Recognition of Sustainable Approaches in Urban Structure of Historical Cities in Iran

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1 ABSTRACT

Throughout history, most traditional cities and building practices evolved out of necessity and not a supply-driven ideology. Therefore, their sense of sustainability emerged from having found resonance with nature, human-environment interaction, its pace and cyclical progression and that's why they have withstood the test of time and appealed to a variety of functional needs. Much of their charm was a product of the way they related to the character of the neighborhood and allowed for democratic expressions.

The patrimony of indigenously designed and developed urban places and spaces is a clear fact; built environments which are culturally rooted, locally produced, and technologically adapted in time and space. Their potential responsiveness to the needs of a changing social and functional world was achieved through mixed activity patterns, organic geometry and human-environment interaction.

Historic cities of Iran were no exception and have evolved out of an unique sustainable ideology allowing resonance with nature, human-environment interaction as well as creating socio-cultural patterns for a satisfactory urban life. This sustainable approach has been manifested in characteristics such as direction to prevailing wind and sun, utilization of vegetation and other natural elements, vernacular materials and so on.

In this paper the intention is to analyze the conceptions of sustainability in urban structure of Iranian historical cities.

2 INTRODUCTION

Cities can be seen as expressions of mankind's cultural, economic and social evolution, and at the same time they are the stage on which people develop their own futures and in this process, urban life will exert pressure to evolve physically by expansion outwards, upwards, downwards or in increased density [1]. Cities of the great early civilizations which developed by incremental growth from a historic nucleus adopted common spatial or physical features with orientation to the path of sun and prevailing wind as well as encircling fortifications. Hierarchy, geomancy and cosmology were among the most influential planning and design concepts that were seen in almost all ancient civilizations. Besides, since the earliest of times, political, religious and other vested interests have been glorified in cities and, often, physically raised [2]. The 'historic center' of city encompasses architectural, social, urban, environmental expressions which are recognized as relevant and which express the social and cultural life of a community. From an urban point of view, historic center or district is the oldest nucleus of a city which has evolved in centuries and contains best examples of most precious monuments of the city.

The concept of sustainable development is steadily approaching recognition, if not full disciplinary autonomy, becoming the focus of new theoretical and normative reflection. However, the same cannot be said of a more specific field of application of that same concept - the urban environment. In our opinion, this has been hindered until recently by some unresolved problems - of definition, methodology and epistemology - intrinsic in the more general concept, and also by some specificities of the urban case especially the historic district of city that have not been sufficiently borne in mind. A city is, by nature, a manufact, an almost entirely artificial object, constructed for historical goals of socialisation, synergy, increase of knowledge and social wellbeing. A weak concept of sustainability, which permits ample substitutability between production inputs and utility function inputs, is almost impossible to avoid. When considering the problem in its entirety from an urban point of view, we must combine the socio-cultural, economic and environmental elements, which all go towards the construction of that complex set of relations we call city. Sustainable urban development may be defined as a process of synergetic integration and co-evolution among the great subsystems making up a city and its history (economic, social, physical and environmental), which guarantees the local population a non-decreasing level of wellbeing in the long term, without compromising the possibilities of development of surrounding areas and contributing by this towards reducing the harmful effects of development on the biosphere.

With the current size and foreseen increase of the world's population living in urban areas, supplemented by insufficient policies to recognize and facilitate sustainable use of heritage assets, pressures on historic cities

will continue to rise, making historic urban landscape conservation one of the most daunting tasks of our time. As a direct consequence, the time allocated at World Heritage Committee sessions to debating the impact of contemporary development in or adjacent to World Heritage designated cities has increased dramatically. Ranging from traffic and tourism pressures, to high-rise constructions and inner city functional changes, the issues negatively affecting the protection and conservation of World Heritage sites are numerous and often inter-related. However, in the case of threats to the universal value and integrity (physical or visual) of historic urban landscapes, and as opposed to uncontrolled urban development or large-scale planned development, there's a clear emphasis on urban heritage and urban landscape in historic center of cities to attract attention, investment and visitors.

Urban areas act as population centres providing goods and services not only for its population, but also for populations worldwide. Urban ecosystems can no longer be considered as a separate entity to the environment as they have direct and indirect impacts on the immediate and wider environments. Many of the environmental problems faced today (eg global warming, water and air pollution and inadequate access to safe drinking water) can be traced back to cities and lifestyle choices. With urban population levels expected to reach 60% in the next 30 years and the majority of urbanisation to occur in developing countries, urban environmental management is being increasingly important.

Ministries of Culture across the world and Organization of Cultural Heritage, Handicrafts and Tourism in Iran have been the pioneers to establish and monitor the norms, regulations, strategies and actions regarding identification, registration, conservation and restoration of historic buildings and quarters. In Iran, historic centre of 90 cities with a total area of 16000 hectares have been identified and registered by the organization of cultural heritage, handicrafts and tourism revitalization projects with diverse characters and frameworks have been planned and implemented in these areas which are in different stages due to historical, cultural and political priorities.

Historic centers of cities in Iran which had been built during history in response to economic and social life of this territory were considered as dominant pattern of their frames until the late Ghajar era. Primary changes in these centers were accomplished when Iran was settled in the world capitalism chain in the last years of Ghajar era. Entrance of the first automobile and propagation of western culture were two important factors to change the structure of Iranian cities environmentally. Some of major characteristics of historic urban environment in Iran which contribute to urban sustainability are as follows.

2.1 Existence of Cultural Heritage

Historic district of each city possesses the best examples of cultural, historical, urban and architectural heritage of the city. From this perspective urban heritage exposes itself mainly as a collection of monuments and landmarks: honourable relics of the past, symbolizing our history, giving meaning to our cultural identity and embellishing our lives. In most cities of Iran, most precious examples of mosques, tombs, palaces, public bathes, urban squares and Bazaars, symbolizing historical, cultural and architectural identity of the city are located in the historical centre of each city. These monuments along with some visual and/or verbal documents about past can provide us with enough information enabling simulation of ancient urban characters. Besides, the built heritage of each city creates the best opportunities for tourist attraction leading to economic benefits to the area. In Iran, more than 27000 monuments located in historical center of cities have been registered as national heritage by organization of cultural heritage, handicrafts and tourism. Most of these monuments are symbols of old architectural and urban design styles and are considered to be major sources of urban tourist attraction. Existence of these monuments which are always located in inflection points of urban texture, make any intervention a challenging one. Since these monuments can not be replaced or displaced, the geometry of new interventions and urban projects, especially streets and intersections need to be aligned with the location of monuments which in some case makes almost impossible to reach and acceptable level of intervention. In most case, location of a monument in historic district has made new intervention incapable of providing suitable vehicular access into the area.

2.2 A Source for Continuity of Culture

Historic urban environments and spaces sustain social structures of human societies and ensure their continuity. Environment plays a significant role in socialization: from the very babyhood, individuals experience an impact of the native settings. Specific environmental characteristics – geomorphologic

features, spatial structures, scale, rhythms, textures, light, colors and similar – are gradually imprinted in human mind, creating a sense of sympathy with the native environment, as well as preferences for specific spatial and other physical patterns. This way environment transfers culture of an ethnic, a nation, a class, or a similar social group from generation to generation. Sometimes 'a silent language' of environment is more suggestive than words, because it is less intrusive and does not moralize, as it sometimes happens with verbal socialization. Thus, historic urban environment plays a significant part in cultural development – it acts as a carrier, a sustainer, and a transferor of traditions. Factually, this is the main role of historic environment, and local people understand this perfectly well – intensifying grass-roots movements or spontaneous resistance of local population against a new development – are clear evidences of this phenomenon. It is always very hard to disconnect a community from its cultural identity.

2.3 Pedestrian Spaces and Environments

In the ancient city, pedestrian circulation was the dominant mode of circulation and therefore, dimensions of all public spaces were adjusted for pedestrian movement. The human dimensions and scale of these spaces led to sense of safety and comfort for pedestrians creating opportunities for pedestrian activities [3]. On the other hand, a major layer of urban structure that has developed in the recent decades can be defined as the network of motorways and other high speed traffic routes. The development of this layer has had a clear impact on both the global structure of the city and on the local urban systems. The new structural layer, emphasizing on car based global movement, has not improved overlapping and interconnection of the local urban areas. The continuity of the older urban texture has been further interrupted, resulting in a vulnerable global urban structure characterized by very low integration and intensive dependence on limited links of a network of highways. In this process the self-contained housing estates developed in the previous periods have become more segregated in the global spatial system of the city [6]. In cases with no urban intervention, due to dimensions of open spaces, lack of enough space for vehicular circulation and parking has created lots of problems and inconvenience for residents.

2.4 Climatically Responsive Spaces and Environments

In traditional cities of Iran, like other old civilizations, overall configuration of city was organized depending upon orientation, sun light and prevailing winds of each area and the effects of urban morphology on the urban microclimate and, therefore, on energy consumption can not be ignored. The physical parameters that could affect the urban microclimate were size of city, density of built-up area, land coverage, building height, orientation and width of streets, and building-specific design details affecting the outdoor conditions [4]. There exist enough documents indicating that designers and builders of ancient cities in Iran were well aware of strong correlations between urban street configuration and wind flow and sunlight direction, therefore, pollution dispersion and human comfort. This direction was called Roon. Besides, there was a subtle knowledge in street design which aimed to maximize ventilation, dispersion of pollutants and solar access, while not compromising shelter and urban warmth. They were based on relationships between these factors and urban geometry towards finding a 'zone of compatibility' for all inhabitants. Uniform structures of contemporary city regardless of local climate and natural ecosystems of each city have disrupted the traditional and organic harmony of natural and built environment leading to a sense of discomfort for occupants of new buildings.

2.5 Visual Integrity

The intimate and cohesive quality of the urban spaces in old city depended on homogeneous building materials and on the uniform proportions and heights of the buildings. These elements come together in a subtle interplay between the occasional landmarks and the simple and uniform residential structures, the walled and covered alleyways (called Sabat) and well-organized open public spaces (called Arsan), and the striking climatic features integrated into built elements, for example Badgir (wind catcher) in central regions of Iran creating a delicate balance, and one that can be easily thrown off [5]. In historic center of most cities in Iran, many traditional buildings, particularly along the main routes have maintained their architectural features and details. Many others, however, were shelled and have been left in a state of ruin, or hastily and poorly reconstructed, or radically transformed during the immediate aftermath of the deterioration. Lack of visual relationships between old buildings and new constructions has disrupted the integrity. New building design, height and bulk relationship of facade parts, scale and massing of large buildings an urban projects,

size and massing of new additions, cornice heights, roof shapes, reconstruction of building components, prevailing setbacks, building widths and spacing, stoops and porches, garages and driveways al have led to a visual chaos in most historic cities of Iran. New buildings need to be designed to strengthen the unity of the existing streetscape, and should follow the design principles of historic architecture. But in some cases, these buildings which merely imitate the forms and materials of historical buildings dilute the quality of existing historic structures.

3 CONCLUSION

In the case of urban sustainability dealing with historic centers of cities in Iran, it has been recognized over the last decades that these areas are not constituted only by material and physical heritage – buildings, streets, squares, fountains, arches, and sculptures – but also include the natural landscape, and above all, its residents, customs, activities, economic and social relations, religious ceremonies, beliefs, and urban rituals all of which must be considered in any restoration or revitalization project aiming at urban sustainability. Due to high complexity of revitalization in historic centers it is necessary to compile comprehensive strategies covering diverse aspects of the task. Therefore, existing processes and methods applied to heritage cities, while helpful, are insufficient to meet contemporary and emerging needs. In response to these needs the following strategies can provide the basis for a comprehensive sustainable approach.

- Improving the conditions of pedestrian access with the least intervention with vehicular circulation by provision of suitable street network, intersections, parking lots and public transportation facilities.

- Improving and rehabilitating old residential buildings and motivating residents to live there while improving and upgrading basic infrastructure and municipal service.

- Promoting and selecting a variety of economic and commercial activities that are compatible with the historic context and can meet part of the maintenance and development costs of new projects and conservation of historic monuments, the cultural and urban heritage, making, if necessary, adaptive re-uses for adequate maintenance and economic gains.

- Modifying and easing the regulatory, administrative frameworks for land use and use of open spaces for new constructions and projects while respecting old architectural and urban texture of the area.

- Planning and executing tourism attraction policies and visitation to reinforce sustainable and human development by enhancing and protecting monuments and archaeological sites.

4 REFERENCES

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