Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231– 6345 (Online)
An Open Access, Online International Journal Available at www.cibtech.org/sp.ed/jls/2014/04/jls.htm
2014 Vol. 4 (S4), pp. 3711-3723/Moayedi and Reza
Research Article

A QUALITATIVE DESIGN OFPEDESTRIAN-ORIENTED URBAN SPACES TO ACHIEVE THE ENVIRONMENTAL SUSTAINABILITY IN CITIES: A CASE STUDY FOR ENVIRONMENTAL QUALITY EVALUATION OF PEDESTRIAN-CENTERED SPACES IN TEHRAN

***Mohammad Moayedi and Reza Kheiroddin**
Department of Urban Planning, Iran University of Science and Technology, Tehran, Iran
**Author for Correspondence*

ABSTRACT
Rapid development of urban areas in some decades influenced on human life and caused some environmental unsustainability. Scientists represent sustainable development theory as an aid for keeping the environment. Stable development current has become as a sample in literature on the dominant Urban Development and Planning has become. According to this theory, by reducing reliance on natural resources, efforts to minimize the environmental pollution, according to enjoying energy, enhance biodiversity and …in addition to improve the quality of urban environments, natural ecosystems also provide more protection. Now one of the basic problems on urban planning is the way in which the implementation of sustainable programs in cities work. In this regard, according to ecosystem issues, which are in priority of environmental issues in urban programs, attention to this in smaller scale means that public spaces in the cities are more important. That is why in the last decade human approaches to environmental quality in urban areas versus technical approaches, specialized in environmental quality, has been the focus of serious scholars. In this regard, the role of planning and designing of public spaces in order to achieve lasting impact and benefit is the place. This research is to answer the question of what is the role of urban public spaces in the city's environmental sustainability and how the capacities can be obtained through reasonable and hidden spaces used in the promotion of environmental sustainability. Analytical methods and ield survey were used to assess environmental sustainability in public spaces in Tehran. The results show that the approach taken and sustainable urban design based on some values like mobility, energy, the environment, ecology, design and development would contribute to the environmental sustainability of cities. Therefore, these factors are good basis for evaluating the quality of urban public spaces. Then, some researches made in the cases studied, indicate that there is a relationship between the components of sustainable urban design and sustainable environment parameters in public spaces. This approach to sustainable urban design can promote sustainability and lead to environmental quality in urban areas.

Keywords: *Sustainable Urban Development, Urban Design, Quality, Pedestrian-Oriented Urban Spaces, Quality Assessment, Urban Environment*

INTRODUCTION
Characteristics of today`s urban communities cause human and environment instability (natural and artificial environment) (Mofidi *et al.,* 2009). Because of this, rapid development of the city, in contemporary decades in various aspects of social, economic, cultural, political, and human life has heavily influenced. .. the introduction of sustainable development as the main theme of the third world right of (undesirable) cities biosphere and various aspects of human life (lifelong) (Gharakhlou *et al.,* 2006). Sustainable development of the city during the past decade has become the dominant new sample and current scientific literature on urban development and planning. Although the Paradigm refers to various interpretations, but in general the stability and continuity and development are for all future generations, during the comprehensive review of complex aspects of economic, social and environmental development in a focused country or city (Rahnamaee *et al.,* 2006).
So, city sustainability is a social development program that tries to know the inhabitants of the cities' needs, from environmental protection and social and economic resources resulting from the urban generalization at all levels (Shieh, 2008). In reality, keeping and facilitating city environment that

eventually will lead to improving quality of life is only possible by reducing air pollution, preventing ground pollution, looking for enjoying energy, increasing life variation, refining or cleaning burned grounds and will lead to a better life quality (Strong and Hemphill, 2006). The problem today, in front of urban planning, is sustainable urban planning and drawing and the application of policies to sustainability of cities.

The major issues in the urban environment, which have been seriously considered in recent years, by providers, are planning and urban management, but small-scale environmental problems such as urban planning and designing is a sub-theme. Its importance even in fields such as scientific research, the environment and sustainable development remains unknown. Because of this, in the designing process of the urban environment, we neglected climate approach (environmental), and our cities faced with social and environmental effects of rapid urban development in past decades. Ignoring the natural context of large-scale irreversible effects on the lives of citizens and civic life has also increasing adverse effects of natural bed stems.

This study is to answer the question of what the role of urban public spaces in the city's environmental sustainability is and how it can be obtained through reasonable and hidden spaces of capacities in promoting environmental sustainability aspects such as biodiversity, and productivity savings in energy consumption, conserving natural resources and improving the urban environment. The hypothesis is based on the belief that sustainable urban design approach can improve the sustainability and environmental quality in urban areas. It leads expecting a significant relationship between the components of sustainable urban design and sustainable environment parameters in public open spaces. The reason for choosing these spaces is the differences in (morphology) and the physical quality.

Theoretical Sustainability Development

In general, over the past three decades, global concern about the negative consequences of human activities on the global level has risen. Due to this global concern, during the 1980s, the idea of sustainable development of the proposed solutions to the problems and the needs of the current population, taking into account the rights of future generations was strong (WCED, 1987). Sustainable development, like any other great ideas, came into existence, and represented public benefit and pursued goals such as freedom, equality and democracy. Because of this, several offered explanations by researchers also expected (Gladwin *et al.*, 1995). Definition of sustainable development, which is proposed by the Commission Brantlnd, is the most effective ideas. In this report, sustainable development, satisfying the needs of the present document, without the ability to meet the future generations needs to be in danger (WCED, 1987). Table (1) shows some definitions related to sustainable development.

Table 1: Definitions of Sustainable Development

Definition of sustainable development	International organizations
A '"Development that provide the needs of the current population without the ability to meet future generations needs to be endangered and it is the sustainable development of mutual relation between humans and nature in the world	Brtlnd report (World Commission on Environment and Development)
'Sustainable development is a process of changing the use of resources, guiding investment orientation of technological development and institutional change that will be compatible with current and future needs (UNESCO.1997)	World Commission on Environment and Development
Development that is consistent	The International Bank

According to this, sustainability is responsible for maintaining the quality and sustainability of life for present and future generations (http://Avenu.org /gov/TjpDC/sustain.Html). The theory of sustainable development, with emphasis on the needs of human communities and the environment without reducing the level capacities for natural generations' investments is looking for increasing the quality of human life

in the future. Therefore, the realization of human life in the context of cities, focusing on urban issues on the agenda of sustainable development occurs. From this point of view, there are sustainable urban development agenda in recent decades in many urban movements such as the21st United Nations Agenda (Rio Conference on Sustainable Development), Human Development Report 2003 and the Charter of the United Nations Urbanization in developing modern industrial societies. In this regard, the World Commission on "Urbanization in the 21st Century" represents the foundations of sustainable development based on Table 2 (Williams, 2001).

Table 2: A summary the foundations of a sustainable city

Purpose	Background	Row
Work and adequate income, a dynamic economy	Sustainable Urban Economics	**1**
Solidarity, social justice	Sustainable urban population	**2**
Appropriate and affordable housing	Sustainable urban shelter	**3**
Sustainable Ecosystem	Sustainable urban environment	**4**
Transportation deleted without harm to the environment	Sustainable urban transport	**5**
Creating livable city	Sustainable urban living	**6**
Empowerment of citizens	Democracy, sustainable development	**7**

According to Table 2, the most important issue is related to the sustainable development of cities adopting an ecosystem is a dynamic and complex place that cannot evade the rules of normal and abnormal (Tjallinogii, 1993). As the social context of cities has the most impact on the environment, they are regarded as the beginning of major environmental threats. So, for sustainable development, energy and water supply and waste disposal and recycling collected by the government and the people, environment, social environment has always been a concern for government and people (Darkakis, 1995).

The 'Sustainable development' means improving the quality of life, living in a supportive capacity ecosystem (World conservation, 1994). Brokman believes that 'Sustainable development' improves the quality of life, economic, social and environmental and considers the environment.

Assessment of Sustainability

According to the definitions provided, the sustainable development is an inspiration paradigm (sample) and during the past 25 years, commercial organizations and citizens accepted it as a guiding principle and thought to achieve goals and the measurement of the solutions. Measurement and assessment of progress in sustainable development policies in the 1990s, was the focus of researchers (Scottish Executive Social Research, 2006). In this context, the use of indices is of most necessary tools to assess progress toward sustainable development. Each community has used the circumstances of the particular framework including frameworks based on sustainability objectives, dimensions of sustainability, sustainable development processes etc. The vastest framework for application-based dimensions is sustainability of the sustainable development of the content check-up and assessing the results of policies concerned (Kondyli, 2010; Becker, 1997; Maron *et al.*, 2008; Parris and Kates, 2003; Berke and Conroy, 2000; Lsaksson and Garvare, 2003; Callens and Tyteca, 1999).

Based on content, these variables are usually divided into three categories including environmental, economic and social and their way of access to these, variables are evaluated during time (Campbell, 1996). In some cases, we face transverse dimensions of sustainable development and sometimes they complement each other. Sometimes achieving one may cause the other dimensions of sustainability to get far from the ideal when trying to achieve balance in all aspects of planning it. Therefore, in general, we

can achieve sustainable development in all dimensions and define the balance in relation between them (Evans *et al.*, 2005).

Sustainable Development and Moving towards Sustainable Urban Design

The environmental sustainability of development in addition to distort stable society, promote sustainable growth and is a great help. Accordingly, in order to realize the development of sustainable planning, while the use of community resources in the process of its evolution, one must consider the conservation of resources and the community. Therefore, because stability has a root in the ecological sustainability: this theory is because the nature of life is to provide certain date and some limitation and shows the emphasis (Gulland *et al.,* 2001) (Hancock, 2001). From this point of view, if a society, socially and environmentally is sustainable, the social and physical design should also be in the combined and coordinated way (Hancock, 2001).

In general, sustainable urban development requires urban guided practice with optimum use of land and environment and energy and technology. Because "the scale of urban sustainability", issues such as saving fuel, energy resources and the growing need for sustainable energy sources and environmentally friendly and renewable, are of great importance (Mofidi, 2004). Therefore, the design of cities and the development of old buildings, paying attention to the opinion are among the most important environmental issues because the city should be residential environmentally, the life should be economically consistent and, and it should be kept dependent in terms of social maintenance (Hall, 1993; Mukomo, 1996).

The urban design is crucial to achieve a sustainable city. Peter Kolturp, in "The application of ecological theories in urban design", in particular, argues, urban design is beyond addressing the aesthetic and artistic elements of it. Urban design deals with creating and keeping urban places where appropriate answers to ecological issues, economic prosperity and social life are combined. In addition, nowadays, the designers are looking for new ways in the normal process of urban planning in cities and urban-inspired ecological, environmental requirements as a result of numerous important design factors (Pvrdyhmy, 2001).

The Sustainable Urban Design in twenty first century is the dominant paradigm of scientific plausibility and professional and special characteristics of this model, according to the concept of ecologically sustainable development of interventions designed (Golkar, 2008). In general, sustainable urban design can be formed based on three fundamental principles: The first principle of conservation resources is the attempt to use best resources, the use of non-renewable resources in the construction and operation of buildings in urban design. The second principle is based on a design by life circle and environmental consequences of the construction of urban life steps preparing to return to the nature of the life; the third principle is rooted in the need to preserve the human design to know the chain of survival and the survival of humans and ecosystems. Accordingly, urban environments must improve quality, increase productivity, reduce stress and improve living conditions for the Humanities (Golkar, 2008).

Matin also mentioned these three principles in his book "the first principle is the priority given to recycling of buildings under existing streets channel and by adopting their conditions and new needs. In the principle, the protection and improvement of buildings and urban contexts is emphasized. The second principle talks about conservation and natural landscapes. Third principle mentions reducing energy consumption in the development of new urban areas (Mofidi, 2004).

In recent decades, in addition to large-scale urban design, attention was also given to the micro scale, social and cultural roots in social places and local small spaces, especially in the residential environment and the daily life. Therefore, today a lot of planning and urban design theory and the methods of the Quality Measures have been identified, in the realm of local and social places. The urban design is based on three main elements of environmental resources, skills development and social values (Bahrain, 1998).

Accordingly, urban design, unlike the past, not only to beautify and lessen the emphasis on individual buildings of outstanding architectural or functional divisions, but the attitudes and further development of the public spaces, such as the social places and streets, shopping centers,, space tourism, space of pedestrians and bicyclists (Madani, 2001). One of the most important aspects of sustainable urban design

is open spaces for the purpose of welfare of citizens in the region including micro-scale thermal comfort, visual, audio, wind and urban morphology. The texture can be local and public open spaces as the smallest social unit and urban microclimate scale environmental assessment contract.

Environmental Assessment of Urban Public Spaces

Lack of environmental designs in small scale has had bad effect on the usefulness of new constructions and the citizens' lack of satisfaction. Review of environmental assessments also shows that man can enjoy adaptability to adapt to the conditions. For example, technical indicators show factors such as cold, heat, air pollution, radiation and damaging winds, but citizens are able to calculate various measures like clothing, furniture urban space and intrinsic motivation, self-adjusting conditions (Nikoloupolou, 2003).

The users of spaces are consistent on three methods of physical compatibility, compatibility physiological and psychological adaptation. Physical compatibility is changes that occur if the man has adapted to its environment. Changing in the establishment of appropriate heating and cooling drinks, removing removable walls, sunshade, sheltering in the shade or sun, are the best efforts to accommodate the external physical environments. The Human physiological adaptation to environment depends on variables such as response to human organs and sweating the new climate. Psychological adaptation is also influenced by expectations, motivations, perceptions and previous experiences of individuals. The environment can affect the level of tolerance or compatibility with the environment. Thus, evaluation of open spaces, comfort and field studies require climate survey of urban space and comfort of citizens (Nikoloupolou *et al.,* 2004). In other words, the improvement of environmental sustainability in urban spaces is not useful with the general principles and it is necessary to be careful about space features and small hemisphere condition.

In recent decades, in front of the specialized technical approaches to the quality of the human environment, a radical approach to the environmental quality of the city and the urban spaces is also taken into consideration.

Evaluation of Environmental Quality

Perceptual quality assessment of environment has special impact in creating life and dynamic location. In this category of the evaluation, the environmental quality is located in the field of view of the residents of the neighborhoods. In this regard, Francis and his colleagues refined based on 2500 points of view residents of the estate of San Francisco. In this study, a questionnaire which contained one of the physical aspects of the quality of public space, respectively (for example, air quality, noise pollution and health care environments, the amount of forklift, quality ofthe street aesthetic and the like) were used. This process is a comprehensive assessment of the environmental quality of the area (and public spaces) to clarify the weakness and strength. In this study, the relationship between the effort to assess the objective environment of the substitute roads and displacing residents in the neighborhood about the identification was mentioned (Gifford, 1987).

The researchers have focused on the priority of environmental interventions in urban neighborhoods. Therefore, it is necessary to evaluate the environment due to the nature of the location of your interest with regard to the attitude of the axis of the settlers and estate. Functional relationship with a particular place seems to be the most important psychological component. The most important factors influences on the quality of the environment are as follows:

-Functional components: safety activities in the urban space catch up with the urban space, compatibility with the space walk, time, and public transportation

-Aesthetic components: quality objective and subjective point of view of urban space, classification bones and mass and space

-Environmental components: the quality of the urban environment, such as climate, small Sun, shade, wind and mist, the efficiency of energy resources (Adapted from the Golkar, 2003; Golkar, 2001).

Some research has shown that the interventions done in the cities, which has been done according to the contemporary design and programs has lost the necessary efficiency to improve environmental conditions due to the lack of human needs. Under such conditions, improvement of the urban environment through the traditional and detailed technique-oriented and new strategies on a mass and

small scale is essential (Motallebi, 2006). In this study, environmental sustainability, strategic micro-scale as modern urban spaces are taken into consideration. The human-oriented strategy, planning and development of urban spaces, the need-based funding for sustainable values and ecological environment of human behavior meet the needs. At the same time, in order to satisfy the demands of permanent human and environmental sustainability in urban spaces to create sustainable urban design, as mentioned before, the welfare of the inhabitants is one of the issues for designing.

Today's, the environmental approach is being followed by some scholars such as the RUROS to provide the comfort of the inhabitants and those using open spaces.(http://alpha.cres.gr/ruros). This shows the measures of the urban design and urban microclimate profile localities play an important role in the sustainability of the environment and sustainable use requirements of the user although, in spite of the diversity of climate in urban areas and even within the major cities of the country, and the uniformity in the design of urban open spaces and the urban parts of the country, it is not an easy task in most urban spaces.

To carry out this research, urban pedestrian-oriented spaces in Tehran were analyzed. For this purpose urban pedestrian-oriented spaces of Naserkhsro Street in central Tehran as a historical pedestrian space were taken into account. Other urban pedestrian-oriented spaces were selected in 17 Shahrivar streets and finally Berlan Street was taken into account for undersigned walking spaces.

With regard to the aforementioned issues, generally sustainable urban design is based on criterion such as mobility (structure compact, the integration of walking spaces, the facilitation of public transport and walking), energy (using historical buildings and regional materials, and closeness to regional services and urban centers), environment (having open spaces, biodiversity and natural resources), The shape of space (its independency, mixing different users, high acceptance of population, the existence of a variety of public spaces) and the design and development (endogenous development), the resource conservation, recycling of materials and eco-efficiency development can contribute to the sustainability and promotion of environmental quality in urban areas

New criteria based on sustainable urban design including mobility, energy, space, shape, design and development of ecosystem are based on qualitative assessment as its public open spaces (Mofidi, 1997). Therefore, by employing a professional team, including some professionals in architecture and environment, different points were given to minor indices of each criterion in each region between 0-20. Finally, the results of the three rates of urban space with respect to the establishment of the position and characteristics of urban design were analyzed in comparison. In general, a summary of minor indicators were given as follows:

-Green spaces and landscaping;
-The design fit for women and children's comfort
-Walking spaces, biking;
-Maximum use of daylight, Orientation and climate measures, lack of natural resources as soil erosion.
-Efficient use of water, infrastructure such as the network establishment, water and sewage, and garbage disposal;
- To control the sounds, smell and optimum environmental fragrances, qualified air current, lack of shading buildings and solar orientation.

Data Analysis

The findings of the study indicate that public spaces, Public spaces, have various environmental measures to comply with the welfare of citizens (beneficiaries). For example, notice the use of the tall trees with possibility of shading in the summer and taking advantage of the sunshine to provide winter warmth for the citizens' welfare in general.

(A) Evaluation of Public Spaces on the Criteria of Energy

Nasser Khosrow Street walking space, in the energy index is on the highest rating and there is a significant gap compared with the two other spaces. Due to the space that is eligible for valuable historical buildings, that have been refurbished and are still used, the static use of solar energy, energy efficiency and rational use of natural light during the day and the use of renewable resources throughout

the day, according to views of the climate change context are on a higher level. This is while 17 Shahrivar walk and Berlan walk with a significant difference compared to Naserkhsro Street gained the next rank and stay close to the each other.

Considering the sub- index according to the local microclimate and encouraging the use of natural ventilation due to the extensive changes in construction and space walk in Naserkhsroand microclimate characteristics and the possibility of natural ventilation has undergone serious changes. In addition, the density and intensity of the traditional characteristics of full and empty spaces, of Naserkhsro is gone.

However, because of the position of the 17 Shahrivar patterns designed in accordance to local retail climate and encouraging the use of natural ventilation has received the highest rating.

Table 3: Assessment criteria for public spaces based on energy

Berlan walk	17shahrivar walk	Naserkhsro walk	Main criteria: Energy
10	17	16	Fine attention to local climate Center
8	9	17	Static for use of solar energy
10	8	16	Energy-saving
10	13	15	Encouragement to use natural light throughout the day
3	5	10	Renewable energy resources
16	17	14	Encouraging to use natural ventilation
13	10	18	Appropriate choice from a variety of views in order to respond to climate change
70	79	106	Total points

Table 4: Public spaces based on the assessment criteria for mobility

Berlan walks	Naserkhsro walk	17Shahrivar	Number two main criteria : mobility
off operating in priority setting in mental transport design and compatible with the environment	1	15	16
travel demand reduction	3	13	18
Car parking space reduction	7	6	15
Encouraging the creation of connected cross arteries and homogeneous permeability and surface water disposal	11	17	15
creation of a quiet local traffic flow	16	16	16
Total	38	67	80

B: Evaluation of Public Spaces on the Criteria of Mobility

Naserkhsro mobility index will have the highest score walk and17 Shahrivar walk is located close. The Naserkhosro walking space due to the vicinity of urban centers with the possibility of more active, facilities has the least need to move off the inner-city trips compared to the two other spaces.

Because of the low density of area, the space that is required to park the car is lower .However, the implementation of Berlan walk with a very low rating, reflects high level of the dependence of transport implementation on the means of urban transportation.In the case of sub index of slow traffic flow, 17Shahrivar walk, Naserkhsro walk and Berlan walk, gained equal points and this is due to congestion of these places near to riding trails and paths close to the city center traffic jams that in some cases destroys the peace of the local trails. Table (4) seeks to introduce the subject.

(C) Evaluation of Public Spaces on the Criteria of Spatial Shape

In the space shape index, 17Shahrivar and Naserkhsro walk and pedestrians have acquired very close points. For the indicators of relationship of building with the natural environment and creating sustainable settlements to complex operation and attractions in the neighborhood centers Naserkhsro walk gained the highest points. But the same space in existing infrastructure has achieved the lowest score and that is because of the destruction the old installations and the incompatibility of historical context with the foundation of a new urban facility. In terms of creation of centers of attraction in the neighborhood, Berlan walk had the lowest score that represents the dominant estate, interest, attention to complex space outside these catchy centers. This is while in the same index, 17 Shahrivar is able to receive high points such as Naserkhsro design, with attraction of indoor spaces design. Table (5) refers to this issue.

Table 5: Evaluation of public spaces on the criteria of spatial shape

Berlan walk	**17shahrivar walk**	**Naserkhsro walks**	**Number three main criteria : spatial shape**
17	15	17	Associate the building with the natural environment
17	12	17	Creating your sustainable settlements rely on these
15	16	15	Identification and detection of environmental capacity
16	12	16	Balance up to focus on greening
18	16	18	Encouragement to create neighborhoods with the user
14	15	14	Increasing density but not in the form of a density More than the size
17	16	17	Observing the standard density higher in parts of public transportation
18	16	18	Creating neighborhood attraction centers
6	17	6	How to communicate with existing infrastructure
138	135	138	Total points

(D) Assessment of Public Spaces on the Criteria of Ecosystem

Naserkhsro walk in the ecosystem index gained the highest points and significantly gained higher margin than 17 shahrivar and Berlan walk. Naserkhsro walk in space rating for all childcare indicators is higher than the two other spaces. This is while the Berlan Street space compared to the other two spaces gains the least points. To be done for the modernization, generally less attention to quality and ecosystem indicators is available on the historical context. However, the land surrounding the development of new neighborhoods usually pays more attention to these indicators.

Of course, it should be noted that in the index of natural resources such as land and erosion of natural resources and respect for the historic fabric, Naserkhsro, gains a high score. That is because of the establishment of the position of natural resource policy. Also, due to the attention to the revival of the old ecosystem quality in the open plan living-building and lack of ecosystem in the modernization, it gained higher points than 17 Shahrivar walk. Average rating of Berlan walk is related from one side to the neglect of the design pattern of characteristics such as biodiversity and respect for the natural substrate and degradation of natural resources, surfaces such as soil and its Visual perspectives. Table (6) addresses to this issue.

Table 6: Public spaces based on the assessment criteria; biome

Berlan walks	Shahrivar17 walks	Naserkhsro walks	Number four main criteria: Ecosystem
10	15	16	Green space
10	16	16	Reviews and analysis of environmental values and Encourage living in natural environment
9	15	15	Maximizing biodiversity
7	12	15	Protection and keep prospects prized nature Resources
7	10	7	Increasing and retaining rain water
8	13	17	Reducing erosion
10	14	16	Maintaining visual features (Environmental Perspectives)
56	95	102	Total points

(C) The Evaluation of Public Space on the Criteria of Design & Development

The highest points in the design and development of indicators are related to the Naserkhsro walk, which is located relatively away from 17Shahrivar pedestrian. Recent activities with regard to17 Shahrivar walk in the field of protection of historical literature (paying attention to renewal and repairing the buildings) using indigenous building materials and eco-friendly materials besides the emphasis on neighborhood features, prepare a better bed for development. This is while according to related indicators in all the design of the space, Berlan walk gained the lowest rating. Table (7) shows the issue.

Table 7: The evaluation of public space on the criteria of design & Development

Berlan walk	17 Shahrivar walk	Naserkhsro walk	Number five main criteria: Design and Development
10	16	17	Preparation and open mildness to accept new ideas and creative urban design in the use of sustainable forms
9	16	18	**Preparation and open mildness to accept new ideas and creative urban design in the use of sustainable forms**
10	15	19	Protection of valuable historical compositions
13	15	18	Building on the knowledge of the preferred redevelopment
1	2	5	Recycling
15	16	19	Use of native building materials
11	14	18	Use of more environmentally friendly materials
10	18	17	Preservation of local characteristics and differences
76	112	131	Total

In conclusion, the findings indicate that Naserkhsro walk with a significant distance got the highest rating in environmental sustainability, and 17Shahrivarwalk based on the principles of urban design, in most of the lift points is close to the Naserkhosro walk score.

While Naserkhsro got the highest points in the field of energy and movement, the newly built17shahrivarwalk in the field of ecology criterion earned points nearer to Naserkhosro walk, and in the spatial scale it is almost the same as Naserkhosro.

In the index of development designing, the distance between two walks, is insignificant and 17Shahrivar is almost in same condition. Berlan walk got the least lift index points than the two other walks in more indexes. Field observations showed that the physical and environmental status of these roads and public spaces are also undesirable. Table (8) provides the conclusion.

Table 8: Urban spaces wrap points

Wrap neighborhood Points based on main criteria	Naserkhosro walk (Shape based Urban Design Principles)	17Shahrivar (Shape based Urban Design Principles) walk	Berlan walk (common formation of and lack of urban planning)
main index: energy	106	79	70
main index: mobility	80	67	38
main index: spatial shapes	138	135	102
main index: ecosystem	102	95	56
main index: design and development	76	131	112
Total scores	557	488	342

Results and Conclusion

The results of research, in addition to the findings of the Tehran walks, gives us a deeper understanding of environmental factors affecting environmental comfort, practical strategies form the comfort of urban citizens in the public spaces of the country. Naserkhosro walk, placed in the historical part will earn the highest score in the context of five criteria. Organic plan, regenerated layer, network of intensive buildings and passages, proximity to urban centers, having a network of neighborhood services, continuous communication, urban spaces, pedestrians and less dependency on cars, maintaining and repairing buildings and valuable spaces, native materials reuse and environmental tendency to local climate, are of the most important physical components of the range. Of course, the spaces around this range need urban spaces design. The spaces around the area, as well as in other areas, require a review of urban spaces. This walk has also been under the influence of commercial activity, and extensive new construction in recent years. In addition, new 17 Shahrivar walk, which is built based on the principles of urban design and open spaces, biodiversity, has visual quality and perspectives. This issue has caused the environmental criteria to earn acceptable rating. This implementation of features, such as the way with reinsurance, the incorporation of a different user, high population and the existence of a variety of public spaces, space criteria, received a satisfactory rating and was way off with a slight distance after Naserkhosro. The famous Berlan Street which is famous to Berlan walk (walk of the popular urban spaces, with no design) is also in the bottom of five criteria points and made many environmental issues.

The results of research suggest that most newly built off-centered spaces, and sustainable urban design lack the citizens' environmental needs and interests and are not enough for the citizens. Hence, thermal comfort strategies, light, view, and visibility, comfort in the wind, environmental comfort and enhancing the quality of audio walks, grass ways and green bridge, walking circuit neighborhood, skating and bike rink, public transportation, environmental and health care stations fit to help the sustainability of the environment. The results of this study prove the role of urban design for public spaces, promoting the use of renewable energy in tissue scale and urban spaces and introduce the examples of practical research carried out for the welfare of citizens in urban areas.

REFERENCES

Bahreyni H (1998). *Urban Design Process* (Tehran University Publications).

Becker B (1997). Sustainability Assessment: A Review of Values, Concepts and Methodological Approaches, *Consultative Group of International Agricultural Research* **10**.

Berke PR and Conroy MM (2000). Are we planning for sustainable development?, *Journal of American Planning Association* 21-33.

Callens I and Tyteca D (1999). Towards indicators of sustainable development for firms: A productive efficiency perspective, *Ecological Economics* **28** 41-53.
Campbell S (1996). Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association* 296-312.
Choguill CH (1993). Sustainable cities: urban policies for the Future, *Habitat International* **17**(3) 1-12.
Darkakis-smith David (1995). Third world citics. *Sustainable Urban Development Urban Studies* **32**(4-5) 659-677.
Golkar K (2001). Urban design quality Builder Component. *Journal of Medical Web-Research* **32** 38-65.
Golkar K (2008). *Visual environment for the city;* The garlic transformation from a sustainable approach, the approach of environmental science to the stairs, fifth year, (4) 101-102.
Golkar K (2003). The birth of urban design tablogh, *Journal of Medical Web-research*, ShahidBeheshti University **36** 9-23.
Gulland EJM and Akcakaya HR (2001). Sustainability indices for exploited populations. *Trends in Ecology and Evolution* **16**(12).
Hall P (1993). Toward Sustainable livable and innovative cities for 21st. century. *In Proceedings of the Third Conference of the World Capitals* (22-28).
Kondyli J (2010). Measurement and evaluation of sustainable development: A composite indicator for the islands of the North Aegean region. *Greece, Environmental Impact Assessment Review* **30** 347-356.
Leman E and Cox J (1991). Sustainable urban Development. *Strategic Consideration for Urbanizing Nation*, Ekistics 348-349 216-224.
Lsaksson R and Garvare (2003). Measuring sustainable development using process models, *Managerial Auditing Journal* **18**(8) 649-656.
Madani Pour A (2000). *Urban spaces design process based on spatial and social respect.* Tehran, Processing Enterprises and Planning.
Maron DD, Wackernagel M, Kitzes JA, Goldfinger SH and Boutaud Aur-lien (2008). Measuring sustainable development - Nation by nation, *Ecological Economics* **64** 470 – 474.
Mofidi SM (1997). Climatic Urban Design, *climatic history of urban form*. University of Sheffield 143-150.
Mofidi SeyedMajid (2004). Sustainable environmental and urban design, *Abadi Journal* **44** 88.
Motallebi G (2006). Human approach to shaping urban spaces. *Fine Arts Quarterly Journal* **27** 57-66.
Mukomo S (1996). Urban Sustainability reporting. *Journal of the American Planning Association* **62**(2) 183-184.
Nikoloupolou M (2003). Designing open spaces in the urban Environment: A Bioclimatic Approach. Available: http://alpha.cres.gr/ruros/disgui.htm1.
Nikoloupolou M and Koen S (2004). Thermal Comfort and psychological adaptation as a guide for designing urban spaces.
Parris TM and Kates RW (2003). Characterizing and Measuring Sustainable Development. *Annual Review Environment* **28** 13-28.
PorDeihimi S (2001). A look at the future of cities, urban spaces for the recycling fleet activities with nature and society. *The Medical Web Magazine* **33** 29.
SalehiFard M (2006). *The* evaluation of the role and status of urban sustainable development in the structure of the Iranian society. *Medical Web Magazine, urbanization* 146-153.
Sarrafi M (1996). Sustainable development and urban planners responsibilities. *Technical, Architectural and Urban Planning* **35** 42-43.
Scottish Executive Social Research (2006). Sustainable Development: A Review of International Literature. The Centre for Sustainable Development. University of Westminster and the Law School, University of Strathclyde.
Strong WA and Hemphill LA (2006). *Sustainable Development Policy Directory* (Blackwell Publishing Ltd).

Tjallinogii SP (1993). The responsible city, International. Federation for Housing and Planning. International conference, Berlin.
UNESCO (1997). Education for a sustainable suture. Thessaloniki: UNESCO / The Government Of Greece---WCED (World Commission on Environment and Development.
World Bank (1992). World Development report 1992. *Development and the Environment* (Oxford University Press).