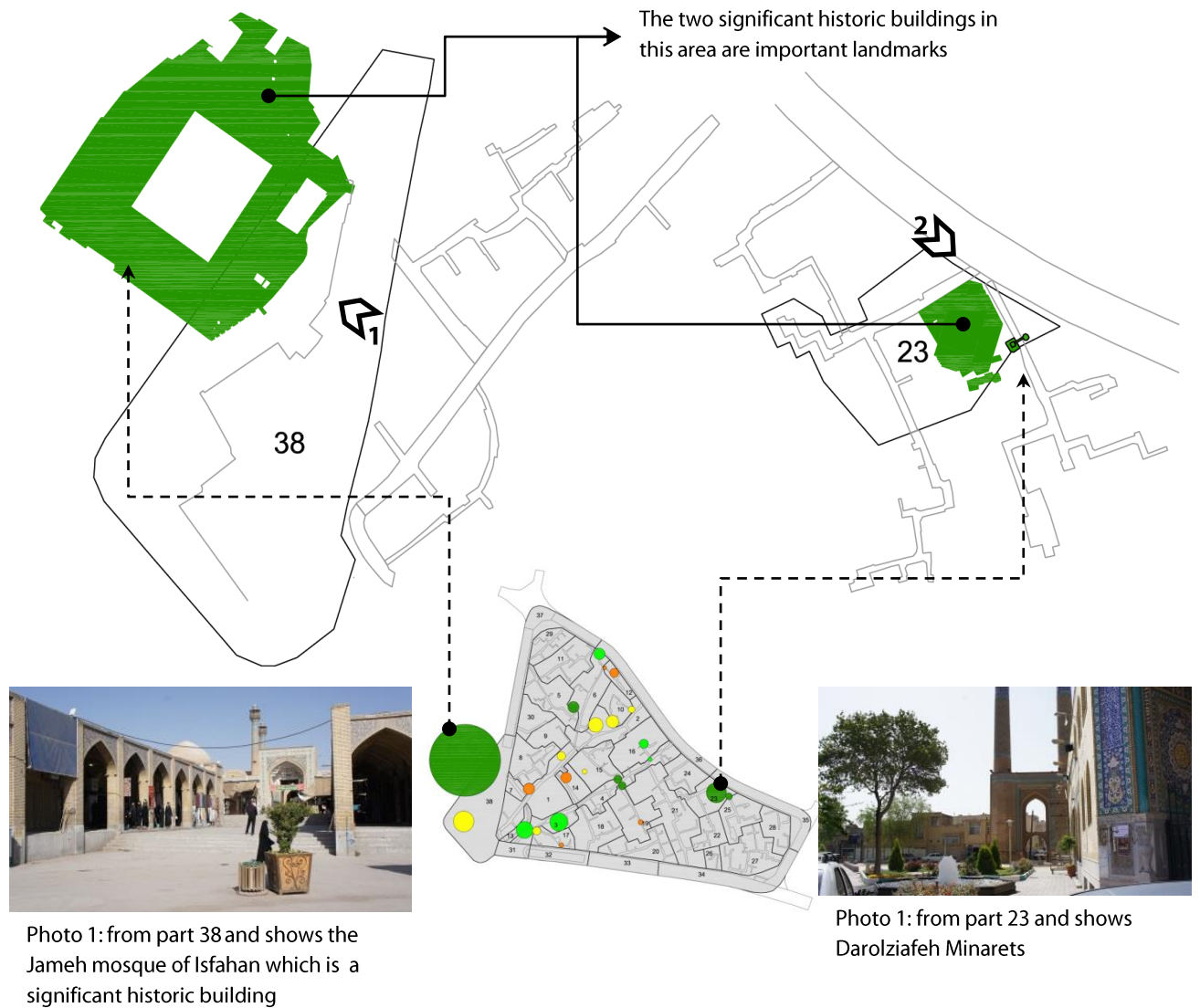


Figure 67: the two significant historic buildings in this neighbourhood

- 3- In part 5 there is a restored historic building inside a green space. This provides a model for the other historic buildings with green spaces and seating areas.

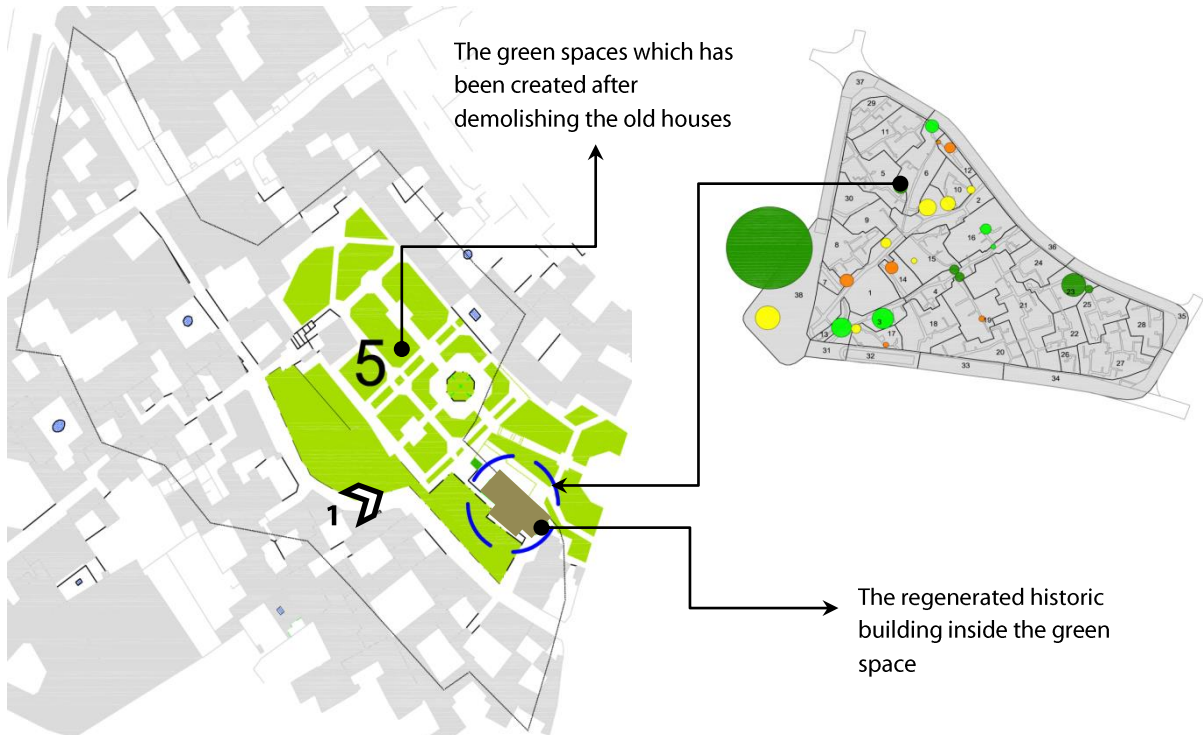


Photo 1: shows the regenerated historic building inside the green space

Figure 68: shows the combination of a regenerated historic building with a designed green space

Constraints:

- 1- There are many historic buildings in poor or really poor condition and they need urgent consideration these historic buildings and elements showed in Figure 66 by yellow and orange colours. Below figure 8 is a sample of these building with poor condition.

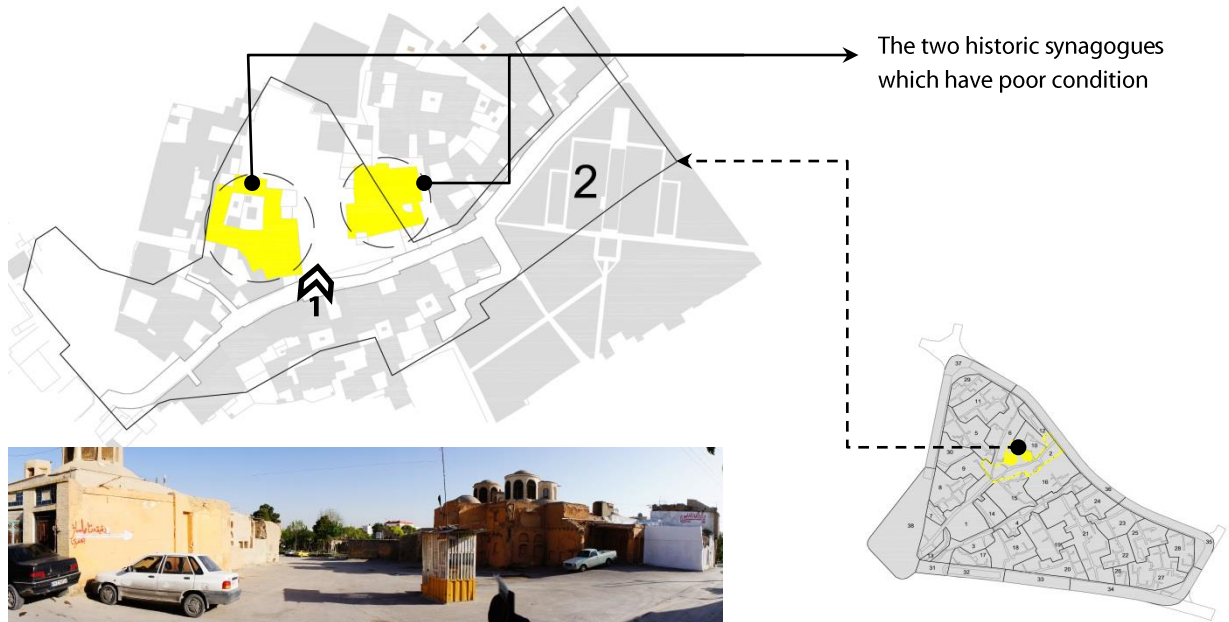


Photo 1: show two poor maintenance condition synagogues in part 2

Figure 69: shows an example of poor historic buildings in the neighbourhood

Guidelines for future development

- 1- The urgent regeneration of all the historic buildings in poor or really poor condition is shown in yellow and orange in Figure 66.
- 2- There are many empty plots near some of the historic buildings which could be converted into green spaces or small meeting areas. The historic buildings themselves could be restored and combined with them. The spaces would form a natural background helping to highlight them, just like the two synagogues in part 2 (see figure below).

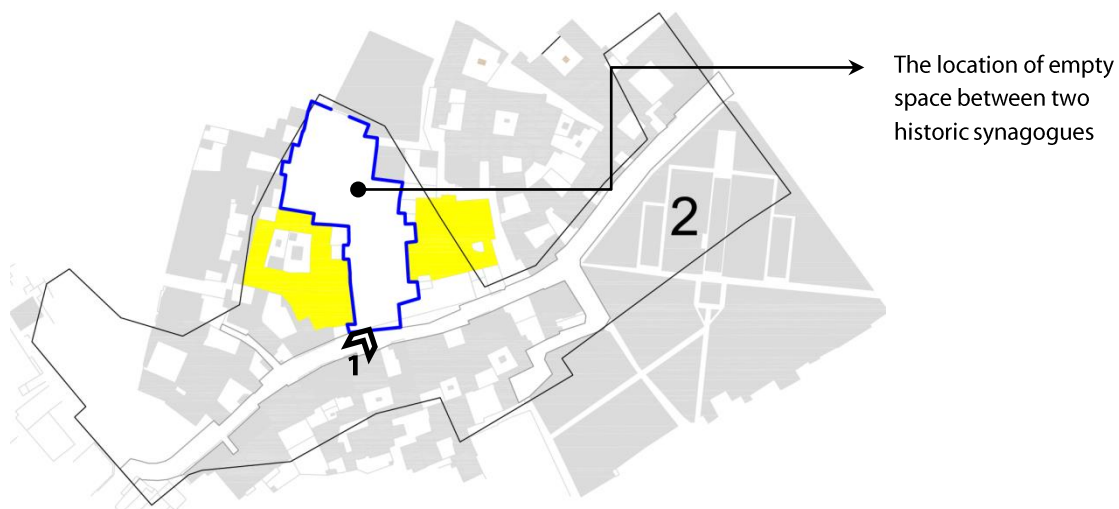


Photo 1: shows the empty space between two synagogues

Figure 70: the empty space between two historic buildings which can be designed as a public space or green space with two historic monuments

- 3- Using some signs like an information map and the locations of historic monuments to make them easy to find for visitors and making and placing information signs for the historic buildings to show their history and importance.

6.1.3 The use of prevalent historic materials, styles and details in new buildings:

In the historic neighbourhood the use of prevalent historic materials and methods emphasises the identity of the place. In this particular locality we observed the layout by using walking tools and the serial vision method. Our investigation revealed where the common historic materials and styles had been used.

- The Figure below illustrates the results of this evaluation:



Figure 71: the results of using prevalent historic materials and style

The results in Figure 71 show that ordinary historic materials had not been used for the renovated and new buildings in most parts of the neighbourhood. This was only done in four sectors of the neighbourhood: 3, 4 and 13 where the buildings were regenerated in the old style using ancient materials. In sector 38 there is a new project to replace Midan Kohneh square which had been completely destroyed. The architectural style of the new Atigh square follows the former old square (Midan Kohneh). This feature accentuates the identity of the quarter. The old-style materials and architecture will give a distinctive character to the entire neighbourhood.

Opportunities:

- 1- The regenerated parts are good sample of using of historic materials and style which highlight the neighbourhood history and identity

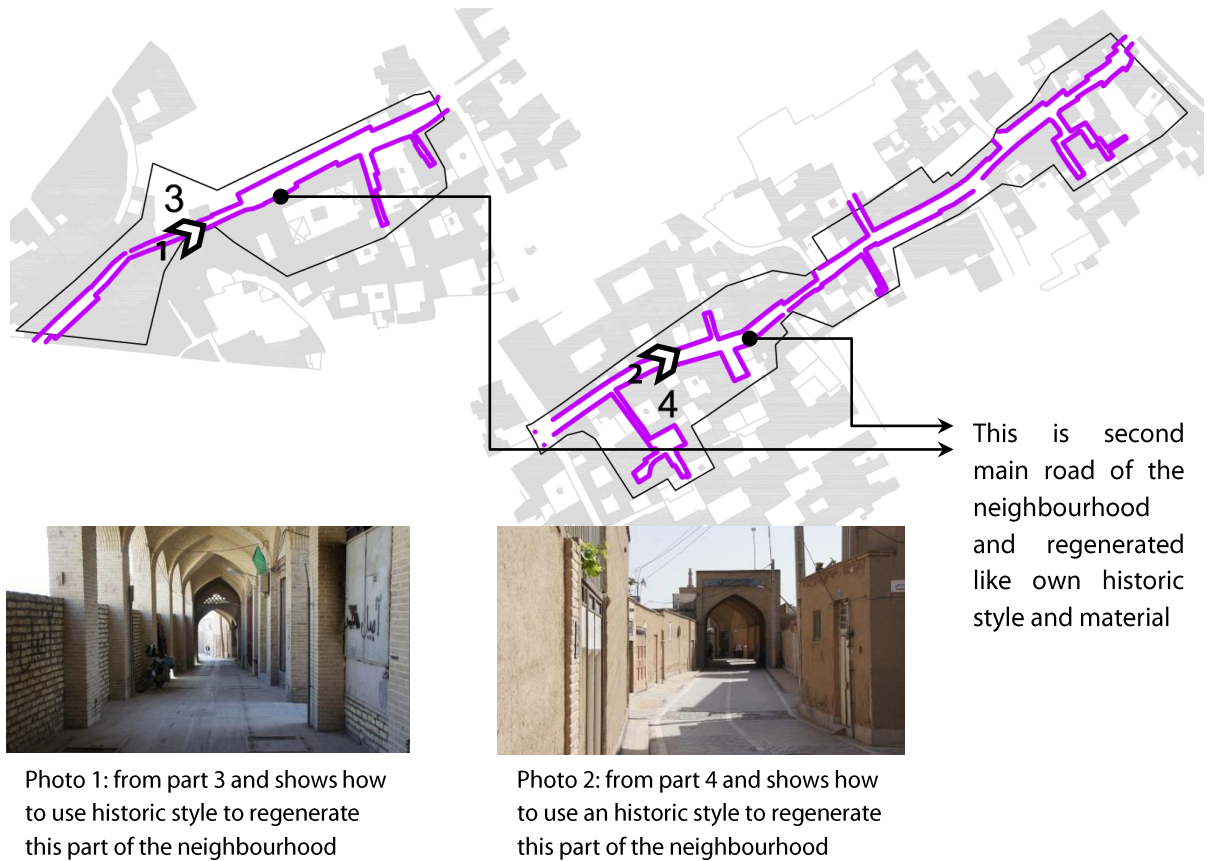


Figure 72: shows the use of historic material and style for renewing these parts of the neighbourhood

Constraints

- 1- There are no signs of using prevalent historic materials and style on the new buildings in the major parts of the neighbourhood (see Figure 71).

Guidelines for future development

- 1- Preparing a policy compelling the builders to use materials and methods for new buildings that are most similar to historic materials and style.
- 2- The two regenerated parts are a good example of what could be applied to the rest of neighbourhood (see Figure 72).

6.1.4 Harmony in architectural design and materials of the buildings:

Superior harmony in the architectural design of the buildings in an area helps to create a comprehensive image and distinct character. Consequently, as part of this aspect of their identity, we assessed the building design in every corner of the area and produced a map. The results are shown in the map below:

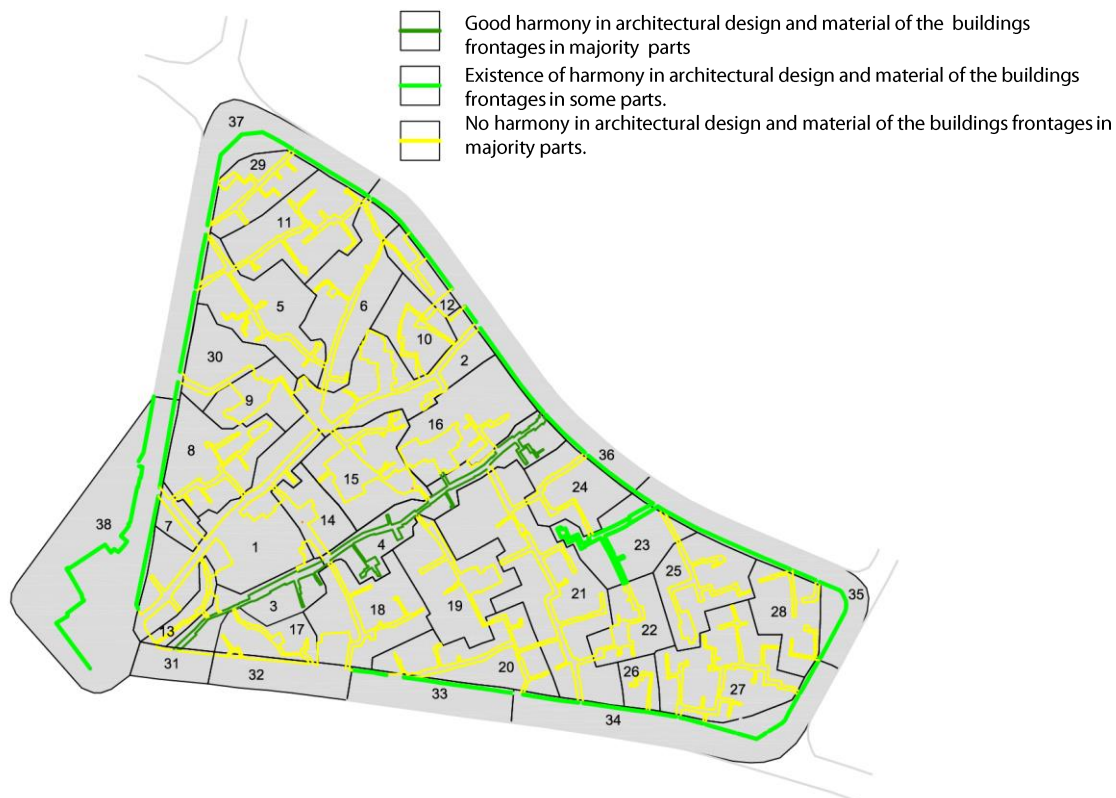


Figure 73: the results of harmony in architectural design and materials

From the Figure 73 it can be seen that instead of two regenerated sectors (3 and 4), the design and materials used in the buildings facades are discordant. In this assessment, we focus solely on the façades. The frontages are covered with different materials and colours and with most of them the architecture is mismatched. In sectors 3 and 4 restored in the old style, the buildings give a reasonable impression of harmony. Furthermore, on the boundaries streets in some areas, the buildings are pleasing in design and materials because the many nearby shops have been designed and decorated in the same style. Generally speaking, however, the architectural design of the buildings is inharmonious in the majority parts of the neighbourhood.

Opportunities:

- 1- The regenerated part can be a good model to apply to other parts of the neighbourhood and create harmony in the architectural design of the buildings.

The building frontages on both sides of the renovated parts of the neighbourhood harmonize well with the architectural design of almost all the elements

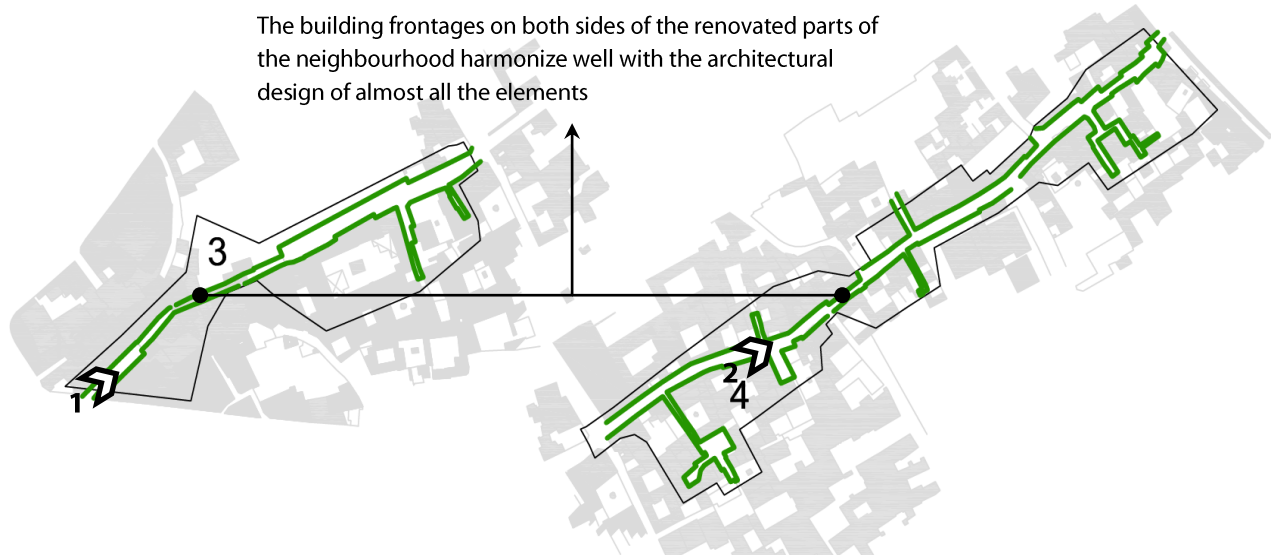


Photo 1: from part 3 which regenerated and shows harmony in architectural design in the both sides buildings



Photo 2: from part 4 which regenerated and shows harmony in architectural design in the both sides buildings

Figure 74: parts 3 an 4 with good harmony of architectural design of the buiding facades

Constraints:

- 1- There is no harmony in the architectural design of the buildings in most parts of the neighbourhood (see figure 73). The Figure below is from part 2 and is an example of the districts with no harmony in architectural design.

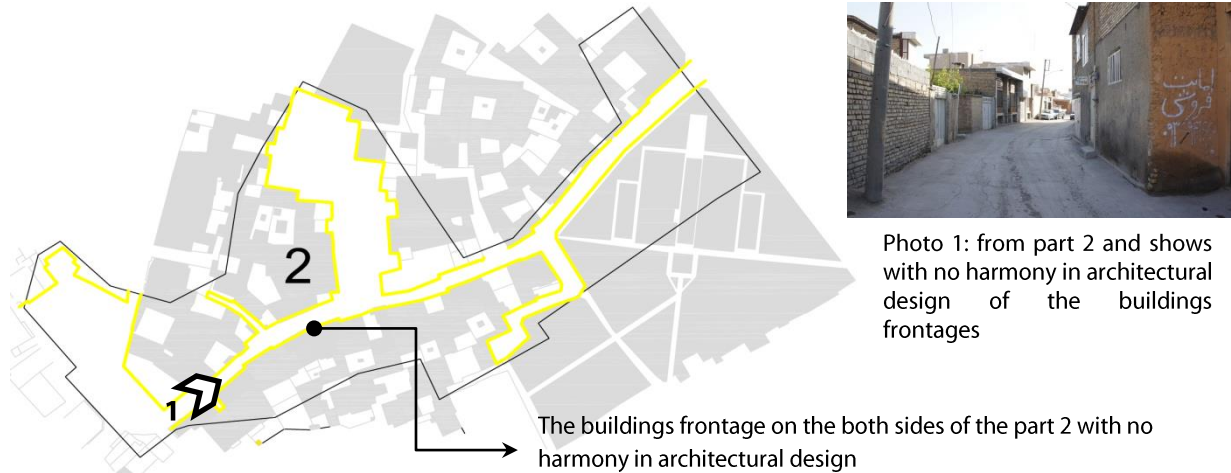


Figure 75: shows part 2 as an example of lack of harmony in architectural design of the buildings

Guidelines for future development:

- 1- Preparing policies to more control on the buildings' design to prevent irregularity.
- 2- Regenerating the old buildings and following the method which has been used in the regenerated parts (see Figure 74 which shows the frontages lines of part 3 and 4).

6.1.5 Distinct image and character

A distinct image is one the important criteria of a place's identity. After walking and observing the neighbourhood we appraised this criterion.

- After an analysis of the all walking areas, the results are shown in Figure 34:

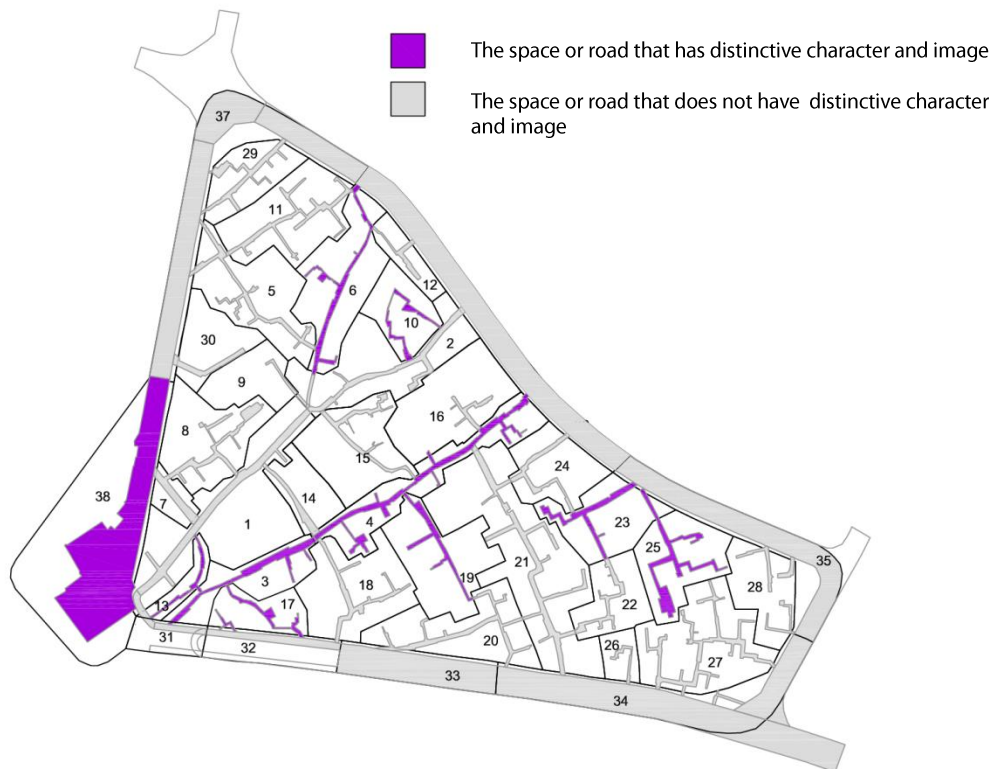


Figure 76: the results for the existing sectors with a distinct image

From the results of above Figure we can see that most parts of the neighbourhood do not possess a distinctive image. Especially roads in sectors 33, 34, 35, 36 and 37, we do not see any difference between the various parts of an Iranian city which has roadside shops. The regenerated roads in parts 3 and 4 were regenerated by the government in the old style. These renovated areas have a distinct image. In sectors 23 and 38 also create a strong impression because of the notable landmarks that are located there. The alternation of the historic design and green spaces generate a special atmosphere in sectors 10, 6, 19 and 25. Zones 13 and 17 have the special characteristics of commercial precincts with their small bazaar with its arched roof but unfortunately they have poor condition environment. Generally, the centre of the neighbourhood some roads and spaces can claim to project a distinct image, for the reasons that explained above, while other areas, especially on the boundaries, are not. The assessment shows that the neighbourhood is striking in many areas and shows a distinct image apart from the main border streets.

Opportunities:

- 1- In parts 23 and 38, a distinct image can be seen because of the existence of two significant historic buildings.

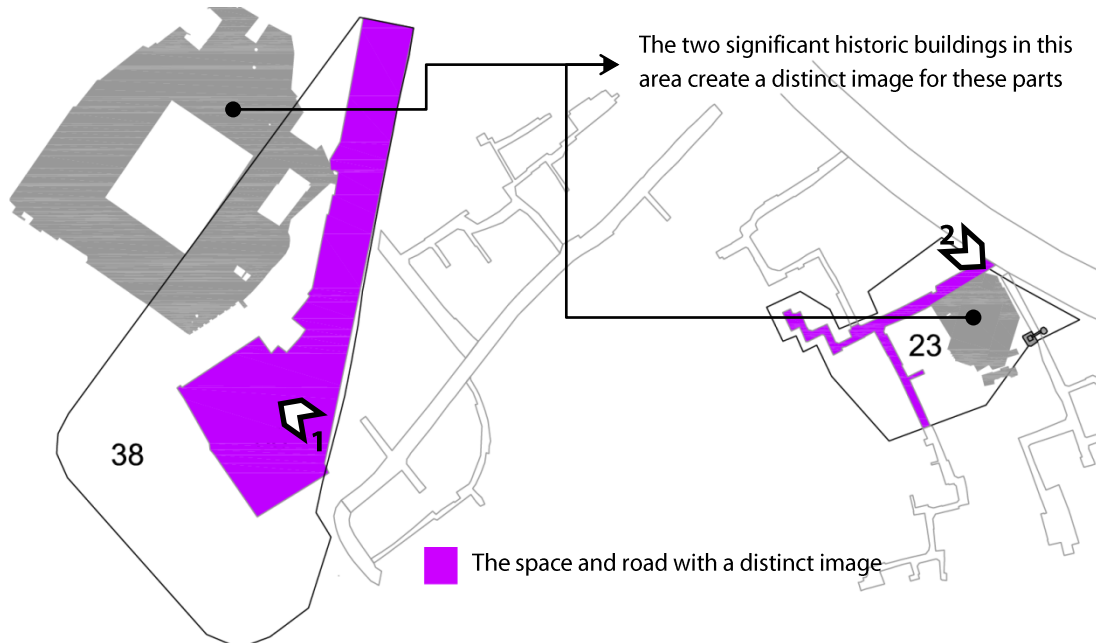


Photo 1: from part 38 shows the Jameh mosque of Isfahan which is an important historic building which gives a striking image to this space



Photo 1: from part 23 and shows Darolziafeh Minarets and cause a distinct image for this space

Figure 77: the parts 38 and 23 with a distinct image

- 2- The combination of green space and a small group of residential buildings creates a distinctive image and is applicable to other parts of the neighbourhood with small space between the houses.



Figure 78: shows the existence of a distinct image in sectors 19 and 25

- 3- The regeneration project created a distinct image of the historic neighbourhood and the regeneration method is successful to create distinct image.



Figure 79: shows the regenerated sectors with a distinct image

Constraints:

- 1- Many parts of the neighbourhood do not have a distinct image, especially the main street which has many shops and is similar to many parts of Iranian cities: a street with roadsides shops (See Figure 76).

Guidelines for future development

- 1- Following the method of the regeneration project (See Figure 79 which shows parts 3 and 4) and creating a distinct image in other parts of the neighbourhood and also highlighting the original pattern.
- 2- Design small green spaces for small groups of residential buildings which create a distinctive image. There are two examples of this kind of area in this neighbourhood (see Figure 78). The figure below shows section 10 where there are opportunities to design a small green space between a group of residential buildings.

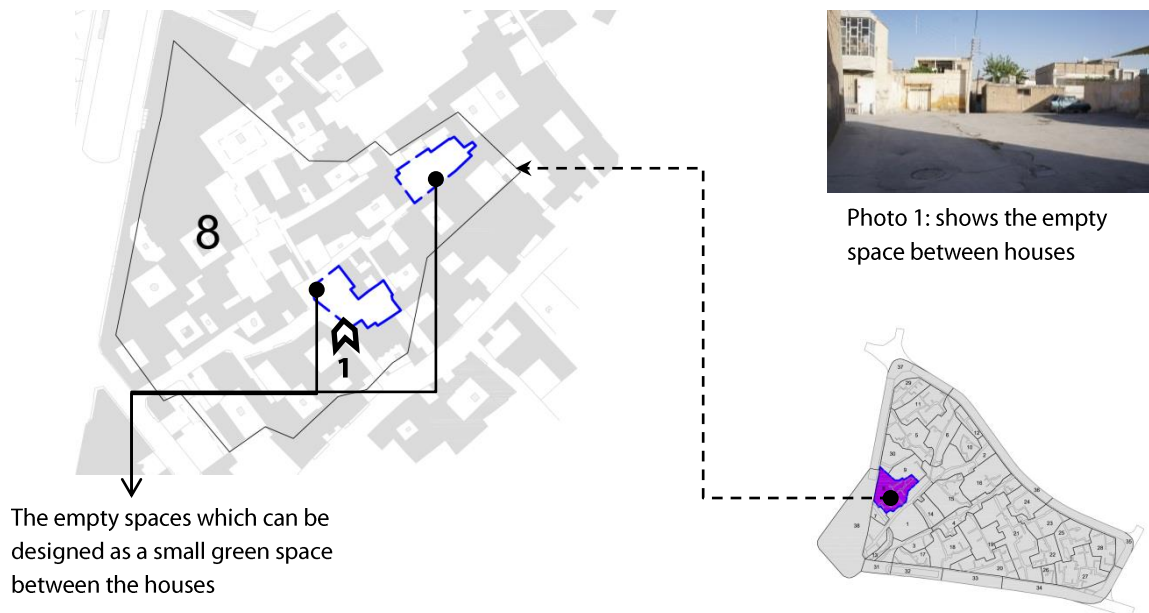


Figure 80: an example of the small empty spaces which can be designed as small green spaces

6.1.6 Significant physical features which have been lost

In the old quarter many historic features which impart identity have been lost. We now focus on these important elements. During the Saljuc Empire in this area between the main bazaar and the neighbourhood there was a large town square called Meidan Kohneh. This was completely destroyed in the Pahlavi period after the modernization of the city. In section 4.1.1.2 we discussed this old square. The neighbourhood is known as Juibareh. Juibareh means 'stream' in the Persian language. In section 4.1.1.2 we mentioned the streams along the Isfahan (Madi) and how the ancient people brought water into the city. In this area there used to be a stream which disappeared at different periods. We referred to it as part of the identity evaluation of the neighbourhood and indicated the location of this stream and the old square. In Figure 39 we show the location of the old square and the collection point for water from the stream:



Figure 81: the location of the features which have been lost

From the Figure above and the background information we can see the location of that stream. The main crossroads of the neighbourhood are called Seh Rah Mhigiri. The place where people used to collect water from the stream was situated at there. People came and collected water at this junction. This feature forms part of the neighbourhood's identity. This provides an opportunity to highlight the area's identity with pictures of public art showing water. Additionally, there was a big town square in zone 38 between the main Isfahan bazaar and the neighbourhood. This old

square (Meidan Kohneh) was completely demolished without trace and a new square is now under construction (Meidan Atigh), in the same style, size and location. This new square replaces the old one which has been lost.

Opportunities:

- 1- There was a stream and water collecting point and its location is at the main junction of the neighbourhood.

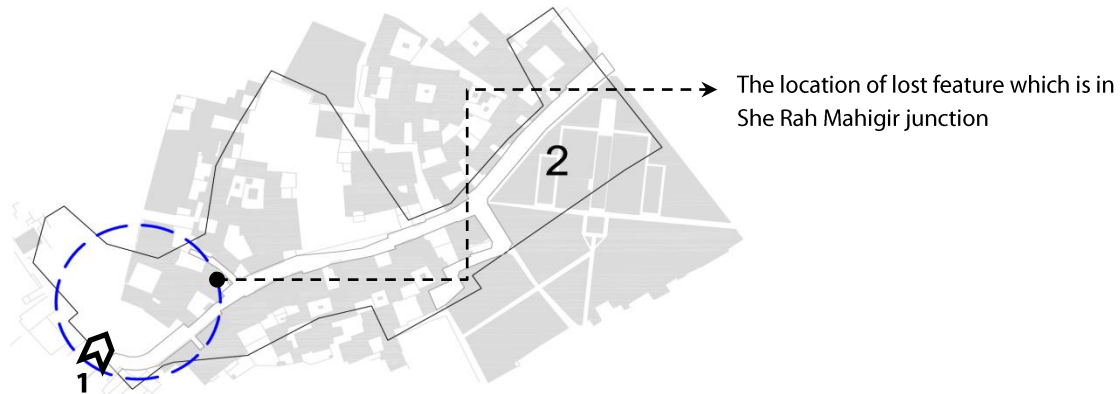


Photo 1: from part 4 which shows She Rah Mahigiri junction and the empty spaces

Figure 82: shows the She Rah Mihigiri junction and the place for collecting water which has been lost

- 2- A new project is under construction instead of the old square in part 38. The figure below shows the location of this square in part 38.

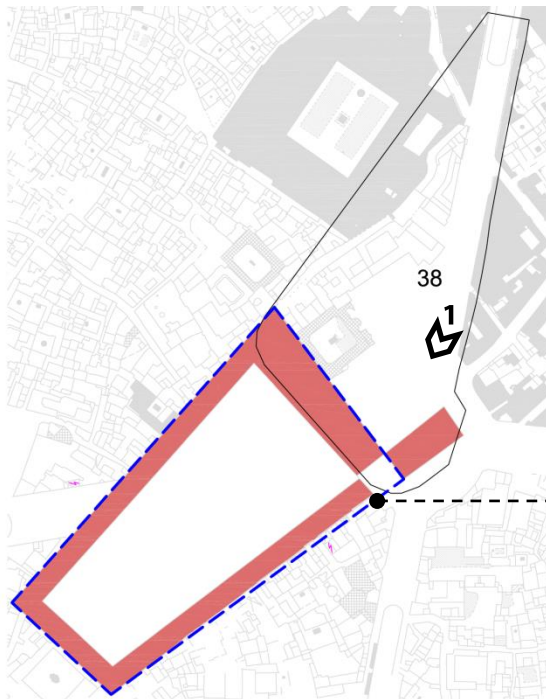


Photo 1: from Atigh square that is under construction and is building like old square style and size.

The location of the square which is between the neighbourhood and main bazar of Isfahan

Figure 83: shows the new square (Meidan Atigh) which is under construction

Guidelines for future development

- 1- There is an empty space in part 2 which offers an opportunity to design a space with features to focus attention on the water in the Seh Rah Mahigiri Junction.

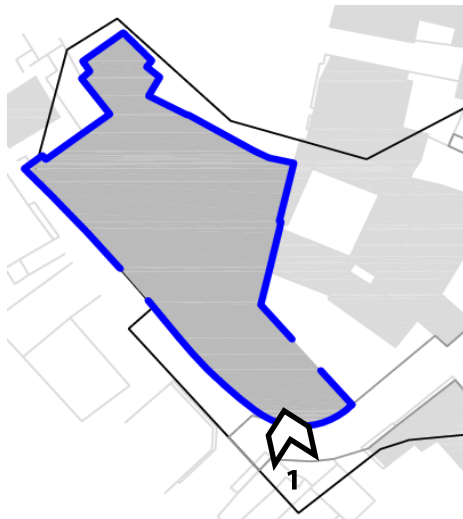


Photo 1: shows a vacant lot at She Rah Mahigiri junction. Formerly, this was a point for collecting water but it is now an empty space since the buildings were demolished.

Figure 84: an opportunity to design a space or locale with water in this empty space to emphasise its lost features

6.1.7 Significant landmarks

Significant landmarks are part of an area's identity as a place is often defined by its landmarks. The neighbourhood therefore needs important landmarks to verify its identity. In this part of the research analysis we confirmed the significant landmarks while walking in this area.

- The results of our observations can be seen in the map below:



Figure 85: the significant landmarks and their locations

After observing the different sectors of the neighbourhood we found the significant landmarks. The results can be seen in the Figure above. Three important monuments have been selected. One is located on the right-hand boundary of the neighbourhood (sector 23). It consists of two tall minarets which are called the Daroziafe Minarets. They were built in the 14th century. These minarets dominate the area. The next two landmarks are found at the other end of the neighbourhood which connects to the bazaar. The Jameh Mosque has a really strong character and impacts on the neighbourhood. Meanwhile the Meidan Atigh, a new town square was built to replace the Meidan Kohneh (which had been completely demolished). These two features of sector 38 are significant landmarks in this area. From these results we can claim that the neighbourhood has three significant landmarks and which landmarks highlight its identity.

Opportunities:

- 1- There are three significant landmarks in this neighbourhood which are showed in Figure 85.

Constraints:

- 2- The all three significant landmarks are on the border of neighbourhood not inside the area (see Figure 85).

Guidelines for future development

- 1- More use of the location of the significant landmarks like making important entry point or making interaction points.

6.1.8 Significant views and vistas

A strong view or vista is part of an area's identity. We appraised this element by inspecting all parts of the neighbourhood.

- The results concerning significant views, vistas and panoramas are shown in the Figure below:

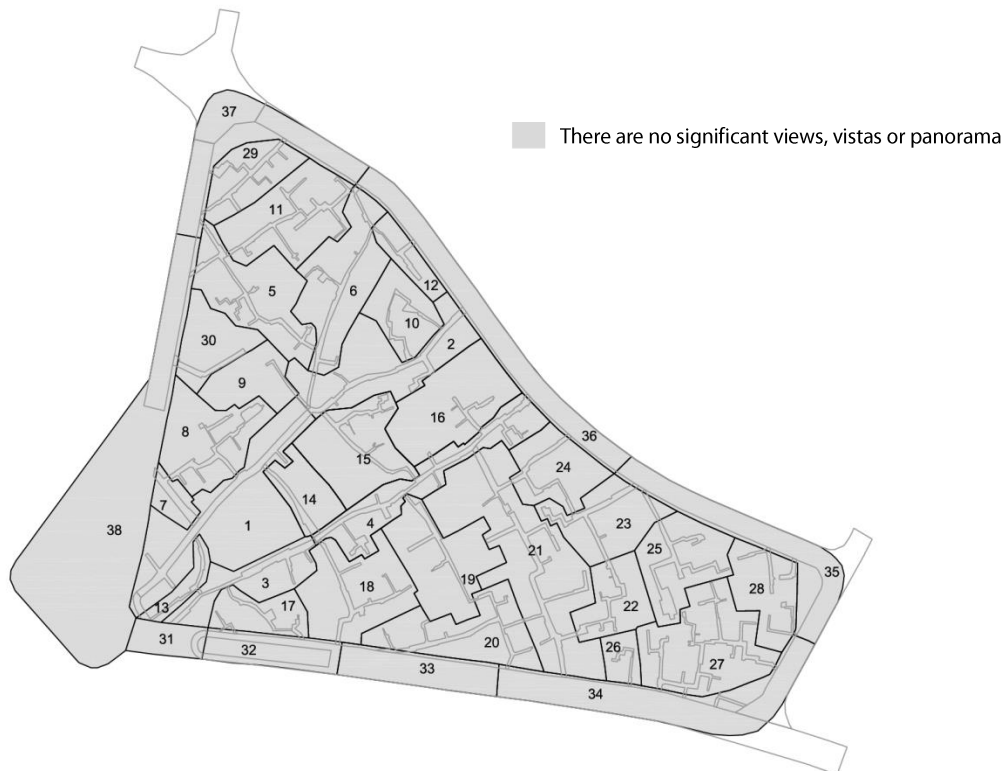


Figure 86: the results of existing significant views or vistas in this area.

From the details of the map above it appears there are no significant views or vistas in this area. The neighbourhood is located in a flat area in the middle of the city. Because of its flat topography we cannot find any significant views or vistas that show the neighbourhood's identity.

Constraints:

- 1- This area of a city has flat topography and there are no significant views or vistas.

6.2 An Evaluation of Public realm

In our evaluation of the public realm of the neighbourhood we identified thirteen elements. These were analysed in chapter 4 and a map was created for each one. Below there is an interpretation and evaluation of the maps also for every element positive (opportunities) and negative (constraints) aspects have been identified.

6.2.1 Pavements (condition, quality and maintenance)

Pavements, kerbs and steps are part of public domain. Good quality, design and maintenance of all of these helps to realise a successful public domain. To evaluate the public realm of an area the first step is to assess the quality of the pavements, steps and kerbs, design and maintenance. In this part of assessment we mostly focused on the state of the pavements.

- The results of observing the roads pavements are shown in the map below:

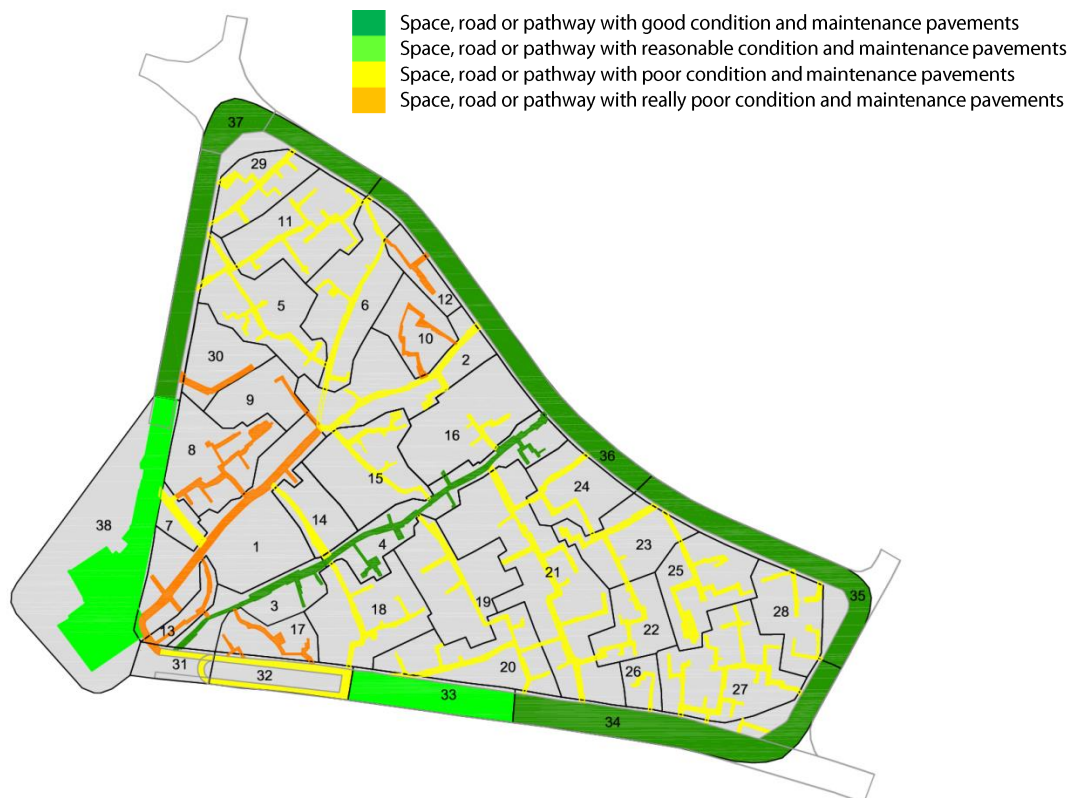


Figure 87: the results for the condition of the pavements

From the results shown in the Figure above we can see that not just sectors 3 and 4, but all areas inside the neighbourhood have poor or really poor pavements. In the main boundary streets the quality of the pavements is good and reasonable. This means that, in majority parts of the neighbourhood, the condition of the roads pavements is below standard. Generally speaking, the

quality of pavements in the majority roads is poor or really poor, apart from the regenerated parts (sectors 3 and 4) of the neighbourhood.

Opportunities:

- 1- Good pavement conditions in the regenerated parts of the neighbourhood. These pavements are composed of flagstones and this material is eminently suitable for historic quarters.

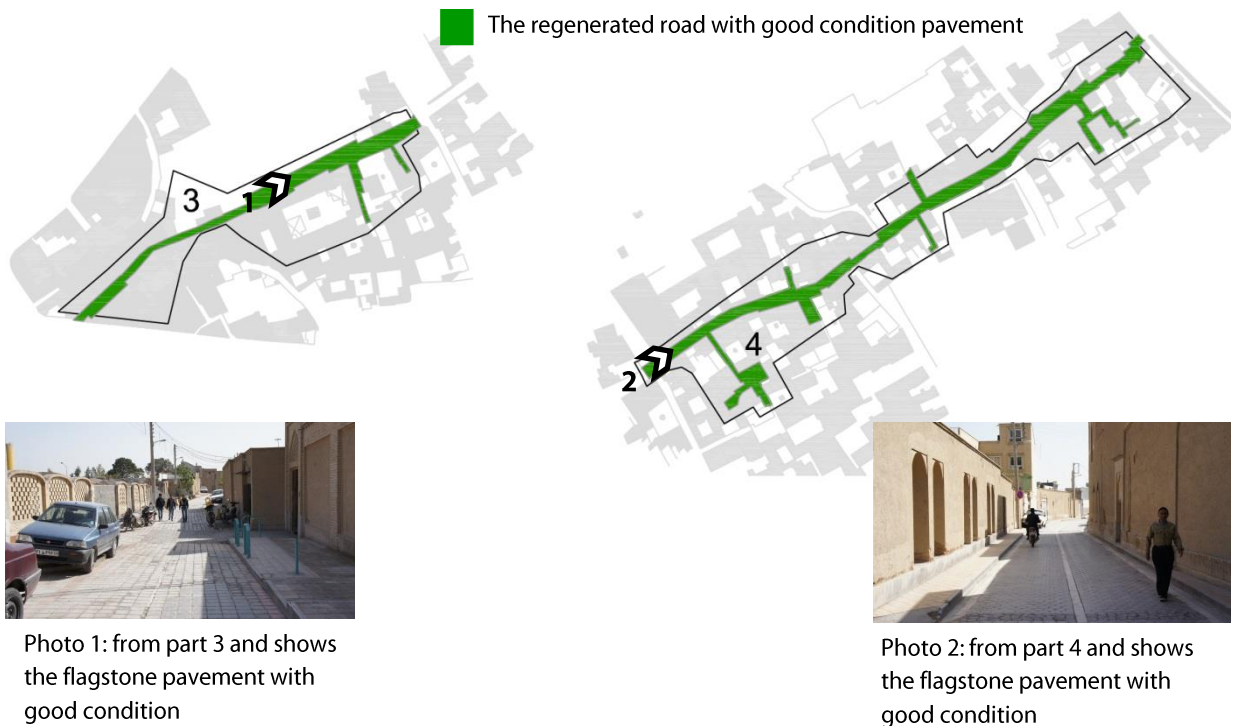


Photo 1: from part 3 and shows the flagstone pavement with good condition

Photo 2: from part 4 and shows the flagstone pavement with good condition

Figure 88: shows the renovated parts with flagstone pavements in good condition

- 2- Good pavements condition in the sidewalks of main streets around the neighbourhood (see Figure 87).

Constraints:

- 1- Instead of regenerated road the rest of roads inside the neighbourhood have poor and really poor roads pavements condition (see Figure 87). Figure 89 shows the pavement condition in sector 1.

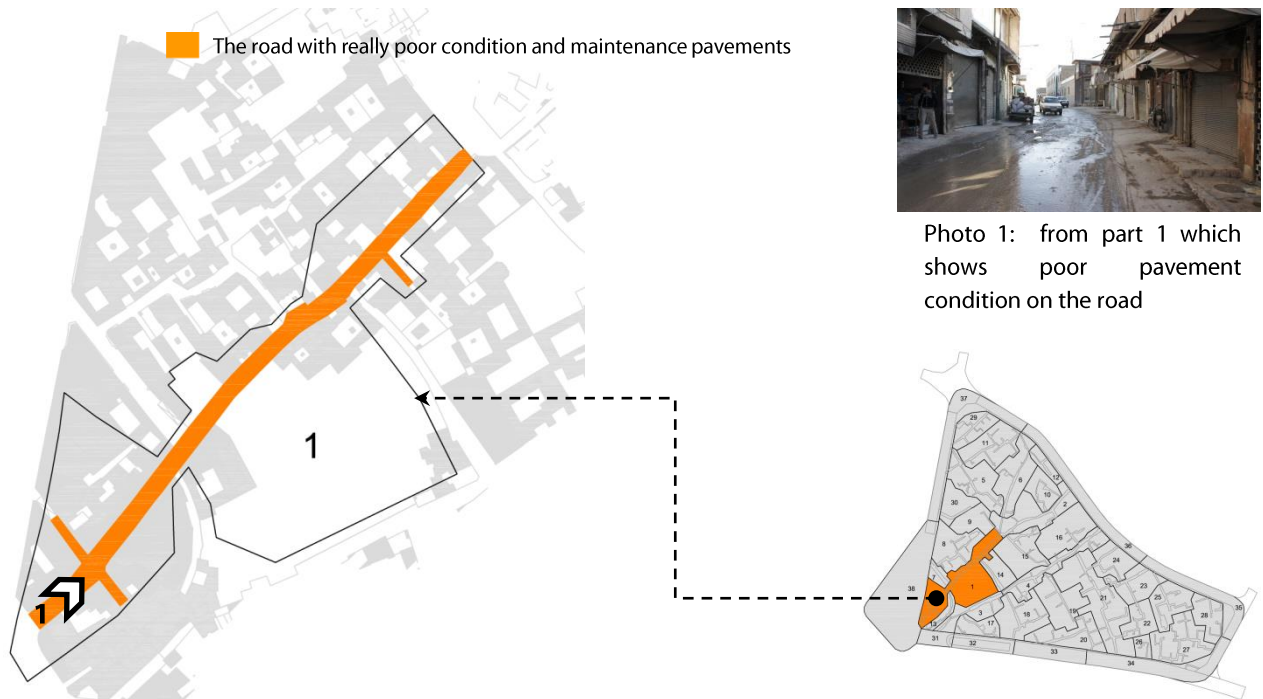


Figure 89: shows sector 1 with pavements in really poor shape

Guidelines for future development

- 1- Repair or reconstruct the poor and really poor pavements which showed in Figure 87 with yellow and orange.
- 2- Using flagstone on the road surface or some type pavement that was used for historic roads to underlie the historic routes like part 3 and 4 pavements which showed in Figure 88.
- 3- Use some method on the pavements to reduce the cars' speed in the narrow roads like rough flagstone.

6.2.2 The condition of the buildings' frontage

The condition of the buildings' frontages is one of the important criteria of the public realm. The first impression of the public realm is related to the condition of the buildings' façades. A location with a successful public domain has buildings in good condition. For an evaluation of the condition of the building frontage we used four scales; good, reasonable, poor and really poor. These are shown in different colours. In this district there are a lot of ruined areas because of the demolition of old buildings. We observed and mapped these dilapidated spaces. The grey coloured areas indicate ruined zones in Figure 90.

- The results of the assessment of building conditions can be seen in Figure 48:



Figure 90: the condition of building frontages and the location of ruined areas in different parts of the neighbourhood

In this assessment we look at the state of the buildings frontages. The Figure above shows that parts of the middle of the neighbourhood are in poor and really poor condition and only sectors 3 and 4 are in a good state because of the regeneration project. In the parts with poor and really poor buildings there are many ruined areas. Some are huge, for example, in walking part 1 there is large ruined zone. These create a poor public realm and decrease the level of social sustainability but they can also provide opportunities for designing new buildings for the neighbourhood's needs. They can also be used as locations, spaces or green areas to help increase social

sustainability. The buildings close to the main boundary streets of the neighbourhood are in better condition. The general picture is that those buildings that are close to the main boundaries are in a good state, but in the middle part of neighbourhood with difficult access to cars, the buildings are in poor condition and there are many run-down areas inside the neighbourhood (See Figure 48).

Opportunities:

- 1- Buildings situated on the main boundary streets, are in good condition because of better accessibility by car. These are shown with light green frontages in Figure 90.
- 2- There are nine big and seven small empty spaces. These expanses with their ruined buildings can be used for neighbourhood needs. In the Figure below, the six empty areas in parts 1, 2, 14 and 15 are seen.

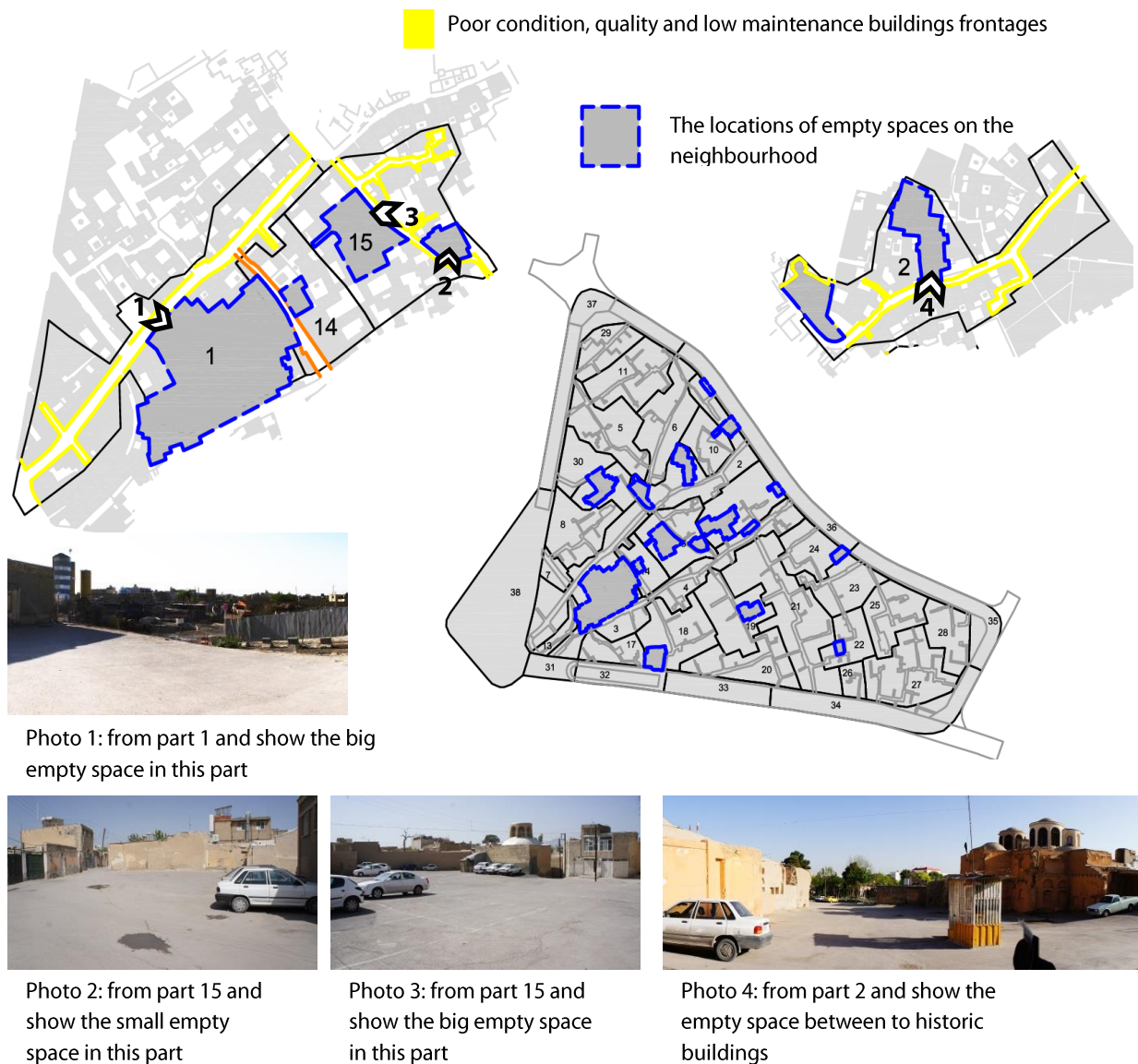


Figure 91: shows the empty spaces after the demolition of the old houses which provide opportunities

3- Regeneration project on parts 3 and 4 creates good condition buildings frontages.

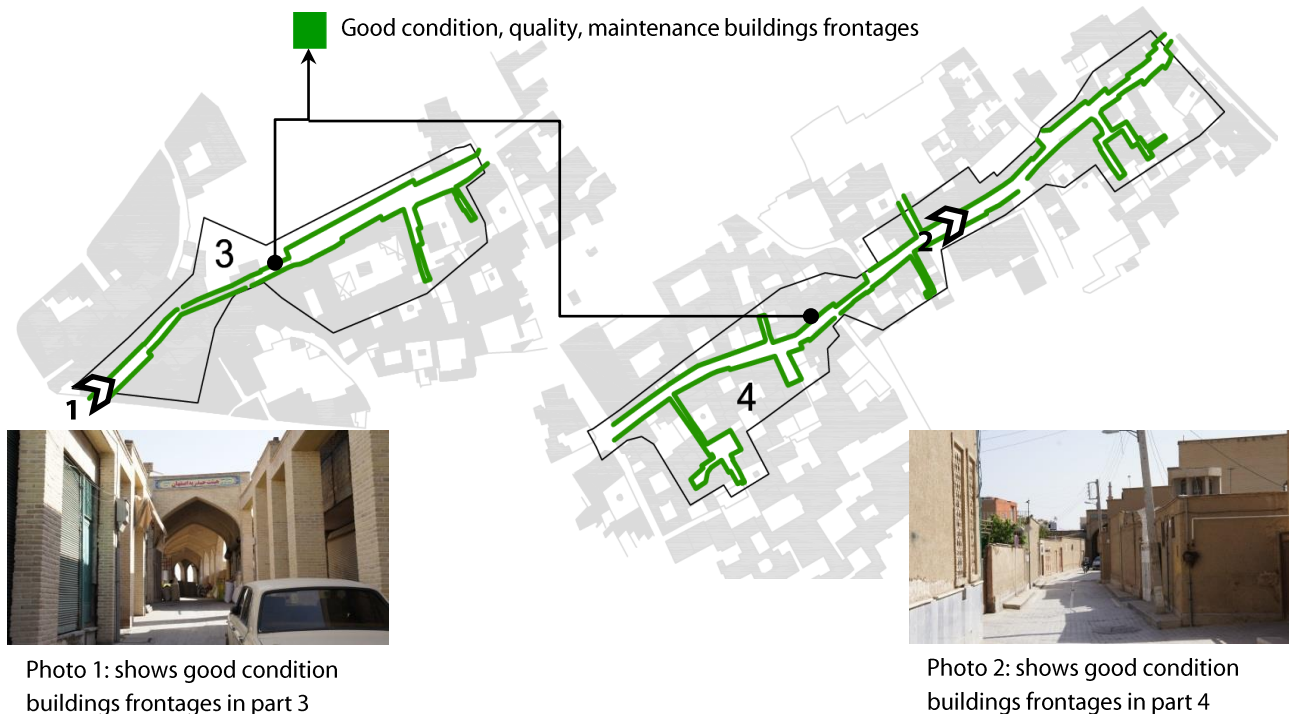


Figure 92: shows the good condition of buildings frontages in regenerated districts

Constraints:

1- Inside the area, in the major parts of the neighbourhood, the building frontages are in either poor or really poor condition. Their frontages are coloured in either yellow or orange in Figure 90. Figure 93 shows the limits of the area with poor or really poor buildings.



Figure 93: shows the area with buildings frontages in poor or really poor condition

- 2- There are many run-down areas caused by buildings being demolished. These affect the whole image of the neighbourhood as well as the nearby buildings.

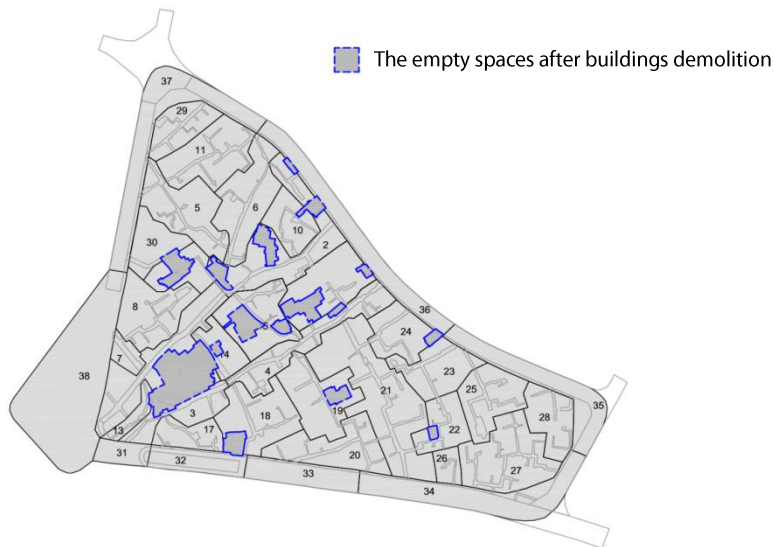


Figure 94: shows the spread of the ruined areas in this neighbourhood

Guidelines for future development

- 1- Taking urgent steps to repair and regenerate the building frontages, which are shown in yellow and orange in Figures 90.
- 2- There are many vacant spaces because of derelict buildings (see Figures 90 and 94). Some of these plots can be used to construct new buildings and houses for the neighbourhood.

6.2.3 Shops frontages

Shop frontages form are part of the building frontages that we evaluated in Figure 48, but in this part of the assessment we consider the shop frontages separately because there are many shops and commercial units both around and inside the neighbourhood. The shop frontage comprises every feature of the shops that we can see when walking in the road. The shops windows and signs are the main elements.

- The map below shows the results relating to the condition of the shop frontages:



Figure 95: the condition, quality and maintenance of the shop frontages in the neighbourhood

As can be seen from the Figure (above) there many areas with no shops inside the neighbourhood. In sectors 3 and 4 the shops are in reasonable condition and well-maintained but in sectors 1 and 2 there are many shops with poor quality maintenance also in sector 17 which is small and near the bazaar there are a few shops with frontage in really poor condition. On the main streets of the neighbourhood there are many roadside shops. These are mostly of good quality and are well kept. In general, the shop frontages on the main street are in good condition. Those in the middle of the neighbourhood have poorly cared for frontages apart from those in the regenerated sectors of the neighbourhood (sectors 3 and 4).

Opportunities:

- 1- In the regenerated road the shops are in reasonable condition. Some are to be found in corridors like small bazaars. These set a good example for the rest of the neighbourhood.



Figure 96: shows the condition of the shops frontages in the regenerated road

Constraints:

- 1- Instead of regenerated parts inside the area the shops frontage are poor. The Figure 97 shows part 2 with poor shop frontages.



Figure 97: the poor condition of shops in sector 2

Guidelines for future developments

- 1- The shops inside the neighbourhood in parts 1 and 2, (shown in Figures 95 and 97), have run-down façades and need restoring and redesigning.
- 1- Following the use of the regeneration road method and design, some small corridors with arched roofs have become like small bazaars (see Figure 96). This method could be applied to the rest of the neighbourhood.

6.2.4 Roadside greenery (trees, plants, grassed areas, flowers and borders):

Good quality roadside vegetation makes a place more attractive and helps to increase social interaction. Especially during the hot summers in Isfahan, trees and shrubs ensure that pedestrians walk in the shade. The assessment of this criterion was made by observing the area during the many walks. The results of this observation are shown in Figure below:



Figure 98: the state of roadside greenery in the neighbourhood

The results obtained from observing the neighbourhood are seen in Figure 98. In most parts of the neighbourhood, there are no trees or plants on the roadsides. The three main boundary streets have roadside trees whose quality is good. Only sector 3 has some newly planted trees of reasonable quality and we can see that these few trees have completely changed the image of the road. In this area there are four green spaces but unfortunately we cannot see the roadside plants or those in front of the houses. Although most of the roads are narrow with little space for plants, there are still many gaps between the buildings and empty spaces which could be used for small plants and shrubs. Also on the two main roads inside the area (sectors 1, 2, 3 and 4) there is enough space to design sidewalks with trees. The results show that this neighbourhood is lacking in roadside trees and plants.

Opportunities

- 1- Existence of good roadside trees on the main border streets of neighbourhood.



Figure 99: shows the main boundary street of sector 35 with good roadside greenery

Constraints

- 1- Lack of planting, greenery and roadside trees in almost all insides roads of the neighbourhood (see Figure 98).

Opportunities

- 1- Existence of enough furniture with reasonable condition and design in public space.

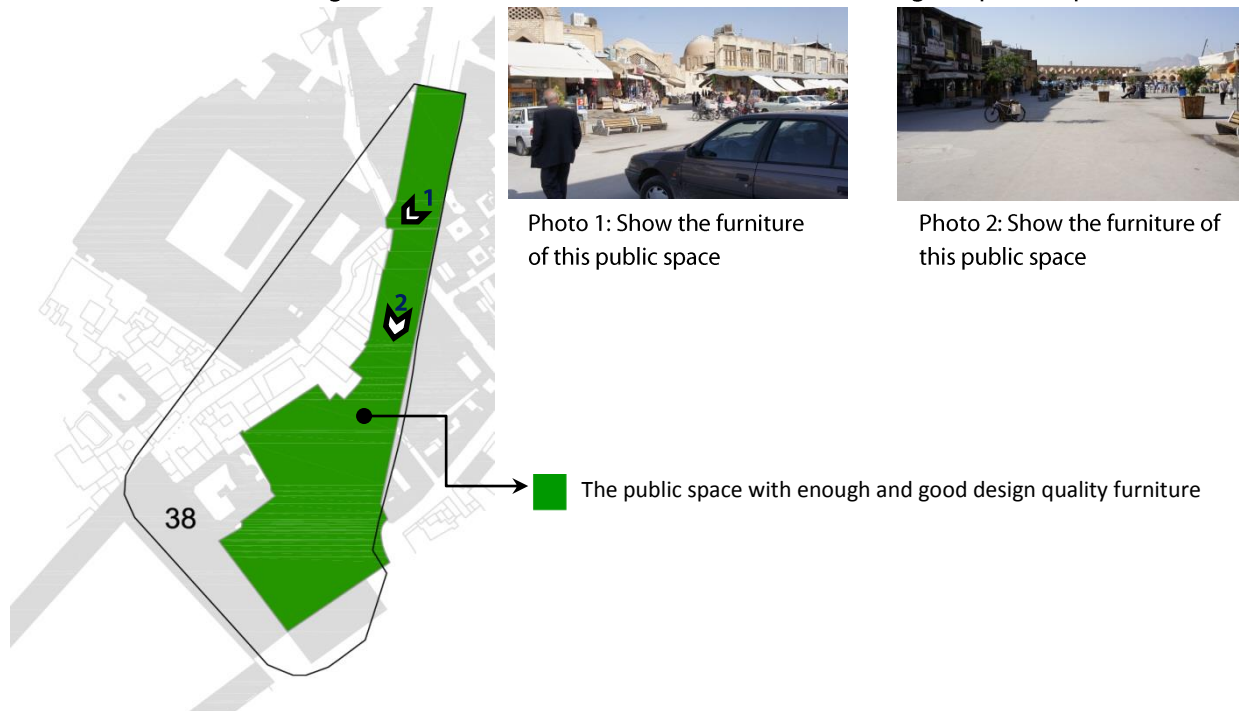


Figure 102: shows the public space in part 38 with good designed street furniture

Constraints

- 1- Instead of the green spaces and the public space the rest spaces and roads of neighbourhood lack of street furniture (see Figure 101).
- 2- The green spaces do not have enough furniture and the quantity of furniture is low (see Figure 101).

Guidelines for future development

- 1- Preparing more furniture for the green spaces which showed in Figure 101 by light green colour.
- 2- Using street furniture in the main parts and also the some part that it is possible to design a seating area like beside the historic buildings.

6.2.6 Advertisement boards

Advertisement boards are any kind of visual graphic created to display information to advertise something. This element was also assessed by observation of the neighbourhood.

- Figure 103 shows some advertisement boards:



Figure 103: the results relating to advertisement boards in the neighbourhood

From the map above, we can see that there are no hoardings or advertisement boards in all part of the neighbourhood. We can only see shop signs on the main streets.

Guidelines for future development

- 1- Control on designing any advertisement boards in this historic area.

6.2.7 Lighting on roadsides, pathways and sidewalks:

The lighting situation needs to be assessed after dark. In the interviews, we asked the local people about the state of the lighting in the area. During this assessment we observed the lighting equipment and the distance between the street lights. On the basis of the quality and design of the lighting,, we show the results in the map above. There are two kinds of lighting in the neighbourhood. Firstly, we assessed the state of the lighting on the roadsides, pathways and sidewalks and secondly, that in the public and green spaces. We allocated five scales for assessing the lighting on the basis of the neighbourhood condition.

- Figure 104 shows the results of the lighting conditions on the roadsides, pathways and sidewalks:

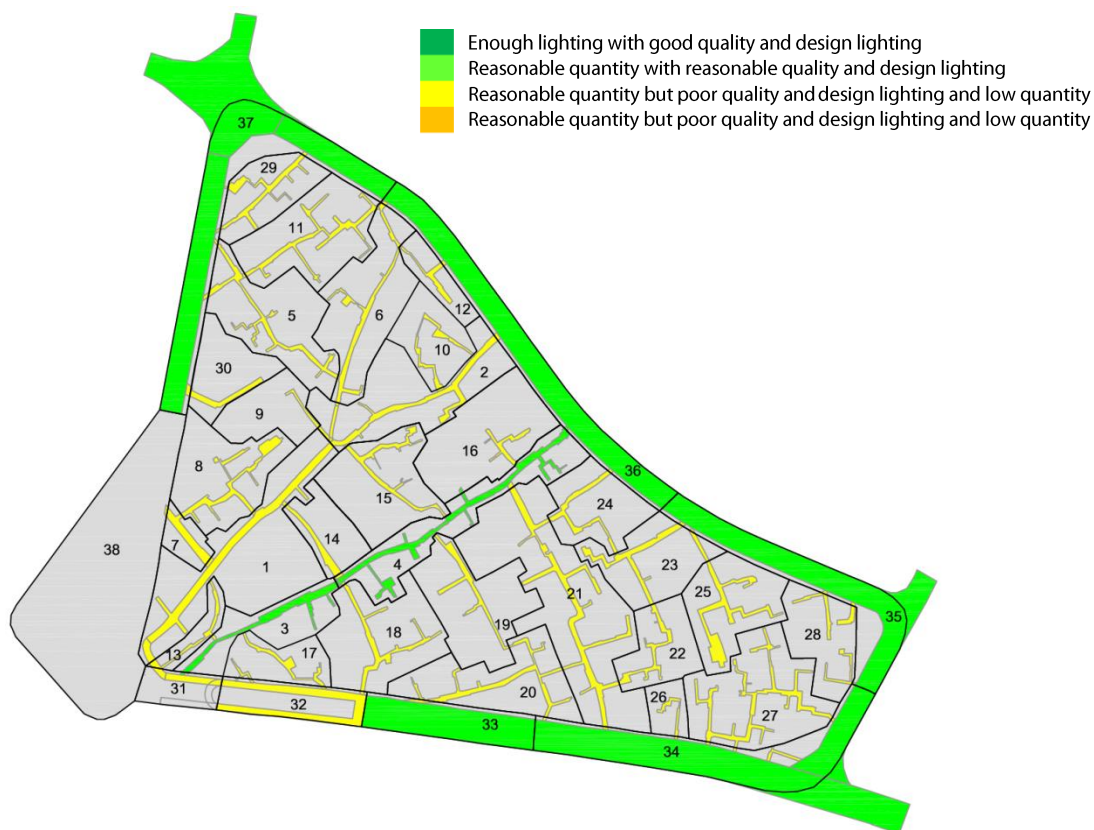


Figure 104: the results of lighting conditions on the roadsides, pathways and sidewalks

It can be seen from the data in figure 104 that two regenerated sectors (3 and 4) and those on the boundary streets have a reasonable quantity and quality of lighting. While in the most corners of the neighbourhood there is a reasonable amount of lighting, the quality is poor. The results show that the neighbourhood has sufficient lighting apart from sectors 3 and part 4 (renovated sectors) and the main boundary street where the lighting is poor.

Opportunities

- 1- On the basis of quantity the most sectors have enough lighting (see Figure 104).
- 2- The main streets on borders (parts 33, 34, 35, 36 and 37) and the regenerated road (parts 3 and 4) have enough and reasonable quality lightings on the roadsides (see Figure 104).

Constraints

- 1- The major areas have poor lighting design with a jumble of electricity cables which affect the image of historic neighbourhood.

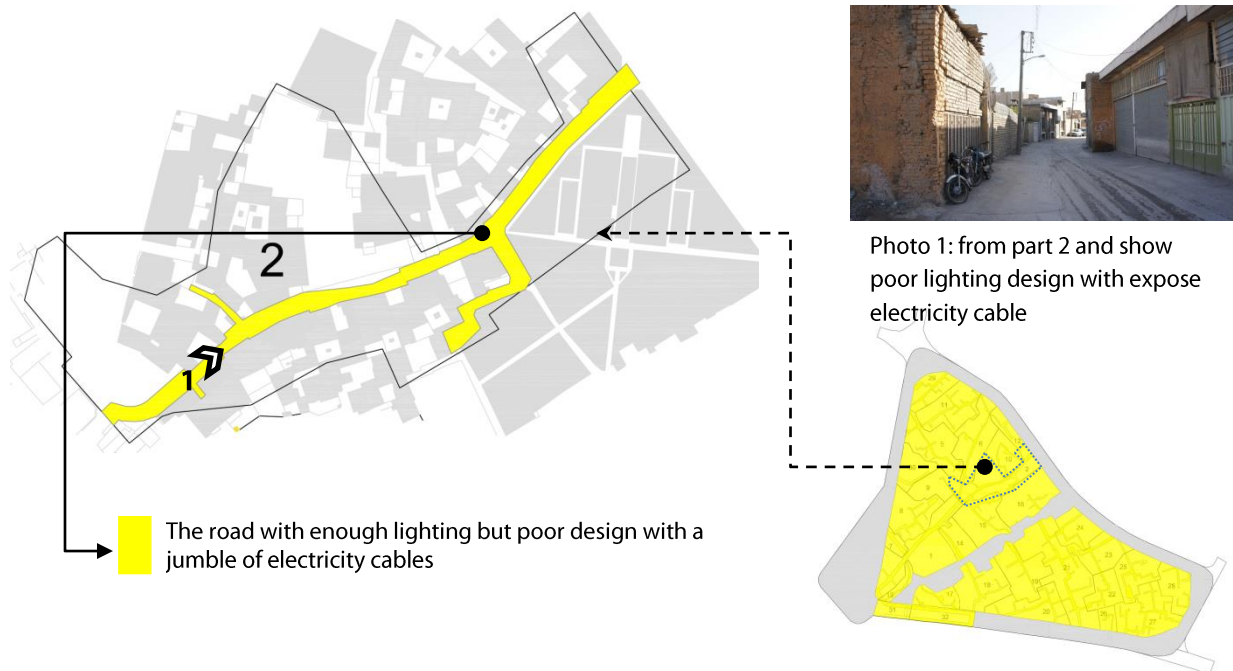


Figure 105: shows an example of poor lighting design with a jumble of electricity cables

Guidelines for feature development

- 1- Putting the main electricity cables under the ground especially inside the neighbourhood.
- 2- Design some lighting for the historic building to highlight them more at night.

6.2.8 Lighting in public and green spaces

After determining the state of the lighting on the roadsides, pathways and sidewalks in this part of the assessment, we evaluated the lighting situation in the public and green spaces.

- The results are shown in map below:

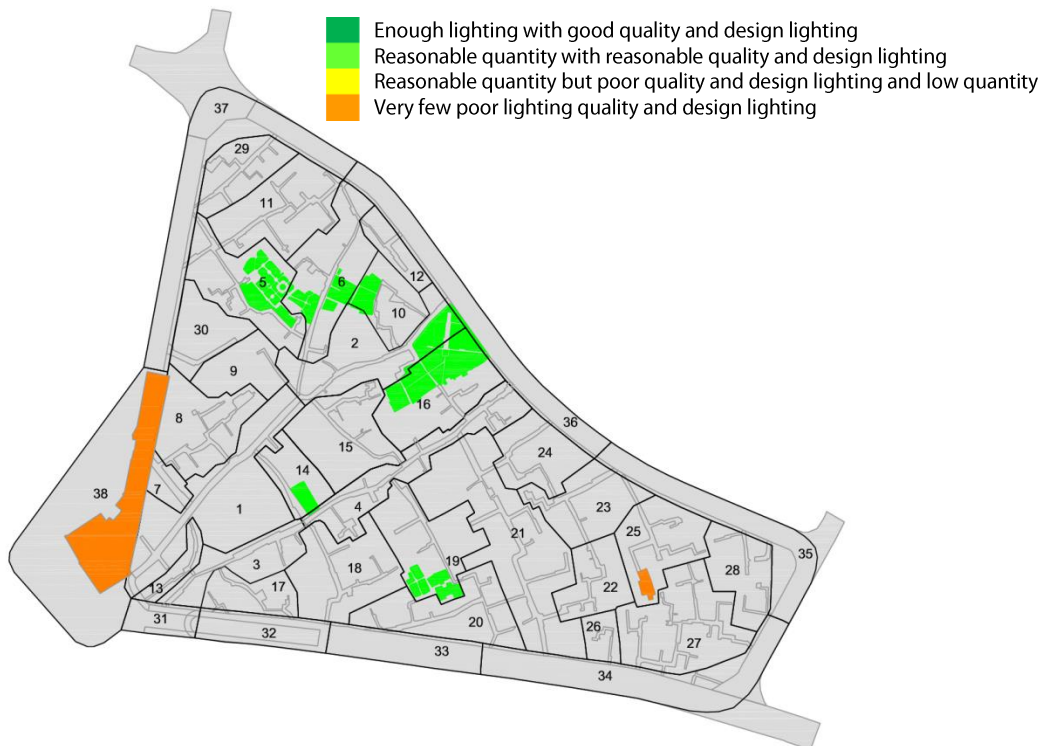


Figure 106: the results of the lighting conditions in the public and green spaces

The results of the Figure above show that the green spaces have a reasonable quantity and quality of lighting, but there is one small green space in sector 25 that has very few lights. However, because it is really small it does not need much lighting. There is also a public space in sector 38 which does not have sufficient lighting for its size. Overall, the green spaces have reasonable lighting but the public space does not have enough.

Opportunities

- 1- Green spaces have enough and reasonable quality design of lighting (see figure 106).
Figure 107 shows a sample of the green spaces with reasonable lighting.

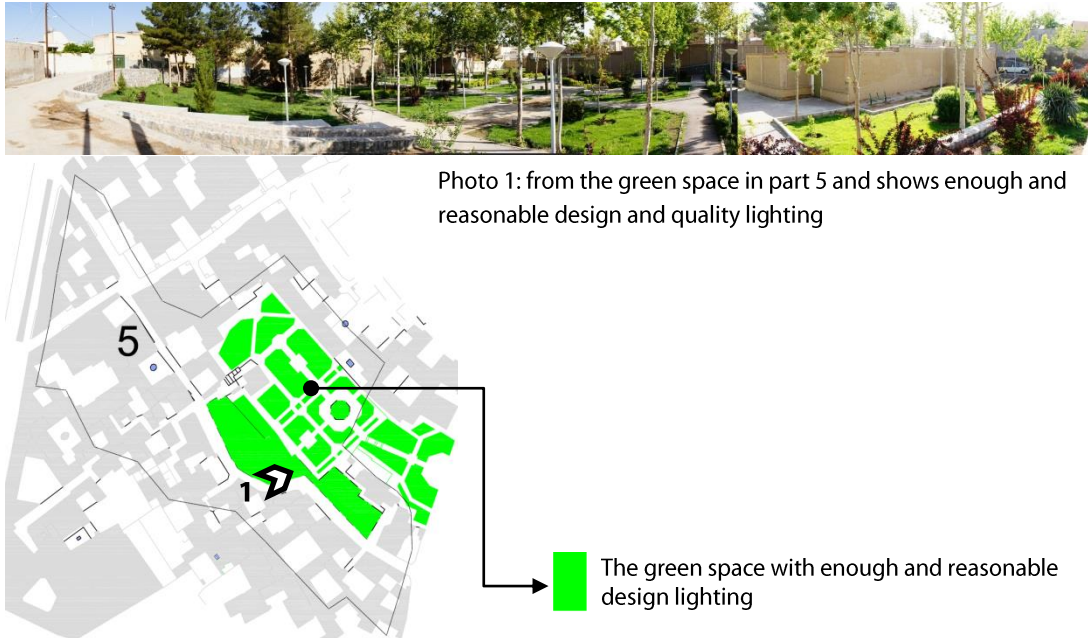


Figure 107: shows an example of a green space with reasonable lighting design

Constraints

- 1- The public space does not have enough lighting. Figure below shows the results:

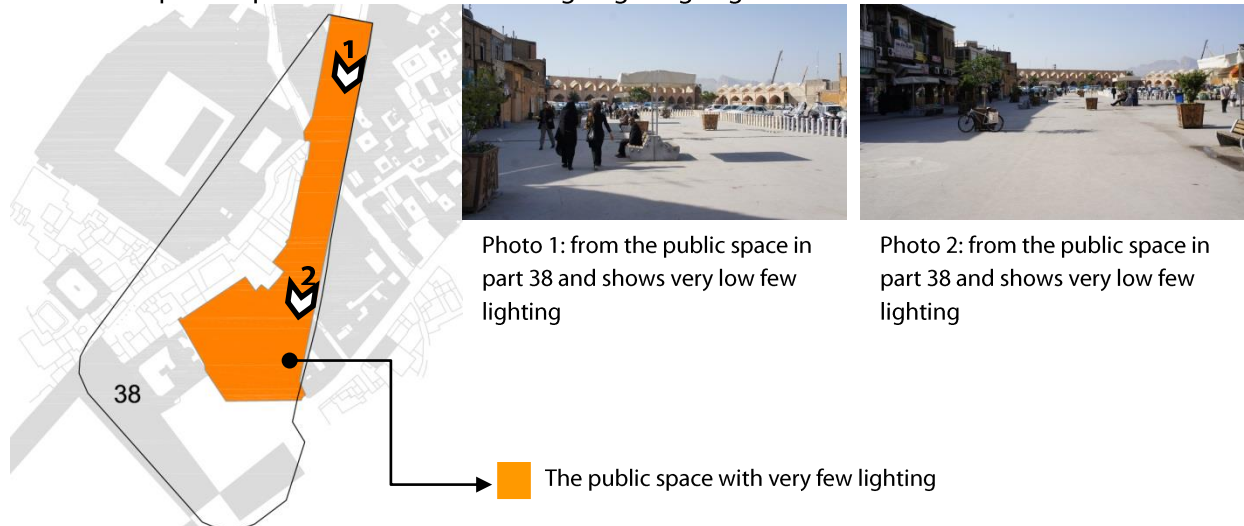


Figure 108: shows the public space which does not have enough lighting

Guides for future development

- 1- Design proper and enough lighting for the public spaces (see Figure 108) to make them enjoyable and attractive after dark.

6.2.9 Public art and (permanent and temporary works, fountains and graphics):

Public art comprises any kind of sculpture, permanent artworks or fountains. Well-designed public art helps increase the quality of the public realm.

- The results have been recorded on the map below:



Figure 109: the location of existing public art

From the map above we can see that there is only one exclusive with public art. In sector 23 there is beautiful fountain with a grassy area in front of a historic mosque. The quality and design of this fountain helps to create an attractive environment. This fountain combines well with the historic elements and the grassy area. This is a beautiful example for the rest of the neighbourhood.

Opportunities

- 1- There is a public artwork in one part of the neighbourhood

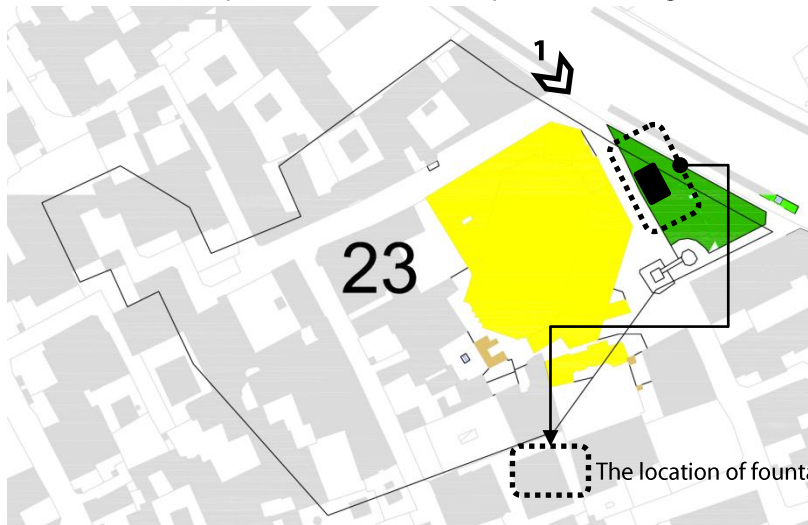


Photo 1: shows the fountain in front of religious building

Figure 110: shows the fountain (public art) in the sector 23

Constraints:

- 1- There are many green spaces and one public space with no public art (see Figure 111).

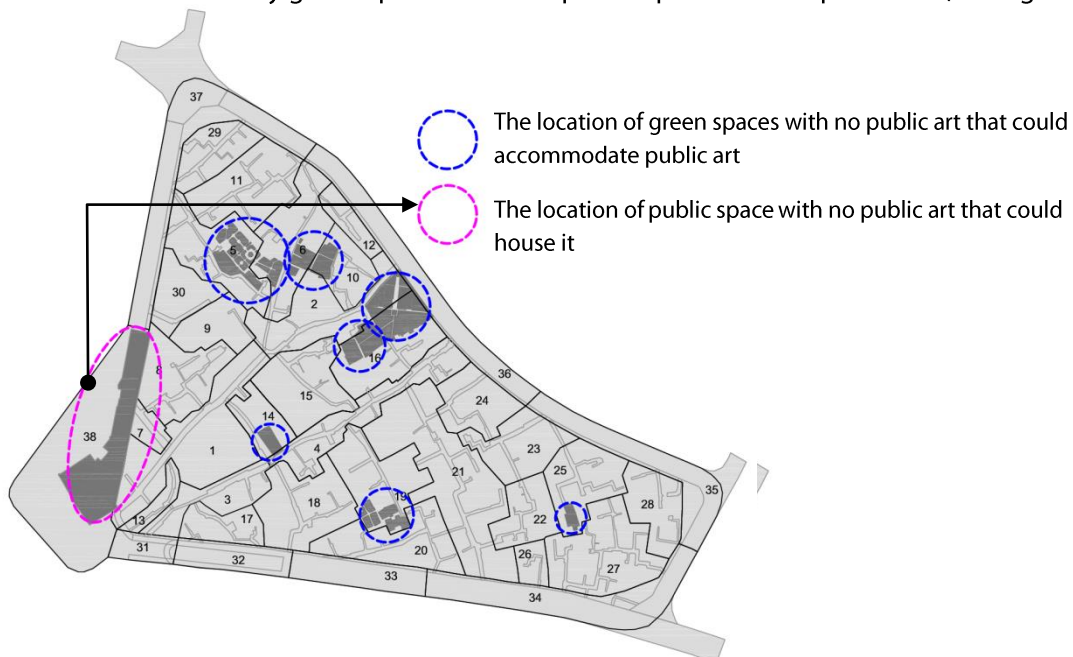


Figure 111: shows green spaces and a public space with a lack of public art

Guidelines for future development

- 1- There are many green spaces in parts 2, 5, 6, 14, 19 and 25, plus one public space in part 38 (see Figure 111) which could enjoy a more distinctive character with the aid of some public art .
- 2- There many empty spaces from demolishing the old building and they can design as public space or green space with beautiful public art.



Figure 112: the location of empty spaces which can be designed as public or green spaces with beautiful public art

6.2.10 Safety and security equipment

Safety and security equipment include anything such as fire appliances, security camera and police stations. Every part of the neighbourhood was inspected for this assessment which was carried out by taking serial pictures on foot.

- The map below shows the results:



Figure 113: Condition of the safety and security equipment in this neighbourhood

The results obtained from the preliminary analysis of the walk are shown in the map above, from which we can see there is no safety or security equipment. . This deficiency needs to be investigated because every successful public domain needs a safe and secure environment.

Constraints

- 1- There is no safety or security equipment in this area (see Figure 113).

Guidelines for feature development

- 1- Consider installing CCTV in the public spaces and main junction and some parts of the quarter that are unsafe at night like narrow lanes and arched pathways.
- 2- Design and place some small police kiosks in the main parts of neighbourhood.

6.2.11 Public space, quality, use and management:

The existence of a good public space can improve the quality of life and the standing of the public realm. Gathering in public spaces enhances people's social life. Public spaces are needed everywhere because they increase social interaction and make the place more socially sustainable.

- The results of public spaces assessment is recorded in Figure 114:

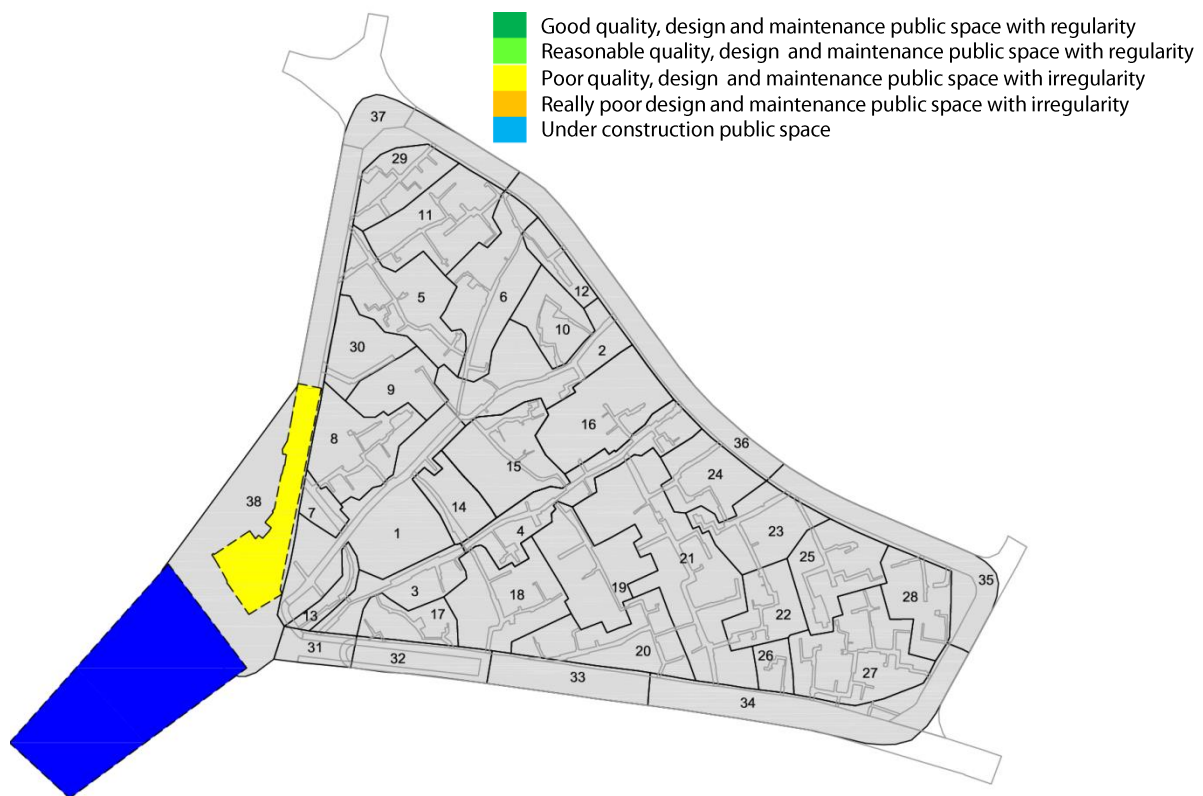


Figure 114: the existing public spaces and their location in this area

For the evaluation we used five scales, which are shown on the Figure above. The results show that there are two public spaces outside the area. These are in sector 38 which is connected to the bazaar and Jameh Mosque. Inside sector 38 there is a large area which is a public space. Unfortunately, the unevenness of the terrain and the lack of management are evident. We can see many cars inside the area and most of the street furniture is in disarray. This space is still unfinished and needs to more design consideration. Another public space connected to this area is the new town square. Known as the Atigh Square, it was rebuilt to replace the old square which was demolished. This public space is still under construction. From the results, we can see there are two big public spaces alongside the neighbourhood but the problem is that they work on the city scale and most of the time they are really busy because of their location. This area needs some public areas inside the neighbourhood for the use of the local people. Generally speaking, this quarter has good potential since it is connected to two large public spaces but in order to increase

social interaction among the residents it needs to have more public areas inside it that work for the neighbourhood.

Opportunities

- 1- Existence of a public spaces on the south border of neighbourhood

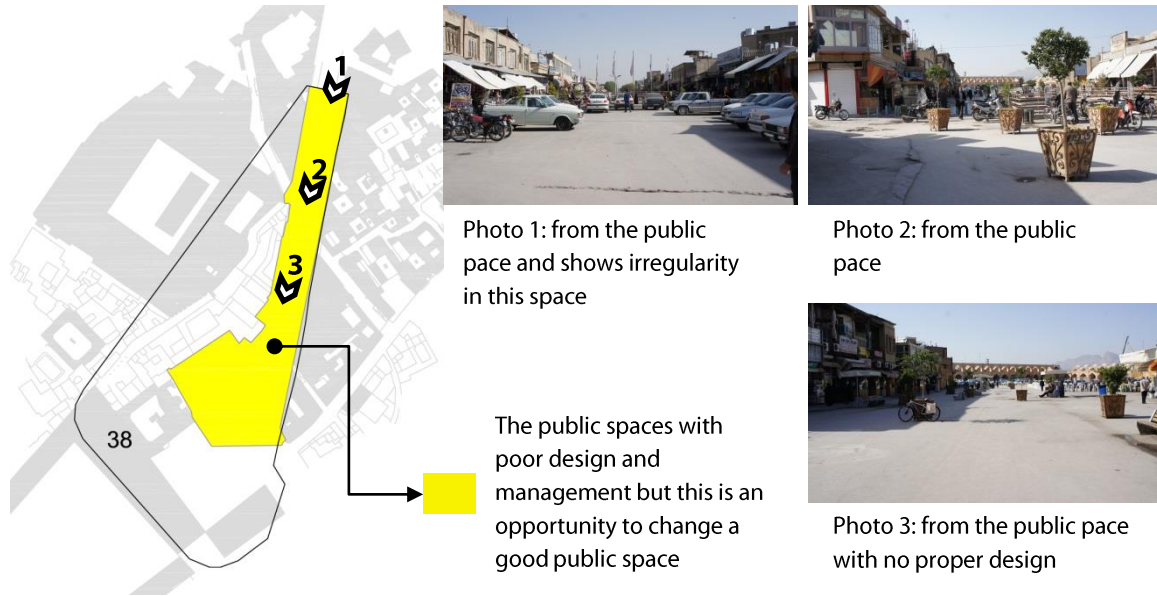


Figure 115: shows the public space in sector 38 which has poor design and management

- 2- There is a new big town square (Atigh Square) which is under construction.

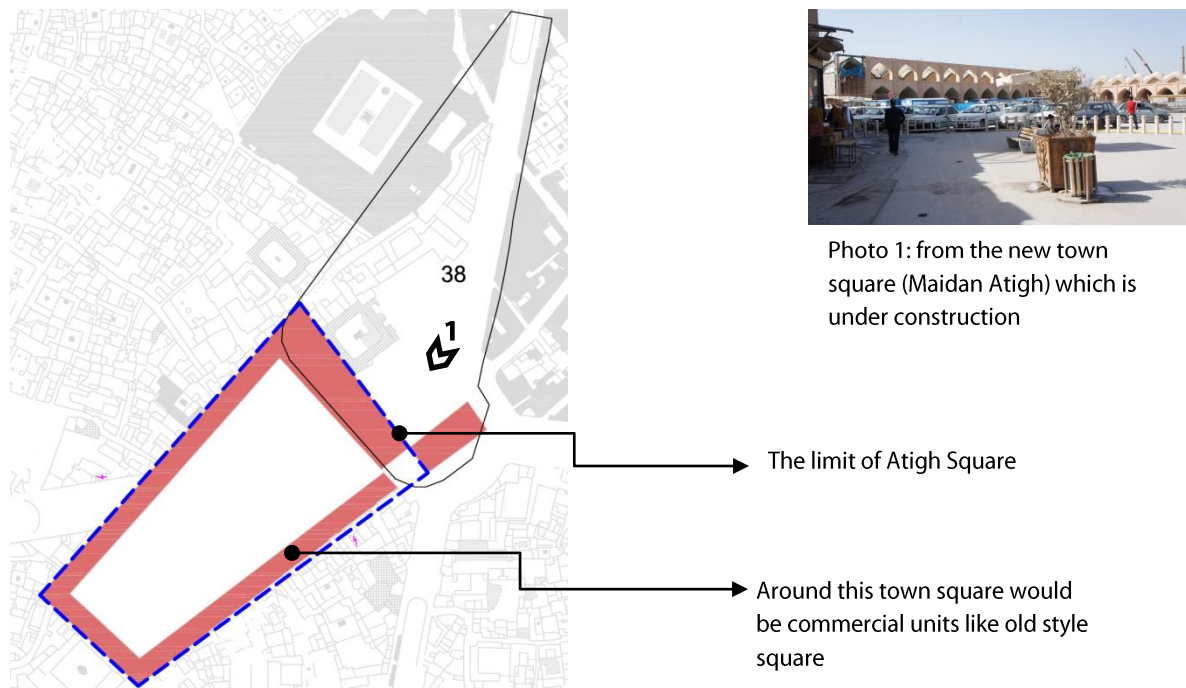


Figure 116: shows the new town square which is under construction

Constraints

- 1- There is no public space which works on the neighbourhood scale inside the neighbourhood (see Figure 114).
- 2- Proximity to two big public spaces makes the neighbourhood really busy at specific times.

Guidelines for future development

- 1- Redesign the public space in part 38 and more control on managing this space (see Figure 115) and
- 2- There are four good size empty spaces (from demolishing the buildings) which have good potential to design public space inside the neighbourhood.

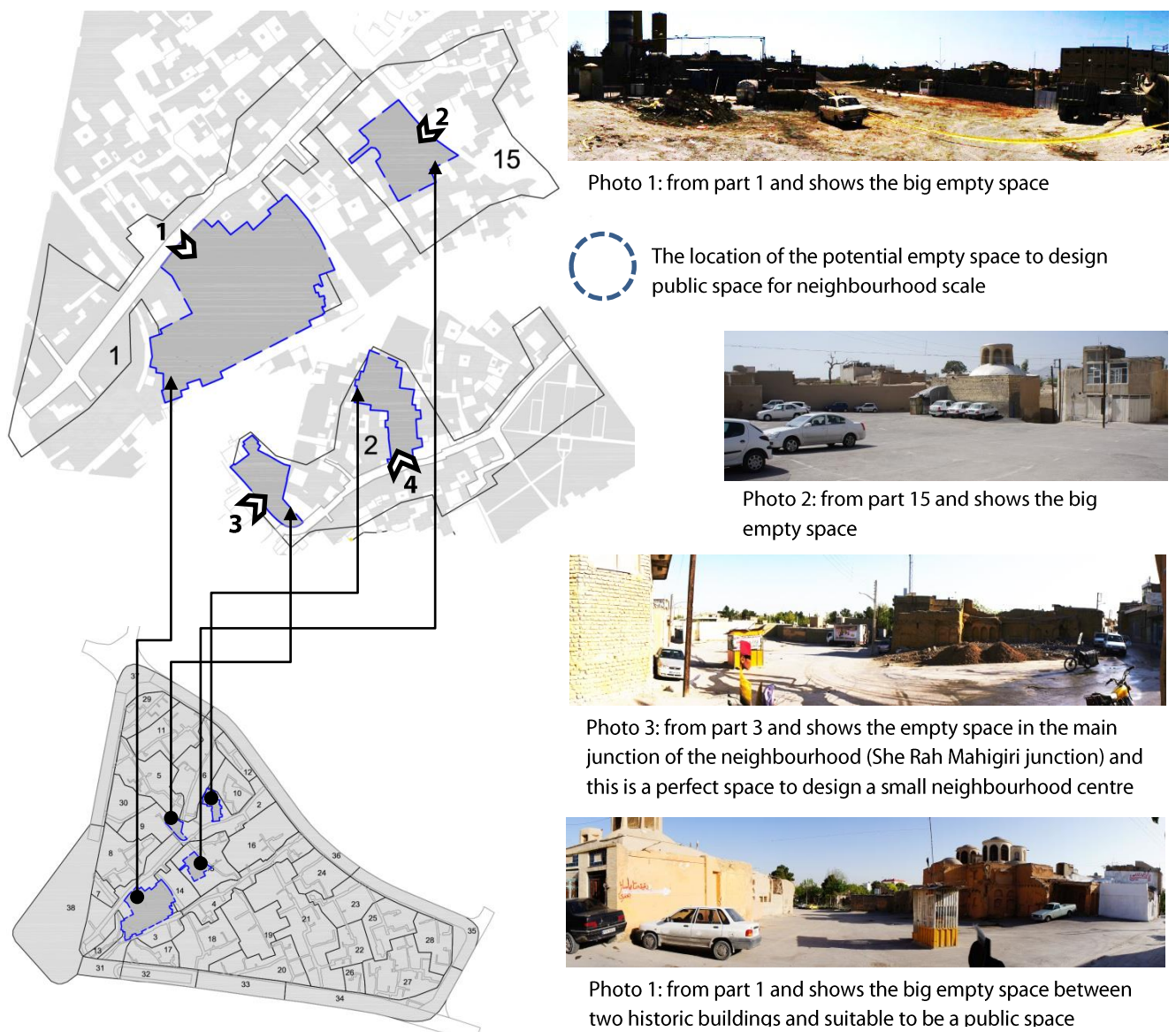


Figure 117: shows the vacant lots which provide opportunities for designing public spaces on the neighbourhood scale

6.2.12 Traffic installations (including street markings, parking meters, traffic signals):

Traffic installations include any traffic signals, traffic lights, stop lights parking meters and street markings. The results of this initiative are in the map below:



Figure 118: the results relating to the quality and quantity of traffic installations in this neighbourhood

We used nine scales for our assessment for this criterion. In Figure 118 we can see these options. As shown in the map above, most parts of the neighbourhood do not have any traffic installations. Only sectors 1, 2 and 4 have a small number of poor-quality traffic signs. The boundary areas have a few traffic signs of reasonable quality, nevertheless the number of traffic installations is low. An overall shortage of traffic installations can be seen in this area, which especially lacks pedestrian crossings, roadway lanes, car-stop lanes and parking marks on the street. However, there are a few traffic signs in some areas.

Constraints

- 1- Lack of proper traffic installations in all parts of the neighbourhood, even traffic signals, at the main junctions and pedestrian crossings (see Figure 115).

Guidelines for future development

- 1- Preparing good quality traffic installations for all parts of the neighbourhood, such as, speed limits, parking meters, street marking, traffic signals for the junctions of main roads and pedestrian crossings

6.2.13 Green spaces and other semi-natural features:

Good quality natural features create an attractive public realm and also help to increase the quality of social life. In this area there are many green spaces. The assessment of their quality has been done by using a walking instrument. We selected five options for this evaluation. These are shown in Figure 119.

- The results for the existing green spaces and their quality are shown in Figure 119:

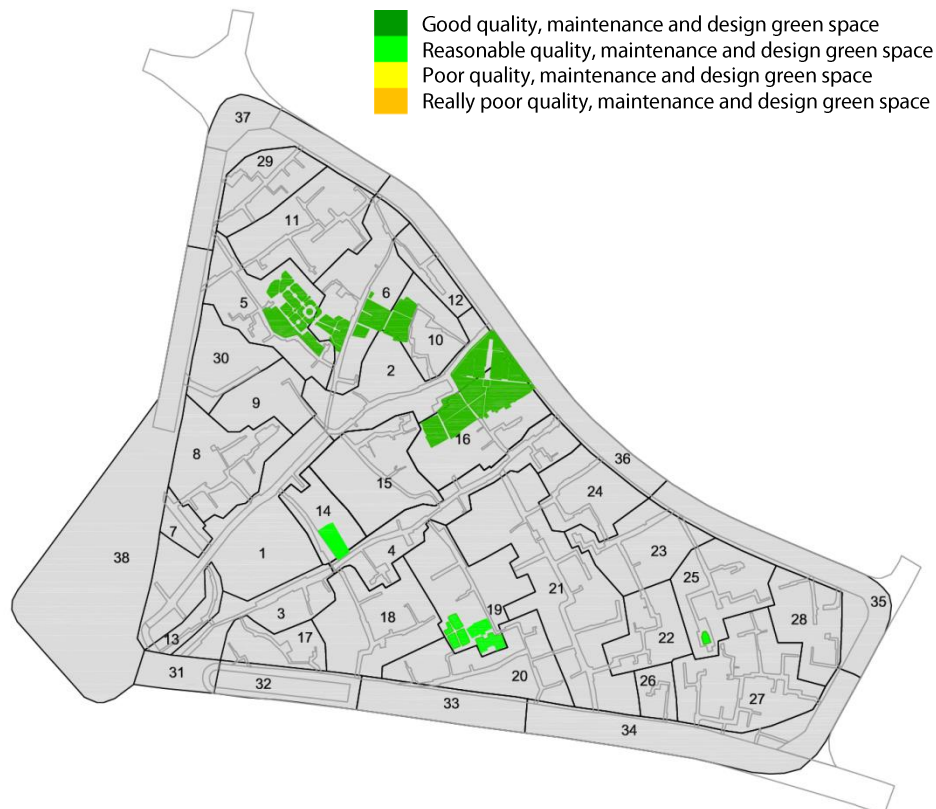


Figure 119: quality and locations of the green spaces in this neighbourhood

After obtaining the results from the Figure above we found that there were three good size green spaces inside the neighbourhood. These green arbours have been built in the empty spaces left by demolishing old buildings. These are close to each other in sectors 5, 6, 10 and 16. They are shown on the map above in dark green. They are of good quality and are well maintained. Their locations are really good and many residential areas have good access to them. There are three smaller green spaces in sectors 14, 19 and 25. These are also in reasonable condition and are perfectly located between the residential area and a good enclosure. These green areas are good examples of a small group of residential and private green spaces. In general, we can say that this neighbourhood has good green spaces in some parts but the problem is that there are three large green spaces located close to each other while the rest of the residents are a long way away from

them. However, there are a few small green spaces belonging to some small residential sectors which are in good repair and they can be used by the rest of the neighbourhood.

Opportunities

- 1- There are three good sized public spaces with good accessibility for the residents (see Figure 119)
- 2- There are three small green spaces in parts 14, 19 and 25 (see Figure 120) which are located in an ideal area between small groups of residential buildings.

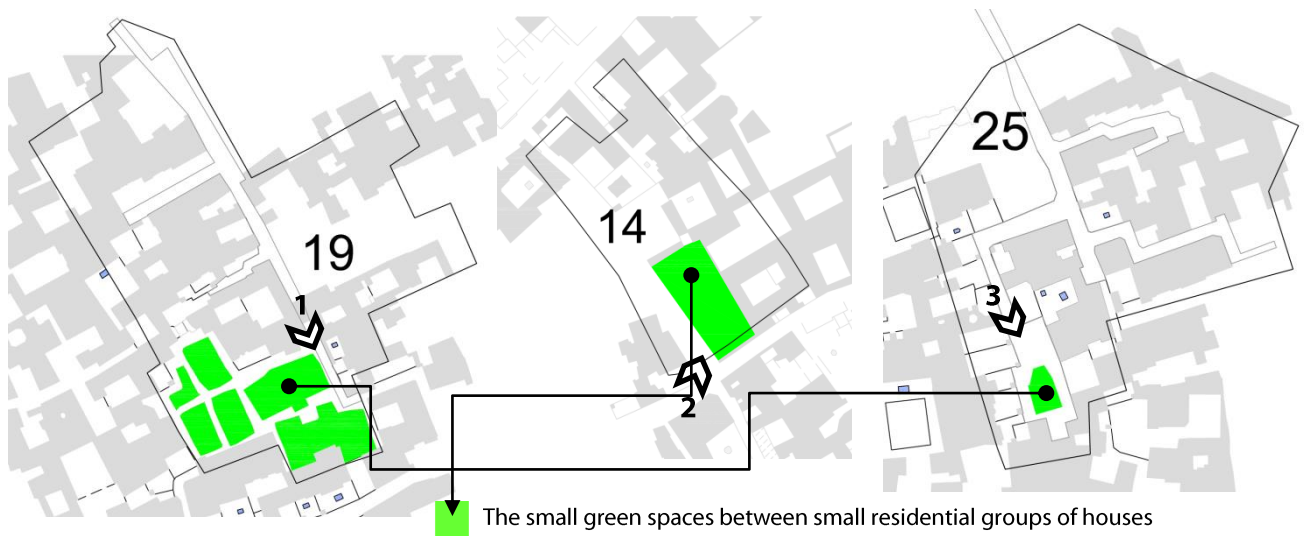


Photo 1: from part 19 and shows the small green space



Photo 2: from part 14 and shows the small green space



Photo 3: shows the small green space

Figure 120: shows the reasonable quality and design of small green spaces in this neighbourhood

Constraints

- 1- It can be seen from Figure 119 that three green spaces located close to each other in the north of the neighbourhood but difficult to access from other parts of the area and the rest parts of neighbourhood there is no good size green space.

Guidelines for future development

- 1- There are some large vacant stretches in the area which are far from any green space. These could be earmarked and designed as green spaces.

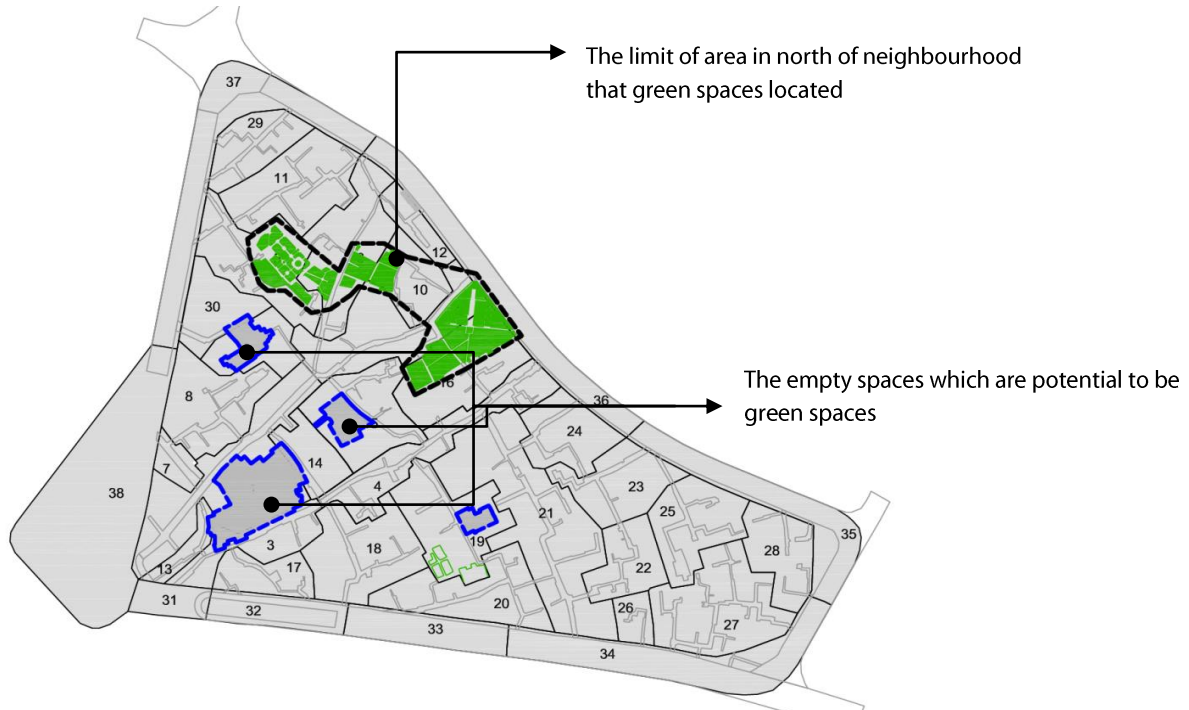


Figure 121: shows the location of big empty areas which could be converted into green spaces

- 2- Design more small green spaces like those that already exist in the area (see Figure 120) and make small group of housing with small green space. The figure below shows small empty spaces in sector 8. These could be used to design small leafy shelters like those in Figure 120.

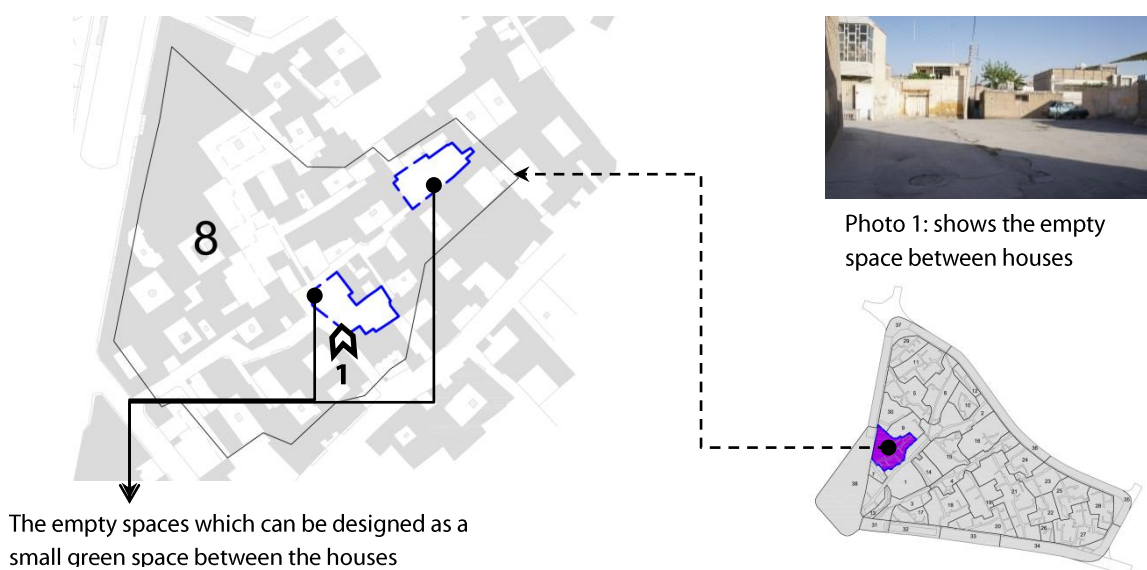


Figure 122: shows small empty spaces between houses which could be made into small green spaces

6.3 An Evaluation of Movement

Successful movement with filtered permeability was the third feature of townscape to achieve social sustainability. To assess the movement situation we identified nine elements. Every element was analysed manually in chapter 4 and, in this section, we created a map for each element from the results of their analysis. All of the maps will be evaluated in this section.

6.3.1 Public transport services and accessibility:

The public transports services and accessibility is the first elements of transport movement that need to be assessed. Good access to public transport is one of the main criteria of sustainability. In Isfahan a new metro system is under construction and the only public transport throughout the city is by bus. Most of the main streets in Isfahan have good bus services and facilities. We assessed their accessibility with the help of a walking device and after observing the area on foot, we obtained the results that are in Figure 123.

- The results of bus services and facilities shown in Figure 123:

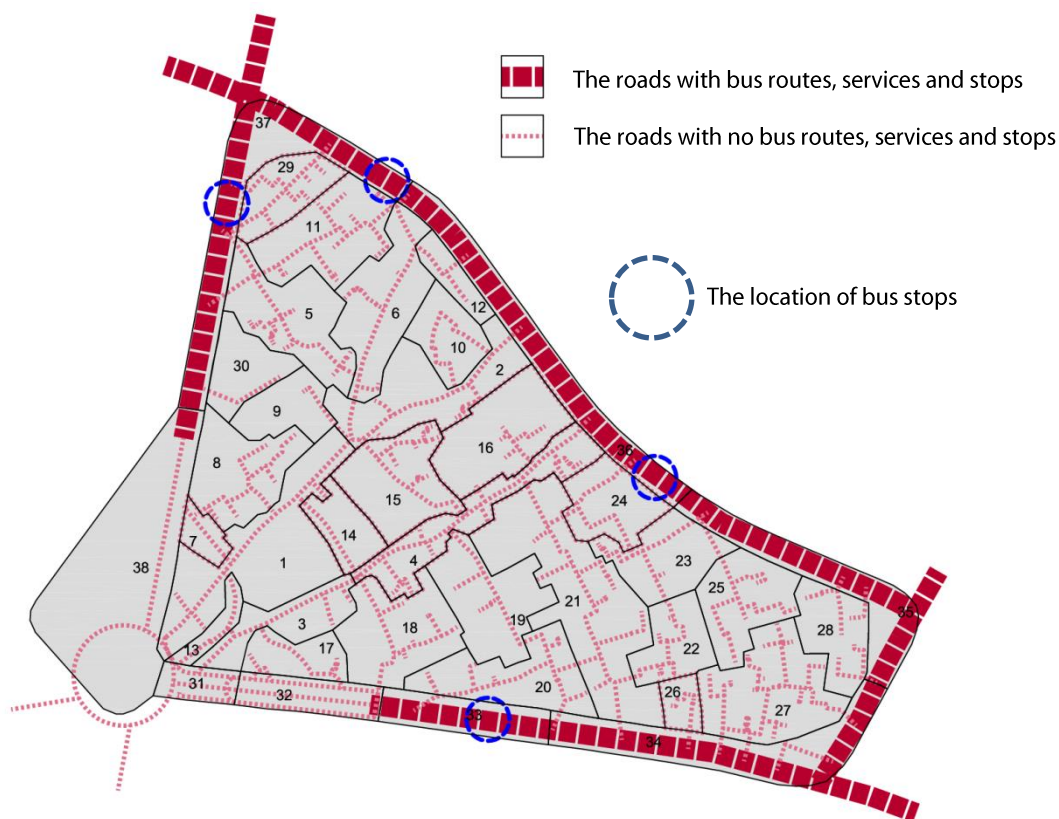


Figure 123: bus services and access points in this area

From the results in the map above we can see that all the main streets of the neighbourhood have bus services and reasonable facilities. In some sectors there are no bus services because of the narrow roads but the longest distance to a bus stop in the boundary street is 300m. This distance is

acceptable. In general, the neighbourhood has reasonable bus services and the quality and design of bus stops is also good.

Opportunities

- 1- Good access to bus services from most parts of the neighbourhood (see Figure 123).

6.3.2 Car use including access, circulation and traffic flows:

Cars movement is the second criterion of movement. Especially in Iranian cities, using a car is the main form of transport. From the interview results we found that the car is the main form of transport in this area. Because this is an ancient district built on a historic plan, all roads and pathways are narrow. Some of them are unusable by car and only pedestrians can use them. For the car movement assessment we used a walking to observe all the roads and pathways in the vicinity.

- The results from the observation of all parts of the neighbourhood to assess car movement and circulation are shown in the map below:

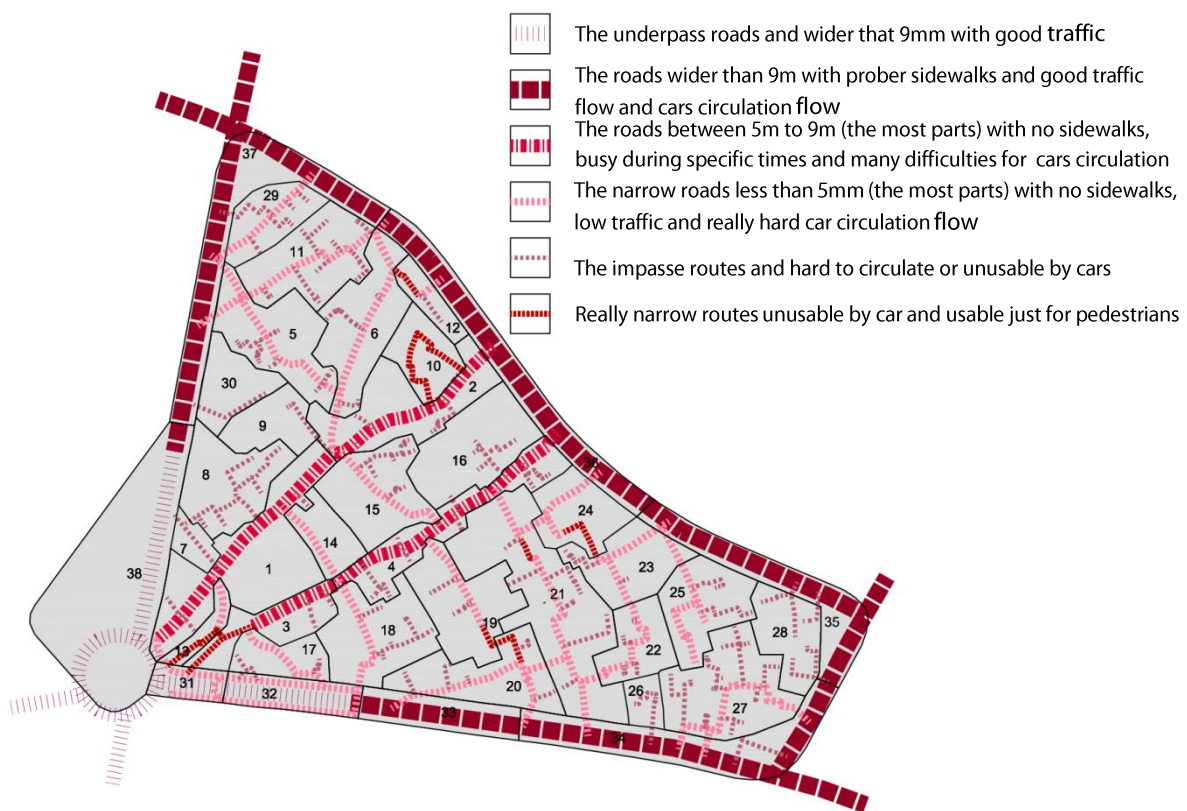


Figure 124: the results of the car movement situation in this neighbourhood

The car movements on the roads have been divided into six categories. These are shown with different line-type. We can see them in Figure 124 as well as the results of the car movement analysis. Around the neighbourhood, the main streets enjoy good, smooth car circulation. These roads are wide enough (9m plus). Also, traffic flow is fine and reasonable. On the sides of these main streets there are proper sidewalks with no car intervention for pedestrians. In the south of district there are underpasses (see the first line-type in Figure 124) and because of the new Midan Atigh project, car movement is below ground. These new underpasses help to ease car movement and reduce traffic.

Inside the neighbourhood, we can see in the Figure 124 that all of the roads and pathways are less than 9m wide. The third group are the main roads (third line-type in Figure 124) which cross this area and do not have sidewalks or proper traffic installations. Because of bazaar access from these two roads, the traffic flow is heavy during the morning and evening. The fourth group of roads are really narrow (less than 5m in the majority parts) with no sidewalks and difficult for car circulation but they have low traffic flow and are mostly used as access routes by the local people. The fifth category of roads is the dead ends. There are many cul-de-sacs in this area and most of are really difficult to access by car. The buildings which are located in these streets have really poor car accessibility and most of them cannot be accessed by car. The last group are some kinds of roads or parts of the road which are unusable by car (less than 2m wide). The houses which are accessed through these narrow roads have problems because cars can't enter them.

Consequently, car movement in this area can be divided into two: inside the area and on the borders. Inside the neighbourhood car movement is really hard because most of the roads are narrow and there are many narrow cul-de-sacs. Some parts are virtually unusable for cars. The two main roads inside the area are busy and they are service providers for the bazaar and the big commercial centre in the south of the neighbourhood. On the borders, car circulation is good because the streets are quite wide and are separated from the sidewalks, which helps to ease movement.

Opportunities

- 1- Cars pass the neighbourhood and the bazaar through the underpass. This makes it relatively easy to cross this area (see Figure 124)
- 2- Presence of wide streets throughout the district with good car movement.

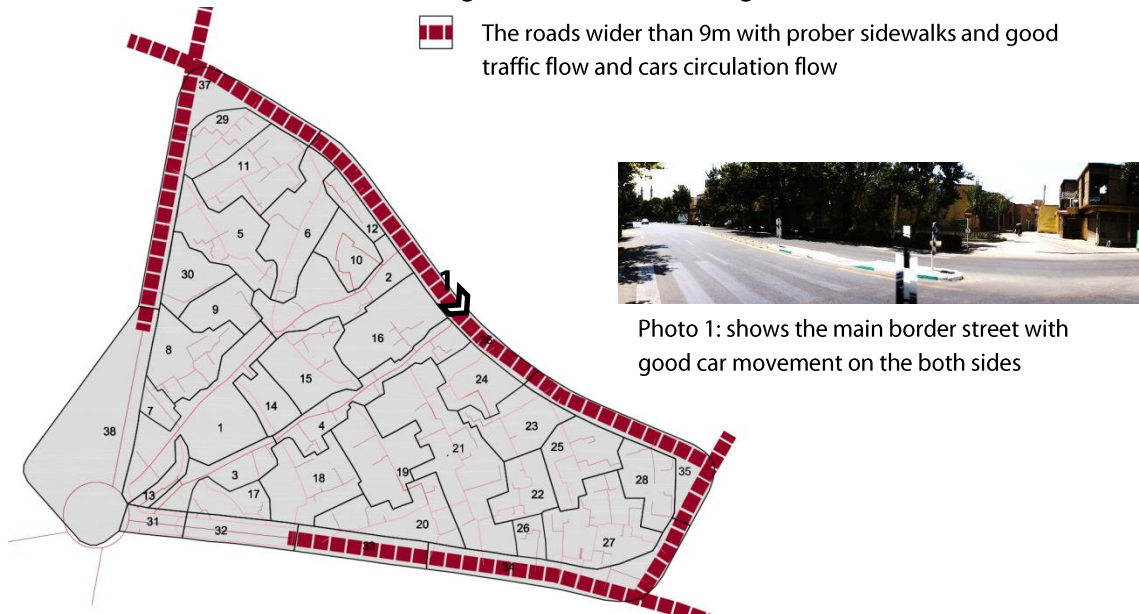


Figure 125: shows the main boundary streets with good circulation of cars

Constraints

- 1- The two main roads are not wide and they face many problems at busy times of the day

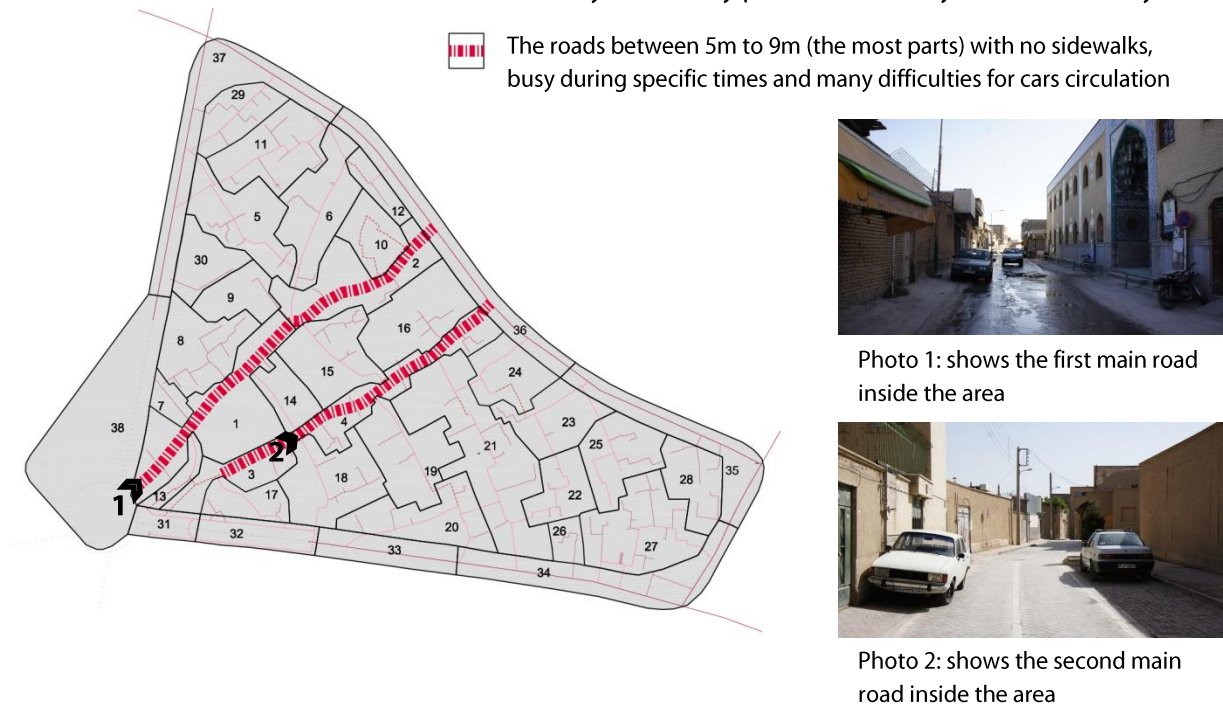


Figure 126: shows the two main roads inside the area and the problem with car circulation

2- Existence of the narrow paths which are hard or impossible for cars to pass along.



Photo 1: from part 10 and shows really narrow pathway which unusable by car



Photo 2: from part 21 and shows really narrow part of the road which unusable by car

Figure 127: shows the really narrows roads and those parts of the road which are unusable by car

3- There are many narrow cul-de-sacs in this neighbourhood which are hard for car circulation

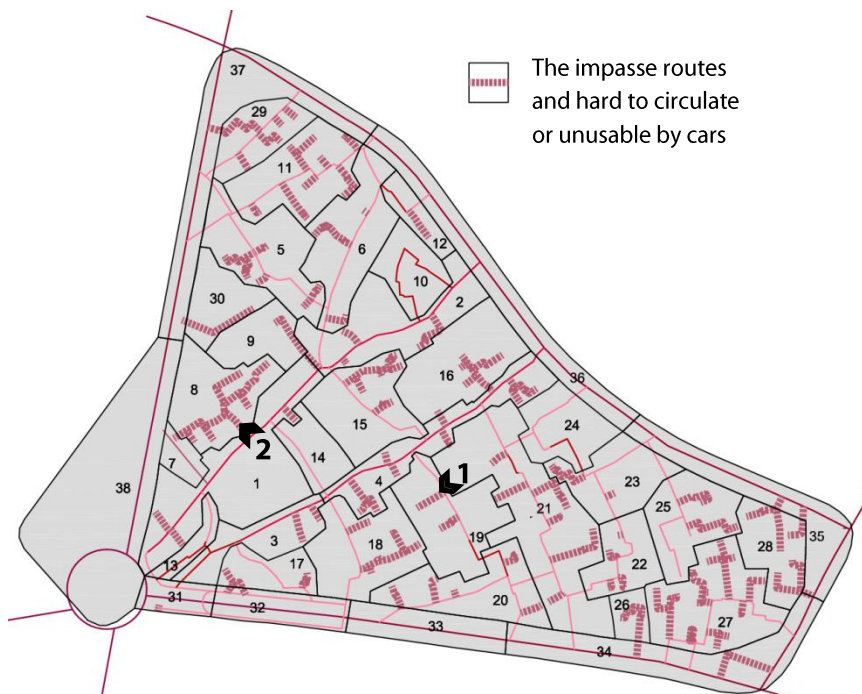


Photo 1: from part 19 and shows the narrow impasse which is hard for car circulation



Photo 2: from part 8 and shows the impasse with hard car circulation

Figure 128: shows the impasses in this area

Guidelines for future development

- 1- The main road use as access to the bazaar and Jameh Mosque and need to change their function as people cannot use these roads to enter the bazaar and use this road as their crossing choice. So cars should be forbidden and the end of the road dedicated to pedestrians.

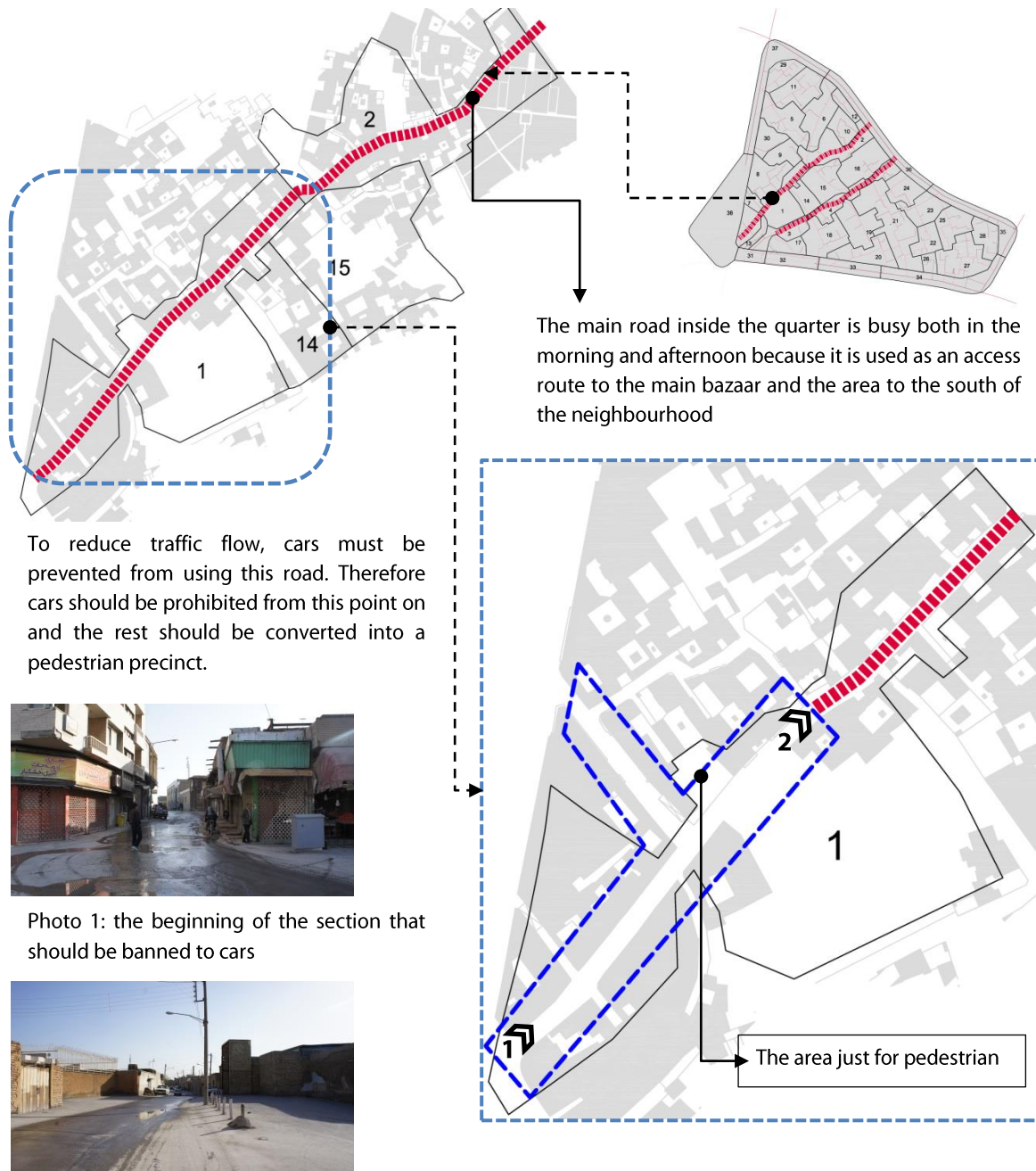


Figure 129: shows the guidelines for the future of the main road and its changing function

- 2- It is possible to make some of the roads should be one-way making it easier for car to circulate.
- 3- Using road markings, especially for the two main roads inside the neighbourhood (see Figure 126)
- 4- Installing pavements like flagstone which reduce the car speed inside the neighbourhood.
- 5- Using identification maps in the parts of the neighbourhood where for car movement is difficult like impasses.

6.3.3 Cycle use, including routes and facilities:

Cycle routes and facilities are part of the traffic. In this section of the movement assessment we looked at cycle routes and facilities. This evaluation carried out by surveying the entire neighbourhood.

- Following a study of the traffic, the results related to the cycling routes and facilities are illustrated in Figure 130:

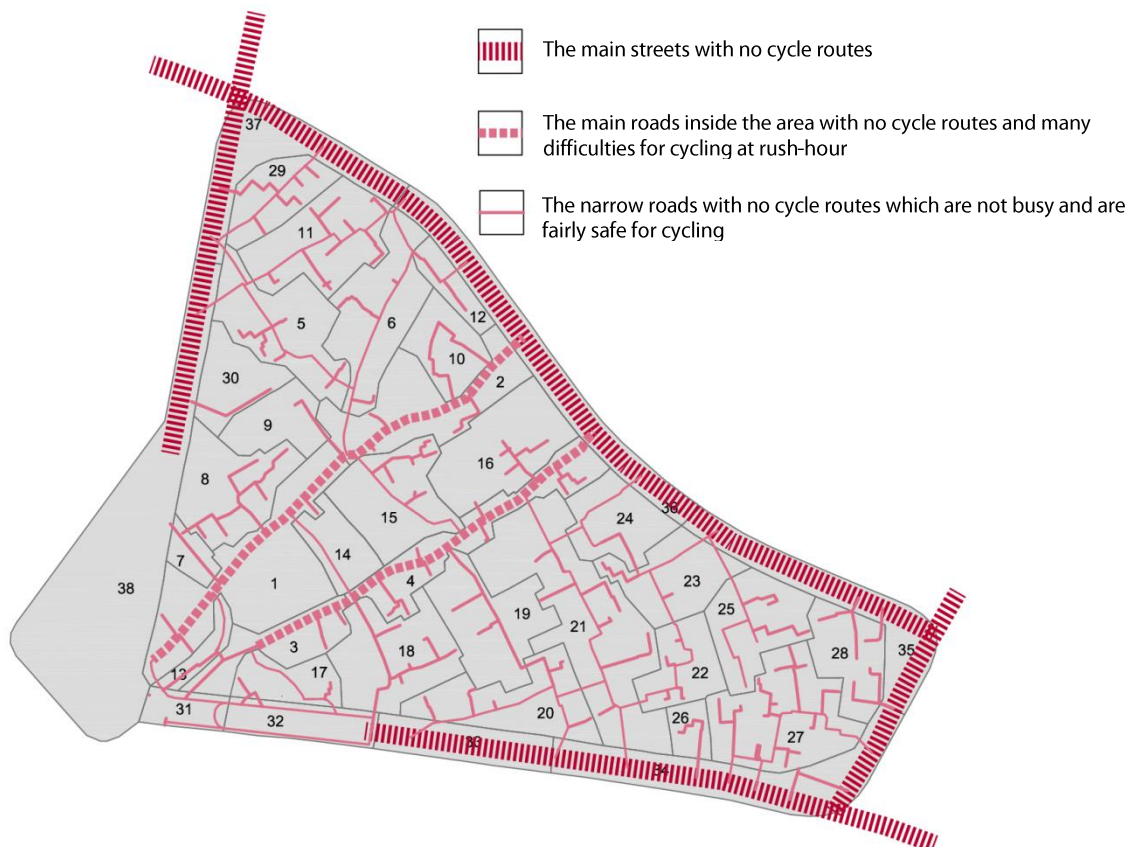


Figure 130: shows the main boundary streets with no designed or marked cycle routes

From the results of Figure 130 we can see that there are no specific cycle lanes or facilities in the area. Even on the main boundary streets, which are quite wide, there is no cycle space; even though there are many people who use cycles as their main form of transport (see interview results). Inside the neighbourhood, cycle users have difficulty in riding because the roads are narrow and the cars cause a lot of problems both for cyclists and pedestrians, especially on the two main roads. Thus, the neighbourhood is lacking in cycle space and cycle facilities.

Constraints

1- There are no cycle routes in the main border streets.

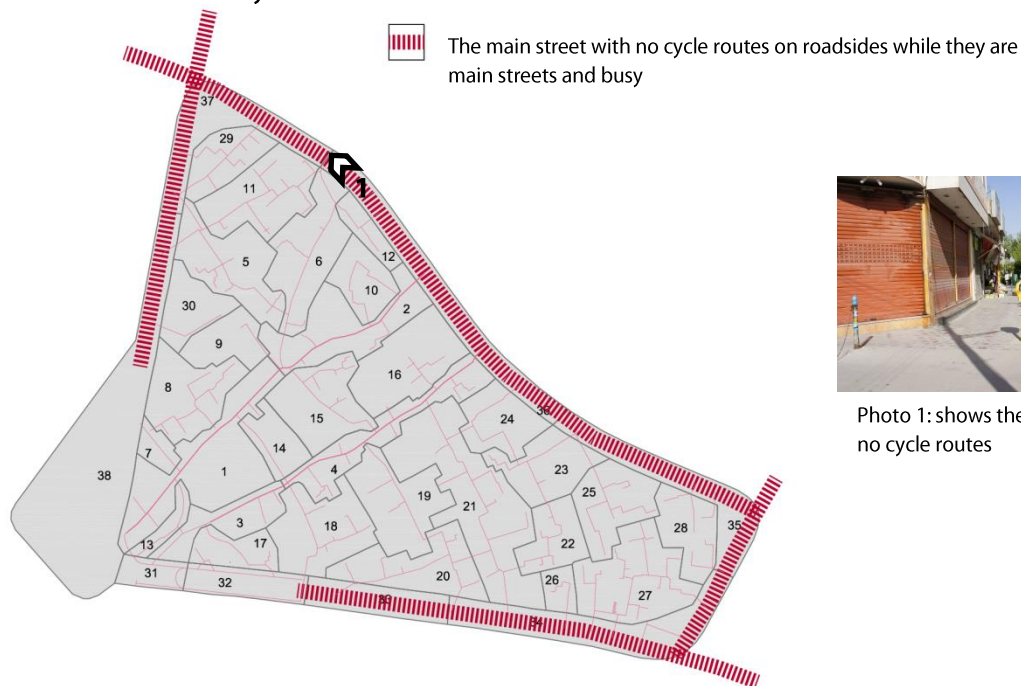


Photo 1: shows the main street with no cycle routes

Figure 131: shows the main border streets with no designed and marked cycle routes

2- The two main roads inside the area have heavy traffic in specific times and there are no cycle routes on these roads.

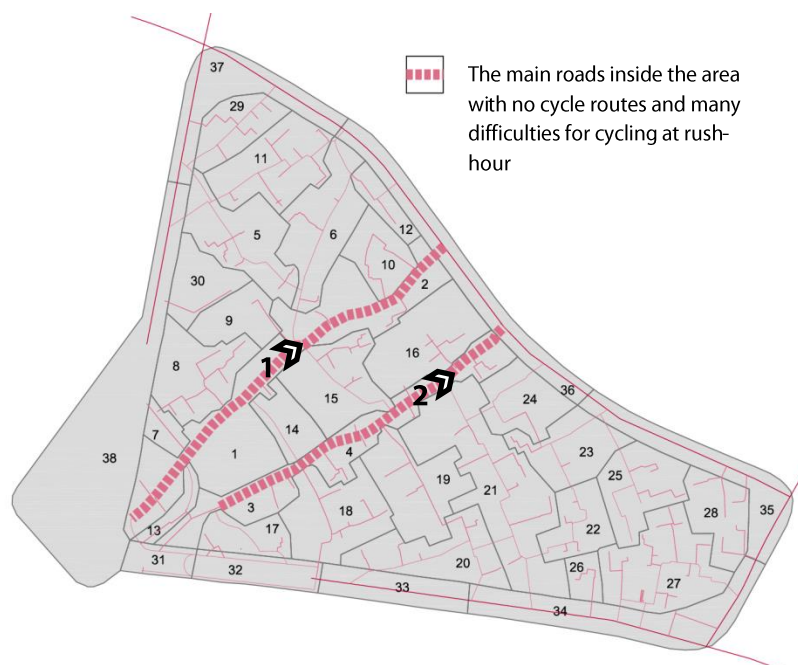


Photo 1: from the first main road and shows difficulty for cycling



Photo 2: from the second main road and shows difficulty for cycling

Figure 132: the main roads which are narrow and with no cycle routes

Guidelines for future development

- 1- Design cycle routes for the main border streets (see Figure 131 which shows the main streets with no cycle routes on both sides of the streets).

6.3.4 On-street parking:

The existence parking space for cars is another feature of movement. To move about successfully in an area, it is necessary to have properly designed on-street parking spaces. We therefore assessed the on-street parking design and quality.

- The results are shown in Figure 133:



Figure 133: on-street parking conditions in this neighbourhood

From the results above we can see that even in the boundary streets, which are quite wide, there are no designed spaces for on-street parking. These have enough space to park but do not have facilities or specific marked spaces. Inside the quarter there are five kinds of roads and we assessed the condition of the parking spaces on them. The two main roads (showed in Figure 133 by the second line-type) are between 5m and 9m wide and there are no specific spaces for parking and parked cars interrupt the circulation. This kind of road could have designed spaces for parking on one side. Also there are some roads the same as the main roads wide (between 5m to 9m) with no roadside parking spaces but they are not busy and parked cars do not cause irregularity (see Figure 133). The third sort of routes inside the area are less than 5m wide and parked cars virtually block the road. For this kind of road, the wider part needs to be designated for parking. The fourth group are really narrow and it is impossible to drive or park cars on them. The final category is

dead ends with a width of less than 4m and most of them are inaccessible by car. The outcome of the assessment shows that there are no designated street parking spaces in this area, which has many narrow roads and cul-de-sacs where it is impossible to park. In addition, the two main roads do not have designed parking spaces but they could have such spaces just on one side. The boundary streets do have enough room but specific spaces need to be allocated for parking.

Opportunities

- 1- There are enough spaces on the roadsides of the main streets around the neighbourhood (see Figure 133).

Constraints

- 1- There are no on-street parking facilities in the two main roads inside the neighbourhood and parked cars sometimes create many problems for car, pedestrian and cycle movement.

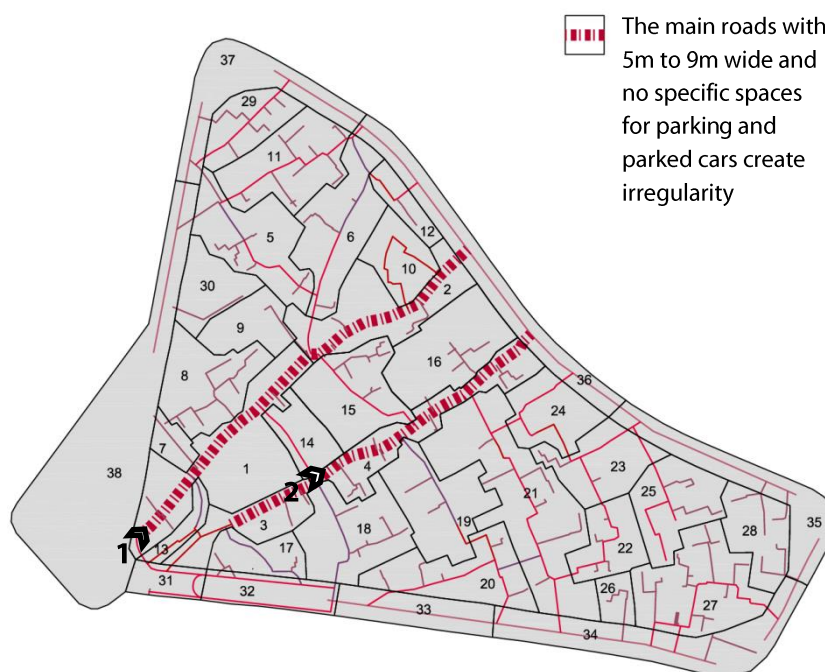


Photo 1: shows the road with no on street parking and conflict between parked car and users



Photo 2: shows the road with no on street parking space and cars parked on sidewalk

Figure 134: shows the two main roads with no parking spaces at the roadsides

- 1- There are not enough places for parking on the most roads of the neighbourhood because the majority of them are too narrow and less than 5m wide (see Figure 133).

Guidelines for future development

- 1- Marking the parking spaces on the main boundary streets and providing parking meters.
Figure 133 shows the main boundary streets.
- 2- It would be possible to create parking spaces on one side of the two main roads inside the area. Figure 134 shows these roads.
- 3- Narrow parts of the road which are less than 5m wide, need to be signposted as well as the wider stretches of all roads that have the possibility of introducing on-street parking.
- 4- Use of parking permission for stakeholders to help restrict street parking inside the area.

6.3.5 Parking lots

In this area, built according to an historic plan, car movement is a big problem. Also, we found that inside the neighbourhood there are no on-street parking spaces and on most routes it is impossible to park at the roadside. Therefore, in this section of the movement assessment we looked at the parking lots. The existence of parking lots and their quality were assessed by surveying the neighbourhood.

- Following our observations, we recorded the results on the Figure below:



Figure 135: condition and location of parking lots in this district

It can be seen from the data in the Figure above that there is a parking lot in sector 38. This is located in front of the Jameh Mosque and the Meidan Atigh. The parking lot is not well designed and it is disorganised. There are no proper spaces for cars or parking meters. Inside the quarter there are no proper parking lots but there are nine empty spaces from the demolished buildings which are used for parking. These are well spread throughout the neighbourhood and they provide an opportunity to design good parking lots. In general, there are no properly designed parking lots in this neighbourhood but there are many empty spaces which could be converted into proper parking lots.

Opportunities

- 1- There is a parking lot between this neighbourhood and the Midan Atigh

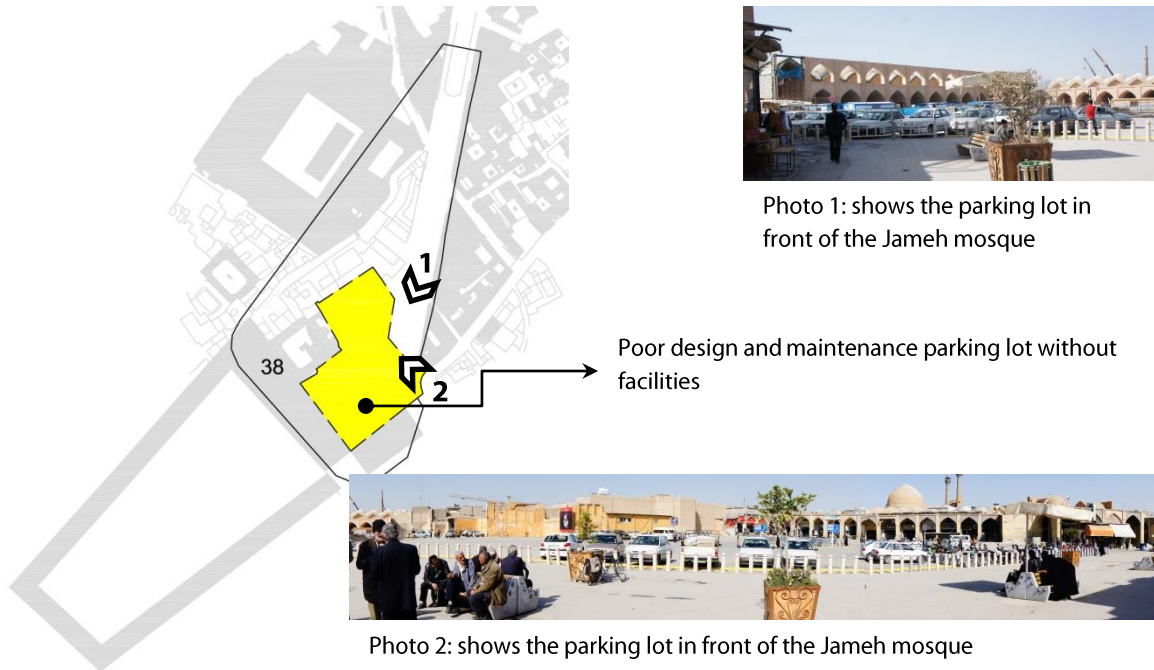


Figure 136: shows a poorly-designed parking lot

2- There many empty spaces around ruined buildings that are used as parking lots inside the neighbourhood. Figure below shows five samples of them in parts 2, 15 and 19.

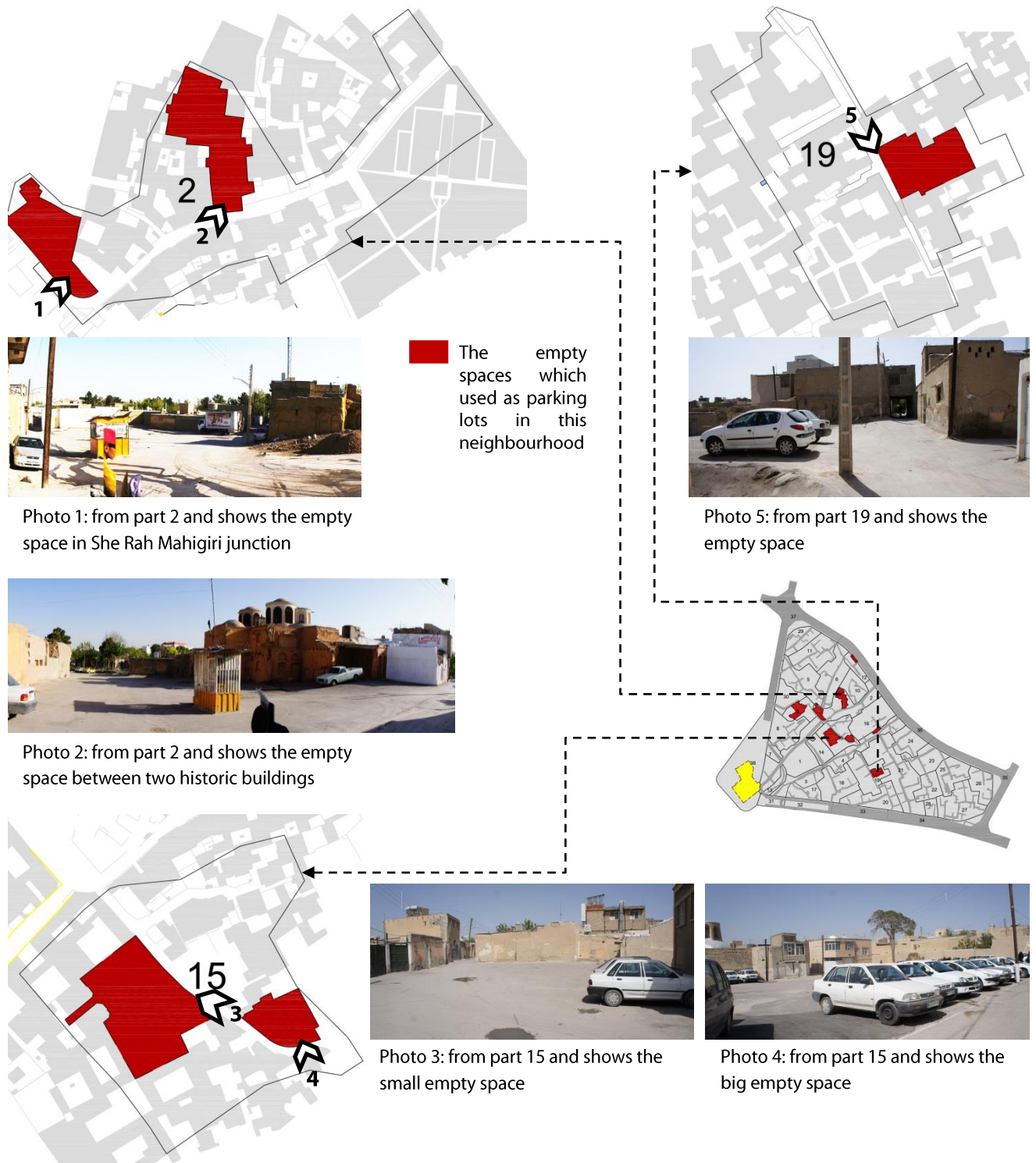


Figure 137: the empty spaces that are used as parking lots

Constraints

- 1- The parking lot in front of the Meidan Atigh which showed in Figure 136 does not have proper design for parking and is not well-marked.
- 2- The poorly-designed empty spaces which showed in Figure 137 have no facilities and marking.

Guidelines for future development

- 1- Redesigning the parking lot beside the Meidan Atigh (see Figure 136) and allocating the facilities
- 2- Using the empty space which use as parking lot (see Figure 135 and 137) and designing good parking lots like those in multi-storey car parks to replace improvised parking lots (empty spaces), with better access from the main streets.
- 3- Designing parking lots in the residential areas where it is impossible for cars to circulate.

6.3.6 Pedestrian movement:

The circulation of pedestrians is one of the main kinds of activity in the neighbourhood. To become a sustainable place it needs sound and safe pedestrian precincts. This is a historic area with a lot of narrow roads and pathways. It used to be a place solely for walking and horse-riding but the arrival of the car is a really big problem and creates a lot of disorder. We assessed pedestrian movement using eight categories. These are shown in Figure 95 with different colours. On the basis of these options we observed and analysed all the walkways of the neighbourhood.

- The results of pedestrian movement can be seen in Figure below:

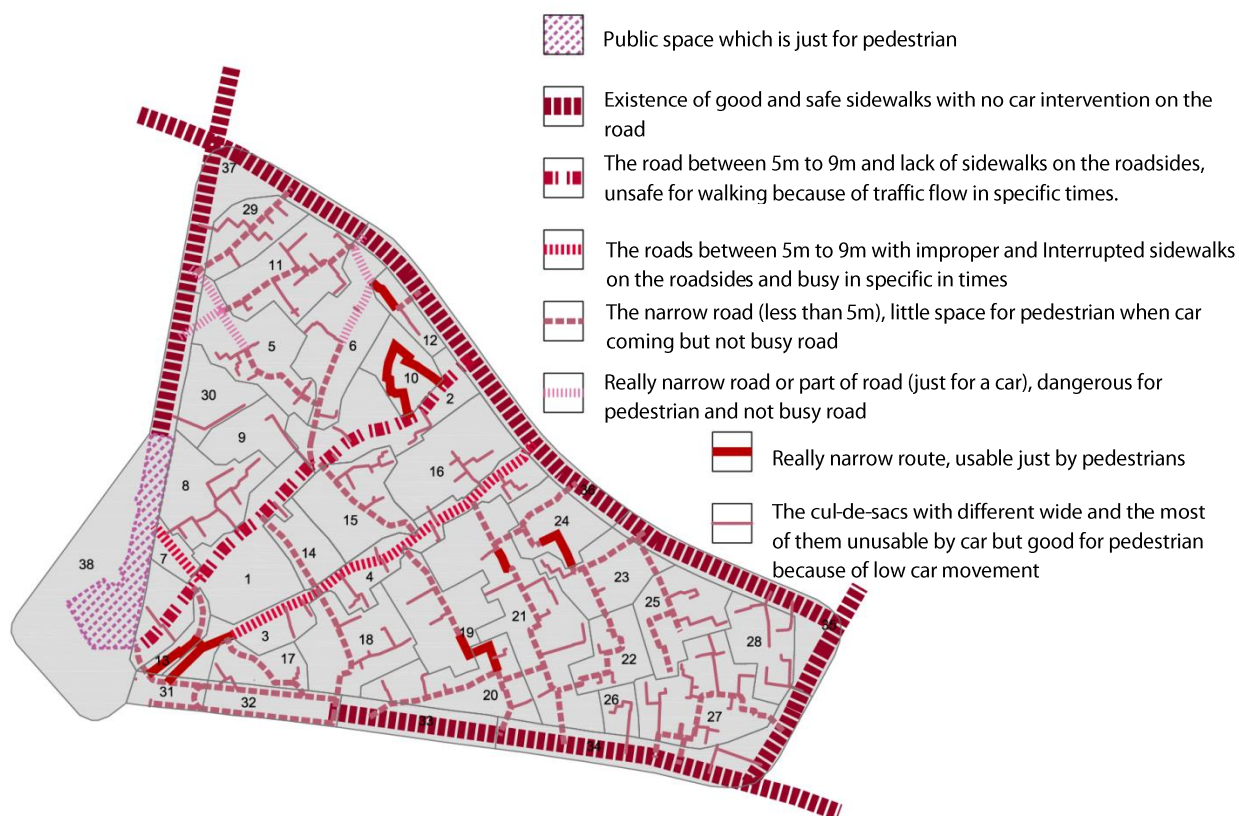


Figure 138: the state of pedestrian movement in the neighbourhood

The Figure above shows the pedestrian movement. There is a public area in sector 38 solely for pedestrians and it is a safe environment for walking but, unfortunately, due to poor management, cars now park in some parts of this space. As recorded in Figure 138, only the streets on the neighbourhood boundary have proper sidewalks and pedestrian can walk in a safe environment which is separated from the cars by roadside trees and kerbs. Inside this neighbourhood, one of the main roads does not have sidewalks or specific spaces for pedestrian. It is very busy with heavy traffic in the morning (7am to 9am) and afternoon (4pm to 6pm). It does not have sidewalks, so the pedestrians do not feel safe when walking. Another major road has sidewalks but they are not properly designed and some parts are discontinuous. This road is busy and pedestrians still have a

problem during the rush hour. The fifth category are narrow but uncongested. These roads do not have sidewalks but the low traffic flow creates a safe zone compared with the two major roads. Some of the local roads are really narrow (less than 5m). Though the traffic is sparse, they are not safe because there is not enough room for both cars and pedestrians. The seventh type of roads are narrow pathways unusable by car. These offer a safe environment for walking without fear of meeting cars. The last category of roads are the cul-de-sacs and most of them are too narrow for car use. These dead-ends are a safe walking environment. The overall pedestrian activity in this area can be divided into two: inside the quarter and on the boundary streets. In the main border streets, these are provided with proper sidewalks in good condition but the interior of this area is completely different. There are two main roads which need designated spaces for walking and some actions for reducing car speed to a minimum. Apart from these two main roads most roads and lanes are not busy because many are narrow and winding, so cars cannot drive fast and pedestrians enjoy a safer environment. Additionally, there are some narrow roads which are not usable by car and are safe for walking. These are very few in number. Unfortunately, few have survived in the main sectors of the neighbourhood because they lack accessibility by car. This area has a good chance of being a safe place for pedestrians.

Opportunities

- 1- The main streets around the neighbourhood have good and safe sidewalks for pedestrians.



Photo 1: from part 37 and shows the proper sidewalk on the side of main street



Photo 2: from part 34 and shows the proper sidewalk on the side of main street

Figure 139: shows the main streets with good safe sidewalks

- 2- There are some very narrow pathways which are really safe for walking because there are no cars.

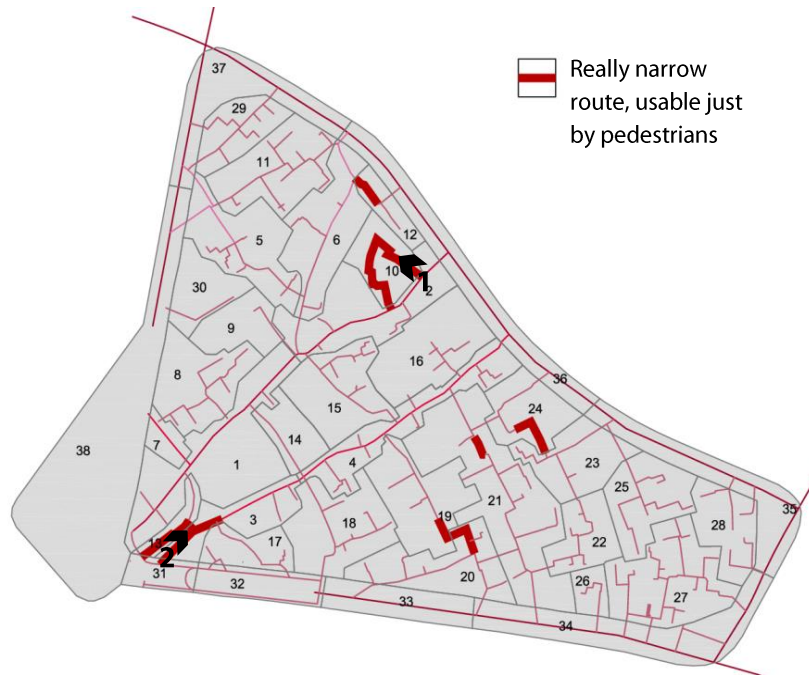


Photo 1: from part 10 and shows the really narrow pathways just for pedestrian movement



Photo 2: from part 3 and shows the really narrow part just for pedestrian movement

Figure 140: shows the really narrow roads or stretches of the roads that are only usable by pedestrians

Constraints

- 1- The public space in sector 38 is not well managed or designed. Cars can come in and park. This causes problems for all those who use this area and makes it rather unsafe for pedestrians.

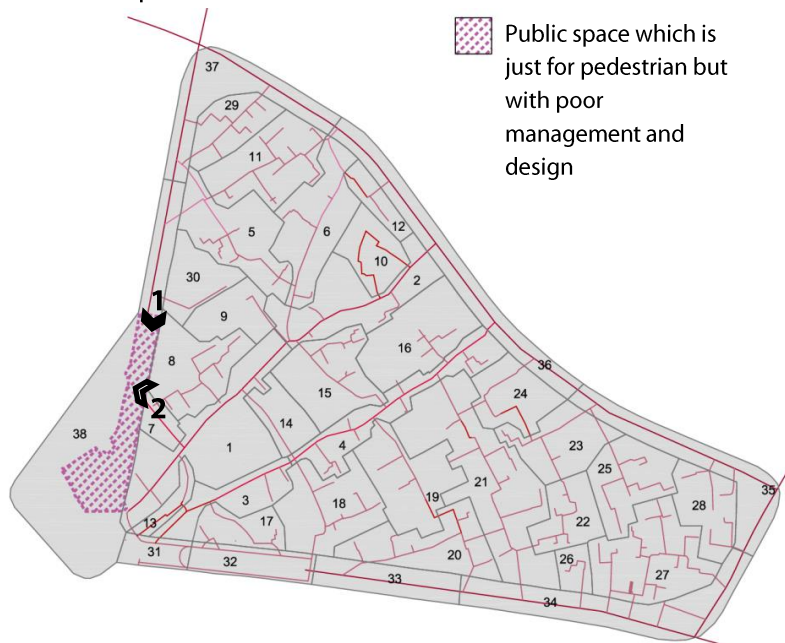


Photo 1: from the public space and shows the parked cars



Photo 3: from the public space and shows the parked cars and irregularity in this space

Figure 141: shows the public spaces with car intrusion

- 2- The first main road inside the neighbourhood does not have sidewalks or specific routes for pedestrians.

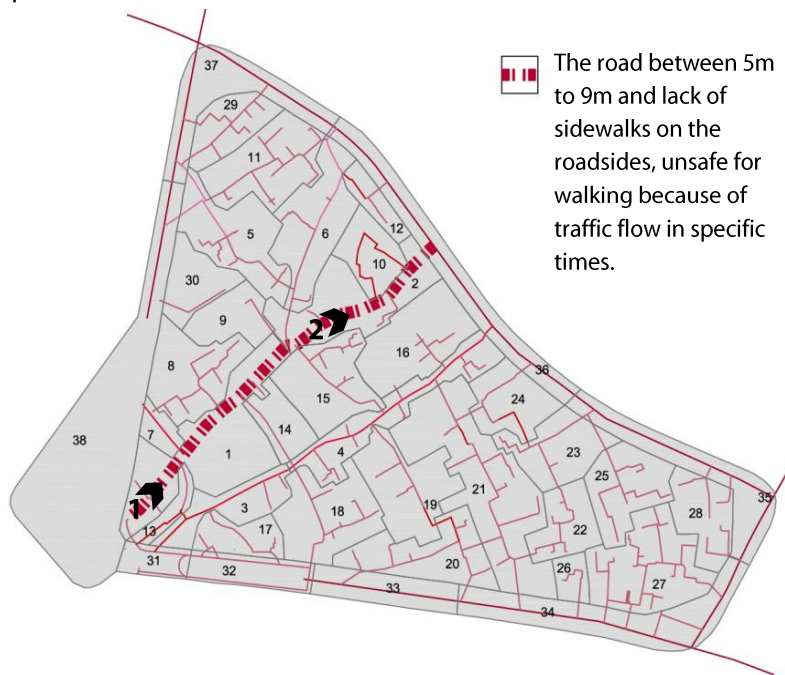


Photo 1: shows the main road with no sidewalks for pedestrian and dangerous environment for pedestrians



Photo 2: shows the main road with no sidewalks for pedestrian and dangerous environment for pedestrians

Figure 142: shows a busy main road in the neighbourhood with no sidewalks for pedestrian movement

- 3- The second main road which has been regenerated does not have proper sidewalks and in the most parts have been interrupted.

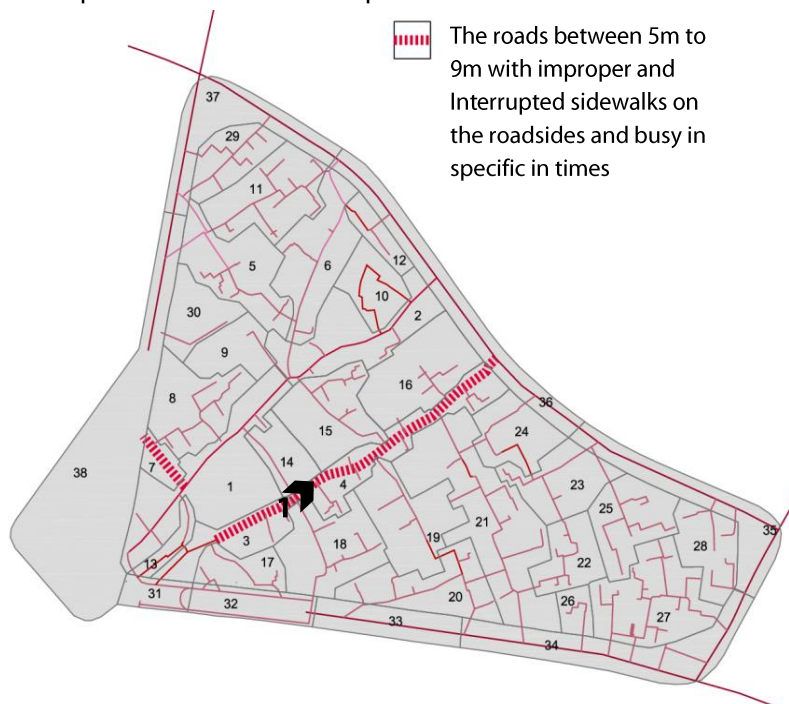


Photo 2: shows the second main road with sidewalks but the latter are discontinuous and poorly designed. The fact that the sidewalks are useless can be seen in photo

Figure 143: the second main road which has been resurfaced but with poorly designed sidewalks

- 4- Some roads in the sector are narrow but they still have space for one car but this causes problems for pedestrians.



Photo 1: from part 6 and shows really narrow part of the road (just for a car), dangerous for pedestrian when car coming



Photo 2: from part 5 and shows really narrow part of the road (just for a car), dangerous for pedestrian when car coming

Figure 144: shows the narrow roads or stretches of the roads that have only space for one car and which are dangerous for pedestrians

Guidelines for future development

- 1- Redesign the public space (see Figure 141) and prevent cars from entering the space by proper design and management.
- 2- Install sidewalks for the main road as shown in Figure 142. These need to have bollards to protect pedestrians in the narrow sections. Furthermore, reduce and control car speed in this main road to protect pedestrians. Lay flagstones to make pavements to reduce car speeds.
- 3- Redesign the sidewalks in the regenerated road (see Figure 143) and design proper sidewalks with no breaks
- 4- Allocate some parts of the district specifically for pedestrians and ban cars completely as in the narrow sections seen in Figure 144.
- 5- To protect pedestrians in the narrow stretches, which are identified in Figure 144, car speeds should be minimized by designing rough flagstone pavements. These help to reduce speed.

- 6- Narrow routes (see Figure 140) provide ideal opportunities for creating a pedestrian-friendly area. Design and create one or more integrated roads solely for pedestrians, with connecting these narrow routes (see Figure 140) and encourage the residents to walk along those roads that are unusable by car.

6.3.7 Accessibility for disabled people

To achieve acceptable traffic circulation, a locality needs to have good accessibility for the disabled, since such accessibility is part of the traffic movement. We assessed the disabled facilities and accessibility in a survey of the neighbourhood..

- The results of disabled accessibility and facilities are shown in Figure below:



Figure 145: the condition of disabled accessibility and facilities in this area

From the results appearing in the map above, we can see there is a shortage of disabled access in most sectors of the neighbourhood. It may even happen that the accessibility and facilities are poor or non-existent. The overall accessibility for the disabled in Iranian cities is really pathetic and even in new towns we see no disabled access or the facilities are inadequate.

Constraints

- 1- There are no facilities for the disabled in the buildings of the area (see Figure 145)

Guides for future development

- 1- Designing disabled access to all facilities in the area such as shops, religious centres, banks and sidewalks.

6.3.8 Permeability of pedestrian movement inside the neighbourhood:

Permeability or connection with the main parts of an area helps pedestrians reach both major and minor places without having to leave the neighbourhood. This area has mostly narrow routes suitable for walking. Their connection to different parts of the district helps to increase the level of pedestrian permeability. Easy connection with the main precincts is especially important for a locality. In this part of the movement assessment we evaluated the level of connectivity from all parts and roads to the main and secondary sectors. This was done by observing the whole area using a walking device. This assessment only covered the sectors inside the neighbourhood and mainly focused on the importance of connectivity for the pedestrian.

- The results of the observation of the connections between different areas and to the main parts are shown in Figure 146:



Figure 146: the results of the connections between different parts of the neighbourhood

The evaluation of connectivity inside the neighbourhood was performed with four options. These can be seen in Figure 103 with different line-types. From the results recorded in Figure 146, we can see that some parts of the neighbourhood (sectors 25, 26, 27, 28 and 29) have been isolated from other parts and not connected directly to the main localities. To reach the main and other parts of the quarter, people have to go via the borders. These are shown by a dashed circle in the map

above. These are cut off from the neighbourhood and do not form part of the neighbourhood. Unlike these isolated sectors the rest of the neighbourhood has good connections and pedestrian can walk and reach the main localities.

Opportunities

- 1- The traditional historic layout of the quarter provides good permeability for pedestrians to reach most parts (see Figure 146)

Constraints

- 1- The main street cut the historic plan and this isolates some districts which are not connected directly to the main areas (see Figure 146).

Guidelines for future development

- 1- Designing some pedestrians routes from the main parts to the places that are not connected

6.3.9 Pedestrian movement permeability with adjacent neighbourhoods:

This neighbourhood used to be part of a big neighbourhood but, with a change of life style and the use of the car, the character of the Iranian city dramatically changed. A lot of new streets were built without attention to the historic pattern. This area is a good example of this phenomenon. On the border of the neighbourhood, four main streets cut the historic layout. This phenomenon caused the creation of many small historic areas. These used to be connected together and worked as an integrated system but they have now been isolated from the adjacent areas by a new road (from the last century). Permeability with the adjoining neighbourhoods by walking is an element of movement and helps to increase the level of social sustainability. We assessed the contact condition in this neighbourhood by observing the border sectors.

- The results of the connection to the adjacent areas are shown in Figure 147:

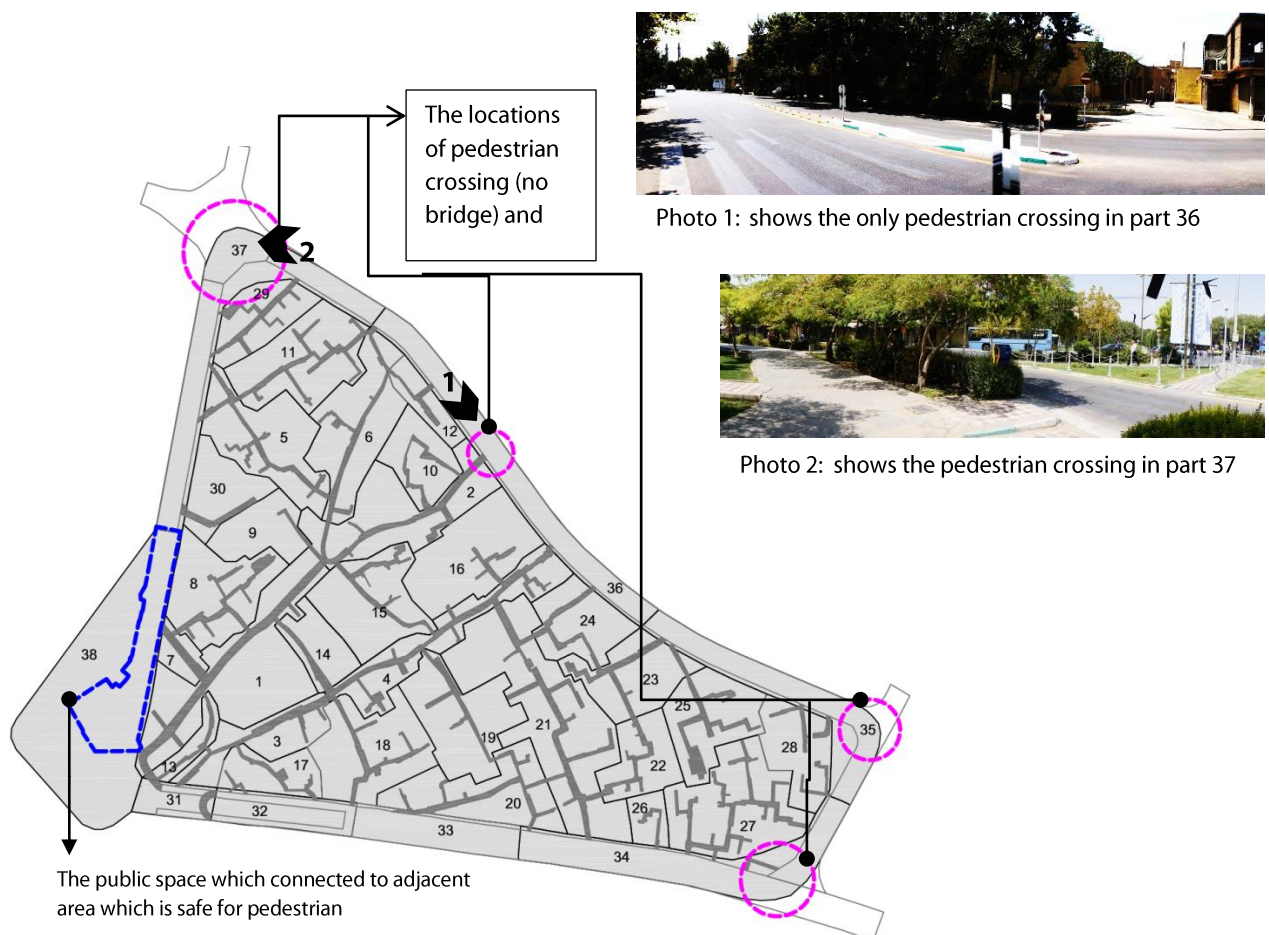


Figure 147: pedestrian movement permeability with adjacent neighbourhoods

We can see from the results of Figure that sector 38 is the only one with a good connection because it has a public space which is connected to the bazaar and the Jameh Mosque. From this sector people can walk and reach the adjacent neighbourhood. There are no streets in this sector because cars use an underpass. The boundaries of the neighbourhood have poor connection with

adjacent area as there are just a few pedestrian paths, which are shown in Figure 147. There are no pedestrian bridges. This means that apart from sector 38 which connected to the bazaar and the Jameh Mosque, the neighbourhood cut off from the adjacent neighbourhoods which used to be connected to this area. Consequently, the district has poor permeability with the adjoining areas for pedestrians.

Opportunities

- 1- The neighbourhood has pedestrian permeability in the public spaces (see Figure 147).

Constraints

- 1- The neighbourhood does not have pedestrian permeability with the neighbourhoods near the main roads (see Figure 147)

Guidelines for feature development

- 1- Identifying places like the end of two main roads and designing some elements like a pedestrian bridge or underpass for cars to connect with the adjacent neighbourhoods.

6.4 An Evaluation of the legibility

Four elements of legibility were identified using the Kevin Lynch method of analysis. In this section, after manually analysing the elements, we drew four maps which will be interpreted and evaluated here.

6.4.1 Nodes (gateway, entry and exit points)

The node was the first legibility criterion that we assessed. The nodes in this neighbourhood are of two types: first, the gateway, entry or exit points and, second, the centre, junction and interaction points. We analysed and evaluated both. For the first group we observed every entry and exit point that had access to other parts of the neighbourhood. There are some entry points, for example, in the sectors 27, 28 and 30, that do not connect to other parts of the area. We assessed every entry point through which we could reach the main parts of the neighbourhood. On the basis of legibility, we allocated three options to evaluate them. These are shown in Figure 148. We noted these entry and exit points when observing the neighbourhood.

- Figure 148 contains the results of the observation:

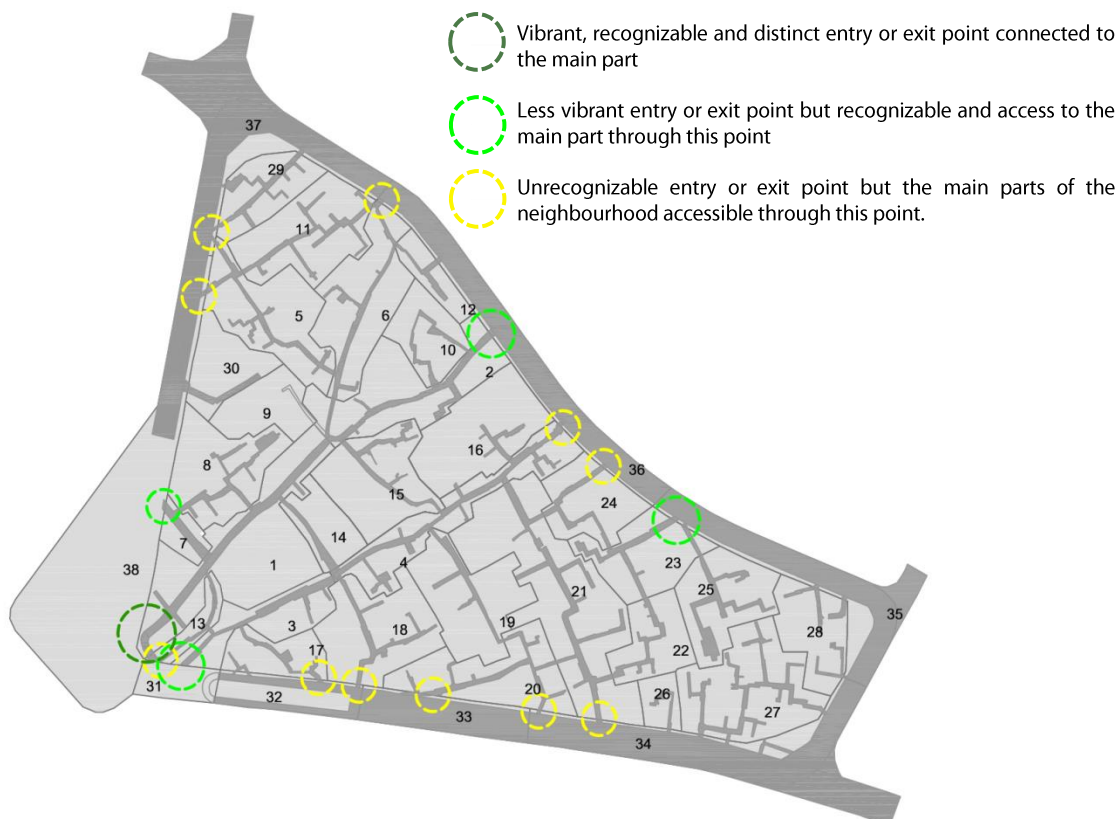


Figure 148: the location and value of the entry and exit points in this neighbourhood

We can see that on both sides of the main roads (sectors 1, 2, 3 and 4) there are entry or exit points. One of them is an animated entry point and is the most important because of its location next to

the bazaar. This entry point is shown in a dark green circle. There are many shops on both sides of it. There are also three less busy entry points which is second-grade from the viewpoint of legibility. It is shown in the map above in light green. The last type of entry and exit points are unidentifiable but they provide access to other parts of the district. These are shown in yellow. They are not legible or distinctive but the main sectors of the neighbourhood have access through them. By redesigning them and providing them with a new character and image, we could improve their legibility as well as that of the neighbourhood. Overall of the many entry points, one is legible, four less legible and twelve are non-legible. This area has many opportunities to make the entry points more legible. A redesigning of the non-legible points would create a distinct character for them and help to increase the level of the neighbourhood legibility.

Opportunities

- 1- The three entry points on the main roads and small road in part 7 from the south are animated because of the shops and small bazaar. These are legible points.

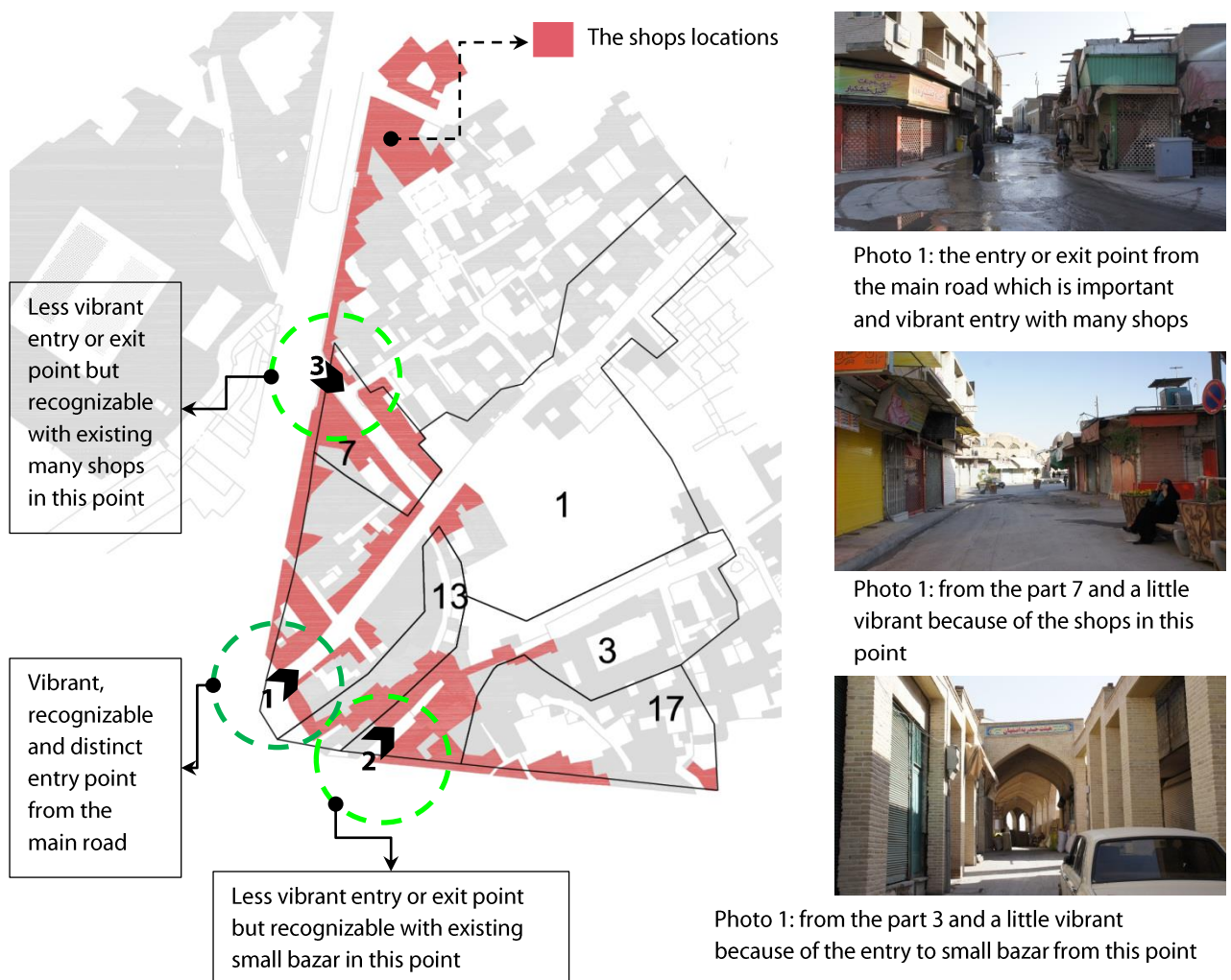


Figure 149: shows the three legible entry of exit points in the neighbourhood.

Constraints

- 1- There are many entry and exit points which do not have a legible character. These points showed in Figure 148 with yellow circles.

Guidelines for future development

- 1- Designing a legible character for the entry points which are barely legible or not legible at all (these points showed in Figure 148 by light green and yellow circles).

6.4.2 Nodes (neighbourhood centre, important junctions and interaction point)

In this part of the assessment we looked at the second group of nodes which we classified as neighbourhood centre, junctions and interaction points.. In this area there is no neighbourhood centre but there are a lot of junctions so these were what we assessed.. To assess their' legibility, we utilised four evaluation options. These can be seen in Figure 150.

- After identifying the junctions, the results were recorded in Figure below:



Figure 150: the legibility levels of the junctions in the neighbourhood

It can be seen from the data in the Figure above that there is one important junction. This is shown in a light green circle. This junction, being in poor condition does not project a distinctive image also without legible elements. Indeed, it has a fair chance of becoming an important node. It could even be a neighbourhood centre. There is also a public space which is an interaction point for people and we classified it as such (shown in light blue). There are also five less important junctions which have a distinct image. These five are shown with yellow circles. They are located on the main road which has been regenerated. All five help to increase the legibility of the area. The other junctions of the neighbourhood do not possess a legible character. Giving them a new character and image would increase their own legibility and that of the area. As a result, this area has one important junction, a public space and five secondary though legible junctions which are

all legible. There are also many non-legible junctions which could become legible with proper design.

Opportunities

- 1- There is one main junction in the middle of the neighbourhood with an empty space which is an opportunity to design a neighbourhood centre or a small public space.



Figure 151: shows the main junction in the neighbourhood which could become an important node

- 2- There is also one public space which is an interaction point for the local residents (see Figure 150).

Constraints

- 1- The main junction of the area does not have a distinctive image (see Figure 150 and 151).
- 2- There are many non-legible junctions (see Figure 150).

Guidelines for future development

- 1- Designing a space like neighbourhood centre at the main junction of the neighbourhood (She Rah Mahigiri junction). This junction showed in Figure 151.
- 2- Identifying some of the junctions and designing a new legible character for them to make the neighbourhood more legible.

6.4.3 Edges (building frontages, shop frontages)

The second element of legibility, according to Kevin Lynch's method, is edge. Edges in the study comprise the linear elements on both sides of the roads, which are building frontages and shop frontages. Therefore, while walking and taking a series of photos of the neighbourhood, we analysed both sides of the roads as edges. Legible edges have distinctive images of continuous design. Furthermore, a legible edge needs to have harmony in the design and materials of the buildings and it should look as if there is a comprehensive style in all parts of the edge. We adopted three scales for the assessment of the edges in the neighbourhood (see Figure 152).



Figure 152: the results of the level of legibility of the neighbourhood edges

After a comprehensive survey of every part of the neighbourhood using a walking device, we obtained and analysed the results shown in Figure 152. From these we can see that only two sectors of the neighbourhood have legible edges. These are in the regenerated areas. On the basis of the assessment scale, which is shown in Figure 152, the edges in parts 3 and 4 are legible. There are also three sectors inside the neighbourhood where the edges in some parts are legible. In sectors 34, 35, 37 and 38, because shops are found at the roadside in some areas, legibility is seen in some parts of the buildings frontages. In the rest of the area, especially inside the neighbourhood, the edges are not legible. So only the renovated sectors have legible edges on

both sides of the road while the most sectors in the area do not have the legible buildings frontages. The regeneration project has been successful in creating more legible edges, so this could be applied to other parts of the neighbourhood.

Opportunities

- 1- In the regenerated sectors (parts 3 and 4) the building frontages are legible. See Figure below:

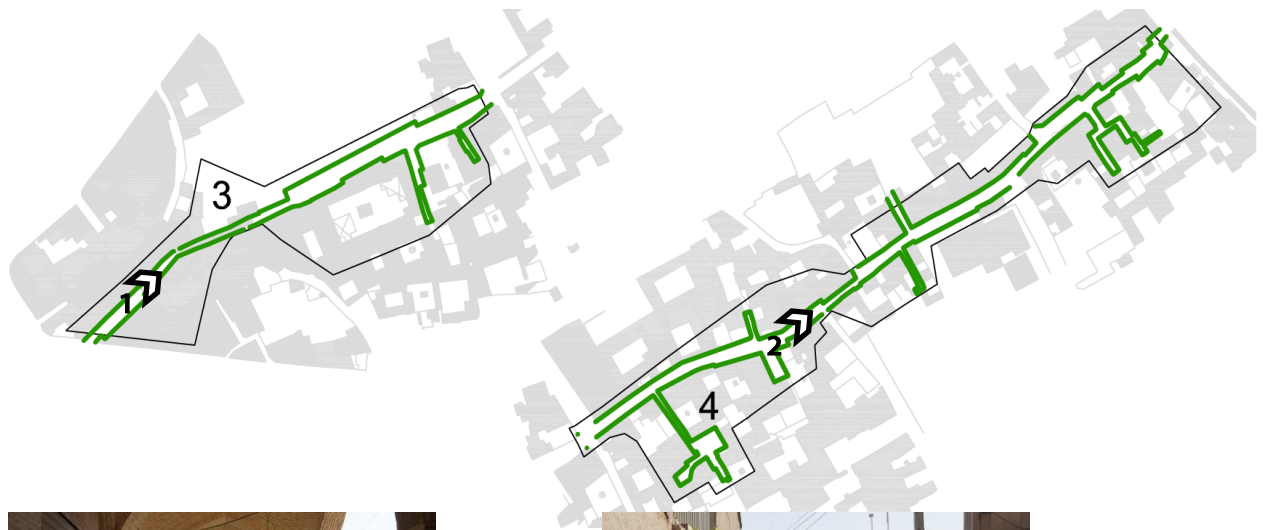


Photo 1: from part 3 and shows legible edges on both sides



Photo 2: from part 4 and shows legible edges on both sides

Figure 153: the legible frontages line in the regenerated areas of the neighbourhood

Constraints

- 1- In the majority parts of the neighbourhood the building frontages do not have continuous and attractive edges with legible character (see Figure 152).

Guidelines for future development

- 1- Using the regeneration method to create legible and continues edges especially where there are many historic buildings (see Figure 153).
- 2- Creating rules for the new building design that follow a specific method to create more comprehensive building frontages.

6.4.4 Landmarks

The third element of legibility that we assessed was the landmarks. To do this, we looked at every historic building, substantial structure, important corner and monument that acted or could act as a landmark in the area. Some of them had a striking character. Though others lacked outstanding character, they could become landmarks in this neighbourhood. All the historic edifices, prominent buildings and important corners were identified. In this ancient quarter, there are many historic buildings. We assessed their condition at the beginning of this section (assessment identity elements). We now chose five options to evaluate the landmarks.

- The evaluation of the landmarks was carried out and the results recorded in Figure 154.

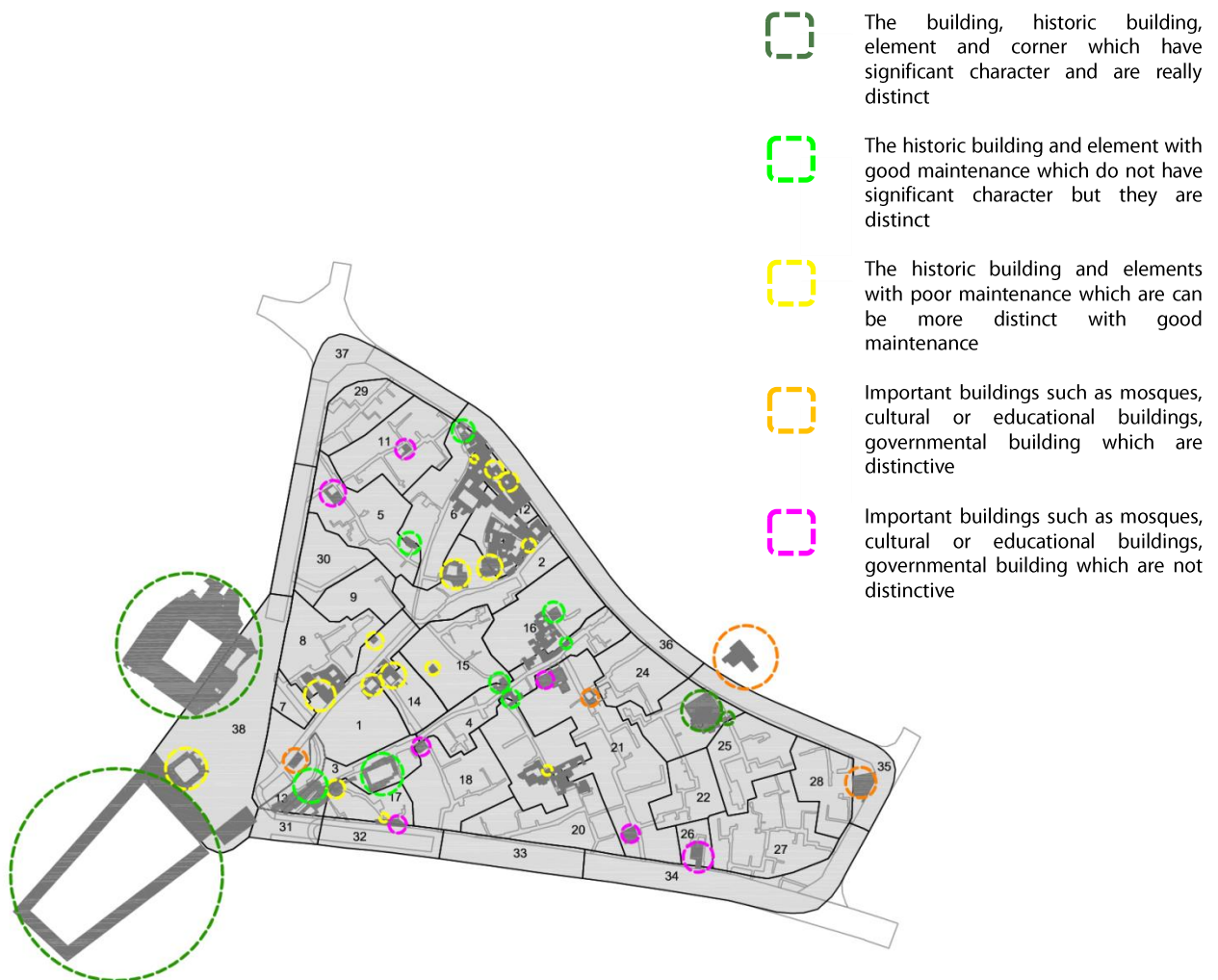


Figure 154: the results of the assessment of the landmarks

From the results noted in Figure 154, we can see that there are three significant landmarks with a really strong character even on a city scale. There are many historic buildings that have been restored and are in good repair (shown in light green circles). These buildings are mostly located in

the refurbished parts of the area (sectors 3 and 4). The third group of landmarks are the historic buildings in poor condition. These have poor maintenance condition and shown in yellow circles. They can be converted into noted landmarks in this area. The fourth and fifth groups of landmarks are important buildings such as mosques, cultural, educational or government buildings. There are four important buildings with a distinctive character (shown in orange circles). Additionally there are seven buildings which do not possess a distinctive image and are shown in magenta circles. Overall, in this area, there are three significant landmarks and many historic and important buildings that could work as landmarks if they had a more impressive image and this area has many opportunities to have many distinct landmarks.

Opportunities

- 1- There are three significant buildings which have strong legible character and they have showed in Figure below.



Photo 1: shows the Jameh mosque that is a significant landmark in this area



Photo 2: shows the Atigh square that is a significant landmark in this area.

Three significant landmarks which have significant character and are really distinct



Photo 3: shows the Daroziafeh Minarets that is a significant landmark in this area

Figure 155: shows the most significant landmarks of this neighbourhood

2- From the results in Figure 154 it can be seen that there many regenerated historic buildings with good maintenance especially in parts 3 and 4 which is the second main roads of this area. The Figure below shows three examples photos of these landmarks.

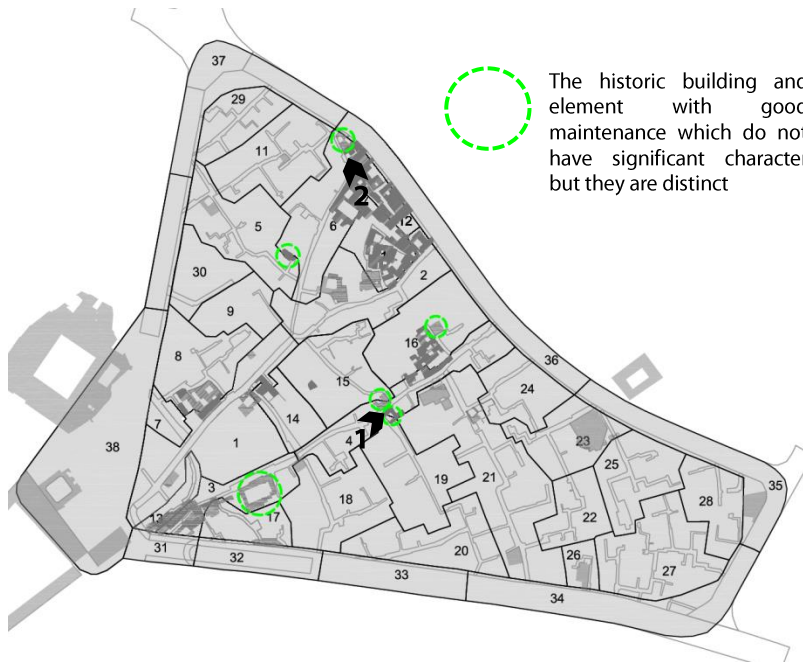


Photo 1: from part 4 and shows the two regenerated historic buildings



Photo 2: from part 6 and shows the a regenerated historic mosque

Figure 156: the historic buildings that have been regenerated and act as landmarks

3- There many important buildings like mosques and governmental buildings which are distinct in this area and work as landmarks.

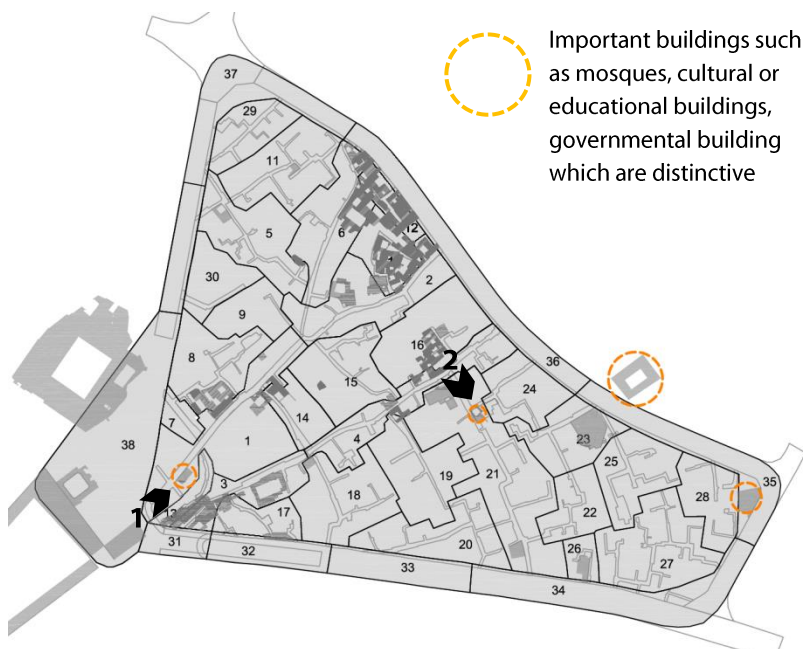


Photo 1: from part 1 and shows a mosque



Photo 2: from part 21 and shows a mosque

Figure 157: shows the important buildings that act as landmarks

Constraints

- 1- There are many historic buildings with poor maintenance which needs regeneration to be more legible in this neighbourhood.

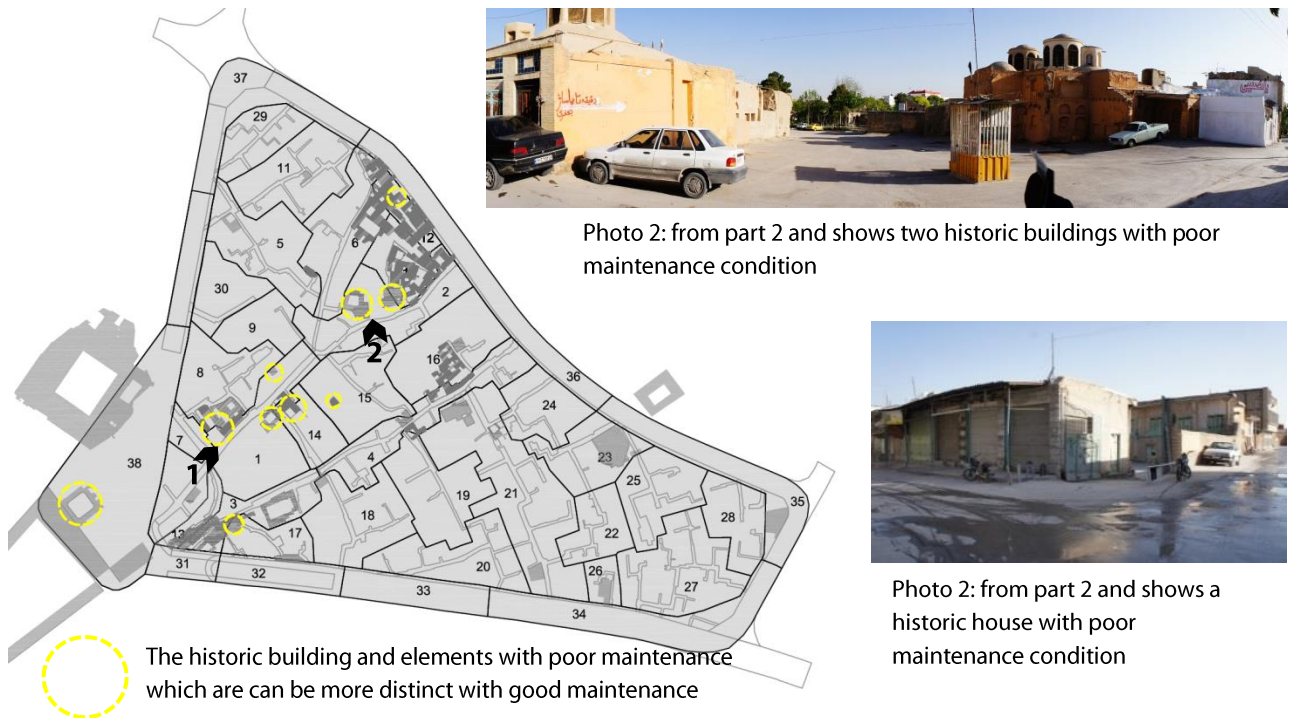


Figure 158: shows the historic buildings in poor condition that could be converted into legible landmarks

- 2- There are many important buildings such as mosques which are not distinctive in this area.

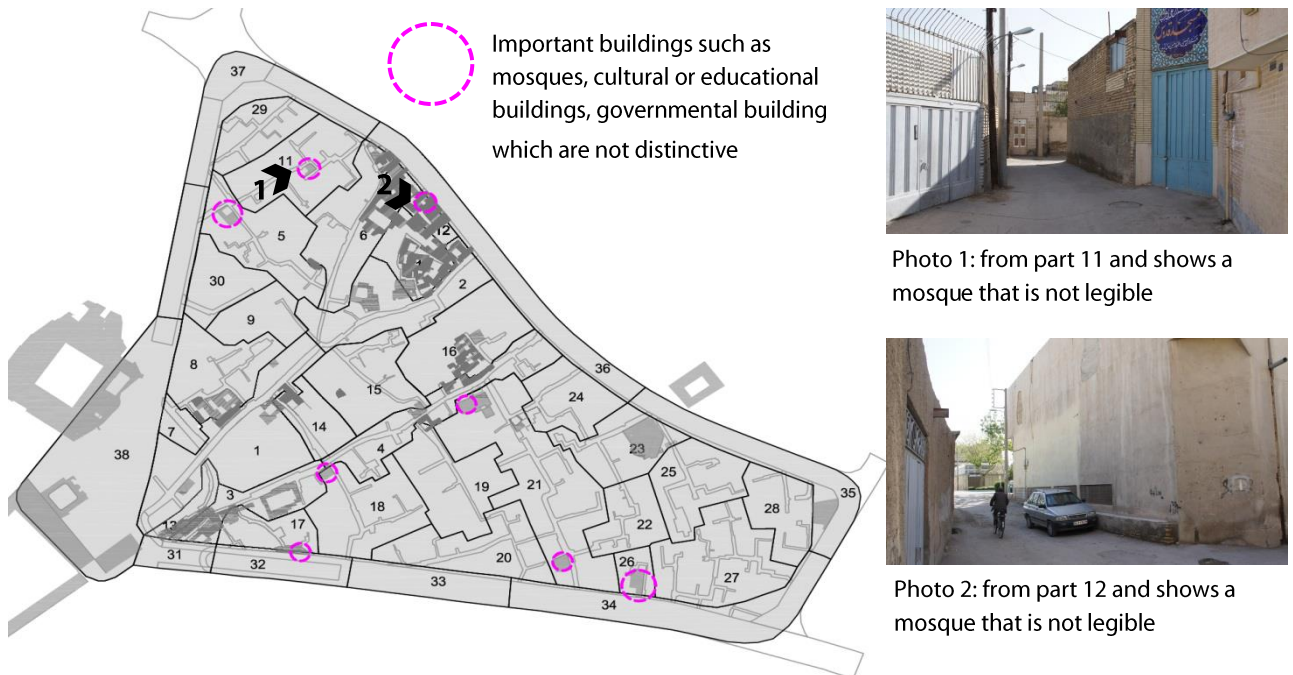


Figure 159: shows the important buildings with no legible image or character

Guidelines for feature development

- 1- Regenerating the poor historic buildings that showed in Figure 158 and using some method to create more legible landmarks
- 2- Using a special method to separate the landmarks from the general plan and surrounding buildings

6.4.5 Paths

The last element of legibility is paths. These are the routes that are used for moving around an area. In this district, paths include any kind of street, road or pathway. In order to analyse the paths for this case study we looked at all the roads, routes and lanes inside the neighbourhood to discover their legibility.

- The map below illustrates the level of path legibility inside the neighbourhood:

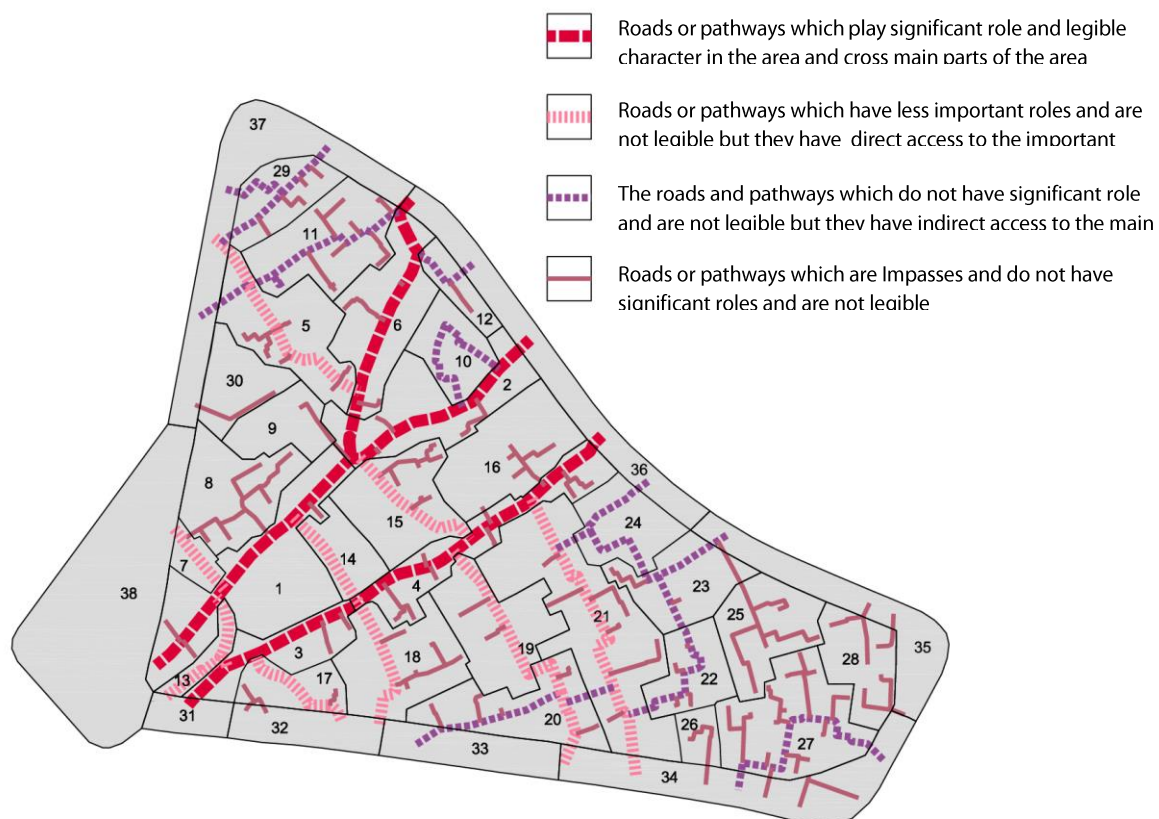


Figure 160: the results of the legibility of the paths

From the Figure above we can see that there are three roads playing a significant role. These roads cross the main sectors of the neighbourhood and provide access to many important parts and buildings. They are also the busiest roads in this area, so we classified them as the most legible. The second legible routes do not play any significant role in this area but they join the main thoroughfares and provide direct access from outside to the main sectors. We assessed them as a secondary group of roads on the basis of their legibility level. The third kind of legible routes are the roads or pathways that do not have direct access to the main sectors so they are not considered legible. The last type of routes, which have the lowest level of legibility among the neighbourhood roads are cul-de-sacs. There are many dead ends in this area so we classified them as the least legible paths in the region. Consequently, there are three roads with good legibility in

this area and ten less legible which need improving. In addition, there are many routes that are not legible and do not have direct access to the main sectors of the neighbourhood. There are also many cul-de-sacs of a non-legible character.

Opportunities

- 1- There are three roads with significant character which cross the main districts and have legible character.

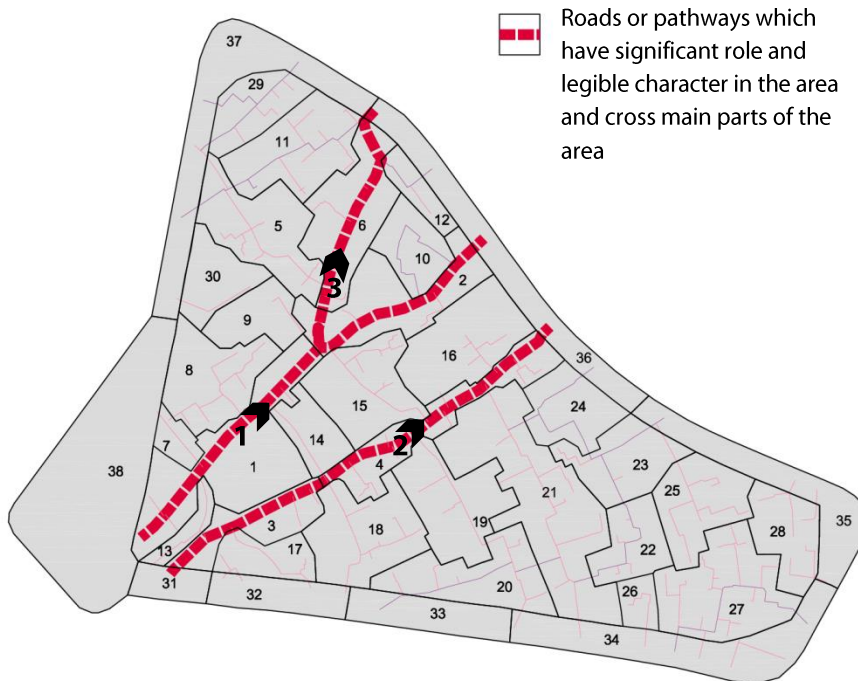


Photo 1: from part 1 and shows the main road with legible character



Photo 2: from part 3 and shows the second main road with legible character



Photo 3: from part 6 and shows the road with legible character

Figure 161: shows the three legible roads that play significant role in this area

Constraints

- 1- Apart from three roads (see Figure 161), most of the routes are not legible (see Figure 160).

Guidelines for future development

- 1- Designing new elements for the non-legible routes for example at the beginning or the end of the routes to make them more legible.
- 2- Designing some memorable spots on the less legible roads and paths with small green spaces containing a seating area or designing some new public art.
- 3- Using a notice board with a map of the area and especially the less legible roads that show directions and information.

6.5 An Evaluation of Land use

The final feature of a locality that improves social sustainability is mixed land use. We identified four elements to assess land use. The results shown in the maps will be interpreted and evaluated also the positive and negative aspects will be identified. Additionally for every element some guides for future development will be illustrated.

6.5.1 The neighbourhood form

This is a historic neighbourhood with a traditional organic urban form. The traditional urban form of the Iranian cities is compact with narrow roads and lanes and compressed, organic plot subdivisions. In this evaluation, we wanted to find how much of the traditional urban form had survived. We assessed the neighbourhood layout and form because the new urbanism of Iranian cities has destroyed the arrangement of historic urban plans.

- The results are shown in the Figure below:

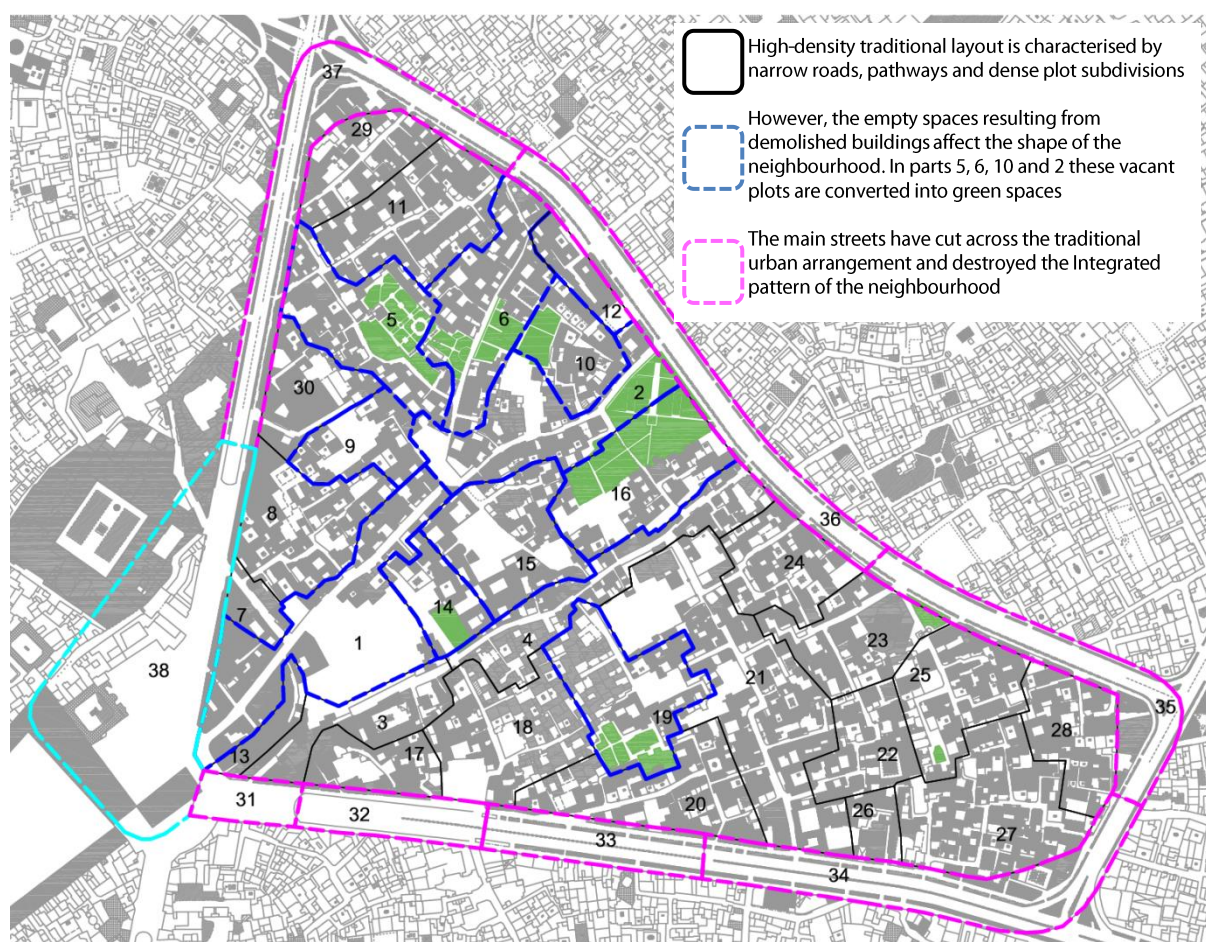


Figure 162: the results of the neighbourhood form

From the results shown in the figure above it can be seen that the urban plan of the neighbourhood is quite compressed and high density is characteristic of the entire district apart

from sectors 1, 2, 5, 6, 9,10, 14 and 19 which have many empty and green spaces created by the destruction of the neighbourhood plan. This problem has affected the historic integrated pattern and destroyed the hierarchy of the spaces. In addition, the boundary area where the wide streets dissect the ancient estates, the historic layout is completely fragmented and the neighbourhood is isolated like an island. Thus, we can see that the area is still very compact and within the neighbourhood the dense historic form still exists.

Opportunities

- 1- The existence of a traditional urban pattern with a high-density form (see Figure 162).

Constraints

- 1- Destruction of the neighbourhood pattern and the existence of many empty and green spaces in parts 1, 2, 5, 6, 9, 10, 14 and 19. These contributed to the ruining of the original form and character of the neighbourhood (see Figure 162).

Guidelines for future development

- 1- Protecting the historic pattern from more fragmentation.

6.5.2 Distribution and amount of land use

To assess land use diversity in this neighbourhood it was necessary to identify the amount and distribution in this area. We evaluated the land use during the walks and a map of the neighbourhood shows its extent and allocation.

- The map below illustrates the results of the amount and distribution of land use in the neighbourhood:

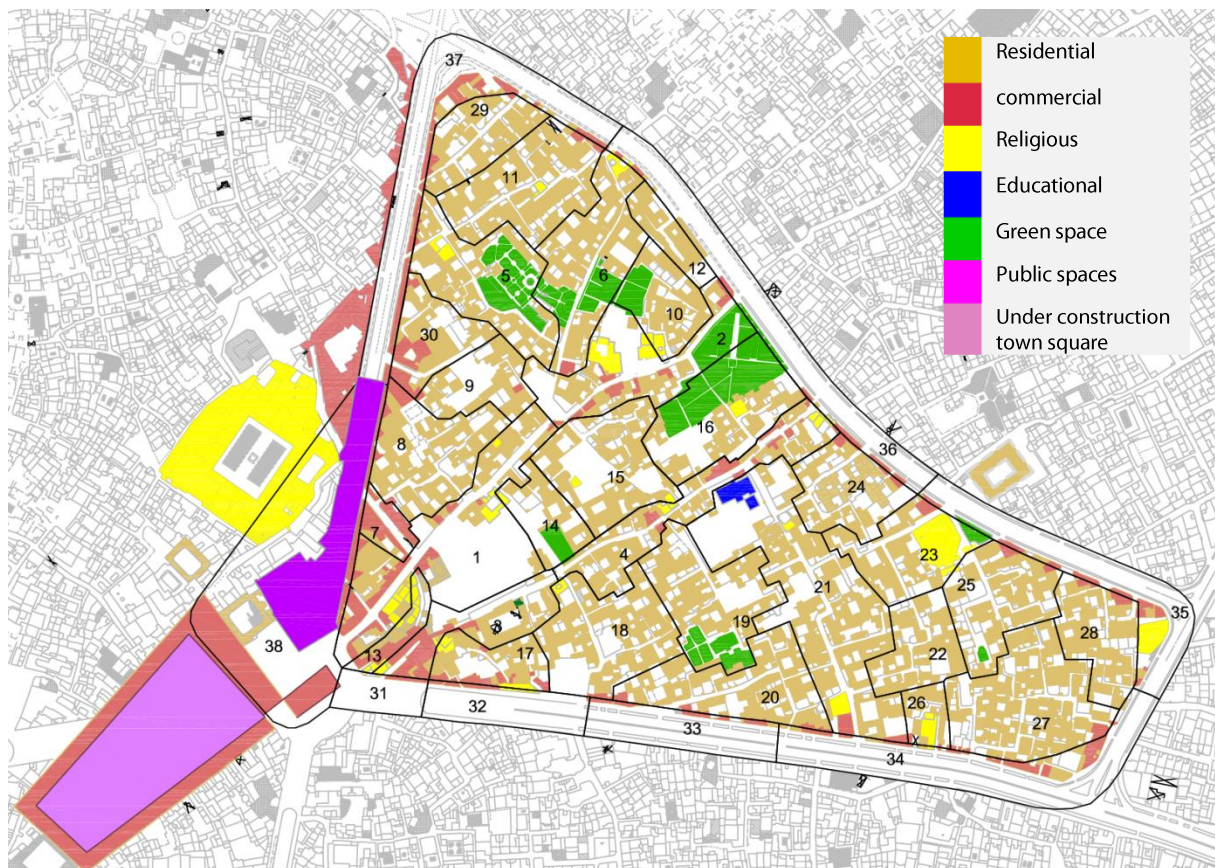


Figure 163: amount and distribution of land use

The data from Figure above indicates that instead of residential land use there are many commercial land uses (shown in red colour) throughout the neighbourhood especially in sector 38 which is connected to the bazaar and the big new town square which is under construction. Furthermore, the majority of the units on the main boundary streets are commercial. Inside the quarter there are many shops on the two main roads. Religious land use (shown in yellow) is another land use of which there is a fair amount and good distribution in this neighbourhood. There is one educational building which is a high school (shown in dark blue) while there is no primary school and nursery. In the interview results, most interviewees responded that this area had poor educational facilities. There are also two public spaces in sector 38 (the town square is unfinished) and three good size green spaces in sectors 2, 5, 6 and 10, also three small green

spaces in sectors 19, 14 and 25. So we can say that this area has a sufficient number of commercial and religious facilities as well as a reasonable distribution of public and green spaces. While it has a few educational facilities, it lacks others such as cultural, communal, medical, sports, social and leisure amenities.

Opportunities

- 1- There are many shopping facilities (see Figure 163)
- 2- There are many religious facilities in this neighbourhood (see Figure 163)
- 3- There are three green spaces (see Figure 163)
- 4- There are also two big public spaces in the area (see Figure 163)

Constraints

- 1- Poor social, leisure, sport, medical, communal, educational and cultural facilities (see Figure 163)

Guidelines for future development

- 1- Allocating the empty lands for non-existent facilities like sports, social and leisure centres

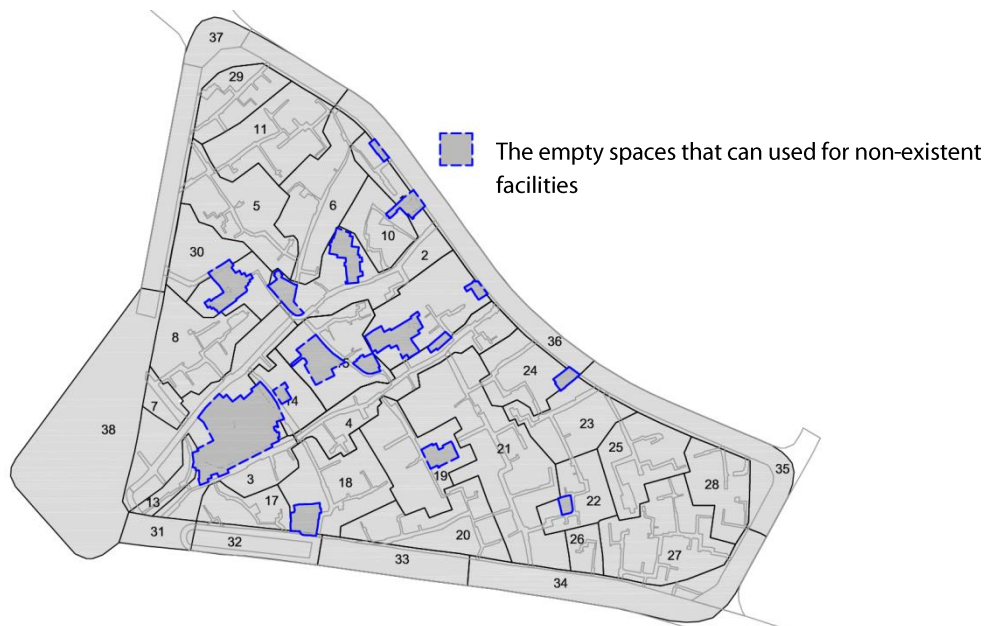


Figure 164: shows the vacant spaces in this area that could be allocated for neighbourhood facilities

- 2- Creating multi-functional buildings for the facilities that the neighbourhood needs.

6.5.3 The housing types

The third element of diversity which we allocated to this case study and assessed was the housing variety. In this community, two kinds of house can be seen. The first group comprises the typical neighbourhood houses which are mostly 1 or 2 storeys and are detached. The majority house one family. The second group consists of new blocks of residential flats, in which more than four families live. These flats are seen in some parts of the area and are mostly new buildings.

- The results of the housing types are shown in the map below:

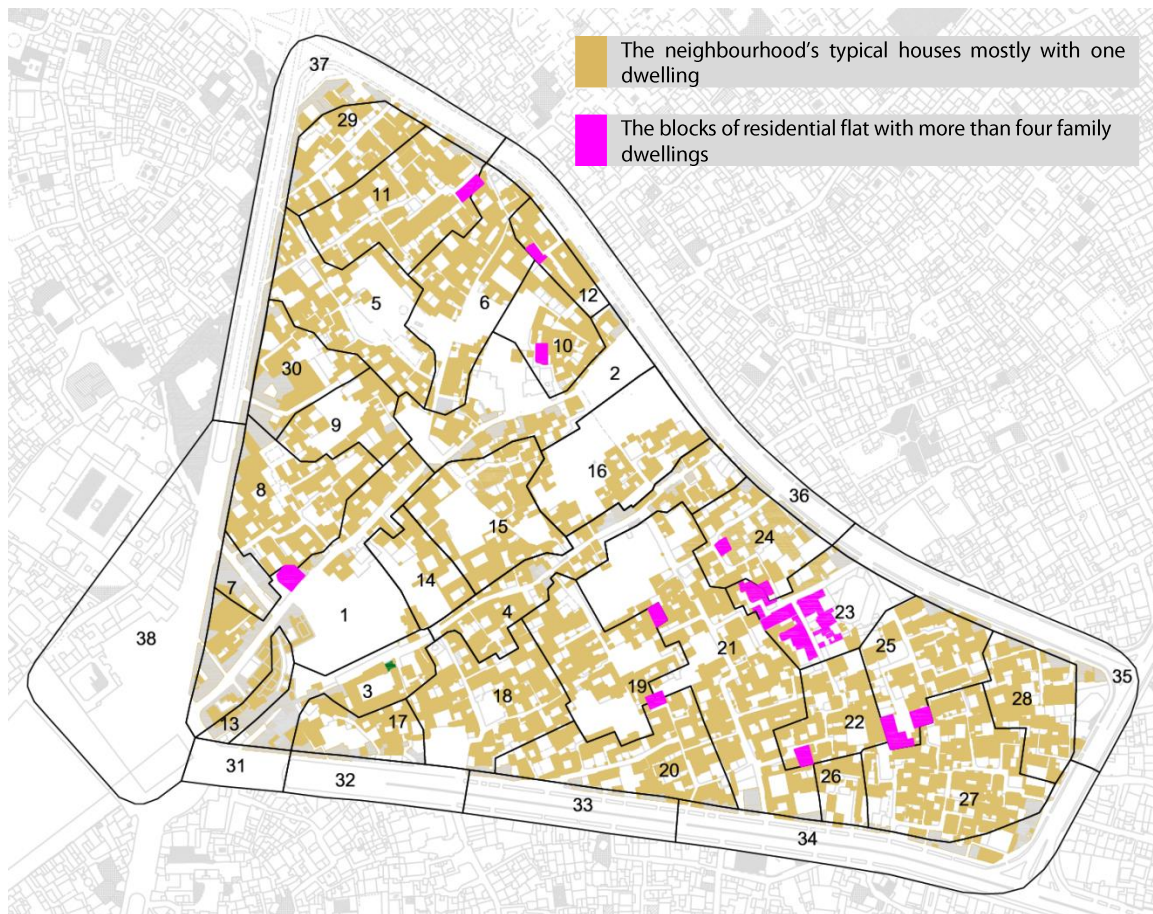


Figure 165: the results of the existing types of residential buildings

We can see from the results in the Figure above that in most sectors of the neighbourhood the houses are typical detached dwellings but in some areas like sectors 1, 10, 11, 12, 19, 21, 22, 24 and 25 there are a few blocks of apartments. These new buildings are shown in magenta in map above. There are also one part where most buildings are new blocks of apartments (part 23). This part has many new buildings with easy access to the main road. Overall, most houses are typical detached neighbourhood houses with one or two dwellings but there are some new residential flats which have more than four abodes. These new buildings mostly located in areas that have better access to the main roads.

Opportunities

- 1- There are a few residential flats in the neighbourhood and also in sector 23 there are many blocks of apartments (see Figure 165).

Constraints

- 1- The majority of the houses are typical one-family neighbourhood houses and there is little diversity in the housing types (see Figure 165).

Guidelines for future development

- 1- There are many vacant spaces that can be used for new residential buildings in the neighbourhood.

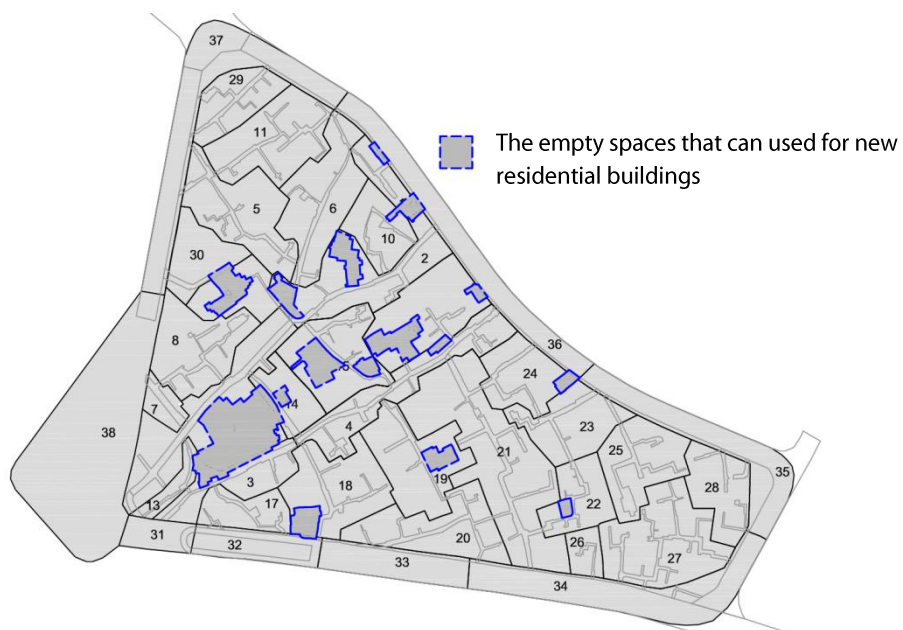


Figure 166: shows the empty spaces that can be used for new residential buildings

6.5.4 The buildings height (scale)

In this part of the assessment of the diversity of land use we calculated the height of the neighbourhood dwellings. We wanted to find the scale of the buildings. This assessment was conducted with the aid of walking devices and all parts of the neighbourhood were studied. We classified the buildings according to height. We looked at most of the buildings in every sector and on the base of the results used two scale assessments for evaluation.

The results are shown in Figure 167:

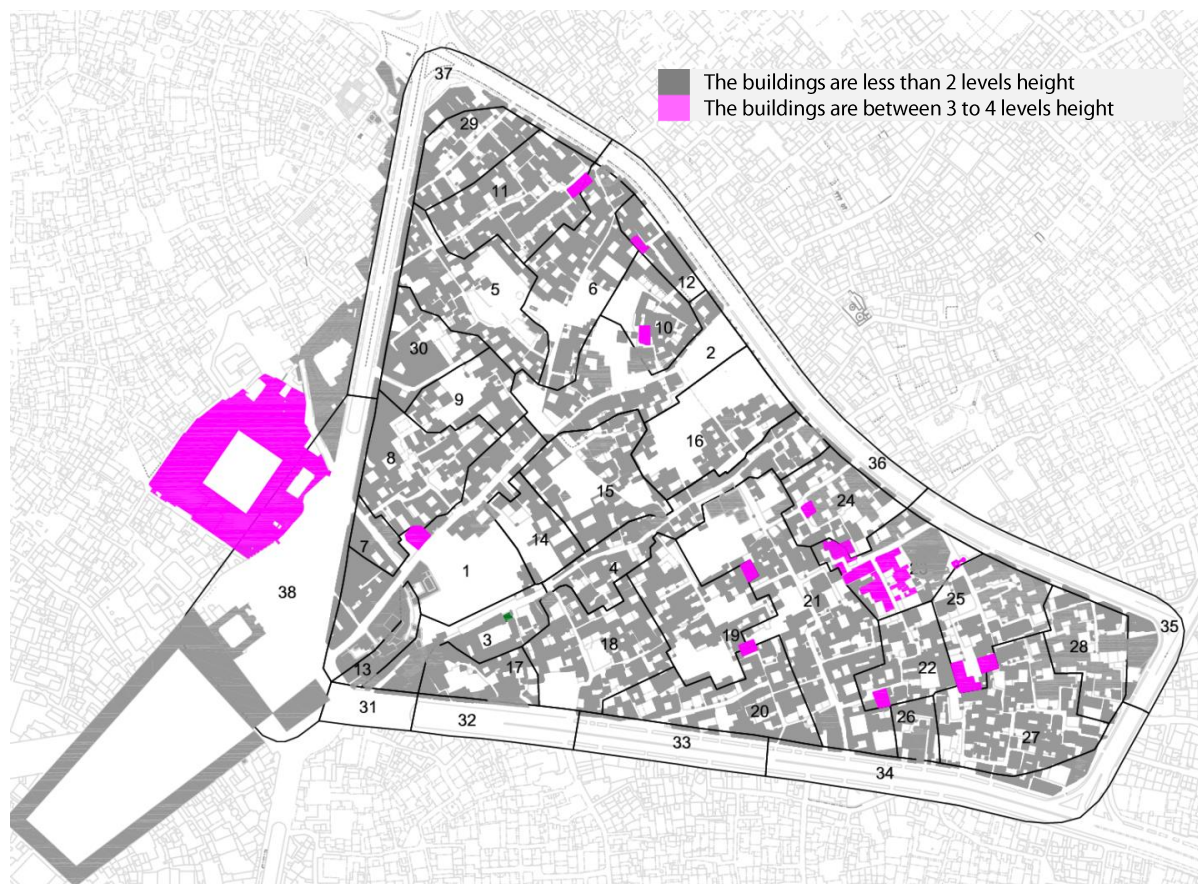


Figure 167: the results of the scale of buildings in this area

From the results in the Figure above we can see that in most sectors of the quarter the buildings are less than two storeys high. Those in the locality are typical neighbourhood houses, the majority being of one storey. In only two small areas of the neighbourhood are most buildings of 3 or 4 floors (sectors 12 and 23) these are close to the main street to the north. In general, the building scale is less than two storeys. These results show that it would be possible to raise the heights of the dwellings, especially in those parts of the area that have easier and better access to main roads and streets if the neighbourhood could provide the extra infrastructure for sustainability.

Opportunities

- 1- The height of most buildings is less than two storeys which is on a more human scale compared with the width of the roads (see Figure 167).

Constraints

- 1- Despite a dense urban form in terms of height, the building/ population density is low in this area.

Guidelines for future development

- 1- Increasing the height of the skyline by constructing new buildings of up to four storeys. This would give rise to greater density and also provide more land to use for (as yet non-existent) facilities

6.6 Conclusion

In this chapter we devised many maps for all the elements of the townscape after having analysed them (the method of analysis is given in section 4.3.2). The maps were interpreted and evaluated in this chapter and the level of the elements' success was identified. Chapter 7 will display the summary of the results of every element's evaluation. Moreover, after appraising the features of the townscape elements, the positive aspects (opportunities) and negative aspects (constraints) of each element were highlighted and the researcher presented them after assessing each components. Additionally, the guidelines for the future development of every element of identity, the public realm, movement, legibility and land use were shown.

CHAPTER 7: CONCLUSION

Introduction

Chapter 7 is the final chapter of this study. It comprises five sections. The first, will illustrate summary of the interviews results (summary of chapter 5) and also summary of walking results (summary of chapter 6). The second section by comparing the research aims, questions and the results achieved, gives us clear results of the study. The third explains the limitations of this study. The fourth suggests some further research and the final section gives the theoretical and practical recommendations of the current research.

7.1 Summary of Findings

All of the quantitative and qualitative data in the previous chapter were evaluated and the results confirmed but this was an assessment of the questions for the interviews and the walking survey. In this study the quantitative method was used to assess the social sustainability of the historic neighbourhood. To do this, we identified four criteria: accessibility, safety and security, sense of place and social interaction and community spirit. In the interviews, we asked many questions for every criterion and in chapter 5 all these questions were appraised. In this chapter we created five tables from the results of section 5.1. These tables are a summary of the results. Using them we can determine the overall assessment of the criteria for social sustainability. The second section (5.1) of this chapter provides a summary of the results of the evaluation of the townscape elements. Then we took five figures from a summary of the results which showed which elements were more successful and which less successful. In the final section, the researcher indicated the positive and negative aspects (opportunities and constraints) of every element of the townscape elements and after that the design solutions for improving the social sustainability of the neighbourhood were identified.

7.1.1 Summary of the Interviews' Results

This section gives us a summary of the results from the interview evaluation. There are five tables in this section. These comprise a summary of the five sections of the interview. They show the average rating of every question and also the rating scale. For a better understanding of the results, we allocated different colours for different scores of the average ratings. The small table below shows colours ranging from 100% positive to 100% negative.

The colours of the average rating scores					
Lowest score	Weak score	Slightly less than average	Slightly over than average	Good score	Highest score

Table 70: scale of different colours for the average rating scores

The average rating score in the table demonstrates the results, but by allocating colours to the scores we can compare them better and more easily and make the tables and results more visual.

- **View of the local area:** for assessing an overall view of the local area we consider three aspects: signage, maintenance and design.

View of local area summary	Average rating	Rating Scale (low-high)	Additional description
Signage	1.62	(1-5)	<ul style="list-style-type: none"> • Lack of the signs for way finding
Maintenance	1.43	(1-5)	The Important repairs needed: <ul style="list-style-type: none"> • Obsolescent houses (32%) • Historic buildings (30%) • Pavements (21%) • Historic pattern (15%) • Shops (2%)
Design	2.09	(1-5)	

Table 71: the overall results of the features of the local area

From the data in table 71 we can see that all three have an average rating score of less than average (3). It was only the interviewees who believed that the overall design was slightly better but that the neighbourhood was very poorly maintained. In the residents' view, the neighbourhood was generally in a physically poor condition.

- **Accessibility:** This was identified as the most important criterion for assessing social sustainability. Its three characteristics are access to public transport, facilities and employments. We assessed them and the table below gives a summary of the results.

Accessibility (access to employment and facilities)		Average rating	Rating scale (low-high)	Additional description
Access to public transport (bus)		1.79	(1-2)	The main form of transport <ul style="list-style-type: none"> • Car (37%) • Motorcycle (29%) • Walking (20%) • Bus (11%) • Cycle (3%)
Facilities	social & leisure	1.4	(1-5)	
	shopping	4.28	(1-5)	
	medical	1.9	(1-5)	
	sport	1.66	(1-5)	
	communal	1.6	(1-5)	
	religious	4.29	(1-5)	
	educational	1.84	(1-5)	
	cultural	1.89	(1-5)	
employment	Business activities	2.72	(1-5)	<ul style="list-style-type: none"> • 65% of the interviewees like to work in this area
	Job opportunities	1.57	(1-2)	
	Business opportunities	1.6	(1-2)	

Table 72: the overall results of the features of accessibility

It is clear that this area has good access to bus routes and services but the main form of transport is the car. The bus is in the fourth position among the main forms of transport. Most of the facilities are poor in this area and only the shopping and religious facilities are good. Furthermore, the opportunities to find a job or establish a business are just about average while most of those who were interviewed believed that the business activities were not too good in this area. An interesting point was that almost two-thirds of those interviewed liked to work close to their living quarters. Consequently the positive aspects of accessibility in this area are access to bus services, shopping amenities and religious facilities. Employment opportunities are moderate and among the negative points access to social, leisure, medical, sport, communal, educational and cultural facilities are really poor.

- **Safety and Security:** The second criterion of social sustainability, which assessed in this study, is safety and security. We assessed nine aspects. Table 73 presents the final results of the assessment.

Safety and security		Average rating	Rating Scale (low-high)	Additional description
Safety feeling when walking at day and night	Day time	2.71	(1-4)	<ul style="list-style-type: none"> • 8% of the female interviewees indicated that it was a bit unsafe in day time • All the female interviewees indicated that it was a bit unsafe in day time
	After dark	2.22	(1-4)	
Lighting	Roads, pathways and sidewalks	1.91	(1-5)	
	Green spaces and public spaces	3.3	(1-5)	
	main junctions and public spaces	2.02	(1-5)	
	entrance of homes and buildings	2.01	(1-5)	
Security equipment		1	(1-2)	
Unsafe environment because of the neighbourhood's physical condition		1.83	(2-1)	<ul style="list-style-type: none"> • Ruined buildings 29% • Old abandoned buildings 24% • Cracked buildings 21% • Narrow and tortuous pathways 15% • Arched pathways 8% • Construction sites 5%
Car movement problems		3.01	(4-1)	
Neighbourhood pollutions	rubbish and litter lying around	3.03	(4-1)	
	level of noise	2.4	(4-1)	
Antisocial behaviour	vandalism and graffiti	1.97	(4-1)	
	teenagers hanging around	1.53	(4-1)	
	alcohol or drug use people	3.61	(4-1)	
Crime		1.62	(1-4)	<ul style="list-style-type: none"> • theft or break-in of cars parked 8% • racist attacks 5% • theft or break-in of house or flat 3% • personal experience of theft or mugging 1%

Table 73: the overall results of the safety and security features

From the results in table 73, we can see that this area is fairly safe in the daytime but is a bit unsafe after dark, especially for women. The lighting conditions are rather poor on the roads, pathways, building entrances, at the main junction and in the public spaces but the green spaces have better lighting conditions. There is no security provision such as a police station or public CCTV. Another negative aspect is the physical condition of neighbourhood which creates an unsafe environment.

The ruined buildings (29%), old abandoned buildings (24%) and cracked building (21%) characterise the unsafe environment. The narrow and tortuous paths (15%), arched pathways (9%) and construction sites (5%) add to the danger. Car movement is a fairly big problem, especially for walking. Rubbish and litter cause great inconvenience and the level of the noise is high, though only those living close to the main roads raised the issue. The main forms of antisocial behaviour are drug abuse, vandalism and graffiti though they are not considered a major headache. The problem of teenagers hanging around was really low. The crime rate in this area is not high. Where crimes do exist, they mostly happen in the poor neighbourhoods. The lighting conditions on the roads, pathways, buildings entrances, main junctions and public spaces need to be improved because women feel unsafe in this area after dark. Providing security equipment also increases the level of safety in this area.

- **Sense of place:** is identified as the third criterion of social sustainability in an urban context. For the purposes of evaluation, sense of place has two aspects: community attachment and place attachment. The results for both are shown in Table 74.

Sense of place	Average rating	Rating Scale (low-high)	Additional description
Community attachment	15.57	(6-30)	
Place attachment	1.38	(1-2)	

Table 74: the overall results of the aspects of sense of place

The average rating score of community attachment is the sum of six statements. From the results of the table 74 it can be seen that community attachment is a bit lower than average. Place attachment is also below average. Consequently, both aspects of sense of place are rather poor in this neighbourhood.

- **Social interaction and community spirit:** is the final criterion of social sustainability which we assessed in the neighbourhood. Six aspects were identified for social interaction and community spirit. Table 75 shows the results of the assessments of the five aspects.

Social interaction and community spirit	Average rating	Rating Scale (low-high)	Additional description
Social and cultural activities	1.95	(1-2)	Social activities: Religious activities (100%)
Community-based organizations and groups	1	(1-2)	
Satisfaction	1.52	(1-2)	Dissatisfaction problems: <ul style="list-style-type: none"> • The neighbours who dump garbage (31%) • The family with many kids (26%) • The neighbours who do not maintain their house (24%) • The family with drug addicted persons (21%)
Know	2.41	(1-4)	
Trust	1.88	(1-4)	
Supportive	4.21	(3-6)	

Table 75: the overall results of social interaction and community spirit

It can be seen from the results of table 75 that the social and cultural activities took place in this neighbourhood but all those interviewed indicated that they consisted of religious activities such as religious ceremonies. There are no community-based organization groups in this area. The level of satisfaction is slightly higher than average and is positive but the level of familiarity, trust and support are below average. This means that the local residents do not know many of their neighbours and trust only a few. So it can be seen that the level of social interaction and community spirit is not good and most of the other aspects are a bit lower than average. While religious ceremonies take place in this area there are no other social or cultural activities.

7.1.2 Summary of Walking results

After mapping, interpreting and evaluation every component of the townscape in section 5.2 the results were identified. This section shows five figures of the results. The diagrams of the urban form factors show the less successful and moderately successful elements using a specific range of the colours. We sorted the range of colours from less to more successful. Figure 168 shows the colours that we used for the evaluation of the elements.



Figure 168: the elements to show the range of colours from less to more successful

This small diagram was also shown with the five main diagrams of the townscape elements. We chose red the least successful elements and dark green for the most successful.

- **A neighbourhood with own Identity:**

We selected eight elements to assess the neighbourhood identity. After analysing each element, a summary was given in Chapter 5. Also, in Figure 169, we can see the least and most successful elements of the neighbourhood identity. :

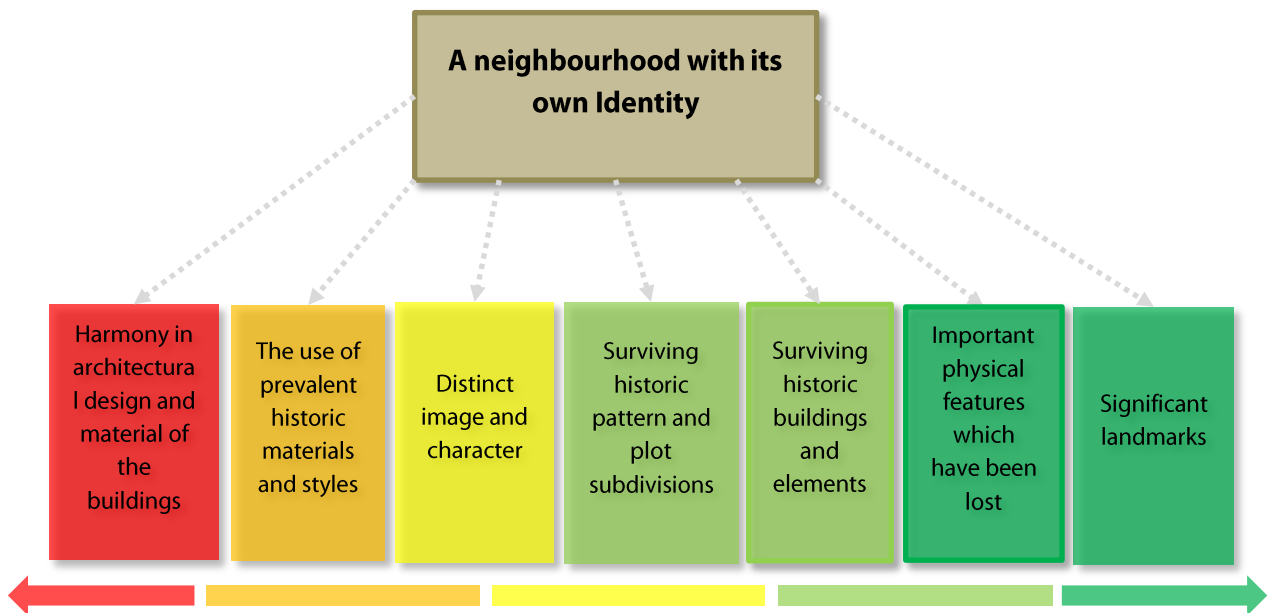


Figure 169: the elements of the neighbourhood identity and the degree of their success

Below, a summary of the evaluation of the elements is given:

Significant landmarks

In this neighbourhood there are many significant landmarks. In the city too there are a number of important monuments, especially the Jameh mosque of Isfahan whose powerful character is part of the neighbourhood's identity.

Important physical features which have been lost

The lost physical features of the old quarters are still part of their identity. In this area also there were two significant attractions that have been lost. One was a stream used as a collecting point for water inside the neighbourhood at the main (She Rah Maihigiri) junction. The other was a large town square in the southern sector between the main Isfahan bazaar and the neighbourhood. A new square is under construction (Meidan Atigh) with the same style, size and location. This replaces the old square which has disappeared.

Surviving historic buildings and elements

There are still many surviving antique buildings and monuments that show off the neighbourhood identity but unlike the more famous historic edifices the majority are not properly maintained. If all ancient buildings and element which are in poor condition were regenerated and well-maintained it would give a great boost to the neighbourhood's identity.

Surviving historic pattern and plot subdivisions

In all sectors of the neighbourhood there are many signs of a historic pattern but unfortunately, this has largely been destroyed and a lack of maintenance has create an unattractive image of the historic design. In order to highlighting the neighbourhood's identity the historic plan needs to be restored. The ancient model is in good condition in only two regenerated parts of the neighbourhood.

Distinct image and character

Some sectors of this neighbourhood have a distinct image. The renovated parts, the parts with green space and the parts with significant landmarks have a distinct image. . Unfortunately, other areas are indistinguishable from many badly-managed districts in Iranian cities.

The use of prevalent historic materials and styles

Although this is an old quarter but in the most sectors lacks the typical historic style and materials used in the renovated areas. In the two renovated sectors of this neighbourhood a regeneration project has done and completely changed the image of the neighbourhood. This shows how much the use of these historic features has influenced and improved the quarter's identity.

Harmony in architectural design and material of the buildings

In the major parts of the neighbourhood there is no harmony in the architectural design and materials of the buildings. The regenerated part is a striking exception Also, in some sectors there are many shops whose architectural design is matched and coordinated.

Significant view, vistas and panoramas

This area, which is in the heart of the city, has a flat topography, so it does not possess any significant views or vistas.

- A neighbourhood with successful public realm**

For an assessment of the neighbourhood’s public realm we identified thirteen elements. In chapter 5 all were evaluated and Figure 170 shows a summary of the results and the degree of success for each element.

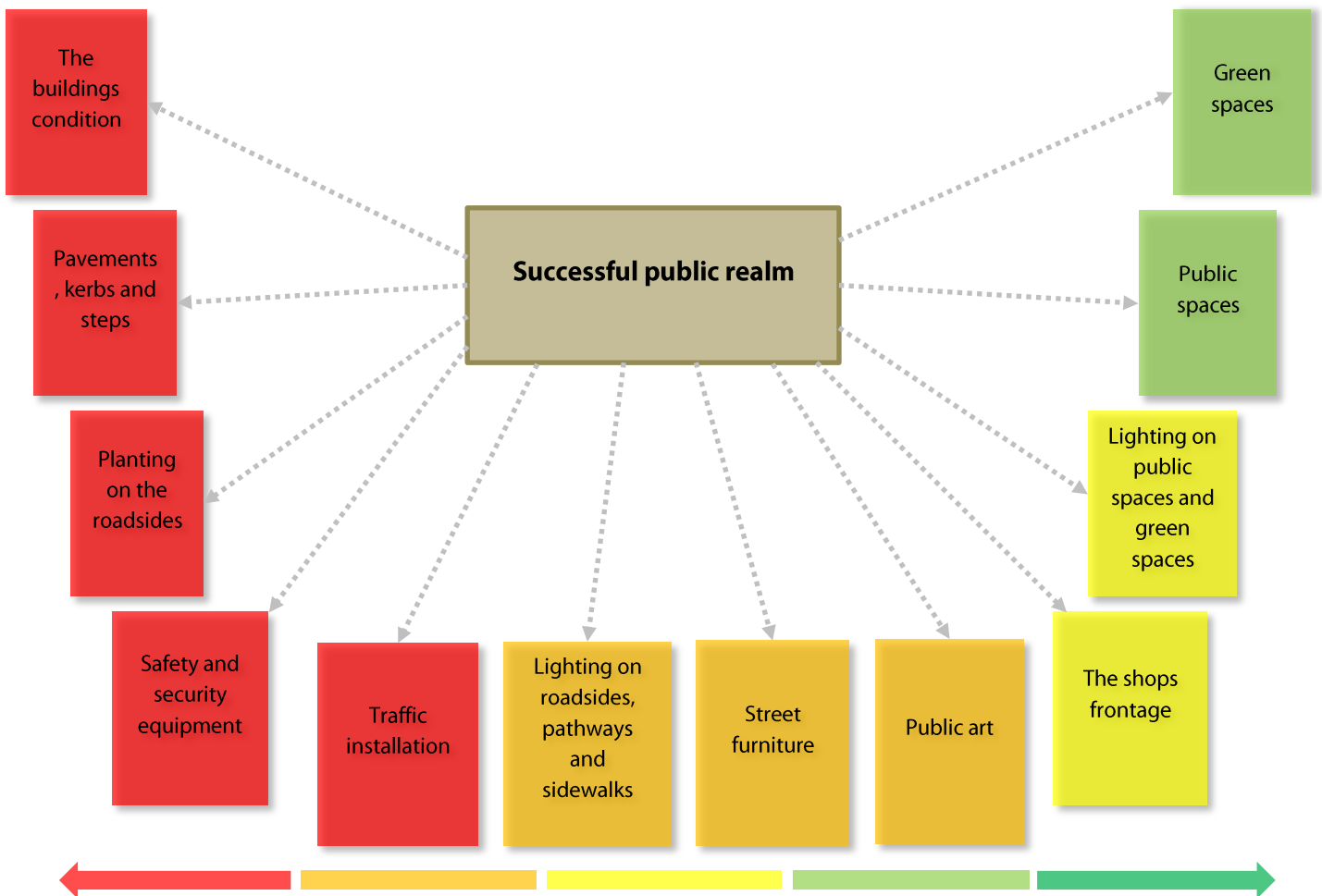


Figure 170: the elements of the neighbourhood public realm and the degree of their success

Below is a summary of the evaluation elements:

Green spaces

There are three large green spaces which are of good quality and well-maintained. They also have adequate access to the surrounding residential buildings but their distribution throughout the neighbourhood is unsatisfactory because all of them are located in the north of the area and are almost inaccessible to other parts of the district. There are however three small green well-appointed areas within easy reach of a small group of residential buildings.

Public space, quality, use and management

There are no public spaces in the neighbourhood itself but there are two between the, Jameh mosque and the main Isfahan bazaar. One of them is large but does not have a proper design or management. While it suffers from many irregularities, it has fair potential because of its location. Another is a new town square, which is under construction. It is situated between the main Isfahan bazaar and the neighbourhood. This square (Meidan Atigh) was built to replace the old one which was completely demolished. This is a new project is a replica of the old square both in size and style but it still needs one year to complete.

Lighting in public spaces and green spaces

There are six green spaces in this district. Apart from the smallest one, which has very few lights, the others have a reasonable quantity and quality of lighting. . One public space, however, is a vast area with very few poorly designed lights. This location definitely needs to give more thought to its lighting situation because it is a public space.

The shop frontages

The shops in the main streets of the neighbourhood are in reasonable condition because the majority of the units are commercial and they are also quite successful in the regenerated roads of the area where there are many shops with reasonable quality of frontage. In the main road inside the area though, there are a lot suffering from poor quality and low maintenance. These need refurbishing. Elsewhere in the locality there are no shops.

Public art and other features

Apart from one sector, there is no public art in the district. There are many green and public spaces which would benefit from some open-air art but do not have any. In the northern main street, however, there are two imposing minarets (Darozziafe minarets) with a beautiful fountain in front. This fountain is the only public art in this area.

Street furniture

In most parts of the neighbourhood there is no street furniture, not even bins. There is sufficient furniture in the public space next to the Jameh Mosque but it is haphazardly arranged. On the sidewalks of the main streets there are very few bins or bollards.

Lighting on roadsides, pathways and sidewalks

In general, the area has a reasonable amount of lighting in the main streets, main roads and pathways but in most localities the design quality of the lighting is poor. But in the regenerated parts of the neighbourhood and also the main streets, the quality is reasonable.

Traffic installations

In this neighbourhood, apart from some poor traffic signals, there are no traffic installations. There are no pedestrian-crossing markings,, traffic signals or street markings. While the two main roads are busy at specific times of the day, and they do not have traffic lights and pedestrian crossings are needed at some junctions.

Roadside greenery

In this area, there are trees only on the main roads. In the neighbourhood itself there are no trees or plants on the verges. Although the district has narrow roads and pathways are short of room, there still quite a lot of unused space at the roadsides. This area definitely needs more vegetation.

Safety and security equipment

In all around the neighbourhood there are no security equipment and facilities such as a police station or security camera in the main junction, public space and green spaces.

Pavements

The greater part of the neighbourhood has poor pavements condition. Unfortunately, the inadequate maintenance of the pavements has created an unpleasant image of the area. In the regenerated sectors the new, well-kept pavements are in complete contrast to the un-renovated districts. The state of the sidewalks pavement in the main street around the neighbourhood is acceptable.

The condition of the building frontages

The state of the buildings frontages in most sectors, especially those close to the centre, is really poor. This is an old quarter with many run-down buildings suffering from lack of maintenance. There are many empty spaces left by the demolished and this destruction is continuing. While the buildings in the restored areas are in good shape, those in the main streets are in a reasonable state of repair.

Advertisements boards

There are no hoardings or advertisement boards in all part of the neighbourhood

- **Successful movements network with filtered permeability**

We evaluated nine elements to assess movement in this neighbourhood. We mapped, interpreted and evaluated all the elements of movement in section 6.3. In this section a summary of an assessment of all the elements of movement revealed both successful and unsuccessful features.

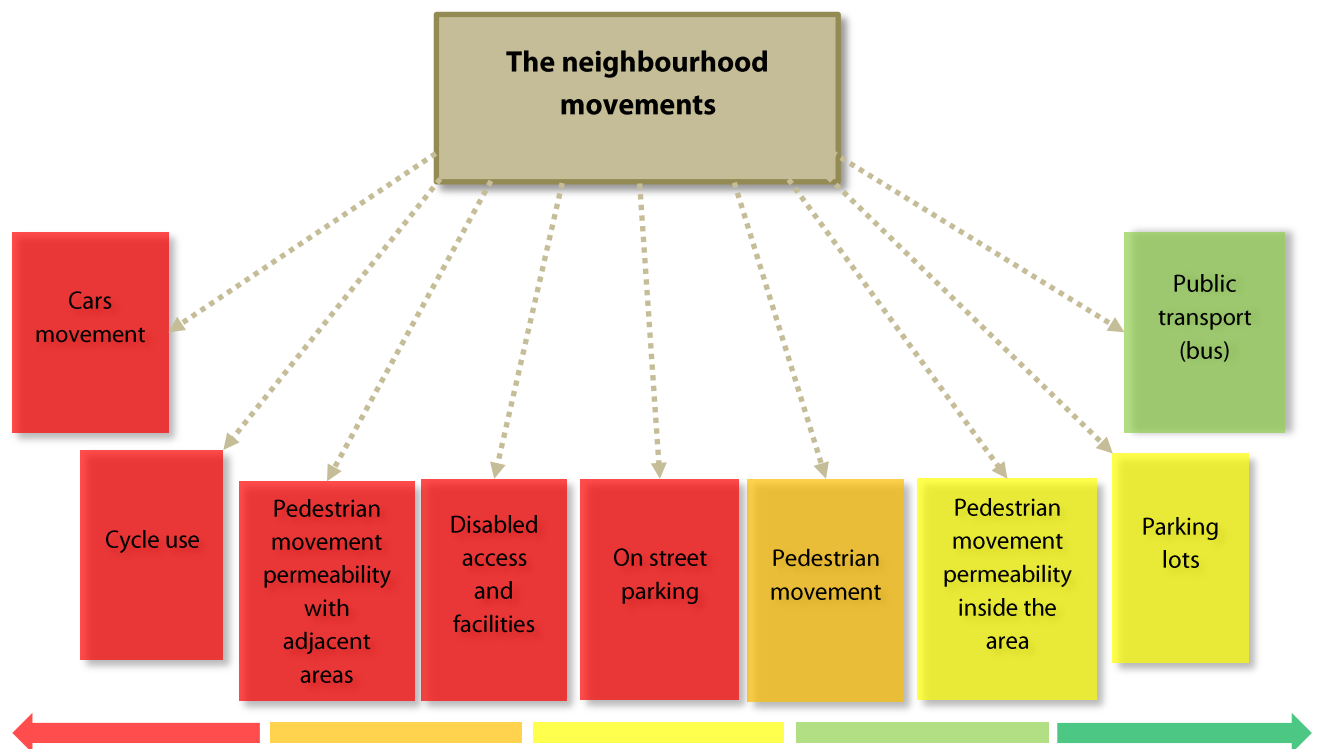


Figure 171: the elements of neighbourhood movement and the degree of their success

A summary of the elements the evaluations are given below:

Public transport (bus routes and stops)

We explained in section 6.3.1 that the only public transport in this area was the bus. Therefore we examined the bus routes and bus stops in the district. In this area, all the main streets have bus services and each has four bus stops. These are of reasonable design and quality with seating and rain-cover facilities. Generally speaking, this neighbourhood has reasonable bus services and access points.

Parking lots

This locality there many empty spaces, because of the demolition of old buildings, which are used as car parks. They have no facilities and are badly designed. The parking lot in front of the Jameh Mosque is a good example.

Pedestrian movement permeability inside the neighbourhood

In this precinct, the roads and lanes in the middle are good and the pedestrians can reach the main quarters directly but the west and east zones do not enjoy good connections.

Pedestrian movement

The inner roads do not have sidewalks and pedestrian are vulnerable on the busy roads, such as the two main thoroughfares. On the other routes, the volume of the traffic is low. There are also some very narrow lanes which provide a good walking environment. Pedestrians can move around easily on the pavements in the main street unmolested by cars..

On street parking

, Because of the crowded urban plan of the neighbourhood, with its narrow roads and many impasses, street parking is difficult. This is one of the many circulation problems. On the main street there are spaces for parking but no proper road markings or facilities.

Disabled access and facilities

There are no facilities for the disabled anywhere in the neighbourhood.

Pedestrian movement permeability with adjacent neighbourhoods

The area has poor permeability with adjacent districts. Only the south of the neighbourhood, because of a public space, offers good conditions for pedestrians. The main streets have poor pedestrian links with the adjoining quarters. A few pedestrian crossings do exist at the main junction but there are no foot bridges.

Cycle use, including routes and facilities

There are no cycle routes or dedicated lanes for cycle movement, nor any cycling facilities in the neighbourhood.

Car use including access and circulation and traffic flows

There are a lot of problems for drivers inside the quarter due to the traditional urban layout which comprises many narrow roads, impasses and crowded urban structures. In some parts of the neighbourhood because of really The narrow streets, impossible for cars to use, create many

difficulties for the locals. The main boundary roads are more than adequate for cars, as they are quite wide and can comfortably accommodate two-way traffic.

- **A neighbourhood with Legibility**

In this study Kevin Lynch’s method was adapted to analyse the neighbourhood’s legibility. The four elements of legibility are analysed and evaluated in Chapter 5. In this section a summary of the results is given. The diagram shows the elements of legibility and the degree of success of the elements.

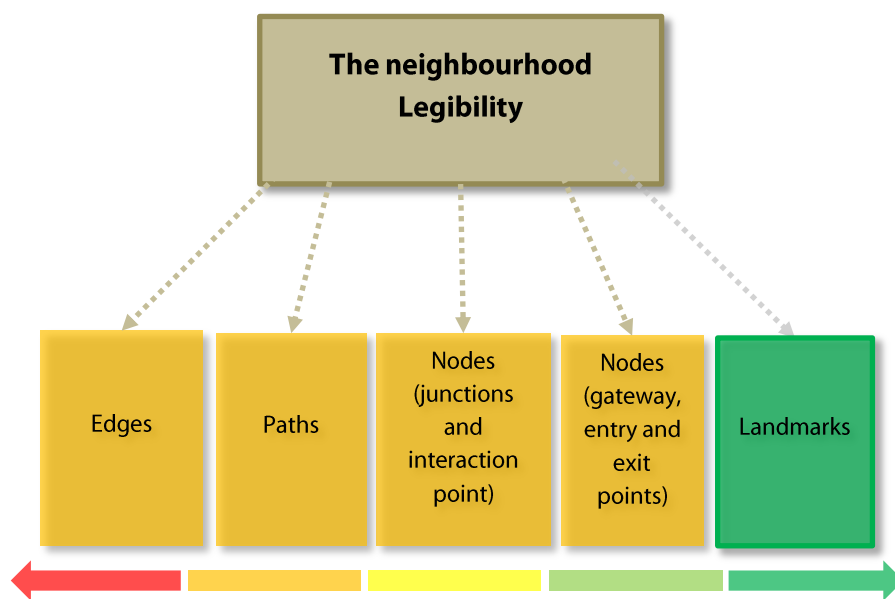


Figure 172: the elements of the neighbourhood legibility and the degree of their success

Below a summary of the elements of evaluations is given:

Landmarks

In this area there are many ancient structures and important buildings like the mosques which act as landmarks, of which there are three significant ones. The neighbourhood has network of such landmarks.

Nodes (gateway, entry and exit points)

Only one entry point of this area has a vibrant and legible character. The others – and there are many - need to be more legible.

Nodes (neighbourhood centre, important junctions and interaction points)

There is no neighbourhood centre in this neighbourhood, but there is an important junction with no legibility and an interaction point which is also a public space. There are many unimportant crossroads with non-legibility character.

Paths

There are three paths in this area that play a significant role and are legible because of their roles in but there are many which are devoid of any legible character.

Edges (building frontages, shops frontage)

In the main sectors of the quarter nearly all the building frontages (edges) are without a comprehensive character or continuous shape and they lack harmony apart from those structures that have been renovated, where the frontages follow a similar design with continuous verges on both sides, which invite you to follow them. In some sectors of the main boundary streets legible edges can be seen, but not everywhere.

- **Mixed land use**

The final feature of townscape that we identified to improve social sustainability was mixed land use. For an assessment of land use we classified four elements. These four elements are evaluated in Chapter 5 and in this section a summary of the evaluation is shown.

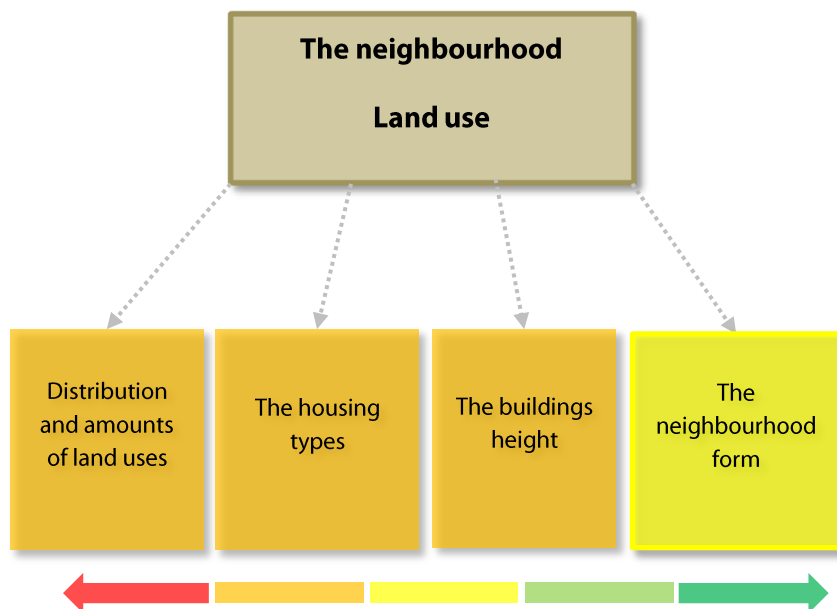


Figure 173: the elements of the neighbourhood legibility and the degree of their success

The figure 173 shows the land use elements and their success level. A summary of the results is shown below:

The neighbourhood form

The urban form of Juibareh is still that of a dense traditional quarter with many narrow pathways and cramped plot sub-divisions. The historic layout of the neighbourhood is still acceptable due to its density and human scale. However, in some parts, because of the destruction of the neighbourhood pattern, the original configuration has changed. This phenomenon has particularly affected the hierarchy of space though it is still dense. In the border district, the main streets have been completely degraded and the area has been cut off from the adjacent localities like an island. Thus, the neighbourhood form is only an average success.

Distribution and amount of land uses

The most essential use of land in this area would be for leisure, sport, culture, medicine, educational and the community. The district can claim a good distribution of commercial and religious land uses. There are also three fair-sized green spaces which are all located in the north of the neighbourhood.

Building height

The majority of the buildings are less than two storeys. Those with more floors help to achieve an easier mix of land use and the different levels can be used for the extra facilities needed by the neighbourhood. They also increase the density of the area.

Variety of housing types

In this sector, most of the buildings are typical detached houses used mostly as dwellings for one family. We do not see a variety of housing types. There are a few residential buildings with several families.

7.2 How to use the Interview Findings for Design

In this case study, five elements of the neighbourhood townscape are analysed through observation and in Chapter 6 these are evaluated and their positive and negative aspects identified. For every component, a number of solutions for highlighting opportunities and controlling constraints are given. In addition to observation, the quantitative method is used to assess the four criteria of social sustainability: namely, access to facilities and employment, safety and security, sense of place and social interaction and community spirit. The results of the quantitative data (interviews) could be used in design to improve the social sustainability of the neighbourhood. In the following paragraphs the findings of the interviews which are necessary for future design will be discussed.

In the first part of the interview we asked people about their general view of the local area and they replied that its overall maintenance was poor. The obsolescent houses (accounting for 32% of the interviewees); historic buildings 30%; pavements 21%; historic pattern 15%, and the shops inside the area 2%, needed immediate repair. All of these features of the public realm were analysed and evaluated and some guidance was offered (see section 6.2). From the findings of the first part of the interview we can see that people give priority to these five constituents - all of which should be taken into account by planners, urban designer and policy makers.

In the second section of the interviews, accessibility to facilities and employment was assessed. Among the findings it was evident that cars and motorbikes were the main form of transport, while the results of direct observation indicated that this area has good access to bus services (see section 6.3.1). These results also reveal that a high proportion of the local residents use walking as their main form of locomotion. An analysis of the movement of people in this area shows that the two main roads inside the neighbourhood are used to access the principal bazaar and the Jameh mosque of Isfahan. With these points in mind, the town planner and urban designer should respect the needs of the local residents and come up with solutions to control traffic within the area since there are already three adequately wide streets in the neighbourhood that can be used to reach the bazaar and mosque. Furthermore, it is clear that proper pedestrian routes are urgently required.

The interview findings call for adequate social and leisure, medical, sport, cultural, communal and educational facilities, while the observation results show that there are many empty spaces, resulting from the demolishing of buildings (see section 6.2.2) that could be used to house these facilities. In addition, 65% of the local residents disclosed that they liked to work as well as to live

there. This detail should also be taken into account when attempting to design or create more job and business opportunities in the neighbourhood.

In the third part of the interview, dealing with safety and security, we received some useful suggestions for local planning. The female interviewees believed that this area was rather unsafe after dark, principally because the general lighting quality was poor. This can be confirmed from direct observation, because, while there are many street lamps, the quality of their illumination is poor (see section 6.2.7). From these results we can say that this area needs to have better lighting design to create a safer environment after dark. Dilapidated buildings (29%); old derelict hovels (24%); buildings with cracked walls (21%); narrow and tortuous pathways (15%); arched walkways (8%) and construction sites (5%), are what the local residents identify as the physical aspects of the neighbourhood that make it an unsafe environment. These elements also feature in the observation results (see section 6.2). Planners, urban designer and policy-makers should prioritise these results in their work. Among the forms of antisocial behaviour that make the surroundings unsafe, drug addicts are the main problem. This factor should also be considered for designing a centre for the rehabilitation of drug abusers.

In the final section of the interview, after an assessment of the social interaction and community spirit of the neighbourhood, it was noticed that apart from religious activities, there was a complete absence of social activities and group organizations. The observation revealed that there were many empty lots (see section 6.2.2) that could be used to design community spaces and buildings for social activities.

7.3 Restatement of Aims

This section provides a quick review of the research questions, the method of answering them and the results achieved. It helps us to see a clear and brief conclusion of the study. The research questions were:

Q1) Are the historic neighbourhoods of Iranian cities with traditional urban forms socially sustainable?

Objective of Q1:

- **Identifying the criteria for social sustainability which are most relevant to urban forms on the neighbourhood scale.**

Methods: via reviewing the literature about sustainable development, social sustainability, social sustainability criteria, urban social sustainability and the neighbourhood, four criteria of social sustainability were identified.

Outputs: Accessibility (access to employment and facilities), safety and security, sense of place and social interaction and community spirit identified as the four criteria of social sustainability which are most relevant to urban forms on the neighbourhood scale (refer to section 2.3.1).

- **Assessing the criteria for the social sustainability of residents' feelings in the historic neighbourhoods.**

Methods: through a structured interview of a large sample of the local residents from different groups (refer to section 4.2.1) the data collected from the case study and then the interviews data were analysed (refer to section 4.3.1) and finally the four criteria of social sustainability (accessibility, safety and security, sense of place and social interaction and community spirit) were evaluated (refer to section 5.1).

Outputs: the results of the four criteria of social sustainability (accessibility, safety and security, sense of place and social interaction and community spirit) were evaluated and the level of social sustainability was identified in the historic neighbourhood and in section 6.1 we can see the summary of the evaluations.

Q2) Are townscape of historic neighbourhoods in Iranian cities amenable to social sustainability?

Objective of Q2:

- **Identifying the features of the neighbourhood townscape that improve social sustainability.**

Methods: via reviewing different writings about the features of a place that improve accessibility, safety and security, sense of place and social interaction and community spirit (refer to section 2.3.2)

Outputs: a place with its own identity, successful public realm, successful movement with filtered permeability, a place with legibility and mixed land use were identified as five features of urban form that improve social sustainability (refer to section 2.3.2).

- **Appraisal of the elements of the historic neighbourhood townscape to find the level of amenability of the features to social sustainability.**

Methods: via observing the neighbourhood form and physical context by using a walking tool and a serial vision method (refer to section 3.2.3.2) the visual data (many sequences of pictures) from all parts of the case study were collected and clustered (refer to section 4.2.2). The clustered walking data, which were 39 walking sheets, were analysed manually (refer to section 4.3.1.2) and finally all the results from the analytical stage were mapped and the maps evaluated (refer to section 5.2)

Outputs: Every element of the neighbourhood townscape was evaluated and this study found which elements are more and less successful (refer to section 6.2).

Q3) How can social sustainability be improved in the historic neighbourhoods of Iranian cities?

Objective of Q3:

- **Identifying the current opportunities and constraints of the townscapes of historic quarters**

Method: via evaluating the elements of the neighbourhood townscape and identifying the positive and negative aspects of every element (refer to Chapter 6).

Output: the positive and negative aspects (opportunities and constraints) of the neighbourhood form were identified (refer to section 6.3).

- **Suggesting the guides for future development after identifying the opportunities and constraints in the features of the neighbourhood townscape**

Method: via the positive and negative aspects (opportunities and constraints) of the neighbourhood townscape elements the researcher gave the guides to highlight the opportunities and control the constraints (refer to Chapter 6.3).

Output: For every element of the neighbourhood townscape solution was shown that made the element successful and by improving these elements this study achieved its aim which was that of improving social sustainability (refer to section 6.3).

7.4 Limitations

In this study there were some limitations. These limitations existed in the collecting of data. The case study was in Isfahan and the researcher had to go to Iran to collect the data. Each visit lasted only three days. As for the visual data, it was impossible for the researcher to collect pictures for all parts of the case study because about 900 were taken and it was really hard to take the photos after dark. Another limitation was related to the interviews with the female interviewees. Although a female partner interviewed them, the researcher could not find enough female interviewees, especially since Afghani families were so strict about allowing women to be interviewed. Therefore only four women under forty were interviewed. The final limitation was to find enough young Jewish interviewees during different periods of the data collection. In this study all of the Jewish interviewees were over forty.

7.5 Further Research

This study was an investigation that produced interesting findings. It outlined many areas that would lead to further investigations. For example, further study could go into greater depth and detail about the feelings of young female residents about social sustainability and concentrate on these groups. Further investigation could be focused on another theme of the townscape which is the people and the townscapes of the historic neighbourhoods used by them. This study evaluated five factors of townscape and finally presented some solutions but further research should be focused more precisely on each factor and there should also be more focus on the results and the testing and finding of solutions. Environmental and economical aspects of social sustainability can be the subject of further research on the Iranian historic neighbourhood. This study assessed the level of social sustainability in the old quarters of Iranian cities while a comparison of the level of social sustainability in the various kinds of historic neighbourhoods: those with a mixture of historic and new patterns and those with new residential sectors with no history could provide further research projects relevant to the topic of this study.

7.6 Recommendations for Practice or Policy

The findings of this study provide insights into the issues that policy-makers and practitioners should consider in designing regeneration policies and developing programmes and efforts dealing with the social problems of historic neighbourhoods. This study develops a model for the

distribution and use of the research findings for policy and practice. Three aspect of this study could be useful for policy-makers and practitioners.

Theoretical implications: the theoretical implications of this research could be useful in different parts of Iranian cities and different historic neighbourhoods. They could even be used for residential quarters around the world.

Methodological approach: the methodological approach of this research could also be used for every neighbourhood of Iranian cities or even those of different countries which need to assess and improve their social sustainability. The methodology of this study could also be used by other Iranian researchers with benefits for employing a wider range of qualitative and quantitative data from a variety of sources. Furthermore, it could be representative of mixed methods and reveal how different methods can merge to obtain the results. The methodology of this study could show how to collect data about the physical condition of the urban context and categorize visual data. It could also how visual data can be analysed manually. The mapping method of the research is also a unique method whereby mapping researchers can show the large numbers of analysed data visually and evaluate them. The significance of this method is that it shows the exact locations of the positive and negative aspects (opportunities and constraints) of the area and makes it possible to find solutions.

Practical approach: the results of this study can help urban planners, urban designer, architects and decision-makers in that it provides information to assist them in regenerating the historic neighbourhood on the basis of increasing social sustainability. Urban designers and architects should be able to identify opportunities and constraints of the urban context as well as the locations of these positive and negative aspects (opportunities and constraints) to illustrate their design ideas. This study develops a model for social sustainability. Consequently, this research can be useful for urban designers who try to enhance social sustainability in every residential quarter of Iran and around the world.

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FIGURES

Figure 1: the features of townscape which improve social sustainability	49
Figure 2: Structure of traditional urban form of Isfahan.....	52
Figure 3: Structure of traditional urban form of Kerman.....	52
: Figure 4: the urban pattern of Isfahan which shows the phenomenon of cutting the historic pattern by a new layout of streets in the Pahlavi period (from google map).....	62
Figure 5: the position of Iran in Middle East	93
Figure 6: the location of Isfahan province and Isfahan city in Iran	94
Figure 7: shows the climate of different regions of Iran and the location of Isfahan with its hot and dry climate.....	95
Figure 8: Isfahan limits during the Pre-Saljuq Empire 10 th Century.....	99
Figure 9: Isfahan limits during the Saljuq Empire 12 th century	99
Figure 10: The map above which is Isfahan limits during Safavid period.....	100
Figure 11: the recent Isfahan limits (last decade) and compare with Safavid Empire period limits.....	100
Figure 12: the location of Juibareh in Isfahan	104
Figure 13: the map of juibareh which shows the limit and distribution of land use.....	105
Figure 14: The old square (Meidan Kohneh) at the beginning of Islam (7 th century)	106
Figure 15: The old square during the Saljuc Empire (10 th century).....	106
Figure 16: the old square and new street in the Reza Shah period (1926 to 1933).....	106
Figure 17: the old square (Meidan Kohneh) of the town before starting to construct the new square (Meidan Atigh).....	106
Figure 18: the new square (Meidan Atigh)	107
Figure 19: A map from Juibareh which the location of samples photos above	109
Figure 20: segmentation the walking sectors	123
Figure 21: the location of sector 2 in the neighbourhood.....	148
Figure 22: The analysis of existence of the historic pattern in part 2.....	149
Figure 23: The analysis of historic buildings and elements in part 2.....	150
Figure 24: The analysis of using use of prevalent historic materials and styles in part 2	151
Figure 25: The analysis of the harmony among the architectural designs of buildings in part 2 ...	152
Figure 26: the analysis of a distict image in part 2.....	153
Figure 27: the analysis of the lost significant features in part 2.....	154
Figure 28: the analysis of significant landmarks in part 2.....	155
Figure 29: the analysis of significant views in part 2.....	156
Figure 30: the analysis of pavement condition in part 2.....	157
Figure 31: the analysis of the condition of building frontages in part 2.....	158
Figure 32: the anaysis of the shops frontages in part 2	159
Figure 33: the analysis of roadsides greenary in part 2.....	160
Figure 34: the anaysis of the state of street furniture in part 2.....	161
Figure 35: the analysis of advertisments boards condition in part 2.....	162
Figure 36: the analysis of the state of roadside lighting in part 2.....	163
Figure 37: the analysis of green spaces lighting in part 2.....	164
Figure 38: the analysis of public arts in part 2.....	165
Figure 39: the analysis of safety and security in part 2.....	166
Figure 40: the analysis of public spaces in part 2.....	167
Figure 41: the analysis of traffic installation in part 2.....	168

Figure 42: the analysis of green spaces in part 2.....	169
Figure 43: the analysis of bus routes and stops in part 2	170
Figure 44: the analysis of cars movement in part 2.....	171
Figure 45: the analysis of cycle routes and movement in part 2.....	172
Figure 46: the analysis of on street parkings in part 2.....	173
Figure 47: the analysis of parking lots in part 2	174
Figure 48: the analysis of pedestrian movement in part 2	175
Figure 49: the analysis of disabled services and access in part 2	176
Figure 50: the analysis of pedestrian movement permeability inside the area in part 2	177
Figure 51: the analysis of pedestrian movement permeability with adjacent areas in part 2.....	178
Figure 52: the analysis of entry or exit points in part 2.....	179
Figure 53: the analysis of junction legibility in part 2.....	180
Figure 54: the analysis of edges legibility in part 2	181
Figure 55: the analysis of landmarks in part 2	182
Figure 56: the analysis of paths legibility in part 2	183
Figure 57: the analysis of the neighbourhood form in part 2.....	184
Figure 58: the analysis of distribution and amounts of land uses in part 2.....	185
Figure 59: the analysis of housing types in part 2.....	186
Figure 60: the analysis of the buildings height in part 2.....	187
Figure 61: the results of the evaluation of the historic pattern.....	250
Figure 62: the neighbourhood plan connected to the Isfahan bazaar	252
Figure 63: the regenerated road in the neighbourhood which shows the historic pattern in good condition.....	253
Figure 64: sector 2 of the walking parts which shows the really poor condition of the historic pattern.....	254
Figure 65: the main bordering streets with no signs of an historic pattern.....	254
Figure 66: the results for the historic buildings and elements in the neighbourhood	256
Figure 67: the two significant historic buildings in this neighbourhood.....	257
Figure 68: shows the combination of a regenerated historic building with a designed green space	258
Figure 69: shows an example of poor historic buildings in the neighbourhood.....	259
Figure 70: the empty space between two historic buildings which can be designed as a public space or green space with two historic monuments.....	260
Figure 71: the results of using prevalent historic materials and style	261
Figure 72: shows the use of historic material and style for renewing these parts of the neighbourhood.....	262
Figure 73: the results of harmony in architectural design and materials.....	263
Figure 74: parts 3 and 4 with good harmony of architectural design of the building facades.....	264
Figure 75: shows part 2 as an example of lack of harmony in architectural design of the buildings	265
Figure 76: the results for the existing sectors with a distinct image.....	266
Figure 77: the parts 38 and 23 with a distinct image.....	267
Figure 78: shows the existence of a distinct image in sectors 19 and 25.....	268
Figure 79: shows the regenerated sectors with a distinct image.....	268
Figure 80: an example of the small empty spaces which can be designed as small green spaces	269

Figure 81: the location of the features which have been lost	270
Figure 82: shows the She Rah Mihigiri junction and the place for collecting water which has been lost.....	271
Figure 83: shows the new square (Meidan Atigh) which is under construction.....	272
Figure 84: an opportunity to design a space or locale with water in this empty space to emphasise its lost features.....	272
Figure 85: the significant landmarks and their locations	273
Figure 86: the results of existing significant views or vistas in this area.....	275
Figure 87: the results for the condition of the pavements	276
Figure 88: shows the renovated parts with flagstone pavements in good condition.....	277
Figure 89: shows sector 1 with pavements in really poor shape.....	278
Figure 90: the condition of building frontages and the location of ruined areas in different parts of the neighbourhood	279
Figure 91: shows the empty spaces after the demolition of the old houses which provide opportunities.....	280
Figure 92: shows the good condition of buildings frontages in regenerated districts.....	281
Figure 93: shows the area with buildings frontages in poor or really poor condition	281
Figure 94: shows the spread of the ruined areas in this neighbourhood.....	282
Figure 95: the condition, quality and maintenance of the shop frontages in the neighbourhood.....	283
Figure 96: shows the condition of the shops frontages in the regenerated road.....	284
Figure 97: the poor condition of shops in sector 2.....	284
Figure 98: the state of roadside greenery in the neighbourhood	286
Figure 99: shows the main boundary street of sector 35 with good roadside greenery.....	287
Figure 100: shows the solution to design roadside greenery in wider parts of the roads.....	288
Figure 101: the results of a street furniture assessment in the neighbourhood	289
Figure 102: shows the public space in part 38 with good designed street furniture	290
Figure 103: the results relating to advertisement boards in the neighbourhood	291
Figure 104: the results of lighting conditions on the roadsides, pathways and sidewalks.....	292
Figure 105: shows an example of poor lighting design with a jumble of electricity cables.....	293
Figure 106: the results of the lighting conditions in the public and green spaces.....	294
Figure 107: shows an example of a green space with reasonable lighting design	295
Figure 108: shows the public space which does not have enough lighting.....	295
Figure 109: the location of existing public art.....	296
Figure 110: shows the fountain (public art) in the sector 23	297
Figure 111: shows green spaces and a public space with a lack of public art.....	297
Figure 112: the location of empty spaces which can be designed as public or green spaces with beautiful public art.....	298
Figure 113: Condition of the safety and security equipment in this neighbourhood.....	299
Figure 114: the existing public spaces and their location in this area.....	300
Figure 115: shows the public space in sector 38 which has poor design and management.....	301
Figure 116: shows the new town square which is under construction.....	301
Figure 117: shows the vacant lots which provide opportunities for designing public spaces on the neighbourhood scale.....	302
Figure 118: the results relating to the quality and quantity of traffic installations in this neighbourhood.....	303

Figure 119: quality and locations of the green spaces in this neighbourhood.....	305
Figure 120: shows the reasonable quality and design of small green spaces in this neighbourhood	306
Figure 121: shows the location of big empty areas which could be converted into green spaces	307
Figure 122: shows small empty spaces between houses which could be made into small green spaces	307
Figure 123: bus services and access points in this area	308
Figure 124: the results of the car movement situation in this neighbourhood.....	310
Figure 125: shows the main boundary streets with good circulation of cars.....	312
Figure 126: shows the two main roads inside the area and the problem with car circulation.....	312
Figure 127: shows the really narrow roads and those parts of the road which are unusable by car	313
Figure 128: shows the impasses in this area.....	313
Figure 129: shows the guidelines for the future of the main road and its changing function.....	314
Figure 130: shows the main boundary streets with no designed or marked cycle routes	316
Figure 131: shows the main border streets with no desined and marked cycle routes	317
Figure 132: the main roads which are narrow and with no cycle routes.....	317
Figure 133: on-street parking conditions in this neighbourhood	319
Figure 134: shows the two main roads with no parking spaces at the roadsides.....	320
Figure 135: condition and location of parking lots in this district	322
Figure 136: shows a poorly-designed parking lot.....	323
Figure 137: the empty spaces that are used as parking lots.....	324
Figure 138: the state of pedestrian movement in the neighbourhood.....	326
Figure 139: shows the main streets with good safe sidewalks	327
Figure 140: shows the really narrow roads or stretches of the roads that are only usable by pedestrians.....	328
Figure 141: shows the public spaces with car intrusion.....	328
Figure 142: shows a busy main road in the neighbourhood with no sidewalks for pedestrian movement.....	329
Figure 143: the second main road which has been resurfaced but with poorly designed sidewalks	329
Figure 144: shows the narrow roads or stretches of the roads that have only space for one car and which are dangerous for pedestrians.....	330
Figure 145: the condition of disabled accessibility and facilities in this area	332
Figure 146: the results of the connections between different parts of the neighbourhood	333
Figure 147: pedestrian movement permeability with adjacent neighbourhoods.....	335
Figure 148: the location and value of the entry and exit points in this neighbourhood.....	337
Figure 149: shows the three legible entry of exit points in the neighbourhood.....	338
Figure 150: the legibility levels of the junctions in the neighbourhood	340
Figure 151: shows the main junction in the neighbourhood which could become an important node	341
Figure 152: the results of the level of legibility of the neighbourhood edges.....	342
Figure 153: the legible frontages line in the regenerated areas of the neighbourhood.....	343
Figure 154: the results of the assessment of the landmarks.....	344
Figure 155: shows the most significant landmarks of this neighbourhood.....	345

Figure 156: the historic buildings that have been regenerated and act as landmarks.....	346
Figure 157: shows the important buildings that act as landmarks	346
Figure 158: shows the historic buildings in poor condition that could be converted into legible landmarks.....	347
Figure 159: shows the important buildings with no legible image or character	347
Figure 160: the results of the legibility of the paths	349
Figure 161: shows the three legible roads that play significant role in this area	350
Figure 162: the results of the neighbourhood form	352
Figure 163: amount and distribution of land use	354
Figure 164: shows the vacant spaces in this area that could be allocated for neighbourhood facilities.....	355
Figure 165: the results of the existing types of residential buildings.....	356
Figure 166: shows the empty spaces that can be used for new residential buildings	357
Figure 167: the results of the scale of buildings in this area.....	358
Figure 168: the elements to show the range of colours from less to more successful.....	369
Figure 169: the elements of the neighbourhood identity and the degree of their success.....	369
Figure 170: the elements of the neighbourhood public realm and the degree of their success....	371
Figure 171: the elements of neighbourhood movement and the degree of their success.....	374
Figure 172: the elements of the neighbourhood legibility and the degree of their success.....	376
Figure 173: the elements of the neighbourhood legibility and the degree of their success.....	377

GRAPHS

Graph 1: the results of existence signs or maps	192
Graph 2: the rate of interviewees that believe this area is easy to find.....	193
Graph 3: the results of overall signage.....	193
Graph 4: the results of the neighbourhood maintenance.....	194
Graph 5: the rating of the interviewees concerning important repairs that need to be made in the neighbourhood.....	195
Graph 6: the important repairs that the neighbourhood needs.....	196
Graph 7: the interviewees' impression of the overall design of the neighbourhood.....	197
Graph 8: the interviewees' rating as to whether this area has good local transport or not	198
Graph 9: the results of the main form of residents' transport	199
Graph 10: the results from the interviewees' responses about the medical facilities	200
Graph 11: the results of the interviewees' responses about shopping facilities	201
Graph 12: the results of interviewees' responses about medical facilities	201
Graph 13: the results of interviewees' responses about sport facilities.....	202
Graph 14: the results of interviewees' responses concerning the communal facilities.....	203
Graph 15: the results of interviewees' answers about the religious facilities.....	203
Graph 16: the results of the interviewees' answers concerning educational facilities.....	204
Graph 17: the results of the interviewees' responses about the cultural facilities.....	205
Graph 18: the rate of interviewees who work in this neighbourhood.....	206
Graph 19: How long they had been working?	206
Graph 20: the rate of participants that like to work as well as live here	207
Graph 21: the results of interviewees' responses concerning business activities.....	208
Graph 22: the results of finding a job in this area	209
Graph 23: the results of establishing a business in this area.....	209
Graph 24: the rate of the residents' feeling of safety in the day time.....	211
Graph 25: how safe the residents feel about after dark.....	212
Graph 26: the results of the lighting conditions on pedestrian walkways and sidewalks	213
Graph 27: the results of the lighting conditions of green spaces	214
Graph 28: the results of the lighting conditions of the main junctions and public spaces	215
Graph 29: the results of the lighting conditions of the home and building entrances.....	216
Graph 30: the result for the existing security equipment, emergency services and police station	217
Graph 31: the percentage of those who felt the neighbourhood form and physical condition created an unsafe environment.....	218
Graph 32: the results for the attributes and conditions that create an unsafe environment	219
Graph 33: the result of cars movement and the problem with pedestrians.....	220
Graph 34: the results for problems with rubbish and litter lying around	221
Graph 35: the results of the problem with level of noise	222
Graph 36: the response ratings about graffiti and vandalism problems.....	223
Graph 37: the extent of the problem of teenagers hanging around	224
Graph 38: the results of whether the interviewees believed that alcohol or drug use was a problem	225
Graph 39: the results for the interviewees' responses about the overall level of crime	226
Graph 40: the rate of interviewees who have been victim of following crimes	227
Graph 41: the results of the interviewees' responses that this neighbourhood was their home ...	229

Graph 42: the results of the interviewees' responses that this place held a lot of meaning for them	230
Graph 43: the average rating of interviewee responses that this is the place where they belong.	231
Graph 44: the results of interviewee responses that they would miss if they had to leave	231
Graph 45: the results of interviewee responses that you are proud of this place.....	232
Graph 46: the results of interviewee responses that this place was important to them.....	233
Graph 47: the results of the interviewees' statements about: Which they would prefer	235
Graph 48: the results of the interviewees' responses about the social and cultural activities that take place in this area.....	236
Graph 49: the results of what social activities happen in this neighbourhood.....	237
Graph 50: the results of the interviewees' responses about the existence of community organizations.....	237
Graph 51: the level of satisfaction with neighbours	238
Graph 52: the interviewees' responses concerning their dissatisfaction with their problems	239
Graph 53: the results of the interviewees' statements when asked how many people they knew in the neighbourhood	240
Graph 54: the results of the interviewees' statements when asked how many people they trusted in their neighbourhood.....	241
Graph 55: the results of interviewees' responses when asked if this neighbourhood was a place where neighbours looked out for each other	242
Graph 56: the results of the interviewees' responses when asked: In the past 6 months have you done a favour for a neighbour?.....	242
Graph 57: the results of the interviewees' responses when asked: Have any of your neighbours done a favour for you in the past 6 months?.....	243

PICTURES

Picture 1: the main bazar of Isfahan.....	54
Picture 2: the main bazar of Kerman.....	54
Picture 3: The Emam Mosque of Isfahan	55
Picture 4: From Naghsh-e-Jahan Square (Constructed between 1598 and 1629, it is now an important historical site, and one of UNESCO's World Heritage Sites. It is 160 meters wide by 508 meters long, an area of 89,600 m2).....	58
Picture 5: From Meidan Ganj Ali Khan(The Ganjali Khan Complex was built by Ganjali Khan who governed Kerman, Sistan and Kandahar provinces from 1596 to 1621 under Safavid Shah Abbas)	58
Picture 6: traditional picture of Zurkhanah.....	59
Picture 7: the public paths (KermanThe Ganjali Khan Hammam was built by Ganjali Khan who governed Kerman, Sistan and Kandahar provinces from 1596 to 1621 under Safavid Shah Abbas)60	
Picture 8: Naqsh-e Jahan Square also known as "Shah Square" or "Imam Square" - 1602.....	102
Picture 9: Shah Mosque known as the Imam mosque- 1629.....	102
Picture 10: Sheikh Lutfollah Mosque - 1618.....	102
Picture 11: Ali Qapu (The Royal Palace) - Early 17th Century.....	102
Picture 12: Si-o-Seh Pol (The Bridge of 33 Arches) - 1602	102
Picture 13: Pol-e Khaju(Khaju Bridge) - 1650	102
Picture 14: Zayandeh river in Isfahan	103
Picture 15: Chaharbagh Boulevard - 1596.....	103
Picture 16: Jameh Mosque	107
Picture 17: Darolziafeh Minarets	107
Picture 18: The assumptive picture of Old Meidan in the Saljuc Empire period.....	107
Picture 19: Atigh square (new square).....	107
Picture 20: roofed pathway.....	109
Picture 21: roofed pathways.....	109
Picture 22: ruined area.....	109
Picture 23: ruined area.....	109

TABLES

Table 1: Example of definitions of social sustainability.....	15
Table 2: Shows the criteria of social sustainability drawn from different authors	17
Table 3: Score of urban form are highlighted in bold source.....	27
Table 4: the reason why density is responsive to social sustainability.....	34
Table 5: the reason why density is not responsive to social sustainability.....	36
Table 6: the numbers and different groups of the residents who will be interviewed.....	78
Table 7: The elements of identity which will be analysed through sequence of pictures.....	85
Table 8: The elements of public realm which will be analysed through sequence of pictures.....	86
Table 9: The elements of movement which will be analysed through sequence of pictures.....	86
Table 10: The elements of legibility which will be analysed through sequence of pictures.....	86
Table 11: The elements of land use which will be analysed through sequence of pictures	86
Table 12: a sample of analysing an element.....	86
Table 13: Isfahan temperatures in during the year, source	96
Table 14: population of Isfahan at different periods of time	96
Table 15: the numbers and different groups of residents who will be interviewed	115
Table 16: actual numbers in the different groups who were interviewed.....	115
Table 17: the average rating about existence signs or maps	192
Table 18: the average rating of interviewees' respondents that this place is easy to find	193
Table 19: the average rating of the overall signage.....	194
Table 20: the average rating for maintenance condition.....	195
Table 21: the average rating of the respondents that important repairs are needed in this neighbourhood.....	195
Table 22: the average rating of the overall design.....	197
Table 23: the average rating of the respondents about local transport.....	198
Table 24: the average rating of the social and leisure facilities.....	200
Table 25: the average rating score of the shopping facilities.....	201
Table 26: the average rating for medical facilities	202
Table 27: the average rating score of the sporting facilities	202
Table 28: the average rating score for the communal facilities.....	203
Table 29: the average rating score of the religious resources.....	204
Table 30: the average rating score for the educational facilities.....	204
Table 31: the average rating score for the cultural facilities	205
Table 32: the average rating residents who like to work here as well as living.....	207
Table 33: the average rating for business activities	208
Table 34: the average rating score for finding a job	209
Table 35: the average rating score for establishing a business.....	210
Table 36: the average rating of safety for walking alone in the day time	211
Table 37 : the average rating for safety when walking alone after dark.....	212
Table 38: the average rating for lighting on pedestrian walkways and sidewalks	214
Table 39: the average rating for the lighting of green spaces.....	214
Table 40: the average rating for the lighting of the main junctions and public spaces	215
Table 41: the average rating for the lighting at the entrances of homes and buildings.....	216
Table 42: the average rating for the availability of emergency services, security and police stations	217

Table 43: the average rating of those who felt the neighbourhood form and physical condition created an unsafe environment.....	218
Table 44: the average rating for the car movement problem.....	220
Table 45: the average rating for rubbish and litter problems.....	221
Table 46: the average rating of the noise problem.....	222
Table 47: the average rating for graffiti and vandalism problems.....	223
Table 48: the average rating for the problem of teenagers hanging around.....	224
Table 49: the average rating of the alcohol and drug use problem.....	225
Table 50: rating scale summary of antisocial behaviour problems.....	226
Table 51: the average rating for the crimes' problem.....	227
Table 52: the average rating of the interviewees' responses that this neighbourhood was their home.....	229
Table 53: the average rating of the interviewees' responses that this place held a lot of meaning for them.....	230
Table 54: the average rating of the interviewees' responses that this is the place where they belong.....	231
Table 55: the average rating of interviewee responses that they would miss it if they had to leave.....	232
Table 56: the average rating of interviewee responses that you are proud of this place.....	232
Table 57: the average rating of interviewee responses that this place was important to them.....	233
Table 58: the all average rating scale of the six statements.....	234
Table 59: community attachment scale for the interviewees' responses.....	234
Table 60: the average rating for interviewee statements about which they would prefer.....	235
Table 61: the average rating of the interviewees responses about the social and cultural activities that are happening.....	236
Table 62: the average rating for the existence of community organizations and groups.....	237
Table 63: the average rate of satisfaction.....	238
Table 64: the average rating of interviewees' statements when asked them how many people you know in your neighbourhood.....	240
Table 65: the average rating of the interviewees' statements when asked how many people they trusted in their neighbourhood.....	241
Table 66: average rating for the interviewees' responses when asked if this neighbourhood was a place where neighbours looked out for each other.....	242
Table 67: the average rating for the interviewees' responses when asked: Have you done a favour for a neighbour in the past 6 months?.....	243
Table 68: the average rating for the interviewees' responses when asked: Have any of your neighbours done a favour for you in the past 6 months?.....	243
Table 69: the average level of support among the residents.....	244
Table 70: the scale of different colours for the average rating scores.....	364
Table 71: the overall results of the features of the local area.....	364
Table 72: the overall results of the features of accessibility.....	365
Table 73: the overall results of the safety and security features.....	366
Table 74: the overall results of the aspects of sense of place.....	367
Table 75: the overall results of social interaction and community spirit.....	368

APPENDIX 1: THE INTERVIEW'S QUESTIONS

Male Female Age: 30years Religion: Moslem/Shiah Nationality (if he/she prefers): Iranian
Occupation: Student (Master degree) Name (if he/she prefers): Mohammad Fatehi

General questions:

1- How long do you live here?

Less than 1 year Between 1-2 years More than 2 years (how many years)

View of local area:

This stage looks at the physical environment in which people live and facilities in this area. People's feelings about their physical environment can relate to social sustainability.

Signage:

1- Are there signs or maps identifying where you are? (Street, building, neighbourhood)

Yes No don't know

2- If you weren't familiar with this place, would it be easy to find your way around?

Yes No don't know

3- What is your overall impression of the signage in this place?

Very good Good Satisfactory Poor Very poor I don't know

Maintenances:

4- How well is the place maintained?

Very good Good Satisfactory Poor Very poor I don't know

5- Are there any important repairs that need to be made?

Yes No don't know

6- What exactly repairs need? *Historic pattern needs to repair*

Design:

7- What is your impression of the overall design of the place (New pattern)?

Very good Good Satisfactory Poor Very poor I don't know

Accessibility:

Public transport:

8- Would you say this area has good public transport (bus) routes, services and facilities?

Yes No Don't know

9- What is your main form of transport?

Car/motorcycle/ Public transport (buses and trains) Cycling Walking Never goes out Other

Facilities:

10- How are the social & leisure facilities for people like you?

Very good Good Satisfactory Poor Very poor I don't know

11- How are the shopping facilities?

Very good Good Satisfactory Poor Very poor I don't know

12- How are the medical facilities?

Very good Good Satisfactory Poor Very poor I don't know

13- How are the sport facilities?

Very good Good Satisfactory Poor Very poor I don't know

14- How are the communal facilities?

Very good Good Satisfactory Poor Very poor I don't know

15- How are the religious facilities?

Very good Good Satisfactory Poor Very poor I don't know

16- How are the educational facilities?

Very good Good Satisfactory Poor Very poor I don't know

17- How are the cultural facilities?

Very good Good Satisfactory Poor Very poor I don't know

Access to employment:

18- Do you work in this neighbourhood? Yes No

19- How long do work here?

Less than 1 year Between 1-2 years More than 2 years (how many years)

20- Do you like to work here as well as living? Yes No

21- What do you think about business activities here?

Very good Good Satisfactory Poor Very poor I don't know

22- Would you say this area has many opportunities to find a job or around the neighbourhood?

Yes No Don't know

23- Would you say this area has many opportunities to establish a business or around the neighbourhood?

Yes No Don't know

Safety and Security:

Safety feeling at day and night:

24- How safe do you feel walking alone in this area during daytime? Do you feel.....

Very safe Fairly safe A bit unsafe Very unsafe I don't know

25- How safe do you feel walking alone in this area after dark? Do you feel

Very safe Fairly safe A bit unsafe Very unsafe I don't know

Lighting:

26- How is the lighting on pedestrian walkways and sidewalks?

Very good Good Satisfactory Poor Very poor I don't know

27- How is the lighting on green spaces?

Very good Good Satisfactory Poor Very poor I don't know

28- How is the lighting on main junctions and public spaces?

Very good Good Satisfactory Poor Very poor I don't know

29- How is the lighting at the entrance of homes and buildings?

Very good Good Satisfactory Poor Very poor I don't know

Security equipment:

30- Are there emergency services, security equipment, or police station inside the neighbourhood?

Yes No don't know

Neighbourhood form and physical condition:

31- Do neighbourhood form and physical condition create unsafely?

Yes No don't know

32- What is exactly this attribute or condition? [The ruined area](#)

Car movement problems:

33- The speed or volume of road traffic (conflict among cars and pedestrians)

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

Neighbourhood pollutions:

34- Rubbish and litter lying around

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

35- Level of noise

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

Antisocial behaviour:

36- Vandalism like graffiti

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

37- Teenagers hanging around

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

38- Alcohol or drug use

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

Crime:

39- The overall level of crime

Very big problem Fairly big problem Minor problem Not at all a problem Don't know

40- Have you personally been a victim of any of the following crimes in the past 12 months?

Theft or break-in to house or flat

Theft or break-in to car parked in the area

Personal experience of theft or mugging in the area

Physical attack in the area (i.e. hit or kicked in a way that hurt you)

Racist attack in the area (either verbal or physical)

None of these

Sense of places:

Community attachment:

"When I'm in my neighbourhood I feel:

41- I'm in a place that is my home

Strongly agree Agree Average Disagree Strongly disagree

42- I'm in a place that holds a lot of meaning to me

Strongly agree Agree Average Disagree Strongly disagree

43- I'm in a place where I belong

Strongly agree Agree Average Disagree Strongly disagree

44- I'm in a place I'd miss if I had to leave

Strongly agree Agree Average Disagree Strongly disagree

45- I'm in a place I am proud of

Strongly agree Agree Average Disagree Strongly disagree

46- I'm in a place that's important to me.

Strongly agree Agree Average Disagree Strongly disagree

Place attachment:

47- "Which would you prefer,

To fix up your current house To relocate

Community spirit and social interaction

Social and cultural activities:

48- Are there social and cultural activities that take place in this neighbourhood?

Yes No Don't know

49- What are these social activities? [religious activities](#)

Community-based organizations and groups:

50- Are there community-based organizations and groups that are concerned about the neighbourhood and its people?

Yes No Don't know

51- What are these organizations?

Satisfaction, trust, know and supportive among residents

This section looks at how many local people respondents know and trust, and whether people would do favours for them, or vice versa.

52- Do you satisfy with your neighbour?

Yes No

53- What are the problems? [Family with many kids](#)

54- Would you say that you know

Most of the people in your neighbourhood

Many of the people in your neighbourhood

A few of the people in your neighbourhood

You do not know people in your neighbourhood

55- Would you say that you trust

Most of the people in your neighbourhood

Many of the people in your neighbourhood

A few of the people in your neighbourhood

You do not trust people in your neighbourhood

56- Would you say this neighbourhood is a place where neighbours look out for each other?

Yes No Don't know

57- In the past 6 months, have you done a favour for a neighbour?

Example of favours are: taking in post, watering plants, lending tools or garden equipment, carrying things upstairs, feeding pets when neighbours go on holiday and shopping.

Yes No Just moved into the area

58- And, in the past 6 months, have any of your neighbours done a favour for you?

Yes No Just moved into the area

APPENDIX 2: INFORMATION SHEET OF THE INTERVIEWS

About this research

This research is a doctoral project at the University of Sheffield in UK. This project has been approved by the university ethical committee and the researcher is working according to UK research ethics code of conduct.

All material collected handled anonymously and Farsi interviewee's answer will be destroyed after transcript. Any analyses of data collected will be carried out anonymously and will therefore be impossible to track the identity of participants. Attending in this interview is completely voluntary.

Iranian traditional neighbourhood is undergoing from many problems and began to decline in the recent years. It began by ignorance of functions and roles of neighbourhood in city life. Even though we cannot back to our ancient neighbourhood body but we can pay consider making sustainable future for Iranian neighbourhood concept. With focus on people who live in historic neighbourhood and existing townscapes, research is looking for design solutions which make social sustainable future for historic neighbourhood in Iranian cities.

Aims

The main aim of this research is assessment and evaluating social sustainability in historic neighbourhood and finding design solution for historic townscapes to create sustainable future for historic neighbourhood in Iranian cities. Create a safer place, evaluate people's sense of belonging and

Why are we asking for your input?

You will participate in this study as someone who lives in this neighbourhood as a resident. This research aims to find out how achieve social sustainable future for historic neighbourhood.

- Evaluate safety and security
- Making a sense of belonging
- Create social interaction and community spirit

Why participate?

By taking part this interviews you will be contributing to a study that might help to create sustainable future for historic neighbourhood in Iranian cities.

Contact information

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APPENDIX 3: INFORMATION SHEET OF THE INTERVIEWS (FARSI)

راه حل های طراحی برای کالبد محله های تاریخی شهرهای ایرانی با هدف دستیابی به پایداری اجتماعی

در مورد این پژوهش

این پژوهش یک پروژه دکترا در دانشگاه شفیلد در بریتانیا است. این پروژه توسط کمیته اخلاقی دانشگاه تایید شده است و پژوهشگر بر طبق کد کمیته اخلاقی بریتانیا تحقیقات را انجام می دهد.

تمام اطلاعات جمع آوری شده بدون اسم به کار گرفته می شود و صدای

ضبط شده شما بعد از تبدیل به متن از بین خواهد رفت.

هرگونه تجزیه و تحلیل داده های جمع آوری

شده به صورت ناشناس انجام خواهد شد و بنابراین

پیگیری هویت شرکت کنندگان غیر ممکن است. مشارکت در

این مصاحبه کاملاً داوطلبانه می باشد.

محله های تاریخی اینروزها مورد بی توجهی مردم برای

زندگی قرار گرفته و روابط اجتماعی بین مردم رو به

کاهش است. در این تحقیق میزان پایداری اجتماعی این

محلات مورد بررسی قرار میگیرد و به دنبال راه حل هایی

در زمینه طراحی شهری که بتوان به وسیله آنها یک پایداری

اجتماعی بوجود آورد یا ارتقا داد.

اهداف پژوهش

هدف این پژوهش افزایش یا بوجود آوردن پایداری اجتماعی در محله های تاریخی شهرهای ایرانی می باشد همچنین پیدا کردن راه حل های طراحی شهری برای کالبد محله های تاریخی برای بوجود آوردن پایداری اجتماعی.

چرا از «شما» درخواست همکاری داریم؟

شمارا در این پژوهش به عنوان کسی که ساکن محله است شرکت خواهید کرد. هدف از این تحقیق اینست که روابط و مشارکت های اجتماعی این محله افزایش یابد و کمک شود تا میزان:

• امنیت

• حس تعلق

• روابط اجتماعی و گروهی مردم

اندازه گیری شود.

چقدر مشارکت شما در این پژوهش مفید می باشد؟

با شرکت کردن در این مصاحبه شما به مطالعه ای کمک خواهید کرد که هدفش بالا بردن پایداری اجتماعی در محلات تاریخی در ایران است.

اگر به اطلاعات بیشتری نیاز دارید

با ما تماس بگیرید

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APPENDIX 4: OBSERVATIONAL SURVEY

Observational Survey for part 7



1: After the small junction continue to walk, this small road recently renewed. Good point is there is side walk for pedestrian and they can walk in safer environment. The shops have poor lighting but lighting in road is average quality.



2: In this road both sides there are many shops but most of them don't have good quality sign and banner also their accessibility by disabled are really hard even sidewalks do not have ramp.



3: This small road is not a heavy traffic road but if it was just for pedestrians, it would be a more attractive road.



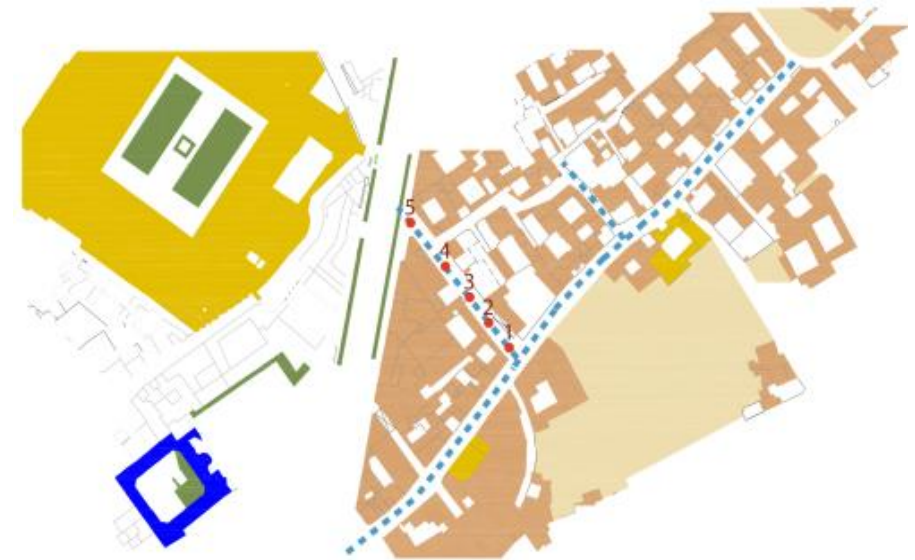
4: Another advantage of this road is street furniture. There are some benches and flowerbox here and a small sitting area helps to attract people here. In these shops lighting quality is good.



5: Pass the small sitting area and reach to a junction. Look at the right side small route. In this view a shops with high level entrance is seen. This shop is impossible for disabled to access. In the beginning of this route 9 small barriers have been located and these barriers prevent movement car inside this small road and prevent using this road for parking space.



6: After walking 50 yards reach to the end of road. At the end of view a picture of Jameh mosque of Isfahan is seen and increases the legibility of the road and also this historic building and pattern around recognize the identity of this area.



Observational Survey for part 8



1: This is small rout which goes inside the neighbourhood from main road. In the left side there is unfinished house with low quality design but in the right side there is house which has got better design. The material of the outside walls ha coherence with historic pattern of this neighbourhood.



1: Arrival to the rout, there are five flowerbox in the left side if the rout. These flowerboxes and well maintained wall in the right side help to create good environment and image in the entry.



1: Continue to walk and reach to a junction with many small pathways around. This junction is a good size open space which has been created by ruin buildings and now use as a parking space. Lack of greenery is seen here. This junction with good maintenance and design would be a small size public space that can use by houses in this part. A public space with greenery and small playground for children change completely the image and environment of this area.



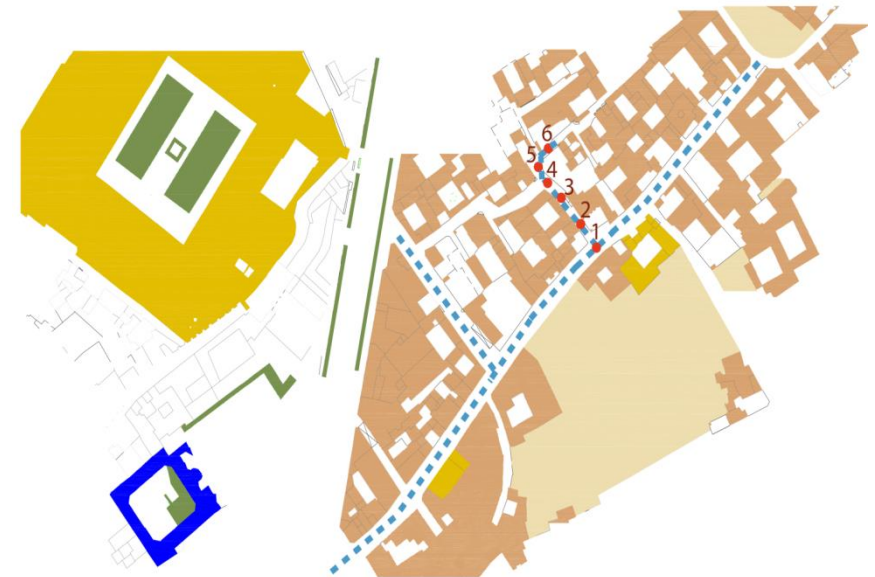
1: This is one of the routs around the junction. It can use by car two barrier have been used for controlling car movement and they are useful. The houses in this part mostly have poor design and poor maintenance.



1: This is small narrow path with obsolete houses.



1: This is a small rout and houses in this rout have better quality but the pavement need more maintenance.



Observational Survey for part 9



1: Arrival to this big junction, Irregularity is main problem in She Rah Mahigiri junction. People are walking in any way there are no specific spaces for walking, driving and parking.



2: Continue to walk straight there is poor quality kiosk in this picture. This kiosk is for selling tickets for parking area. The quality of around buildings is really poor (unfinished facades and obsoleted buildings). There is no proper barrier between parking space and movement area.



3: After 20 yards reach to two shops on the left side with no signs. These shops do not have disable access and occupied road space.



4: Pass there two shops and arrival to a narrow way. There is house in the right that has lower entrance level compare to pavement. This happened because of construction in many years.



5: After passing this house and narrow rout reach to empty space again.



6: This space has been created after destroying old pattern of this neighbourhood and in this area there are many empty spaces.



7: This space is used for car parking and the buildings around this space are destroying. Unfortunately historic pattern of this part is really obsoleted and lack of maintenance in long period cause this condition. This pattern needs emergency action because this condition created unattractive image and therefore decrease social attraction and even sense of place.



8: If pass this parking space reach to the main street and border of this neighbourhood. The main street is a commercial street and proximity of this street with main bazar causes that people use these spaces for feeding parking. Although this is a good point but increases traffic flow and irregularity in this neighbourhood. This problem needs to have more consideration maybe with changing access point for this kind of spaces from the main streets not from this neighbourhood.



Observational Survey for part 10



1: This is a historic arched path. This kind of path is a characteristic of urban form in this neighbourhood. The path is an arched corridor and buildings are connected above the path. This is a part of this neighbourhood identity and also helps to improve area legibility.



2: Continuing to walk inside this roofed path. This is one of the oldest routes in this historic neighbourhood unfortunately lack of maintenance can be seen in this historic element. This pathway is for pedestrians and is unusable by cars.



3: After passing that corridor we reach a narrow route which is good for walking but may be unsafe during dark time because lighting is really poor. Poorly maintained buildings around make this route unattractive but it has really good potential to create a walkable neighbourhood.



4: Following this narrow route a small blue door can be seen in this view. Poor quality design and poor maintenance are common problems in urban pattern of this neighbourhood.



5: Continuing to walk along really poor pavements route. Two house doors can be seen with no lighting.



6: After passing those houses, this part of the route is straight and on the left side there is an old wall. Again lack of maintenance is a problem. At the end of this road a green space can be seen.



7: After 50 yards we reach two steps, there is no specific space for disabled in all parts of the route and also lack of cycle accessibility is a problem. This is one of the access ways to the green space.



8: Arriving at the green space which has a really good location between residential areas and good accessibility from different parts. Paving and maintained trees are advantages of this green space but unfortunately lack of furniture even playing accessories for children is constraints in this beautiful green space. This space really needs seating.



9: An old wall and walking route on the left side of this green space works as a border for this space. Following this sidewalk new repairs have been done on this wall with good maintenance.



10: Following this beautiful route a synagogue can be seen at the end of the view. This historic synagogue is a historic element of this neighbourhood. Beside this synagogue there is a new building block with unfinished facades. This building has no coherence with the neighbourhood pattern.



11: Following this route and walk beside the synagogue, this is a walking path with no access by car.



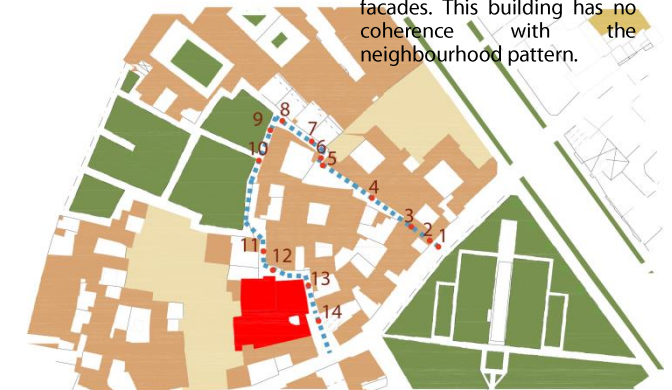
12: Continuing to walk in this way there are new and old buildings around. The maintained frontages on the right side belong to the historic synagogue.



13: Well maintained, the edge of this route on the right side increases the legibility of this part.



14: After passing a narrow part of the way we arrive at the wider area and reach the main road of this neighbourhood. Exit point of this road is a little dangerous for pedestrians because of traffic flow in the main road.



Observational Survey for part 11



1: At this junction start to walk on right side the road. Unfinished facades on both sides of the road create an unpleasant picture of the road.



2: Continue to walk. Confliction between cars and pedestrians is a problem but the low traffic road makes it easy to walk. No sidewalk and cycle route also poor quality lighting on this road are obvious.



3: After walking 100 yards building design quality and maintenance increase. There are no trees on the road sides.



4: Again in this part the buildings are older and need more maintenance. Coherence between buildings is really poor and each house has a different design and maintenance.



5: After passing many houses reach a mosque. This is not a historic building but with more maintenance it increases the legibility for example using colour on the outside walls.



6: Pass this mosque and reach a bend. A wall with low maintenance is seen.



7: Continue to walk, this part is narrower but cars can still use it and should be difficult for pedestrian.



8: After passing that bend the road gets wider. The buildings are taller in this part and the buildings are younger and have better design.



9: Arrive at a small junction.



10: Continue to walk and pass two bends. There are new buildings here with reasonable design and maintenance.



11: Reach the end of this road there is small shop on the corner at the end of the road.



Observational Survey for part 12



1: Start from behind the historic mosque there is a new three level building with low quality design, maintenance and unfinished facades. In the left beside garage door of this house a hole can be seen.



2: This pathway under the house is from old historic pattern of this neighbourhood.



3: A little horrifying to go in, lack of lighting is a problem in the corridor. There are many of these kinds of routes inside this neighbourhood and they are part of the identity of this neighbourhood.



4: Continue to walk and pass this corridor. This way is narrow and usable just for pedestrians. Poor pavement and lack of maintenance on the edges are problems.



5: Continue to walk, there is a good quality apartment block and it is also well maintained in this view.



6: After this new building arrive at a junction with a tall, old building which is not historic on the corner.



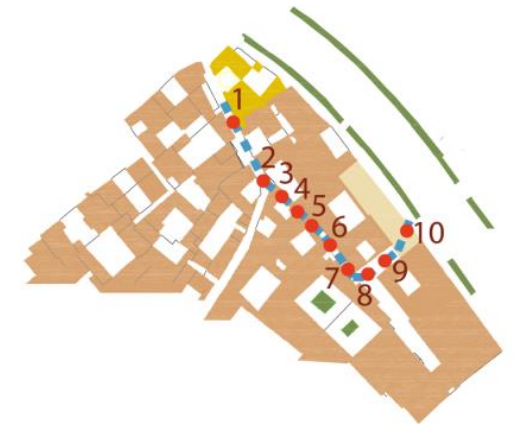
7: This building is a Hoseinnieh for religious activity but the outside walls need to be maintained.



8: Continue to walk on the left side there is an old historic house. The entrance of this house is lower than the route because of a new road and building development.



9: This historic house is abandoned and is obsolete. The house needs to be maintained and is a historic element of this neighbourhood and can work as a landmark to increase legibility. After walking further beside the old house there is an empty space which was a house and now is used as a car park. This empty space has good potential to be a green space with historic character next to it.



Observational Survey for part 13



1: Between two main entrances from new square side there is small entrance. This small and narrow route used to be part of the bazaar and is now still commercial. Unfortunately, poor maintenance is seen here.



2: Arrival at this pathway and continue to walk. Poor quality pavement, poor edges on both sides, and obsolete shops and buildings are problems here.



3: Buildings in this small narrow way are in a state of decay and lack of maintenance is a big problem. This pathway is unusable for walking and is unusable by car. The shops here have been abandoned and do not work.



4: After walking 40 yards, reach a part with a ruined building and debris. This debris needs to be removed from here because with this debris, this pathway is unusable. In this picture, an arch is seen which has been regenerated.



5: Continue to walk and arrive at an arched corridor with shops. This corridor used to be part of the main bazaar of Isfahan, but now it seems most shops are abandoned. However, regeneration has been done on the arches.



6: Reach to a junction and go to the left side. Lack of maintenance is a problem here. This part, with regeneration again, would be a successful part and can help to increase social attraction. This part survived from the historic pattern and needs more attention.



7: After passing the bazaar corridor, arrive at a narrow pathway. The historic pattern has been obsolete.



8: In this narrow pathway, on the right side, an abandoned house is seen. This house is empty and is in a state of decay. Really poor quality buildings with debris and poor quality pavement cause this pathway to be unusable.



9: On the right side, there is a mosque with a tall wall. Unfortunately, the material on the outside wall is poor and needs more maintenance.



10: This pathway seems to be used as a parking space for the main road.



11: Parking cars here should be a problem because they take most of the space of the pathway, and drivers will have problems when they want to reverse and pedestrians get in trouble.



12: Reach to the end of this way, and this is the main road. Careful of heavy traffic on the main road when they want to get out of this pathway.



Observational Survey for part 15



1: In the middle of the main road that has been regenerated and after first arched corridor there is mosque in the corner. This mosque is a historic element in this area and increase legibility of this part.

2: Beside this mosque there is small narrow way. This pathway is usable for pedestrian. Pavement is renewed in the beginning.

3: Continue to walk in this narrow route reach to a bend and a shop. This shop does not have sign.

4: After pass this shop and the last part of regenerated pavement reach to wider area.

5: This empty space now is used as a parking space. This space is perfect to design a small public space with furniture, sitting area, trees and greenery.

6: Continue to walk in this route, this route gets narrower again. Buildings around are obsolete and need maintenance. Most of the houses around this route are old houses and some of them are being destroyed. Lighting is poor in this way.



7: After walking few meters reach to a small ruin area in the right side. This kind of spaces is hidden and makes an unsafe environment in this neighbourhood. They need to have more attention.

8: Pass this space and reach to a big parking space with many obsolete buildings around.

9: This big empty space now is used as a big parking area. It was used to be buildings but now after demolishing old buildings this vast space has been created. Although this neighbourhood needs parking space but this massive empty space has good potential to create public space or providing social infrastructures.



10: Continue to walk some people are walking toward the She Rah Mahigiri junction. This road is sloping upwards. Lack of pedestrian walking side and lack of disabled path are problems. There is reasonable quality design new house on the corner.

11: Reach to She Rah Mahigiri junction, conflict between pedestrians and cars is seen. This is a really dangerous condition for pedestrians because this is the most important junction of this neighbourhood and is a heavy traffic junction. There is no traffic light and traffic installation in this junction also there is no pedestrian crossing and pedestrian way. Poor edges are seen on the left side but this junction can be the neighbourhood centre. With a good design this point would be a successful node in this neighbourhood.



Observational Survey for part 16



1: This is a small road of this area. Start to walk from the regenerated road. There is junction on this junction there is a historic building on the corner. This is a Saqakhaneh which used to be a place for drinking water but these days this is not common.



2: Continue to walk and pass the junction. On the left side behind the small building there is an empty space behind the small building there is an empty space and many houses around this space are destroyed but this space is an opportunity to construct new building such as social infrastructure.



3: Pass this space and walk straight on. The poor pavement and poor lighting are problems.



4: Continue to walk after this empty space. There is a new house on right side and in front of this house on the left side is a steep road which goes down and on this road there is an old house with really poor maintenances.



5: After walking a few meters reach a synagogue on the right side. This synagogue is a historic element and can be a landmark.



6: This is one of the synagogues in this neighbourhood that is still used by Jews. Pass this synagogue and reach a green space. Poor pavement, lack of specific space for pedestrian and lack of disable access are problems.



7: Reach a green space which is perfect for walking but still car interference is seen here and needs to prevent this common problem by designing some gates or barriers.



8: This green space is beautifully designed and overall well maintained. There are many walking spaces in this green space. Continue to walk straight and reach the other main road of this neighbourhood. Lack of furniture, car interference and lack of public art are negative points of this green space but this space changed the environment of this area and increased quality and legibility of this part.



9: On the left side of the green space there is a playground and it is a positive point. This is a proper playground.



Observational Survey for part 17



1: This is small passageway which starts at the bazaar Of which it forms part. The shops here look abandoned and are not active. This small section of the bazaar is ramshackle and needs maintenance.



2: Continue to walk past the bazaar. In the distance, a poor-quality wall can be seen covered in graffiti.



3: After passing the bazaar you come to a bend. Following this historic route you arrive at a religious space (Hoseinieh) in the right-hand side and a new house on the left built with new materials. The surrounding buildings are run-down and need maintenance.



4: Poorly maintained roads with many graffiti on the walls and suffering from a lack of conservation are often seen on this route.



5: Continue to walk until you come to an empty space which is used for parking so this route is challenging for pedestrians especially when cars drive through because it is a narrow passage.



6: In this picture many houses are seen in a precarious condition. They are falling down.



7: After leaving this space with two small workshops on either side, a roofed corridor can be seen at the end of the street..



8: You now arrive at a wooden-roofed corridor which is 4 meters high which is in complete contrast to the other roofed pathways in this area. Again, there is a lack of maintenance of the edges, pavements and roofs.



9: After passing this corridor come to a bend where there are pet shops which give off a horrible stench because this shop owners do not pay attention to cleanliness and this creates a really bad environment. This route is totally unattractive and most people hesitate to walk along it.



10: After this pet shop and another shop on the left-hand corner you join the main border road of the neighbourhood.

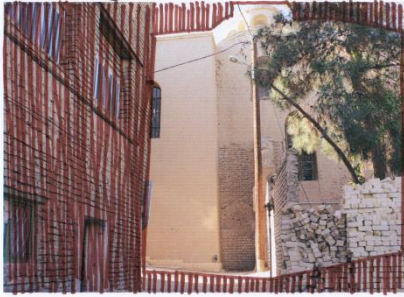


11: This is the entry and exit point of the main street. It is totally unattractive and needs more attention.



APPENDIX 5: THE MANUAL ANALYSIS OF THE OBSERVATIONS DATA

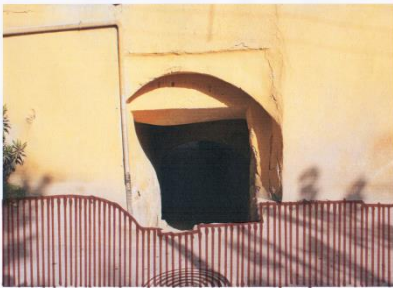
Historic Buildings:



In the picture above the historic synagogue is seen with poor maintenance



Historic ~~Elements~~ Patterns



This is an arched doorway and is an evidence of historic pattern

Historic pattern:



In the photo the historic pattern is seen with reasonable condition

Historic Pattern:



on the left side building frames historic pattern or is seen.



Harmony in Architectural Design



From the picture above it can be seen there is no harmony in architectural design.

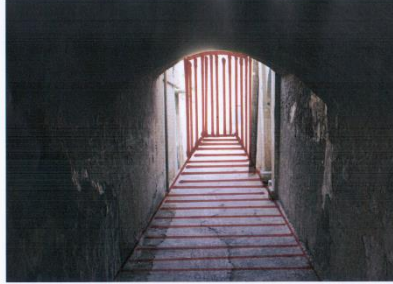


Distinct image:



⚡ this sector has distinct character with this roofed pathway

Distinct image:



⚡ This part of the neighbourhood has distinct image because of this roofed pathway

Sector 10: Distinct image:



Pavements Condition:



⚡ The pavement has really poor condition

Pavements:



⚡ Really poor pavements

Pavements:



⚡ Really poor pavements

Sector 10: Pavements



The Buildings Frontages:



Really poor buildings frontages on the both sides

The Buildings Frontages:



Really poor Buildings frontages on the both sides

The Buildings Frontages:



Really poor building frontages on the both sides

sector 10: The building frontages



Street Furniture:



There are a few number furniture with reasonable condition and design

sector 10: Street furniture:

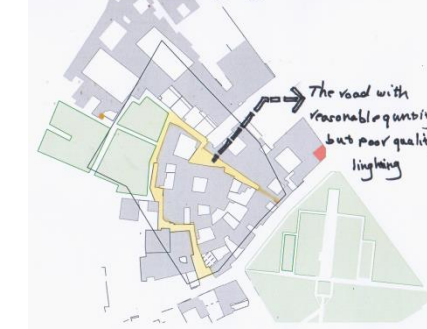


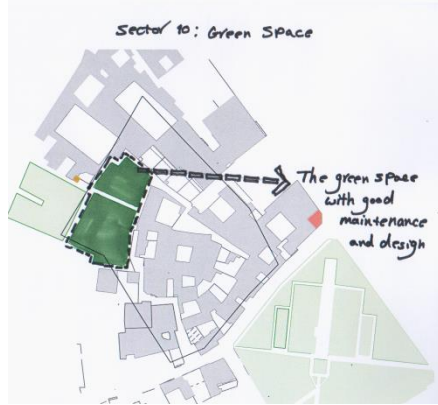
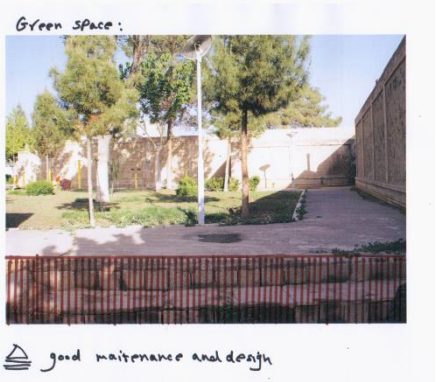
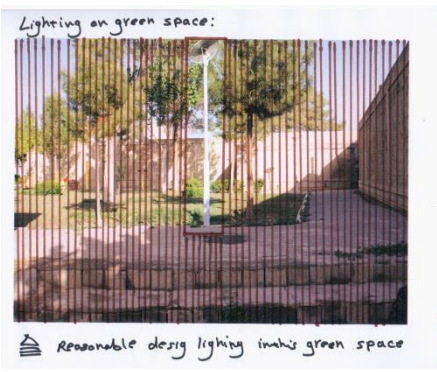
Lighting on roadsides:



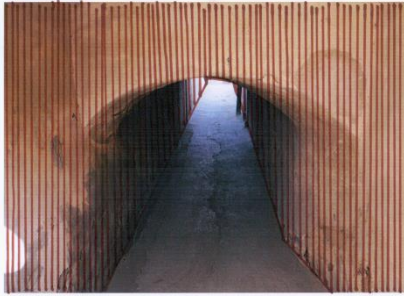
poor lighting design with a jumble of electricity cables

sector 10: Lighting on the roadsides





Pedestrian movement:



Really narrow pathway just for walking

Pedestrian movement:



Really narrow route usable just by pedestrians.

Pedestrian movement:



Really narrow route usable just by pedestrians

Sector 10: Pedestrian movement



Edges:



In some parts the building facades have coherence among material, design and colour

Sector 10: Edges



Landmark:



The historic synagogue works as a landmark while it has poor maintenance.

Sector 10: Landmark



APPENDIX 6: ETHICAL APPROVAL

Mr Hassan Khalifehei,
School of Architecture
University of Sheffield
The Arts Tower
Western Bank
Sheffield
S10 2TN

Wednesday, 08 May 2013

Rosie Parnell

School of Architecture
The Arts Tower
Western Bank
Sheffield
S10 2TN

Telephone: +44 (0) 114 2220327

Fax: +44 (0) 114 279826

Email: r.parnell@sheffield.ac.uk

Dear Hassan,

PROJECT TITLE: Structured Interviews with Residents of Case Study Area, Isfahan, Iran.

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 07/05/2013 the above-named project was unconditionally **approved** on ethics grounds, on the basis that you will adhere to the following document that you submitted for ethics review:

- University research ethics application form (07.04.2013)
- Participant information sheet
- Interview 2

If during the course of the project you need to deviate significantly from the above-approved document please inform me since written approval will be required. Please also inform me should you decide to terminate the project prematurely.

Yours sincerely

Rosie Parnell

Ethics Coordinator

University Research Ethics Application Form For Staff and Postgraduate Researchers

This form has been approved by the University Research Ethics Committee (UREC)

Tick as appropriate

Complete this form if you are a **member of staff or a postgraduate research student** who plans to undertake a research project which requires ethics approval via the University Ethics Review Procedure.

or

Complete this form if you plan to submit a **'generic' research ethics application** (i.e. an application that will cover several sufficiently similar research projects). Information on the 'generic' route is at: <http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/approval-procedure/review-procedure/generic-research-projects.html>

***PLEASE NOTE THAT YOUR DEPARTMENT MAY USE A VARIATION OF THIS FORM:
PLEASE CHECK WITH THE ETHICS ADMINISTRATOR IN YOUR DEPARTMENT***

This form should be accompanied, where appropriate, by all Information Sheets / Covering Letters / Written Scripts which you propose to use to inform the prospective participants about the proposed research, and/or by a Consent Form where you need to use one.

Further guidance on how to apply is at:

<http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/approval-procedure/review-procedure>

Guidance on the possible routes for obtaining ethics approval (i.e. on the University Ethics Review Procedure, the NHS procedure and the Social Care Research Ethics Committee, and the Alternative procedure) is at: <http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/approval-procedure/ethics-approval>

Once you have completed this research ethics application form in full, and other documents where appropriate, check that your name, the title of your research project and the date is contained in the footer of each page and email it to the Ethics Administrator of your academic department. Please note that the original signed and dated version of 'Part B' of the application form should also be provided to the Ethics Administrator in hard copy.

Ethics Administrators are listed at:

<http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/approval-procedure/review-procedure/3.1-3.1.2.html>

Date:10/03/2013

1

Name of applicant: Hassan Khalifehei

Research project title: Design solution for historic neighbourhood townscape to make sustainable future (with regards to social sustainability aspect)

University Research Ethics Application Form

I confirm that I have read the current version of the University of Sheffield 'Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue', as shown on the University's research ethics website at: <http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/index.html>



Part A

A1. Title of Research Project:

Thesis: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

Specific Research Project for which Ethics Approval is begun sought:

Structured Interviews with Residents of Case Study Area, Isfahan, Iran

A2. Contact person (normally the Principal Investigator, in the case of staff-led research projects, or the student in the case of supervised-postgraduate researcher projects):

Title: Mr First Name/Initials: Hassan Last Name: Khalifehei
Post: 9 Peterborough Road, Sheffield Department: Architecture
Email: h.khalifehei@sheffield.ac.uk Telephone: 0114 2301710

A2.1. Is this a postgraduate researcher project?

If yes, please provide the Supervisor's contact details:

Prue Chiles, Dr Florian Kossak
School of Architecture, Arts Tower, Western Bank, University of Sheffield,

Tel: 0114 2220315 / 0114 2220341

Email: p.chiles@sheffield.ac.uk, f.kossak@sheffield.ac.uk

A2.2. Other key investigators/co-applicants (within/outside University), where applicable:

Please list all (add more rows if necessary)

Title	Full Name	Post	Responsibility in project	Organisation	Department

A3. Proposed Project Duration:

Start date: 15th May 2013

End date: 10th June 2013

A4. Mark 'X' in one or more of the following boxes if your research:

- involves *no* access to identifiable personal data **and** *no* direct contact with participants
- involves adults with mental incapacity or mental illness
- involves prisoners or others in custodial care (e.g. young offenders)
- involves children or young people aged under 18 years

Date: 07/05/2013

2

Name of applicant: Hassan Khalifehei

Research project title: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

- involves using samples of human biological material collected before for another purpose
- involves taking new samples of human biological material (e.g. blood, tissue) *
- involves testing a medicinal product *
- involves taking new samples of human biological material (e.g. blood, tissue) *
- involves additional radiation above that required for clinical care *
- involves investigating a medical device *

*** If you have marked boxes marked * then you also need to obtain confirmation that appropriate University insurance is in place. The procedure for doing so is entirely by email. Please send an email addressed to insurance@shef.ac.uk and request a copy of the 'Clinical Trial Insurance Application Form'.**

University Research Ethics Application Form

It is recommended that you familiarise yourself with the University's Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue before completing the following questions. Please note that if you provide sufficient information about the research (what you intend to do, how it will be carried out and how you intend to minimise any risks), this will help the ethics reviewers to make an informed judgement quickly without having to ask for further details.

A5. Briefly summarise:

i. The project's aims, objectives:

(this must be in language comprehensible to a lay person)

The research project has identified three main criteria of social sustainability in relation to historic townscape design in Iran. These are Sense of place; Safety and Security; Community Spirit and Social Interaction.

Through semi-structured interviews with a representative group of local residents and stakeholders the project aims to gather data and information that can validate the argument of the thesis.

It is anticipated that the responses from the interview will also lead to a more differentiated view on these three criteria. Specifically they shall enable the project to include the view of lay people and shift a discussion that is usually driven through a western-centric design course towards a more appropriate, local, understanding.

ii. The project's methodology:

(This must be in language comprehensible to a lay person)

Semi structured interviews with twelve residents and local stakeholders of Juibareh Area in Isfahan.

Interviews will be conducted in Farsi and later translated back into English.

Interviews will approx last for 1 hour.

Interviews will be recorded through writing into an extended questionnaire. The writing will be done by the researcher.

See also interview sheet in appendix

Date:07/05/2013

3

Name of applicant: Hassan Khalifehei

Research project title: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

A6. What is the potential for physical and/or psychological harm / distress to participants?

None.

A7. Does your research raise any issues of personal safety for you or other researchers involved in the project? (especially if taking place outside working hours or off University premises)

No, the interviews with people will take place during the day time in the neighbourhood and in public places.

If yes, explain how these issues will be managed.

A8. How will the potential participants in the project be:

i. Identified?

Respondents will be selected according to a representative spread of the population including ethnic/religious minorities (Jews), as well as foreign workers. The researcher will approach to people and ask them about their condition (residency in this neighbourhood, ethnic/religious and nationality) and find suitable participations and participations who want to participate.

ii. Approached?

The researcher will introduce himself to possible respondents asking them to accept to be interviewed for this research project. The interview will happen in public spaces, parks and nodes which are primary in this neighbourhood.

In the Iranian context it is easy to ask somebody to fill in questionnaire or doing interviews when an oral introduction of the project is given, especially when the interviews and questionnaire are anonymous and without any photography.

Respondents will be informed at the start of the interviews that they can withdraw at any moment of the interview process.

iii. Recruited?

During the meeting with residents and also shopkeepers, researcher will explain the research project to all participants. A project information sheet will also be given to participants (translated in Farsi). By the way, adequate time will be put on asking questions and deciding whether each participant would like to take part. Only the participants that are completely sure that want to participate will take part. In the case of female respondents it is assured that they will be accompanied by a male relative.

A9. Will informed consent be obtained from the participants?

YES NO

If informed consent or consent is NOT to be obtained please explain why.

Further guidance is at: <http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/policy-notes/consent>

Date:07/05/2013

4

Name of applicant: Hassan Khalifehei

Research project title: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

A9.1. This question is only applicable if you are planning to obtain informed consent:
How do you plan to obtain informed consent? (i.e. the proposed process?):
The researcher will introduce himself to possible respondents asking them if they will accept to be interviewed for this research project. There will be an oral explanation of the project as well as an information sheet given to those approached before oral consent is sought from each participant (see information sheet provided). The information sheet will make clear that interviewees have the right to refuse to participate in the research in question and at any time during their active participation, they have the right to withdraw from the research, without having to give a reason.

A10. What measures will be put in place to ensure confidentiality of personal data, where appropriate?
As, the interviews and questionnaires will be done anonymously even the researcher does not need to identify the participants by name and address, also, there is not any taken photo of the participants.

A11. Will financial / in kind payments (other than reasonable expenses and compensation for time) be offered to participants? (Indicate how much and on what basis this has been decided)

YES NO

A12. Will the research involve the production of recorded media such as audio and/or video recordings?

YES NO

A12.1. This question is only applicable if you are planning to produce recorded media:
How will you ensure that there is a clear agreement with participants as to how these recorded media may be stored, used and (if appropriate) destroyed?

Guidance on a range of ethical issues, including safety and well-being, consent and anonymity, confidentiality and data protection are available at:
<http://www.shef.ac.uk/ris/other/gov-ethics/researchethics/policy-notes>

Date:07/05/2013

5

Name of applicant: Hassan Khalifehei

Research project title: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

University Research Ethics Application Form

Part B – The Signed Declaration

→ **Title of Research Project: Thesis: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future**

I confirm my responsibility to deliver the research project in accordance with the University of Sheffield's policies and procedures, which include the University's 'Financial Regulations', 'Good Research Practice Standards' and the 'Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue' (Ethics Policy) and, where externally funded, with the terms and conditions of the research funder.

In signing this research ethics application form I am also confirming that:

- The form is accurate to the best of my knowledge and belief.
- The project will abide by the University's Ethics Policy.
- There is no potential material interest that may, or may appear to, impair the independence and objectivity of researchers conducting this project.
- Subject to the research being approved, I undertake to adhere to the project protocol without unagreed deviation and to comply with any conditions set out in the letter from the University ethics reviewers notifying me of this.
- I undertake to inform the ethics reviewers of significant changes to the protocol (by contacting my academic department's Ethics Administrator in the first instance).
- I am aware of my responsibility to be up to date and comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data, including the need to register when necessary with the appropriate Data Protection Officer (within the University the Data Protection Officer is based in CiCS).
- I understand that the project, including research records and data, may be subject to inspection for audit purposes, if required in future.
- I understand that personal data about me as a researcher in this form will be held by those involved in the ethics review procedure (e.g. the Ethics Administrator and/or ethics reviewers) and that this will be managed according to Data Protection Act principles.
- If this is an application for a 'generic' project all the individual projects that fit under the generic project are compatible with this application.
- **I understand that this project cannot be submitted for ethics approval in more than one department, and that if I wish to appeal against the decision made, this must be done through the original department.**

→ **Name of the Principal Investigator (or the name of the Supervisor if this is a postgraduate researcher project):**

Prue Chiles, Dr Florian Kossak

→ **If this is a postgraduate researcher project insert the student's name here:**

Hassan Khalifehei

→ **Signature of Principal Investigator (or the Supervisor):**

→ **Date:**

Email the completed application form and provide a signed, hard copy of 'Part B' to the Ethics Administrator (also enclose, if relevant, other documents).

Date:07/05/2013

6

Name of applicant: Hassan Khalifehei

Research project title: Design solutions for historic neighbourhood townscapes to achieve a social sustainable future

