

READOUT THE PRINCIPLES OF COMPACT CITY IN THE NEIGHBORHOODS OF THE IRANIAN CITIES (CASE STUDY: NAZI ABAD NEIGHBORHOOD OF TEHRAN)

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ABSTRACT

City is the manifestation of human culture and civilization. Urban neighborhoods as social spaces play an important role in the lives of citizens. Texture density in neighborhoods, concentration of complex land uses and their proximity to each other are closely associated with sustainable urban forms. Today, with the increase of urban population, we are observing transformation and destruction of urban neighborhoods and a lot of old neighborhoods are being destroyed under the pretext of having timeworn texture and lack of accountability to our urban population. Tehran metropolis is no exception to this. Here we encounter two urban problems: First, uncontrolled urban dispersion and second, a huge amount of buildings which haven't any identification and have formed regardless of their field bed. Compact city is a model of sustainable cities and this is an efficient model to address the phenomenon of urban dispersion. In addition, the model emphasizes the focus on the neighborhood. Nazi Abad neighborhood in Tehran, one of the old quarters of the city that has a compact and outdated texture. In recent years, new buildings are being built in the neighborhood, which were formed regardless of the identity and the dominant pattern in this neighborhood. This had a negative impact on the neighborhood and has tarnished its image. By using descriptive-analytic study as well as field studies on Nazi Abad neighborhood, this paper considers this neighborhood as part of the skeleton of Tehran and aims to solve these urban problems by providing some solutions and identify the patterns in Nazi Abad neighborhood. The contents listed in this article aims to provide key tools for urban planning, urban identity and locations for future designs.

Keywords: *compact city, neighborhood-oriented, sustainable, Nazi Abad neighborhood*

INTRODUCTION

As a manifestation of human civilization, city is a settlement which was selected by humans for a better and more deserving elements. In fact, the world has gone towards urbanization for centuries (United Nations 2001; United Nations center for (human settlements [1996] 2000). With the passage of time and the creation and development of new technologies, the form of cities has changed. While most manufacturers pay less attention to the importance of urban space and distance due to the consequence of globalization and the spread of communication (cairncross, 2001), other thinkers have pointed to the importance of proximity and economic benefits of urban density. In between these two poles, a problem that is emerging is massive migration to urban areas and rapid population growth, urbanization, suburban dispersion and decentralization in the cities, especially the metropolises. In the second half of the 20th century phenomenon of urban sprawl, with a widespread lack of decentralization appeared in cities and spread outwards. Factors that were a result of urban sprawl,

are: More car ownership, weaker public transport services, walking and cycling and reduce excessive growth in construction and the like as far as the population declined and this state affects quality of urban life, community, environment economic and social dimension (jenks, Burton, Williams.1996). This phenomenon is the result of migration and urbanization, rapid population growth in recent years, most cities are also put at risk. Therefore, presenting Strategies aimed at enhancing the quality of life in cities and neighborhoods is essential. In order to achieve this goal, we need an urban model that focuses on centralization instead of decentralization. As we know, there is a direct relationship between urban form and spatial structure of urban neighborhoods. Therefore, to achieve sustainable urban form, you must first start from urban neighborhoods. Nazi Abad is one of the old neighborhoods with a compact texture and because of its ancient culture, it is known as "the heart of Tehran". In recent years, many old houses and buildings in Nazi Abad have been replaced by new buildings and most of them have no identity. This had an adverse impact on the urban environment in Nazi Abad, regardless of compact patterns, because the traditional context in Nazi Abad had been formed in compact and layered manner. Hence, this paper aims to examine the current situation in Nazi Abad neighborhood and explain them aimed at designing a compact city.

Therefore, this article is aimed to answer the following questions:

What is the concept of a compact city?

What are the compact dimensions in Nazi Abad neighborhood?

RESEARCH METHODOLOGY

These research is descriptive - analytic. Initially, citing the available resources, principles and concepts of urban compact in urban areas were evaluated. Then using field studies and observation and making photos, the compact dimensions in the study area (Nazi Abad neighborhood of Tehran) were studied.

BASIC DEFINITIONS

URBAN SUSTAINABILITY

Urban sustainability is the idea in which a city can be organized in order to be able to adapt to renewable resources it is comfortable to live in terms of economic, social, and environmental and so on. The main objective is to create a place to reduce pollution and optimal use of the land. This includes social justice and quality of life. Economically, this would provide employment opportunities, adequate facilities, saving energy, time, individual and collective costs (Ahsani, Asgharzadeh: 2014).

In general, urban sustainability has a triple dimension which are shown in Figure 1:

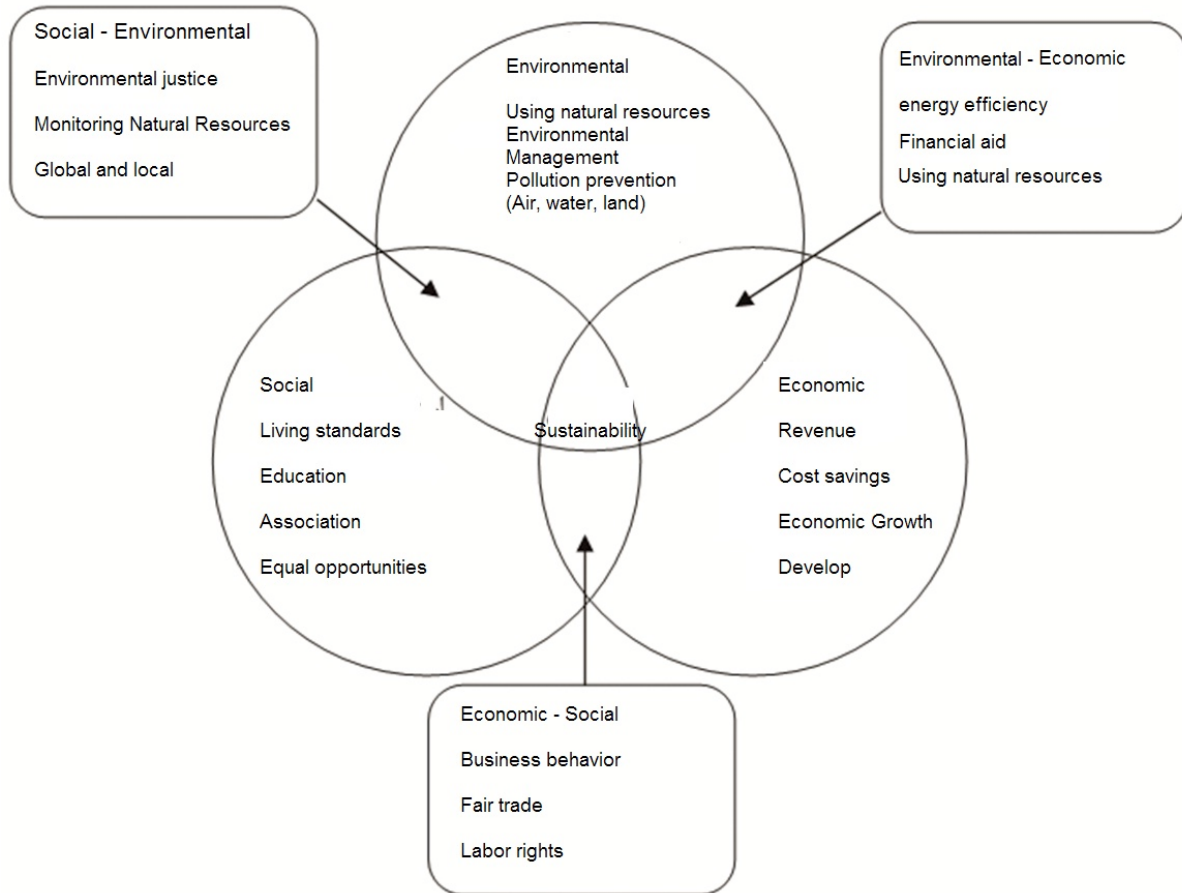


Figure 1: The three dimensions of urban sustainability; resource: Adopted from the 2002 University of Michigan Sustainability Assessment

DENSITY

Density of the built environment is a widely accepted strategy through which sustainable urban forms can be obtained. Urban density refers to proximity and connection and shows that the future of urban development should occur in the vicinity of the existing urban structure (Wheeler, 2002). The density of urban space can minimize the transportation of energy, water, materials, goods and people.

An important strategy to achieve compression is effective use of urban land by increasing the density of development and activity. Intensified form of construction involves the development of undeveloped urban land, existing buildings or redevelopment of previously developed land, which is divided into and additions and extensions (Jenks, 2000).

THE CONCEPT OF COMPRESSION COMPACT CITY

Before the international promotion of sustainable development, the idea of "radiant city" was proposed by Le Corbusier as a solution to urban problems during the reign of Queen Victoria. Following the ideas of Le Corbusier in connection the radiant city, Dantzing and Saaty (1973) offered the compact city (Dantzing and Saaty, 1973). Their perspectives was based on enhancing the quality of life but not at the expense of "next generation" (ibid: 10). The so-called compact city is a concept quite the opposite in comparison with the concept of urban sprawl. The compact city is more efficient and less polluting. Residents have access to more services and stores and can walk, bike and transportation would be easier. Proponents claim that these cities can promote community-based social patterns (Katz, 1994).

Compact cities represent a unique reaction in order to solve many urban problems such as land use in outskirts, increase resources of waste production, air pollution, and social segregation and so on; and this reaction is synonymous with sustainable city (Neumann, 2005: 17). We can say that urban sustainability requires a balance with the environment and identify existing and potential areas to create a suitable spatial structure. But urban planning evolved during the twentieth century, resulting in a variety of forms in their cities that often pay little attention to environmental impact and spatial structure within the cities. Considering the natural and artificial environment is the main ingredient in the compact city (Ahsani, Asgharzadeh, 2014).

COMPRESSION PARAMETERS IN THE COMPACT CITY

Given the importance of the compact city, Europe Commission and national governments in many Western countries intend to focus on compact cities to reduce pollution and energy consumption (Breheny, 1996). In fact, the population of Europe and Agenda 21 declared that "the development with high-density as a basic principle for urban growth" is an important requirement (De Roo, 2000). Before the international promotion of sustainable development, the idea of "radiant city" was proposed by Le Corbusier as a solution to urban problems during the reign of Queen Victoria. Following the ideas of Le Corbusier in connection the radiant city, Dantzing and Saaty (1973) offered the compact city (Dantzing and Saaty, 1973). Since then, the concept of compact city was formed as a pioneered concept in urban planning, especially in Europe (Haußermann & Haila, 2004). Dantzing and Saaty (1978) were the first ones who attempted to define the compact city and explain the characteristics of compact urban form and space with the features and functions of their community. Table 1 illustrates this index:

Table 1: characteristics of compression from the perspective of Dantzing and Saaty

Urban form	Spatial features	social factors
High-density housing	Mixed land use	social justice
Less Dependence on Cars	Diversity of life	Self-sufficiency from everyday life
Have a transparent border from the surrounding area	Transparent identity	Independency from government

Source: Adapted from Hideki, 2003

The compact city paradigm is not only based on the concept of efficient use of land and urban area, but also it includes the objectives and parameters that are associated with sustainable urban form. Some of these factors include: (Williams, 1999)

The urban area separated from the residential area, which is the productivity of the used land

Sustainable public transport, less dependent on the car, less climate change, lower travel costs and public health benefits of non-motorized trips

Protect the countryside, farmland, ecological diversity

Focus on urban neighborhoods with indirect social impacts such as social composition, social cohesion, economic diversification, etc.

Generally, compression in the city has three dimensions including density, mixed use and aggravation. Table 2 provides a description of these dimensions and their subdirectories:

Table 2: Three Dimensions of compression

The nature of the indices	Compact dimensions
Density of characteristic nature	Density
Individuals and households per hectare	population density
Individuals and households per hectare with the areas of citizenship in the area	Density of construction form
Density of in dense areas	Density of sub-centers
The percentage of residential buildings built with higher density and lower large and small houses	Residential density
The nature of combined index	Mixed use
Key features and basic quality	Providing facilities
Variation in the number of facilities in each section, and dividing by the average number of possibilities in that sector	Combination / separation facilities in the horizontal plane
Development of retail / residential and commercial / residential development	Vertical mixed use
Nature of Intensification indices	Intensification
The rate of internal migration	Population increase
The rate of new residential buildings, changes in the proportion of small and large houses, rehabilitation of abandoned land and planning approval	Increased development
Changes in the density of the dense area	Increase in the density of sub-centers

Source: Burton, 2008

NEIGHBORHOOD-ORIENTED IN THE COMPACT CITY URBAN NEIGHBORHOODS

Neighborhood is one of the most physical divisions in the city. In the past, neighborhood plays an important role in urban areas and objectify its role in contemporary times. The concept of neighborhood has meanings, functions and values that they can be examined at various levels and dimensions. Henri Lefebvre described the neighborhood as an organized form of urban space, and acknowledges that neighborhood organized by social forces (Rabbani, 2002).

In the specialized studies that examined the concept of neighborhood, there are two main attitudes regarding the neighborhood:

A. neighborhood as a physical-spatial unit: In this approach, with an emphasis on spatial concepts, the neighborhood is made up of physical elements such as residential units, communication services and networks that settlement and collection of related activities occur in different spaces of the neighborhood. In such an attitude, neighborhood can create context for relationships and social ties between residents. West neighborhood concept with an emphasis on physical-spatial can become meaningful with such an attitude. In this perspective, Neighborhood can be defined by an index function and borders of neighborhood are determined by the radius of activity performance in this function. Like neighborhoods that are defined by urban planning through the area of school performance. In addition, the neighborhood is defined by its relationship with one or more service organizations or local organs. Like neighborhoods that be defined by the electoral districts, police stations, parks, public transport network, social services and cultural areas covered by the local administration and municipalities or their boundaries (Shi'a, 2003; Saeidnia, 2006).

B. neighborhood as social and physical-spatial unit:

In this view, social and physical-spatial both involved in the definition of neighborhood. This attitude considers neighborhood a more comprehensive concept than the previous approach. Social concept of neighborhood is defined by a set of communication and social interaction. Neighborhood is a primary form of social organization and include those who have shared history. Action and interaction in the neighborhood Creates a sense of belonging and cooperation. In the history of urbanization in Iran, there was a strong social attitude to neighborhood (Ashraf, 1973; Soltanzadeh, 1989; tavassoli, 1997).

NEIGHBORHOODS AS URBAN COMPACT CELLS

Urban neighborhoods of the city act as small cell and they are confluence of social, economic aspects and urban space in the small scale of city. Lynch described the neighborhood as such: "a relatively large area of the city that have similar characteristics and are consistent regulatory practice and be able to enter it" (Lynch, 1997). In the compact city model, neighborhoods act as individual cells. "Neighborhood cell" is an urban compact cell which provides favorable conditions and people can reach their destination by walking in about 20 minutes. In addition, the neighborhood cells have a small electrical network which provides heating, power, communication networks and others in the community. And yet, this is linked with other communities and is connected to the transport network. Within the urban compact cells, there is the future structure of the city according to a number of design principles where it is allowed to increase density with increasing vitality and viability of city (IFHP, 2013). Figure 2 shows a model of urban compact cell configuration that is associated with the viability of the concept of "neighborhood cell" as a basis for the development has been introduced in the future.



Figure 2: urban compact cell configuration; Source: IFHP, 2013

According to the above definitions, the concept of compression in the neighborhood-oriented dimension and urban neighborhood compact cells included multiple dimensions. Hence, we found six important features in the compact urban neighborhoods that are mentioned in Table 3:

Table 3: The concept of compression in the neighborhood-oriented dimension in the compact city

The concept of compression in the neighborhood-oriented dimension in the compact city					
first indicator	Second characteristic	Third index	Fourth indicator	Fifth features	Sixth feature
walkability	Mixing land uses	Connection with surrounding neighborhoods	Multicenter density	Density in the neighborhood tissue	Space status in the neighborhood

Source: authors

THE INTRODUCTION OF THE STUDIED AREA

Nazi Abad neighborhood (Madain) is one of the neighborhoods in south of Tehran, located in the 2nd District of Region 16 of Tehran and it is totally 18 square kilometers and more than 600 thousand people live in this populated area. The nearest neighborhood of the old neighborhoods of Tehran is Khanyabad Nou which is located in southwestern of Nazi Abad. In the south, Nazi Abad is limited by Reye town, in the East, this is limited to Railway Square and in the West, and this is limited to

Ghal'eh Morghi Fortress (uni17.blogfa.com). The neighborhood leads to Azadegan Highway in the south, this leads Be'sat Highway in the north, this leads to Rajaee Highway in the East and this leads to Tondgoyan highway in the West. This area has been developed from the Qajar era. But the neighborhood fundamental systematic planning be introduced in line with modernizations of the first Pahlavi and this plan was prepared by German consultants and came into force during the second Pahlavi. Land in the northern part were used to build a factory and people settled in southern and central sectors. This neighborhood has seventy-two squares that there is a lot of public space between all quarters (Mansoor Rezaee & Esmaily, 2010). Nazi Abad is one of the old neighborhoods with a compact texture and because of its ancient culture, it is known as "the heart of Tehran". In recent years, many old houses and buildings in Nazi Abad have been replaced by new buildings and most of them have no identity. This had an adverse impact on the urban environment in Nazi Abad, regardless of compact patterns.

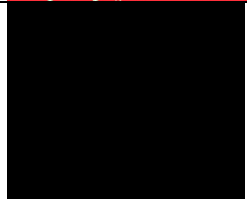


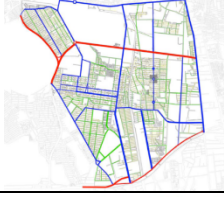
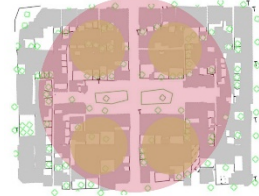
Figure 3: Range of Nazi Abad neighborhood in 16th region of Tehran; Source: Google earth

CHECK COMPRESSION IN NAZI ABAD NEIGHBORHOOD

The study was conducted in Nazi Abad. Nazi Abad is divided into 8 small neighborhood. After reviewing the neighborhoods and taking into account the location, the importance and social status within the range was chosen. The study area covers an area of 19668 square meters and from the North and South and East and West, it is restricted by streets of Akbar Mashadi, martyr Khaleghipour, Kargar Samani and Khalili. In this research, the concept of compression were investigated in this neighborhood. Thus, this study performed according to six criteria listed in Table 3 and using field studies, observation and sketch. The results are shown in Table 4.

Table 4: the concept of compression in Nazi Abad

the concept of compression in Nazi Abad			
No.	Index	Image	Explanations
1	walkability		Lack of attention to pedestrian and bicycle paths - inappropriate distribution of land use compared to walking paths
2	Mixing land uses		Lack of mixing land uses equally in all parts of the neighborhood

3	Connection with surrounding neighborhoods			Appropriate communication with surrounding neighborhoods by foot and in vehicles
4	Multicenter density			Multi-center consolidation within the context of the neighborhood
5	Density in the neighborhood tissue	Traditional texture		Existence some traditional contexts and in accordance with cultural, historical identity of neighborhood
		New texture		Faceless new buildings and without considering the texture of the neighborhoods
6	Space status in the neighborhood			Existence space status and hierarchy in the traditional context the neighborhood A: Private space B: semi-private space C: semi-public space D: Public passing

ANALYSIS OF THE RESULTS

In the previous section, the Nazi Abad neighborhood was studied in terms of six factors of compression. Some of these six factors highlighted in this range and others are less visible. After review, the proposed solutions are analyzed and presented. The findings suggest that Nazi Abad neighborhood has a compact texture and compression factors can be seen in urban neighborhoods.

Table 5: strategies and proposals in relation to the characteristics of axial compression in Nazi Abad

No.	Index	Strategies and recommendations
1	walkability	Create a defined path for pedestrians and bikes accessible location within walking distance of some land uses close to home
2	Mixing land uses	Existence of blocks with different uses such as commercial and administrative, residential In different parts of the neighborhood
3	Connection with surrounding neighborhoods	improve zoning at the local level, according to the principle of social relationships and improve the quality of urban life
4	Multicenter density	Allows mixing of different land uses in various local centers
5	Density in the neighborhood tissue	Pay more attention to the underlying tissue and neighborhood identity and modernization and improvement of the existing fabric according to traditional media viewing buildings accordance with

		the principles of district compression and comply with matching materials in the neighborhood
6	Space status in the neighborhood	Fixed space in the context of the new neighborhood and a new urban development and trying to continue this favorable trend

CONCLUSION

In modern times, despite the challenges of urbanization, especially in metropolises in Iran, understanding and using the contextual integration is important and undeniable. A successful, desirable and sustainable urban form should include urban contextual dimensions (economic, social, historical, environmental, etc.), so that all services and arrangements be considered with the goal of improving the quality of people's lives and well-being of the community.

The compact city concept that includes economic, social, environmental, etc., is a deserved and suitable model for Iranian cities with the aim of implementing urban planning policies for sustainable urban development. Because, despite the need for sustainable development in Iranian cities, most cities are suffering from the radical sprawl and spread in form and scope. And this caused tension and socioeconomic characteristics, it has been negative for society and the citizens and conversely, compact city model focuses on urban sustainability and centralization and starts from the neighborhood-oriented and gradually expand its own scope throughout the city. It also aims to create a sustainable urban form and spatial structure and seeking social justice and respect for citizens' rights and positive social interaction. Iran also has a rich culture and civilization history. Managers, architects and designers need to design a form and spatial structure in order to illustrate the rich history and culture in Iran. In this paper, the Nazi Abad neighborhood was evaluated in terms of compression. Six factors mentioned in the concept of Compression is indicative of this fact that Nazi Abad texture is dense and intensive, but solutions have been proposed to repair and rectify weaknesses in the neighborhood, which should be practiced carefully. Urban planners and managers should also be sure to apply interpretations.

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