



Designing walkable Spaces in the Vicinity of Natural Urban Opportunities (Case Study: As'adi alley in Kermanshah, Iran)

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Abstract: Today, urban public spaces, by strengthening urban vitality, are considered as one of the most important issues of urban development knowledge. Creating pedestrian-oriented spaces will contribute to improving the quality of urban spaces, but developing countries like Iran don't pay much attention to this matter. In most superior urban projects, it has been thought that the "people are in the town and the neighborhood, not that they are living in it". As'adi alley in Kermanshah, Iran, which is located in district 4, despite its natural potential due to its proximity to the gardens and the river, favorable weather conditions and proximity to the affluent regions, doesn't provide high quality for its residents. As it can be seen, residential neighborhoods in our cities, due to non-compliance with standards and regulations in its superior projects in urban development field, have many problems such as crowdedness, lack of mental security of the residents, such as discomfort, dejection, depression and so on. This research seeks to offer a design for pedestrian-oriented spaces of the residential area, which would reduce the presence of passing cars that enter the neighborhood on the pretext of easier access. This highlights the vitality and dynamism of the neighborhood, and the neighborhood's latency and uniformity would be reduced gradually, and by the natural opportunities in the environment, the required background would be created for the residents of the neighborhood. The output of this research are principles and design criteria. The SWOT analysis tables and descriptive and analytical method has been used in the methodology of this research. Eventually, design of the intended space with providing the necessary standards and regulations would be available as the final part of this study.

Keywords: neighborhood, pedestrian-oriented, pedestrian-oriented space.

INTRODUCTION

One of the major problems of our cities, especially urban residential neighborhoods, is the lack of pedestrian-oriented spaces. As a result of the lack of pedestrian spaces, which is a place to satisfy the psychosocial needs of local residents of urban neighborhoods, many problems such as lack of comfort, security, attractiveness and diversity, vitality and safety have arisen in these neighborhoods. However, attention to the roadway spaces against pedestrian spaces that rooted in urban development of Modernism era, has become the separation point of man from nature and natural space in urban areas, which lead to dejection and disrespect to the scale of human in urban areas. In Kermanshah city, despite having the high ability and power to create different spaces for residents, existence of pedestrian-oriented spaces and areas in which the respect for human scale and psycho-social needs of pedestrians is desired has not been clearly seen in any period of urban development actions of this city. As'adi Alley has not been considered the way it should be considered, despite being in a good

climate area which is leading to the doctor Mofateh Street (Baghat-e Sarab area) from one side, and on the other side its closeness to Ferdowsi Square, which has been a place for leisure and having collective memories. Therefore, due to its situation it can be effective in the promotion of neighborhood identity by a proper design, and this is based on factors such as vitality, security, collective memories, diversity, and preservation of belonging and so on. According to current circumstances of cars dominance upon the cities and ignoring pedestrians, attention to the pedestrian-oriented spaces is a basic need which has been less considered. In the field of organizing and designing the pedestrian path, different research and actions have been done. So far, no research has been done about the pedestrian areas in urban residential neighborhoods, and most of the organizing projects of pedestrian areas have been in the city's main thoroughfares. Therefore, this study attempts to provide visions and strategies for the use of natural potentials available in the city. Using field research and the views of residents are the principles of this research, which has been less considered in the field of Behavioral Sciences and Urban Development.

Literature review

In 2013, (Najafi, M., & Saraf, S., 2013) studied the "Vernacular architecture and pedestrian areas with an emphasis on reducing urban pollution, in order to achieve sustainable urban environment". The aim of this study was to provide solutions of using pedestrian-oriented spaces to reduce pollution in urban management discussion. The results of this article showed that urban management with the approach to the construction of pedestrian passages, in case of correct locating and creating necessary facilities for pedestrians, can be used as a solution to encourage walking, reduce fuel consumption, remove pollutants, and enhance safety, social welfare and promoting economic prosperity.

In 2012, (Bemaiyan, M. R. et al., 2012) investigated the "Strategic Analysis of pedestrian-oriented spaces in urban design with an emphasis on reducing urban pollution". (Dehghan Zadeh, 2012) studied the "Analysis and evaluation of environmental qualities of pedestrian-oriented spaces (Case Study: Baghmelli Neighborhood in shahreza, Iran)". Baghmelli district also as the oldest district and primary constituent core of the city has organic tissue and a high potential for pedestrian-oriented spaces, which today has lost its vitality due to the social and physical exhaustion and need reconstruction. Therefore, in line with the objectives of pedestrian-oriented of this neighborhood and with an emphasis on results of the study, strategies had been presented for designing Baghmelli district of shahreza as a pedestrian-oriented model. For example, a pedestrian way has been designed along the main structure of the district (the market). This study is applicable in terms of objectives and it's a field-case study, and the quantitative and qualitative analysis had been used simultaneously for the study. (Shahbazi, M., & khaledian, N., 2012) studied the "promotion of social interactions by grafting Islamic urban elements with an emphasis on pedestrian-oriented". This study aimed to design a pedestrian path in the central part of Zanjan city, Iran with the aim of maintaining and strengthening the historic elements of Islamic city (Traditional bazaar, Masjid Jameh, shrine of Seyyed Ebrahim, historical monument of Zolfaqari and Sabze Meydan and Rakhshui Khane) and emphasizing the developing of the cultural, historical, commercial identity.

Theoretical literatures of the research

Neighborhoods and neighborhoods with Iranian identity

Creating a district with an urban fabric identity under the name of neighborhood was an effort to sustain the intimate private spaces beside the house. In other words, neighborhoods are created to develop the private sector to a larger part of the city (Madanipour, A., 2008). Presenting the concept of Neighborhoods is rooted in the Iranian identity. In Iranian local neighborhoods, people of the neighborhood are close friends and have come

together in a collaborative environment and share their sorrows and joys in everyday living. Social relationships of people are Close; people in the neighborhoods know each other (Shi'e, E., 2008). Factors that strengthen and protect Iranian originality of our neighborhoods are confidentiality, identity, dynamism and vitality, freshness, human- scale, and the existence of neighborly relations between residents and the presence of spaces that cause the gatherings and relationships and associations of residents together (Pour Ja'far, M. R., 2009).

Walkable spaces

Pedestrian-oriented refers to a broad set of designing issues that are associated with categories of walking. In Pedestrian-oriented places, the residents of all ages and abilities can feel attractiveness, comfort and security when walking, not only in leisure but also while using the facilities (Kashani Jo, Kh., 2010). Robert Kuan believes that "creating pedestrian-oriented spaces is to create streets free of traffic or roadways".

Concepts related to walkability

Walking is the most natural and the oldest form of human mobility in the environment which happens by the pedestrian." Pedestrians" are people who walk, stand or sit in public places, or use a wheelchair, and includes various people from children to adults, the elderly, disabled people, workers, residents, shoppers, and the guards".

In general, walking in our culture and other countries has interpretations as follows:

Walking = exercise to enhance health and lose weight

Walking = variation and roaming and leisure

Walking = mobility for the purpose of shopping, work and school (Moeini, SM., 2011)

Walkable Neighborhoods

Walkability neighborhoods are the neighborhoods in which special attention is given to the followings; designing efficient sidewalks, parks for children and elderly, connected pathways and street networks, existence walkable paths with planted trees and flowers, adequate parking for cars beside service and commercial orders, continuous sanitation and hygiene of the open spaces, Lighting and street furniture such as platforms and shaded arcades, residential and commercial, cultural and sports use in the neighborhood, medium and high residential density in the neighborhood and various residential units such as apartments and single units, the center of the a thriving neighborhood which is available by walking the distance and make the residents needless of cars for daily visiting of other neighborhoods. Numerous studies have shown that the presence of green and open spaces like neighborhood gardens and neighborhood Parks for children can help increasing informal communication, friendship, security, social surveillance and vitality. In walkable neighborhood children are more likely to walk from their house to the school, therefore, in addition to meeting the minimum necessary daily activities to grow physically, they will have a better mental image of the social environment of the neighborhoods (Baqeri, M., 2007). Walkable neighborhoods are suitable places for living, working and leisure. The principle governing the creation of these neighborhoods is the easy access of pedestrians to applications and different places of neighborhood, by which their dependence on automobiles and other modes of unsustainable transport is reduced, and an increase in walking among the residents also help to improve people's health. In this regard, development is in such a way that local services such as pharmacies, educational, social and cultural facilities, parks and recreation centers and retail centers are at a walkable distance of 15 minutes.

Location criteria and the creation of Sidewalks

In relation to the location criteria and the creation of Sidewalks, few researches have been conducted. One of the most important and valid documents in this field is the 16 cases that (Nozzi, D) has proposed as the main criteria for the creation, development and maintenance of a sidewalk (Kashani Jo, Kh., 2010).

These 16 cases are:

Row	Emerging norm of sidewalks	Description
1	Happy focus of pedestrians	Sidewalks should include a large number of pedestrians; the best sidewalks if there were small number of pedestrians are not sidewalks.
2	Residential density	The life of many people in a sidewalks or the desired scope is a link between two (or more) interesting destination with less than 3 or 5 block
3	Dimensions with human scale	The walls have the proper height
4	Retail sale of active and diverse	Existence of active and diverse Retail sale
5	Traffic calming	The low speed of motor vehicles not remove them
6	24h working	The existence of pedestrian after worktime due to the Residential density and commercial activities
7	Narrow area	Creating proper borders in sidewalks
8	Protecting from weather	Creating canopies, Steam protection in front of the buildings of sidewalks
9	Wide sidewalks	Wide sidewalks cause convenience for pedestrian and
10	Non-obtrusive equipment	Removing non-obtrusive equipment from eyesight to roofs or next to or behind the buildings and Back alley
11	The main active facade of the building	The main façade and the minimum facade of buildings in front of the walk side
12	Turning radius, balanced and distances	Turning low radius, the roadway intersections, creation of a curved path for reducing the speed of cars and middle area for pedestrian
13	Neighborhood	Destination from residential areas to work, school, park and shop next to each other
14	Low length blocks	The length of blocks are low for safety of pedestrian and balance for walking distance
15	Far landscape	Locating of urban buildings at the end of sidewalk landscape cause Civic pride, sense of walking and lead to endless movement
16	Suitable business	The tendency of sidewalks to ban the big retail sale and machine based business

Source: Kashani Jo

General principles of designing walking paths

General principles for the construction of the sidewalks are defined as follows:

1. Sufficient attention to locating a pedestrian area based on maximum connection with the neighborhood context.
2. Creating the necessary facilities around the sidewalk and at the same time providing good permeability.
3. Maximizing the diversity of applications in the pedestrian area and by observing the principle of compatibility.
4. Paying attention to human scale in all stages of locating and designing all details.
5. Maximum using of plants, water and natural elements and materials in sanitation and proposed furniture.
6. Protecting the valuable historical monuments or developing the sidewalk around these monuments.
7. Paying attention to the natural and artificial landscapes, especially the far end landscape of the sidewalk (Bemaiyan, MR. et al., 2012).

It is obvious that the considered facilities should be appropriate to the performance and objectives of the expected walkable area, and strengthen the human scale and the sense of a pleasant and friendly place. However, given the wide variety of equipment used in the sidewalks, the selection and usage of any facility should be done by considering a range of physical, social, economic and local cultural conditions, and increase the performance and visual integrity of the area. Various studies indicate that addition of equipment to sidewalks has a very important role in attracting pedestrians and encouraging them to walk.

Description of movements and common points related to urban spaces and walkability

	Common features of movements	Principles and criteria
Sustainable development	<ol style="list-style-type: none"> 1.Focus on urban environment 2.Emphasize on walk side leads to increase of social reaction 3.Creating walk side as one of the urban open areas for urban dynamic environment without existence of cars 4. Creating walk side for reducing the use of fossil energy and pollution 	Walking is the reason behind increase of social reaction, dynamic urban area for reducing the pollution
Intelligent development	<ol style="list-style-type: none"> 1.Emphaize on the local committee living 2.Protection of identity and development of social context 3.Emphasize on developing the quality of avenue as urban areas 4.Emphasize on walking as dynamic factor of development 5. Continuity of urban avenues and Pedestrian crossings 6. Standardization of Pedestrian crossings for everybody specially disabled 7.Readability of urban environment 8. Incorporation applications of environment attraction 	Developing of avenue quality and identity, continuity, readability and Incorporation of applications

New Urbanism	<ol style="list-style-type: none"> 1. Back to local areas pattern (developing the identity and originality) 2. Walking and livable in a proper place 3. New urbanism is a reaction against urban sprawl 4. Incorporation applications (to Strengthen security and social communication) 5. Walking as a factor of suggestion 6. Emphasize on security, attraction and calming of side walks 7. Joint, continuity, Permeability and availability 8. Increasing of context density 9. Protect and reinforce the ethnic structures 10. Protect and reinforce the open areas (emphasize on fresh structure) 11. Use of designing tools for increasing of the security in social context 12. Walking as public health 13. Diversity of areas, readability, Sense of belonging, lighting 14. Paying attention to closeness, Proportions and human scale 15. Reduce the use of cars 	<p>Reinforce the identity and originality, Incorporation of applications, security, attraction, joint, diversity, Permeability, freshness, improvement of public health, Sense of belonging, lighting, closeness, human scale, diversity</p>
<p>Sum up Common features of movements: Freshness, readability, Incorporation applications, develop of identity, security, attraction, joint, respect human scale, sense of belonging and lighting</p>		

Source: Authors

Theoretical description and common points of view theorists in relation to urban space and walkability

	Description customer opinions	Abstract of opinions
Aldophan Ike	<ol style="list-style-type: none"> 1- He introduces himself in favor of strengthening the Urban's features a house on the one hand and on the other hand becoming more intimate the urban spaces (in other words, I am looking for converting the home to second city and city to my second home). 2- The need for integration of urban functions. 3- Becoming more intimate of the urban spaces. 	<ul style="list-style-type: none"> - Becoming more intimate the spaces. - Flexibility of space. - Capability the presence of all social groups into space. - Mixing the applications. - Sense of belonging
Jane Jacobs	<ol style="list-style-type: none"> 1- Sidewalks role in security, Sidewalks role in boosting social interactions, Sidewalk role in consilience the children with society, the role of public green space (park), the role of neighborhood set in the city. 2- Jacobs to diversify the streets believes that they should be vibrant and four vital condition has placed for it. 3- 1- The necessity of mixing the uses, 2- the necessity for short city blocks, 3- the necessity for 	<ul style="list-style-type: none"> - Safety and Security - Environmental dynamism - Giving importance to the territory - Establishment the social interaction - Variety - Vitality - Existence of 24-hour activities (the time holder

	<p>old buildings, 4- The necessity for population concentration.</p> <p>4- The relationship between art and life in the city.</p> <p>5- The attractiveness factors of a city street include:</p> <p>1- intermediary street for separating the public space from private space, 2- The street for security and attracting the pedestrians, 3- individuals as visual observers of street are the factor of establishment a secure to space.</p> <p>6- Existence of the time holder uses such as restaurants, coffee shops, etc. has an important role in the security space.</p> <p>7- Mixing the applications as an attractive factor for people to walking spaces.</p> <p>8- To diversify the streets in order to strengthen the vitality four critical conditions, including: The necessity of mixing the uses, 2- the necessity for short city blocks, 3- the necessity for old buildings, 4- the necessity for population concentration.</p> <p>9- Sidewalks are factors for: establishing space security, strengthening the social interactions, sidewalk role in consilience the children in the space.</p>	<p>uses such as restaurants, coffee shops, agency, ...).</p> <ul style="list-style-type: none"> - Mixing the uses. - Flexibility. - Upgrade the urban identity. - Permeability (short blocks) - Attractiveness
Gordon Cullen	<p>1- For that the people to move in the city and enjoy looking at it should giving priority to sidewalks and their continuity the city be ready to move on foot.</p> <p>2- Cullen believed that the urban environment should be a pleasant experience for everyone. He emphasized on the importance of human and his presence in own designs in the urban space.</p> <p>3- Cullen in its designs and articles has always emphasized on the importance of peace and quiet of trails, flooring and furniture proportional to them.</p> <p>4- In the construction of urban spaces, he emphasized on prioritizing the construction of sidewalks and their continuity.</p> <p>5- On the importance of human and his role and place in the urban space (respect for human scale in constructions).</p>	<ul style="list-style-type: none"> -Continuity of pedestrian space -Flexibility of space -Peace -Human scale
Kevin Lynch	<p>1- He claimed that the city is good that improve the cultural continuity.</p> <p>2- Factors such as the readability of way, the Space continuity, active landscapes and diversity of sidewalks are effective in spatial perception.</p> <p>3- Human scale of urban routes.</p>	<ul style="list-style-type: none"> - Value to the residents and their activities. - Readability. - Continuity and conjunction. - Humanization of walking routes (human scale).

		<ul style="list-style-type: none"> - Vitality. - Pointing to inherent positive values in old cities.
Constantine Doxiadis	<p>1- Human scale in terms of science and aesthetics.</p> <p>2- Doxiadis on the other hand referred to stress on residents and urban because of the speed of transformation and complexity of the situation and attracted the attention of architects to the cultural roots of each locality.</p> <p>3-" Should be allowed to enter the vehicle if not cut off throughout the neighborhood. The neighborhood center only remains for pedestrians; the vehicles can move very quickly outside of the neighborhood but they must be reduce their speed to minimum within the neighborhood".</p> <p>4- Attention to prevention of space dispersion and in a way an emphasis on cohesion and city congestion.</p>	<ul style="list-style-type: none"> -The aesthetic characteristics. - Human scale. - Control the movement of vehicles. - Cohesion and city congestion.
Rob Krier	<p>1-Observance the aesthetic principles are effective in increasing the performance of communication for streets.</p> <p>2- Revitalization of urban spaces (The emphasis on vitality).</p> <p>3- Readability, being confined, aesthetics patterns.</p>	<ul style="list-style-type: none"> - Aesthetic principles (attention to the physical appearance and urban landscape). - Observance of human scale. - Vitality. - Readability.
Collin Buchanan	<p>1- Peaceful coexistence with vehicle needs the creation of new urban species. The basic criteria would be safety in these zones.</p> <p>2- So, for example, the struggle against noise in a residential area is more important than in the industrial area.</p> <p>3- The quality of the city zones depends on the freedom and easiness the human movement and observing the around.</p> <p>4- Buchanan knew the quality, reliability and easy access to public transportation as three keys to sustainable transport in the future.</p> <p>5- Neighborhood that has an independent traffic without any traffic passing through them.</p> <p>6- The emphasis on dynamics of the city neighborhoods, incorporation land uses, and creating a sense of security in this space.</p> <p>7- Relaxation neighborhoods and urban zones.</p>	<ul style="list-style-type: none"> - Safety - The quality of urban environment - Dynamism of urban environment - Incorporation of land uses - Relaxation of neighborhoods
Alexander Mitscherlich	<p>1- This fact that the city for one person is "ecosystem / bio location", means that the place where all types</p>	<ul style="list-style-type: none"> - Diversity - Social interactions

	<p>and forms of lives in various ways were received to equilibrium state.</p> <p>2- Invite to social interactions through the construction of urban spaces.</p> <p>3- Existence of a neighborhood sense in urban areas, in other words social communications.</p>	
Lawrence Halperin	<p>1- Halperin believes that urban open spaces as spaces where urban life is formed by them, elements are that give to the city a special character and quality.</p> <p>2- He described it as the simplest multipurpose and vital part of urban open space. He knows the existence of green spaces and local parks are essential which human need to nature can be fulfill with connection to it.</p> <p>3- He knows the urban designing as art in a collaborative environment that is flexible and unrestricted.</p>	<ul style="list-style-type: none"> -Upgrade the urban quality - Flexibility - Green spaces and natural substrates - Creating a participatory environment
Spray Regen	<p>1- Variety and diversifying the city.</p> <p>2- Complete the city with nature.</p>	<ul style="list-style-type: none"> - Variety and diversity - Intervention and entering into natural substrates and the cities
Edward Hall	<p>1- The creation of vibrant spaces is in small towns more difficult than in big towns.</p> <p>2- The emphasis on human scales and the readability of these spaces in urban areas.</p>	<ul style="list-style-type: none"> - Vitality - Human scale
Christian Norberg-Schulz [12]	<p>1- The city is places for visitation and social interaction from the perspective of Schultz, and he knows that urban spaces are as an arena for meeting people.</p>	<ul style="list-style-type: none"> - Establishment of social interactions - Social dynamism
Donald Appbard	<p>1- The street with traffic creates an interconnected social style.</p>	
Ian Bentley et al.	<p>1- Emphasize on access providing (physical contact) and visual communication with various locations.</p> <p>2- Functional diversity and variety of forms, the diversity of individuals and social groups in urban places.</p> <p>3- Capabilities of easy reading environment and easy navigation to desired locations and addresses.</p> <p>4- Space ability and power to accept performances and sheltering their various activities.</p> <p>5- The appropriateness of environment visual characteristics with performances and means environment aforementioned.</p> <p>6- Attention to the delicacy and intricacy in various environments.</p>	<ul style="list-style-type: none"> - Permeability - Variety - Readability - Flexibility - Visual compatibility - Biological Supporting

Conclusion	According to the set of criteria table that were shared in view of all the theoreticians and cause to strengthen the desirable qualitative of space include the following:	
Shared Criteria	Mixing the uses, sense of belonging, security, dynamism, diversity, upgrade the character, upgrade the urban quality, attractiveness, time holder uses, vitality, continuity, human scale, peace, readability, aesthetic characteristics, cohesion and urban density, relaxation the neighborhood, social interactions, green space and natural substrate, flexibility, permeability	

Source: Authors

Summary of universal studied examples

Cases studied	Motivation, purpose and design criteria
Sweden (Stockholm)	Mixing the uses, traffic elimination, converting the local streets to afoot-oriented places.
City with 83 thousand people (Pontevedra)	Preventive measures to reduction the traffic, development the sidewalks, permissible speed equal to 30 Kilometers.
Perth in Australia	Development and application of principles of sustainable development, center neighborhood as a community social of interconnected streets, upgrade the local identity; location provides convenient access for other urban blocks, creating natural surveillance to improve the constraint security, the creation of public spaces such as public parks.
Sea side in Florida	The existence of neighborhood center, edge and public spaces, balanced mixing of activities, spatial contrast and consecutive views, giving the priority to public spaces, encourages the walking through the conjoined streets.
Woonerf pattern	Planting of trees and plants to comeliness space and creating facilities for sitting and relaxing, watching the neighbors and passers-by, mixing rider and afoot, Synchronizing the rider speed in space and residential streets, speed reduction through creation of continuous outdoor tables and guiding them through the rod
Polymouth Devon	Remove the traffic symptoms, Strengthen the neighborhood qualitative criteria to eliminate the traffic limited area, providing the concept of shared space to use for all citizens.
Belgium (Bruges)	Heavy traffic, Dangerous intersections and great number of cars has been an incentive for walking, solutions: 1- Converting the large and busy intersection to the scenic and pleasant square, 2- Increase the shared spaces, 3- Solving parking problems, 4- The creation of flourishing landscapes, 5- Organizing the entrances to strengthen security, 6- The emphasis on green space.

Germany (Freiburg)	Reduction the traffic and restricting the movement of vehicles, the creation of shared green spaces, the creation of a system for traffic relaxation.
Stroget	Strengthen the shopping center, the development of public open spaces, reducing the density of buildings, providing comfort for citizens, transform it from one car-oriented to pedestrian-oriented,
Germany (Essen)	absence of uses entertaining, remove the high-traffic streets, appropriate access to public parking
France (Bastille)	Maintaining the interior and exterior views of buildings, the creation of suitable capacities for new activities, the use of morphology of old buildings to improve identity, scrutinizing accurate criteria of altitude

Source: Authors

The purpose of the study

Reforming and reorganizing spatial structure and improving physical quality of As'adi alley in Kermanshah, in order to improve the security and vitality.

Research Methodology

Considering that this research deals with studying the current situation, analyzing it and, finally suggestions for the desired walkable area, therefore theoretical research methods was used in compiling this research. In various stages of research, appropriate methods for that stage was used. To collect the theoretical basis of this research, conventional methods of urban studies such as documental surveys and field studies like referring to statistical agencies, libraries, and information centers were used. In the analysis of the current situation (Case study) library and field methods (through observations and interviews with authorities and the public) were used. First, the opinions and statements of theorists and movements related to walkability had been studied through library research, then, based on the exploratory findings of the theories and principles resulting from the movements, it would be determined that what are the standards and expectations of spaces and city streets. The next step was to review the current status of these criteria on the study site through questionnaires and interviews with residents and field method, after finding problems with the sites and exploring the possibilities and limitations, SWOT analysis method was used to analyze the current status and to provide guidelines and policies. Scientific solutions were used to solve the problem. Two options were presented for the design, of alternatives with respect to the objectives, features and limitations were evaluated and the best option was selected. Data collection tools were including observation, interviews, questionnaires, tables and databases. A total of 30 questionnaires were prepared.

As'adi Alley

As'adi neighborhood is one of the authentic neighborhoods in the city of Kermanshah, Iran which is about six decades old. Until 1951, this neighborhood was the only a big garden with private gardens around it. After the construction actions and seeing the neighborhood's situation, rich people moved there and over time the neighborhood was covered with upscale houses. Buildings of this area date back to 30 - 50 years ago.



Map: antiquity of the monuments in the area

Source: authors

Usage

As the map shows, much of the surround area is devoted to the residence area which dominant usage is residential. In terms of services and activities, this area is the weakest area the city compared to the entire city of, which has a wide range of residential areas, and activity and services usages are on the sidelines of the main axes. The desired area is more residential, so the lack of a usage with various and boarding functions will cause the lack of vitality and security especially at night.

Materials

Materials used in the facades have a huge impact on the appearance of the city, so analyzing the type of materials and its distribution in tissues helps to better understand its image. According to field observations, materials used in the facade are classified into several groups: Facade bricks, stone, cement and a combination of the above materials. Accordingly, it can be concluded that the materials diversity in the desired tissue is low and it is mostly rocks and cement.

Closeness

Closeness means restriction of a space with the surrounding wall as if it is inside a narrow container which certain levels. Urban locations cannot be attractive if the spaces are not confined to the desired shape. This

principle is common in old cities and most of the world and they are just differing in the way of enclosing, in terms of size, shape, accessibility, enclosing body and so on....

According to Tavassoli, the space between the buildings must be such that it could trigger human emotions. The qualities of any space, large or small, high or low, wide or narrow, visually possess qualities that are related to the human reactions and emotions. Based on the most current dominant thoughts in the West community, human is the most important pillar of space, so he should find a human scale to use the space.

In the study area, the closeness of the pathways has direct relationship with the proportion level of the passages (the ratio of sidewall height to the passage width). Residential and commercial-residential sidewalls, which are around the space, have the role of enclosing body of space. There are also trees on some parts of the body that increased the space closeness.

Privacy

One of the aspects of privacy is to have a view, which means the visibility of a unit (residential) by another unit that is considered illegal and unauthorized. In the current developments, unlike traditional textures, due to non-compliance with the principles and criteria such as density, direction, openings, and users and so on, having view has become critical. Privacy of the desired area has been observed to a large extent.

Openings

Shape, size and arrangement of the openings play an important role in the formation of the walls. Openings had been considered important in the analysis of urban spaces body, because they are transparent in the walls. At the target area, there are openings with a large variety of size, shape and proportions that no specific form can be considered for them. Compliance with climate rules such as sunlight, wind direction, etc. play an important role in the formation of the openings. However, a proper design and creation of a harmonious form for openings of the sidewalls has a significant role in making the urban landscape more beautiful.

Skyline

Skyline is one of the important elements of the street landscape and it means the distance of the street sidewalls from the sky. In analyzing a city space, sky line is a border line between the defining elements of a space and the sky, and the border of the buildings connected to the sky. Height difference in the buildings of the desired area has created volumes with different heights, and this height difference has caused the not uniformed skyline. The dominant height in the desired area is two and three floors.

Access and movement

Human activities occur in space and time. These physical sets are connected by connections channels. It can be said that model and texture of the city is formed by its access network, and identification of this system is very important in our understanding of the desired area. Urban roads networks are classified from two perspectives of "physical characteristics of the road" and "functional characteristics of the road" and there is always a one-to-one correspondence between the function of a road and its physical properties. In the studied area, because of the number of allies leading to As'adi alley and the wide entrance, it has become a passing area for the cars which try to escape from the traffic of the surrounding streets.

Evaluating the criteria for creating the sidewalks in the area

- Happiness of the pedestrians which is the first criterion for creating a sidewalk, is not feasible due to the transitions of the area and insecurity of the pedestrians. The proposed area has a residential density which attracts pedestrians to the area.

- The existing relations between the constituent components and elements of the area has the features of the human scale, which has been mentioned as another criterion in this regard, and the existing buildings, except for a few special cases, have no more than three floor height.
- Fixing the traffic in this proposed area, which is one of the primarily objectives of design, is now absent in this area, and 24-hour activities must be included in designing and providing criteria in this area.
- Sidewalks included in the scope of the project are seen on just some parts of the passageways that are narrow and are not enough for satisfying the needs of pedestrians. It can be said that there aren't any wide sidewalks in this area, which is considered as weaknesses of the current situation and solutions are needed to fix them.
- The existence of non-obtrusive equipment and active facades of the buildings are the two other criteria mentioned in creating sidewalks, which does not exist in this area, and must be modified by using a design and delivery of appropriate criteria. Of course, some of the existing buildings have the features of active facades.
- Another criterion for creating sidewalks is the short length blocks which exist in the desired area. In other words, most of the blocks are 40 meters in length.
- The existence of landscapes is another criterion for creating sidewalks, which encourage and stimulate the pedestrian to continue their walk; the proposed area somehow has this feature.
- Proximity to the residential context is another criterion that is actually and potentially exists in the proposed area.

Evaluating the neighborhood problems from the perspective of its residents by using questionnaires

- 1) Environmental pollution, lack of cleaning of the ditches, lack of timely collection of garbage and waste
- 2) The presence of strangers and thieves and addicts in the area and alleys leading to it, which cause insecurity.
- 3) Roadway traffic due to the high volume of vehicles traffics and the low width roads
- 4) Overcrowding and noises caused by passing heavy vehicles
- 5) Lack of security and adequate light
- 6) Lack of recreation and sports centers, such as parks and children's play area, gym and...

Integrated Analysis of SWOT

Urban Design is a batch process, which occurs by using analytical techniques of informed decision-making. This process involves the assessing, making a vision and developing strategy. Performing any of these steps requires special techniques. In the assessment, matrix or SWOT technique is one of the techniques that have notable application in some parts of the design process. Since in analyzing the situation, issues can be easily influenced by politics or personal taste and authority of individuals, SWOT technique, by creating order, structure, objectivity, and transparency and centralizing the issues, can play an important role in improving the quality environmental decision-making. SWOT matrix is a conceptual framework for identifying and analyzing threats and opportunities in the external environment, and assessing the internal strengths and weaknesses of the system. SWOT analysis provides a powerful tool for dissecting actual and potential features of the urban areas in the form of a matrix. In other words, regularly organization of data can reveal and analyze a lot of strengths and weaknesses.

SWOT matrix

Swot

Component		Strengths	Weaknesses	Opportunities	Threats
Performance component	Permeability and movement	<ul style="list-style-type: none"> - Appropriate access to the Delgosha street as the main street. -The existence of a fairly good-sized blocks for permeable the passage. 	<ul style="list-style-type: none"> -lack of public parking - Low quality of passages. - High volume of drivers traffic. - The existence of narrow streets. - Lack of proper sidewalks on local allies. - The lack of a secure environment for cyclers crossing. - Marginal park. - Conflict between the movement of cars and people - Crossing movement of the rider. 	<ul style="list-style-type: none"> -General tendency to use private cars due to fuel costs -The possibility of taking the walking path on site -The possibility of eliminating the passing traffic in the passage and converting it into walking space -The possibility to create variety and contrast in axes of walking. 	<ul style="list-style-type: none"> - Increase of passing traffic

	Land uses	<ul style="list-style-type: none"> -Mostly residential usage -The absence of incompatible uses -High share of consistent uses and relatively compatible with adjacent facilities. -Proximity with the centers of activity and demographic. 	<ul style="list-style-type: none"> - Lack of local functions including cultural and social spaces. -Lack of uses with a variety of functions and 24-hour. -Lack of children's playing space. -Lack of facilities and utilities -lack of population absorbent uses 	<ul style="list-style-type: none"> -Possibility of using abandoned and unused spaces. -The possibility of establishing vibrant activity due to green spaces, good weather and good perspective - Increase the potential importance of main passage due to the lack of existence of an passage with other natural potential in the region. - The existence of population absorbent activities near the passage, a potential for strengthening the capability of presence 	
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Public arena quality	<ul style="list-style-type: none"> - Existence of absorbing and encouraging collaborative activities near the passage. 	<ul style="list-style-type: none"> - Lack of adequate safe space for children to play - Lack of proper gathering space with neighborhood conditions - The existence of non-defendable spaces in parts of passage e due to poor lighting and ... - Lack of urban furniture in the passage - Inappropriate sidewalk flooring - Severe damage and fraction of the curbs - Lack of proper disposal of surface water - Inappropriateness of bridges on the water channels 	<ul style="list-style-type: none"> - The possibility of taking advantage of the design site to compensate for the lack of public spaces. - The possibility of the establishment of urban furniture according to the visual character and identity of the region - The possibility of improvement and change of passage flooring 	
Climatic comfort	<ul style="list-style-type: none"> - Buildings textures are southern. - Existence of green spaces and refinement and cleanliness of the air 	<ul style="list-style-type: none"> - Noise pollution 		<ul style="list-style-type: none"> - Lack of implementation of construction in large-scale and in accordance with the environmental conditions

Safety and security	<ul style="list-style-type: none"> - A high level of education of residents - The use of high quality materials in new buildings - The existence of open spaces at the time of emergency 	<ul style="list-style-type: none"> - Low levels of environmental security. - Weakness in engineering of the pathways and increased risk of accidents - Lack of continuity of pedestrian movement - Interference of the movement of drivers and pedestrians - Exhaustion of passages flooring - Small possibility of residents control on neighborhood space. - Uncertainty about the hierarchy of crimes - Low illumination in the passage - Lack of required equipment to prevent motorcycle's entrance 	<ul style="list-style-type: none"> - The possibility of appropriate lighting equipment on passage - The possibility of the establishment of 24-hour activities for the presence of residents 	<ul style="list-style-type: none"> - Efforts of the officials to establish security using police methods instead of using physical activity strategies - Negligence in appropriateness of passages with the conditions of particular groups (the elderly and disabled, etc.).
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Component of experimental aesthetic	Visual character	<ul style="list-style-type: none"> - Suitable height of buildings - Continuation of the wall at some distances - view of the gardens and the green spaces as agents of sustainable landscapes 	<ul style="list-style-type: none"> - Visual disturbances and lack of coordination between the new and old elements. - Lack of balanced sky line and appropriate landscape - Improper insertion of signs, and municipal utilities. - The presence of malicious graffiti. - Inappropriate quality of gardens. - Surface of the water channels aren't covered. - Improper viewing due to low width of sidewalks. -the existence of inconsistent walls with each other. - Uncertainty and destruction of garden wall. 	<ul style="list-style-type: none"> - Ability to improve the quality of architecture - Possibility to create varied sky line with at least one or two floors difference in buildings height 	
	Readability	<ul style="list-style-type: none"> - View of the natural scenery of the mountains and the surrounding heights ranging from the neighborhood - Personal gardens and the green spaces of the region, a factor in strengthening the readability. 	<ul style="list-style-type: none"> - Lack of emphasis on the key points - Lack of prominence and recognition of the intersections - Lack of signs of identification - Confusion in texture - The absence of active signs. - Lack of strong centers 	<ul style="list-style-type: none"> - Possibility to create identification giving signs - Possibility to create activity areas. 	<ul style="list-style-type: none"> - Blockage of optimum visibility corridors due to new developments

	Skeletal	<ul style="list-style-type: none"> - Buildings textures are southern. 	<ul style="list-style-type: none"> - The presence of constructions which are inconsistent with the context and ecology - The presence of no barren and defenseless urban lands. - Low permeability due to organic texture 	<ul style="list-style-type: none"> - Application of laws related to building density 	<ul style="list-style-type: none"> - the tendency to high-rise building - Possibility to tendency to the new construction, regardless of the context and incompatible with the general texture of the passage
Environmental component	Environmental cleanliness	<ul style="list-style-type: none"> - Rich vegetation and presence of gardens and air filtration 	<ul style="list-style-type: none"> - The lack of construction consistent with the environment - Lack of public participation in environmental cleanup - Lack of timely collection of garbage - Contamination of water channels - Low speed operation of municipal services in gathering and cleaning the physical and abandoned waste - Visual and environmental pollution caused by waste 	<ul style="list-style-type: none"> - Possibility of cooperation with the relevant officials in clearing the neighborhood - Possibility of using locals participation and encouraging them to maintain and clean the neighborhood 	<ul style="list-style-type: none"> - Lack of environmental refiners
	Energy efficiency		<ul style="list-style-type: none"> - Lack of optimum use of energy's culture 	<ul style="list-style-type: none"> - Tax exemptions for construction in harmony with environment - Clarifying the importance of saving energy 	<ul style="list-style-type: none"> - Lack of adequate incentives to use renewable sources - avoiding the use of sustainable methods in construction

	consilience with nature	<ul style="list-style-type: none"> - Presence of trees at the edge of the passage - Lively and vivacious space - Full shade in some parts of the passage 	<ul style="list-style-type: none"> - Noise pollution 	<ul style="list-style-type: none"> - Taking advantage of the natural landscape in front of mountains in order to give identity to the design site 	<ul style="list-style-type: none"> - The continued illegal construction, a threat for disappearance of gardens and green identity of the area. - Tendency to dry up the gardens and construction of buildings due to high prices of lands and housing
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Source: authors

Presenting the design options

First option: This option, due to the prevailing residential usage and to meet the needs of residents in cars, in addition to the presence of pedestrians and bicycles, cars are also allowed to slowly enter in two-way, and by blocking the driveway to some of the streets leading to the area along the way, the quality and safety of the pedestrian will be increased. Two parking sets will be considered and space will be allocated to three sequences. According to superior projects, passageway will be widened in some parts. An entrance is also designed for more effectiveness. In addition, on two parts of the route, parking and shops will be anticipated in middle of the street, and in addition to raising the closeness, it will meet the residents' needs, and some places will be considered to sit and chat and for children to play.

Second option: In this option, the street is one-way and its entrance is from Sarab Street. Also, the area will be divided into two major sequences; in the first sequence places for assembly and meetings and also for children's play are considered and the second sequence will be allocated to the places for elderly's to sit and chat, and some shops to meet daily needs of residents. Parking is not considered and the cars will park on the edge of the roadway. Entrances of the alleys to the area will be defined and the entrance of the road from Sarab street from will be emphasized specifically.

Evaluating the options

Based on principles of proposed criteria and targets, constraints and needs, the best option was elected, then a design at the micro-level was provided and three-dimensional planning was carried out. By evaluating the options, the first option is introduced as the best one.



Figure 1: The design of As'adi Alley

Discussion

As it can be seen, today most of our streets have become insecure, ugly, unsafe, unhealthy, inhumane, noisy, and stressful places for pedestrian users of these spaces, and in most cases, the streets are limited to provide roadway access. The main cause of these problems is that over time, changes have been emerged in the definition and the use of the streets and the function of the spaces is changed without any change in their form. In this regard, contradictions, dilemmas and crises in using the streets spaces, especially about the pedestrian, is due to non-compliance of the existing spaces with the behavioral patterns of the groups that are using these areas, and this is why there is a fundamental conflict between available spaces and how to use these spaces, and hence the tendency of pedestrian users of the dominant streets and the social interactions arising as its result has been drastically decreased.

Conclusion

In our country there is a fundamental dilemma because of the disorders for walking spaces that have no written programs and initiatives, and which is the result of years of negligence and mismanagement of pedestrians' issues, by the authorities and urban planners and designers. Solving this problem is not possible except through a comprehensive and coordinated planning that considers all of the aspects. On one hand, residential areas which are one of the most important urban spaces don't have a good quality today, and this has caused local residents to not to use the neighborhood spaces as they used to do in the past, and just pass through it to reach other urban spaces, which has consequently resulted in less neighborly relations. Passing through neighborhoods space and noise of the vehicles has deprived residents' comfort and relaxation. About this question that whether it is possible to increase active participation of residents and strengthen their social mood by beautifying the area? The residents' comments to the designed questions of questionnaire verify the researchers' claim. Then, according to the hypotheses that supported the offered theories, principals have been extracted from the theories which is the basis of the design work, and that is the connection point of the theoretical foundations and the design. According to the presented principles and criteria, it was tried to provide feasible and effective methods for designing walkability area in the context of a residential neighborhood, for the vital, safe and pollution-free (audio, visual and environmental) neighborhood, by using the identified problems in the neighborhood based on people's and officials' opinions and observations of the researchers and

other analytical methods, so that by increasing the comfort and safety of residents and creating a beautiful space, the attractiveness of the environment will be increased. Two options were made for the design, then by scoring the options based on goals, needs and problems, the best option was elected for the design.

In the followed section, there are some suggestions for conducting researches related to the topic which are offered by the authors for the next articles:

- It is recommended to present similar designs for residential neighborhoods on the outskirts of the city that do not have a good quality of life, to increase the welfare of the residents.
- Examining the impact of walkable neighborhood on the morale and health of the residents and the changes in using of the neighborhood area by the residents.
- It is recommended to consider the comments of the residents and the users of the area not only in identification and analysis phase, but also in designing phase in any research, and to use their comment.

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