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## Sustainable architecture of the Bazaar of Tabriz and its relation with the social and cultural aspects

**A**BSTRACT - Sustainable architecture aims to design buildings and infra-structures, such as squares and bazaars, adapted to the social, economic, cultural and environmental contexts of certain place. The practice of sustainable architecture contributes to sustainable development, therefore for the development of future generations. The concept must integrate not only bioclimatic strategies, but also economic, social and cultural facets. Sustainable architecture research is either carried while the designing process takes place (the present) but is also focused on the built environment through the historical time of a place (the past). The aim of this article is to bring to the academic discussion new perspectives on sustainable architecture and debate the relationship between the architectural elements and the social and cultural aspects by taking the Tabriz Historic Bazaar Complex as case study. Infra-structures like Bazaars are geographically placed all over the world, from Turkey to Egypt, from Tajikistan to Iran. In Iranian cities, the bazaar keeps playing an important role as economic and social engine. Thus, research the main elements that keep the Bazaar of Tabriz so actively dynamic in the present will be discussed.

**KEYWORDS:** BAZAAR OF TABRIZ, SENSE OF PLACE, SOCIAL AND CULTURAL ASPECTS, SUSTAINABLE ARCHITECTURE.

### INTRODUCTION

Sustainability became one of the main concerns of international organizations, governments, non-governmental agencies, decision-makers, citizens and researchers. Creating functional structures, such as buildings or public spaces, among other initiatives, able to accommodate the needs of the present without compromising the ability of the future generations meet their needs, is the main goal of a sustainable approach. Sustainability should be able to enhance environmental and cultural sound preservation with active practices of living in culturally constituted places, contributing, therefore, to the sense of place in communities (see Ashworth and Graham, 2005). Hence, the design of those buildings and public spaces with a sustainable approach to architecture is also fundamental to secure a better future for citizens and contribute to urban development.

The practice of sustainable architecture is an essential factor to secure sustainable development in their multiple dimensions. The process of 'doing' sustainable architecture must integrate not only bioclimatic strategies, but also the dimensions regarding the social and economic impact of the building throughout the different phases of its existence. For instance selecting the material

to build infrastructures has implications not only in terms of energy consumption (i.e. embodied energy), but also on the local economies and that selection is also able to contribute to place development, either a city, a region or a country (Correia et al., 2009).

The language of architecture represents an integral part of manifesting a society or place image. The language of architecture is more than a form; it evokes the past, prefigures the future and articulates the present for all people (Eldemery, 2002). Architects, urban designers and planners are the ‘guardians’ of the heritage of architectural and urbanity forms and spaces, as well as the creators of tomorrow’s heritage. From the citizens to the international and national leaders, adopt a sustainable approach it affects every aspect of our everyday life. Community development and general wellbeing should be the ultimate goals of the human activity, from Europe to Asia, from America to Africa, professionals with their knowledge, such planners, architects, geographers and many others, through their dedicated service, work together to serve communities (Eldemery, 2002). Thus, there is no doubt that architecture is of primary importance to contribute to envisioning better futures, respecting the past, fulfilling the needs of the present and being ‘resilient’ about the future. Architects, for instance, could develop their work by adopting a sustainable thinking that means minimise energy consumption in buildings through the use of passive design strategies, such as reducing the use of energy consuming equipment, or artificial lighting. This sustainable thinking in architecture is not new. Worldwide, some of the existent buildings and infrastructures were built by using sustainable materials and were designed to be environmentally friendly. Bazaars are examples of structures designed within sustainable architecture awareness. The Bazaar is a permanent enclosed merchandising area, a marketplace, or a street of shops and is example of the symbioses between the need to create structures for the communities to develop their activities, the adaptation to the territorial physical characteristics and to create dynamics of spatial development. Furthermore, the bazaar architecture contributes to sense of place and some of the world examples, such the Bazaar of Tabriz in Iran are international classified as world heritage.

The bazaar is a traditional public space and a part of the urban tissue of several cities in Iran. The bazaar always has been either a place for commercial activities and centre of social, cultural, political and religious activities where the architecture is like a society mirror. The architecture of the bazaar in Iranian cities always seeks to find solutions concerning the effects of city development on cultural heritage and urban development. Moreover, the bazaars in Iran, likely as in other countries, keeps giving economic, social and cultural dynamics to the cities where they are located such as Isfahan, Shiraz, Tehran and Tabriz.

The city of Tabriz has been the house of several modern infrastructures and the host of special occasions, pioneers and events. The inhabitants of Tabriz have regarded to be the first to adopt

the modern life style in Iran and that as resulted in great innovations and pioneering that can be found, for instance in buildings and intangible elements all over the city. Even if it seems too much mainstream to research about sustainable architecture by taking a historical city, such Tabriz and focus on their Bazaar the relation with social and cultural elements gives novelty to this article. The bazaar is not only the commercial centre of traditional cities in Iran but also the centre of social, cultural, political and religious activities and hence interconnected with economic, social and environmental sustainability (Alipoor and Raeesolmohadesin, 2012).

Despite the fact that we can find endless possibilities to write about the city of Tabriz, considered the Iran's West Gate due to its geographical location; we decided to try answering the following questions, by take the Tabriz Historical Bazaar Complex as a case study:

- ✓ How does the Bazaar of Tabriz still retain its structure over the decades and how the architecture of the place still stable?
- ✓ How the Bazaar of Tabriz has been creating and enhancing the community cohesion and identity and still performs its function even in a more dynamic way than on the past years?

This article aims to examine the sustainable features of the Bazaar of Tabriz; to study the social and cultural aspects linked with the architecture of the place and relationships with the promotion of community cohesion, identity and sense of place. Hence, research the primary elements that give to the place an active dynamic. An inventory approach was used to show the architectural aspects of the Bazaar. Observation and in-depth interviews were also carried out to demonstrated social and cultural aspects of sustainability of the Bazaar. This article is either of relevance for the discussion on sustainable architecture as well as for urban development studies. If the focus is essentially on architectural elements, this research could be extended to the economic impacts of bazaars and to other cities in Iran or other countries.

## **SETTING THE THEORETICAL FRAMEWORK**

### ***DEFINING SUSTAINABILITY***

The formally known as the World Commission on Environment and Development (WCED), the Brundtland Commission's has put forward a definition of sustainability as meeting the needs of the present without compromising the ability of future generations to meet their own needs (see UN Document, 1987). Citizens in every community, have social, economic, and environmental needs undoubtedly (Nik, 2011). According to the definition of sustainable development presented by the Brundtland Commission's in 1987, sustainable development is a way of development which meets the needs of the present respecting, preserving and saving resources in a way the future generations can also use them for their own well-being (Daly, 2002). Thus the

built environment is responsible for the equilibrium the Brundtland Commission's report calls. Therefore, architecture, as discipline, should create a space that people remember, identify with and want to remain for the future. Architecture is a way to create or express relationship between human beings and the natural and cultural environment (Bodart, 2011). To design and build any structure, which sustains and is wanted to be sustained by people is what architecture contributes to culture and history. Sustainable architecture will not be achieved only by physical durability, but also by the identity of the place in which it is located and the social and cultural dominance. According to the fact, the next item will define and discusses sustainable architecture.

### ***DEFINING SUSTAINABLE ARCHITECTURE***

The authors Guy and Farmer (2001) suggests that sustainable architecture is not a 'prescription', but it's an approach and an attitude. Sustainable architecture as a whole has come to be dominated by energy efficiency and climate change strategies that can improve the economic performance of buildings. In the vein of Ibrahim and Mohamed (2005), sustainable architecture is an echo of the concept of sustainable development, targeting in particular architectural issues. The notion implies a thoughtful, effective and efficient use of energy systems to make buildings that are more conducive to human use and comfort, without generating pollutants or borrowing the natural and non-renewable resources for the future generations (see Bennetts et al., 2004).

Sustainable architecture encompasses the design and managing of sustainable human settlements which deal largely with creating appropriate human settlements configurations that optimize the consumption of resources, and managing resource extraction and waste disposal in a manner which does not deplete or degrade the environment. The development of sustainable architecture has intensified during the past forty years with solid steps for a better future for the earth (Bodart, 2011). Buildings and infrastructures should become producers of energy rather than only consumers, leading our mind to imaging a future where we give more than we take. Increasing desire to live better and longer, be healthier and more fulfilled as human being and re-establish our relationship with nature and quality are becoming important aspect to societies.

Sustainable architecture takes into account the spatial context in order to create the advantage of its benefits integrating contemporary needs and the future generation yearnings in a way that creates positive inference for both (Bodart, 2011). To ensure future well-being, the world needs to reduce the environmental impact, our ecological footprint, by two thirds to a sustainable and globally equitable level (Howlett, 2009). In the same line of reasoning, Farrelly (2007) declares that design and innovation developed on precedent on idea and concepts that have evolved over time. Architecture uses precedent from social and cultural history and applies these influences to contemporary buildings in form and in structure. The authors Bucci and Mollo (2010) state that to avoid losing contact with what we were in the past it is fundamental to create dialogue in any

form of communication (in both time and place) and integration between social and physical spaces. Buildings commonly combine a public facade with a private interior; control and authority are often contested for the physical boundaries between public and private space, and their social borders. Buildings rise above human scale, and extend the social interaction that occurs within and around them (Bucci and Mollo, 2010). The author Sassi (2006) explores the relation between architecture and social sustainability by underlining that sustainable architecture could help put into practice and even encourage a sustainable way of life.

Sustainable architecture goes close as well with the idea of sense of place and therefore with social and cultural aspects of a community. A good place has less to do with how a space looks than how people use it: the activities that go on there, how comfortable it is, how easy it is to get to and walk through, the public image the public perceives. Place is a 'where' dimension formed by people's relationship with physical settings, individual and group activities, and meanings. The creation or preservation of sense of place is important in maintaining the quality of environment of communities as well as the integrity of human life within it. In this regarding and stepping towards the case study of this article, bazaars are places able to enhance sense of place as they are spaces where social interactions are dominant.

According to Moosavi (2005) a bazaar is a covered public passageway which is surrounded by shops in two sides. Architectural and spatial nature of the bazaar was highly dependent on climate, culture and economic power of the city where it's located, such as in Tabriz. The decoration and materials was highly dependent on local culture and climate as well and that is when social and cultural aspects of the society are more reflected on the architecture and the built environment. The next item will attempt to some clarifications between sustainable architecture and social and cultural aspects.

### ***SUSTAINABLE ARCHITECTURE AND SOCIAL AND CULTURAL ASPECTS***

Cultural identity represents the sum of the 'creativity of communities', and the results of creativity are what keeps the society moving forward. Over the past decade, cultural identity and creative diversity have become highly publicized issues on the international development agenda, which is certainly a positive sign (Mahgoub, 1999). The language of architecture evokes the past, prefigures the future and articulates the present for all the citizens. Thus, social and cultural aspects in a wider perspective are far more important than climate, technology, material and economy in influencing the architecture of a building or infrastructures (King, 1980). In any situation it is the interplay game of all these factors which best explains the form and structure of a built environment, such as bazaars.

The Tabriz Historic Bazaar Complex is one of the oldest bazaars and the largest covered bazaar in the world. In the line of the work of Gugu (2009) the bazaar, besides the retail function, is also one of the focal points of the community (in addition to the mosque in Muslim cities), thus attached to social and cultural values. Bazaars are composed by different architectural elements that include fountains, mosques, schools, music chambers, and public baths and act as is a cultural, social, commercial, educational and sanitarian area. This features and interconnections of the inner area with the surroundings give a fundamental dynamic to the bazaar. The importance of the bazaar, as a concrete place for trade and for social interaction, has been particularly stressed in the research of Keshavarzian (2007) on Iranian bazaars. On the next item we will focus our attention on the relation between the architectural elements of the Bazaar of Tabriz, their sustainable characteristics and the relation with the social and cultural aspects.

### ***APPROACHING THE CASE STUDY***

The rise of the 'city' and the advent of urbanization in the eastern world have a very long history and, in certain regions, it dates back to the Neolithic age. Archaeologists have found evidence of bazaar's in different countries, including Turkey, Egypt, China and Iran. Some of those bazaars are still playing an important role in their city communities, together with their valuable heritage. The growth of urban population, the increased number of cities and also the increase of production which brought about the growth of trade and accumulation of wealth stimulate the constructions of bazaars.

### ***ARCHITECTURE OF THE BAZAAR***

The word of Bazaar refers to Çarşı in Turkish, Bazaar in Persian and Bazzarro in Italian language. Bazaar is a traditional public space that always accommodated a large number of activities and they became inseparable part of each city and the place to exchange of commercial goods from near and more distant places. The bazaar means a marketplace or assemblage of shops where miscellaneous goods and services are displayed for trading (Pirnia, 1990). The bazaar may first of all be viewed as a symbol of tradition and as a market which operates not only in economic term. Secondly, it may be viewed as part of the class system where the Baazaris (people who work at the bazaar) can be classified as part of the national tangible and intangible heritage.

According to Keshavarzian (2007) marketplaces, such as Bazaars, are important institutions in Middle Eastern and North African societies for a number of reasons. Commerce therefore is one of the main reasons. Commerce, product exchange of trade are an ancient of the economic system that enables the establishment of legal and ethical foundations, strengthening of social ties, improving cultural relationships, trading values and technology as well as goods on safe, secure routes, such as the Silk Road, and giving social and economic dynamics to places. The



Silk Road was once the most important routes of commerce, a statement of a continuous journey of human knowledge, philosophy, religion, art and architecture, mathematics, science and technology, which had an undeniable impact on the great civilizations such as on the Indus Valley of India, Egyptian civilization, Persian civilization, Arabic civilization, the Ottomans and finally the Romans. Extending over 8,000 kilometres, the Silk Road developed interconnected networks linking traders, merchants, pilgrims, monks, missionaries, soldiers, nomads, urban dwellers and intellectuals from East, South and Western Asia with the Mediterranean World, including North Africa and Europe for thousands of years. The development of materials and architecture attempted to the development of shopping activity and design of bazaars in the heart of the cities situated on the ancient routes and ports of the Silk Road.

Similar to the plazas of the pre- industrial European cities, bazaars were also housing of the social, political, cultural and civic activities of people like the forum or the agora of the ancient world were in the past. However, mainly due to the climatic factors and quality of the goods stored in, they are covered, or covered within time. However, there may be a pre-designed grid or some crisscross exceptions. Bazaars always emerged in connection to important and prestigious religious, governmental or public buildings, and defined the major streets of urban fabric, connecting two major entrances. Apart from being a space for shopping or socializing, the bazaar organizations were formed according to hierarchically developing guild system where apprentice- master relationship were forming the vertical line, while guilds of various artisans and craftsmen were forming the horizontal line in terms of locations of the manufacturers, merchants and such (Edgu et al., 2012). Bazaar is a traditional public space in the Iranian cities, such as Isfahan and Tabriz. The Bazaar is not only the commercial centre of traditional cities in Iran but also the centre of social, cultural, political and religious activities. On the next item we will approach the sustainable dimension regarding the architecture of the complex and the relation with the social and cultural dynamics of the place as whole.

### ***THE BAZAAR OF TABRIZ***

The city of Tabriz is located at the north-western part of Iran, and centre of East Azerbaijan province is a precious example of a multicultural city that always played an important role through history. As an Ilkhanid capital during the late 13th century, Tabriz was prosperously rendered with new walls around the city, and numerous public buildings, educational facilities, and caravanserais so as to serve traders travelling on the ancient Silk Road. The Bazaar of Tabriz has the largest traditional covered bazaar in the world with the finest art and Islamic architecture, and because of being located on the Silk Road, has played various economic, social, religious, communicational, political and cultural roles during history, in which the bazaar spirit is affected by the roles and their suitable integration.

The Tabriz Historic Bazaar Complex consists of a series of interconnected, covered brick structures, buildings, and enclosed spaces for different functions, which has preserved its sustainability both in terms of structural stability, economic, social and cultural dimensions. All of the 'urban bazaars' were covered to provide protection against unpleasant climatic conditions (responding to the natural environmental conditions). Due to the location of Tabriz in the north-western part of Iran and being in a mountainous region, the climatic conditions are characterized by severe cold in the winter with heavy snowfall, mild climate in the summer and noticeable temperature variation between day and night time. During the summer season the roof would provide shadow and during the winter it would protect from snow and rain.

The Bazaar of Tabriz covers an area of over three square meters and in 2010 was inscribed on World Heritage List by The United Nations Educational, Scientific and Cultural Organization (see UNESCO - URL: <http://whc.unesco.org/en/list/1346>). The Bazaar was built on the main circulation axis of the city, connecting the east to northwest, dividing the Bazaar into two main parallel 'raste', the Main Raste and the Kohne Raste (the old Bazaar), and crossing over the Mehran River. In recent times, some parts of the Bazaar were destroyed and some functions were changed along the main 'rastes and streets of the Bazaar'. The Mehran River separates the Bazaar in two parts, the Northern part of the Bazaar that includes Saheb Abad Square and Akbarieh Madrasa, which was added to the bazaar complex during the 19th century and the southern part, which was the main area of bazaar before the 19th century (Edgu et al., 2012). The first floor is composed by commercial spaces, while the second floor is composed by the warehouse and offices. Most of the shops and workshops at the Bazaar are separated from the streets with stairs. The Bazaar of Tabriz is also composed by a mosque, a courtyard, a school and several streets.

### **ARCHITECTURE OF THE BAZAAR OF TABRIZ**

While writing about the Bazaar of Tabriz, we are referring to the central area of the Bazaar. That means its main complexes that formed the core of the commercial activities (Werner, 2000). Other shops and trade stands are located near to the gates or in the vicinity of the major shrines. The Bazaar consists of a large covered brick complex containing both public buildings and lanes lined with small stalls. High vaulted ceilings often have circular openings that admit shafts of light and provide ventilation. The whole property of the Bazaar of Tabriz covers almost thirty thousand hectares. The structure of the Bazaar of Tabriz is consisting of:

- ✓ The sārās (or khāns) that are large complexes with a spacious central courtyard surrounded by one or two storey rows of rooms where goods could be stored and people lodged. In Tabriz, 26 sārās are still active;

- ✓ The timchas that are structures with functions similar to those of the sārās but without accommodation facilities. The timchas a recovered, often with complicated vaulted roofs, and have been used for the storage and trading of expensive goods. Amir ensemble in terms of grandeur and mozaferiyeh timcheh in terms of architectural style are the conspicuous elements of Tabriz Bazaar;
- ✓ The rasta that is the basic element of a bazaar: it consists of a double row of shops aligned along an often roofed linear path;
- ✓ The chārsugis that are the vaulted intersection of two perpendicular rastas.

In relation to the body elements of the Bazaar of Tabriz, the researcher Nassehzade et al., (2011) declares that the functional expansion of the Bazaar is mixed with the diversity of its body spaces. The leaner blocks of the Bazaar are formed orderly due to the duplication of structural units or they are specified by the residence of different working classes and are separated from each other. In addition to the main block of the Bazaar and the shops on side of it, the sub blocks and the shops on their side such as the sara, karavansera, tim and timchehs do the economic activities in bigger scales. The social, cultural and religious activities are performed at non-economic 'areas', such as the school, the mosque, the courtyard, and the squares that also composed the Bazaar. The above elements join the spine of the Bazaar and create a general and multifunctional complex (Nassehzade et al., 2011). The Bazaar block ends at the Jameh Mosque the greatest mosque of the city.

The Bazaar of Tabriz is also the largest integrated covered architectural building in Iran and includes the most varied architectural spaces and buildings for commercial functions and that makes the place one of the most important trading centres along the Silk Road. Therefore, each building, structure, and open space contribute to the stability of the others and to the functionality of the place as a whole. The visual integrity of the Bazaar has been maintained and the sequence of open and covered spaces can still be made out, despite some unsympathetic and controversial interventions recently.

The Bazaar of Tabriz is considered an outstanding universal value by the national organizations and assumes a fundamental urban element on the city business and for the local economy. Moreover, is fundamental for future development of tourism, urban dynamics and that asks for the right place management strategies to always keep it alive and social, cultural and economic actively dynamic. The multi functionality of the Tabriz Bazaar is still alive despite the fact that certain activities, such as manufacturing, have been transferred to other areas of the city (Weiss and Westermann, 1998). The Tabriz Bazaar also plays a central role in spreading cultural trends, thanks to its long lasting vitality as a trade centre. The interactions between the complex in itself and the people from different cultures and social levels have created a unique culture atmosphere

(Weiss and Westermann, 1998). The social and cultural aspects of the Bazaar are to be discussed on the following item by taking part of the qualitative research the authors of this article developed in the end of 2012.

### **SOCIAL AND CULTURAL ASPECTS OF THE BAZAAR**

The *Tabriz Historic Bazaar Complex* embraces the history and appears as one of the most complete socio-cultural complexes of this type together with the economics activities. It is a unique physical, economic, social, political, and religious complex that bears an exceptional testimony to a civilization that is still enthusiastically living the place. Over the centuries, thanks to its strategic location, to wise policies of endowments and tax exemptions, the Bazaar of Tabriz has developed into a social and cultural system in which specialized architectural structures, functions, professions, and people from different cultures are integrated into a unique living environment (Kheirabadi, 2000). Recreational, religious and political activities that take place around the complex such as a mosque, shrines, schools, bathhouse, sport clubs and places of mourning, gives a daily dynamic to the place. Interesting and one of the elements that keeps the place so dynamic, despite the natural need to go there to trade and buy goods, are the architectural elements that allow to the development of those dynamics and to the social and cultural interactions among those that frequent the complex. The best examples of the social cultural aspects and the architectural elements are the public reunions that take place inside of the 'Bazaar mosque' together with an informal consultancy, to try solving problems and assist each other by the shop owners (Sangsai, 2008). The Bazaar of Tabriz despite the important social role, as mentioned also enhance cultural initiatives by supporting some decision making processes, spreading news and even rumours around the city. The memories the Bazaar brings are also one of the main elements to tie the people to the place.

The bazaar public places such as the mosque, the courtyards and the tea houses act as community centres for the merchants and the people (e.g. costumers, visitants). Traders have used the mosque for consulting and solving some issues related with the bazaar structure, management of the place or business matters. Respondents to the survey declared if we find out that our neighbour has faced any problem, we gather in the mosque, after praying, and try to solve his matter. Several times, some of the traders have lost their finance support and faced bankrupt, and we paid for them to survive, they argument. The shop owners states we all are happy to do that, because everyone that works or have the business at the bazaar are susceptible to that situations so the cooperation gives us assurance.

The social cultural aspects are the inner satisfaction and pleasure to be at the bazaar. The Bazaar 'goers' are attracted to the atmosphere and feel comfortable at the complex. Walking through the Bazaar, noticing the function of different places provide opportunity for people to enjoy different

kinds of activities inside the complex which generate dynamic, social interactions and provide distinct perimeter. These activities are significant elements in shaping the sense of place and place attachment (people to place). Visitants and costumers have mutual experience with the different parts of the Bazaar.

## **DISCUSSING THE RELATIONSHIP BETWEEN SUSTAINABLE ARCHITECTURE AND SOCIAL AND CULTURAL ASPECTS**

Being multifunctional urban complexes, bazaars were gradually formed to meet the demands of their developers and users. In fact, a bazaar was a place to centralize the inter-related interests of different groups of stakeholders. Taking an overview of such historical buildings can certainly provide valuable examples of successful built environments and attention to the relationship between places and people, as well as design pattern of the building that welcomes each individual to engage and interact.

In Iranian traditional architecture, the buildings are constructed according to the geographical location and respecting the direction of the solar radiation and climatologic conditions. Therefore, choosing appropriate materials, constructing shades in each area, walls, ventilation-shaft, courtyards with expanded shadows, windows facing the sun, constructing reservoir always were taken into account. These factors make the buildings, such as a bazaar more strong while facing external factors, in such a way that the best internal space are created without using a complex system of energy or chemical products. It seems that past generations knew well about how to save energy and use of solar energy to lightening theirs spaces (Surat, 2009).

This research analysed the architectural stability of the building in two main categories of information: i) building components and construction (methods and materials); ii) building functions through inventory (visual appraisal of the building).

When walking through the Bazaar the information captured by the five senses is focused on the inner part; in fact people are surrounded with so much of it that they feel as though they have stepped into a wonderful place to discover. When moving inside the Bazaar of Tabriz the users realize that the passageways of the Bazaar are connected without any interference of walls. The corridors are linked passageways, with discontinuity, separation, and independency. As a result of this fact people are not getting bored to walk around the large scale of the Bazaar. Additionally the design of the districts leads to face to face interaction of people with each other and with the shops owners. The way the complex was designed sustains its vibrant and dynamic atmosphere through the variation of activities and embodies the high level of functional satisfaction and continuous committing. Based on what we have mentioned earlier on this study,

the Bazaar of Tabriz sustain itself in terms of design pattern and architectural features but what makes it significant and alive is how the citizens and the visitors combine together in an expressive way that do not let anyone to be on the outside, the design which carried the burden of personal identity in the environment and memories for the people who shared common history of this place attracts the people to stay, to breath the 'soul' of secular history. The image of the bazaar (see Alipoor and Raesolmohadesin, 2012), together with the architectural elements that contemplates common areas for conversations and attempts to natural resources to accommodate to the weather conditions, creates emotionally ties. Whilst, creates comfortable public environment for social interactions and daily activities. Nevertheless, the findings of this research will be discussed on the next item by taking the answers to some of the interviews elaborated.

## MAIN FINDINGS AND DISCUSSION

The primary data of this research was collected by in loco observation and interviews among both shop owners and customers. The survey instruments were developed and translated into the local languages (Turkish) to collect primary qualitative data. In-depth interviews were used in order to collect information regarding the perceptions of those that interact with the Bazaar on daily bases. In-depth interviews provide a more detailed 'picture' of the reality. The exceptional geographical location of Tabriz contributed to large developments under the influence of a dynamic commercial environment. Tabriz as one of the Iranian historical cities with placement at the Silk Road has been considered as one of the most important centres between east and western civilization (Torkan, 2002). The social and economic history of Tabriz shows that the traditional Bazaar has been able to integrate social, cultural and commercial activities of the city within itself (Hanachi and Yadollahi, 2011). The Bazaar also had a crucial influence on the cultural and economic development of the city.

Different spaces inside of the Bazaar such as saras, timches and rastes, mosques, schools and baths contribute to the sustainability of the complex by creating an appropriate social and economic interaction. The materials used in it are environmentally friendly. Climate responsible and following vernacular design, performance of domed roofed and solar energy widely helps to create desirable environment by creating an appropriate interaction between people and profitable activities, thus keeping the place with a vibrant dynamic. The Bazaar is a unique complex of activities, which are unified with their organic spontaneity and flexibility that create a sense of place which generates community cohesion and at the same time being environmentally friendly and economic and social sustainable.

### **MAIN FINDINGS RELATED WITH ARCHITECTURAL SUSTAINABILITY**

The findings related with the architectural elements of the bazaar in particular the sustainable elements can be categorized into: climate responsible design; constructional material; solar energy performance; roof function; natural lightening and ventilation as well as courtyards function:

- ✓ **The climate responsible design** it means that the construction of the Bazaar have respected the climate conditions of Tabriz, by applying thermal system for heating the building at very cold winter and ventilation of the building through domed roof for the hot summer season. Thus, creating a moderate and comfortable inward climate/atmosphere the entire year. Generally, construction material was mainly brick. Therefore, brick vault acts as high thermal mass element for storing heat. Public activities, light, and heater inside the hojreh were enough for supplying favourable temperature during the cold winter (Nassehzade et al., 2011).
- ✓ **Construction materials** applied in the Bazaar of Tabriz are mostly made up of solid local material such as brick and stone. The main advantage of this material is to produce a thermal 'envelope' which helps controlling the temperature; moreover obtaining security might be another reason to make dividers thick enough to ensure safe commercial space.
- ✓ **Sustainable energy performance** of the Bazaar of Tabriz can be observed in terms of design of ensembles at the Bazaar of Tabriz with corridor model with two timches at north west and southern constitutes a unified area, which for analytical purposes can be viewed as the aggregate of central hashti-o-nim-hashti and four surrounding nimhashts.
- ✓ **Roof function** of the Tabriz Bazaar is one of the masterpieces of the Iranian architecture. Is decorated with magnificent stuccos and high brick arched (e.g. dome and vault) roofs. The vault and dome roof are mostly built with brick masonry because of their low costs and good thermal performance. These kinds of roofs have been extensively used in order to protect against wind storms and sever sunshine and its consequent of lower heat transfer into the building. Domed roofs have traditionally been used to cover buildings, and have had a great effect on the reduction of buildings cooling loads, in particular because of the holes in their crowns that can increase the natural ventilation which enhances evaporation from wet surface (Faghih and Bahadori, 2009; Faghih, 2011).
- ✓ **Natural lighting and ventilation lighting** as an entity symbol, not as a physical one, is an outstanding element in Iranian architecture. Lighting quality affects human behaviour, comfort health, efficiency, safety and security. In most of the traditional worthwhile

monuments, light application was based on the factors such as spiritual dimension and light holiness, light adjustment and uniformity, temperature regulation and energy storage in proportion to the climatic condition. In Iranian architecture the light and darkness hierarchy is used in directing and guiding from one space to another.

- ✓ **Function of courtyards** the courtyard in a cold climate is usually the heart of the buildings spatially, socially, and environmentally (Shokouhian et al., 2007). Courtyards are seen as climate modifiers, they allow domestic outdoor activities to occur with protection from wind, dust and sun. Courtyards serve as light-wells in a building type that must restrict exterior openings. They also serve as air-wells into which the cool, dense night air sinks, and through which the fresh morning and post-rain air make a way into the building via plentiful openings that open from surrounding spaces onto courtyards. Combination of planting and water pool in order to create safe and comfortable environment is place for communication between traders and visitors.

Studies and inventorial observation on the site of Bazaar of Tabriz shows different activities and land uses are located in its structured architectural and urban context. In the Bazaar of Tabriz mass and open space is properly mixed together and the central courtyards help to the regulation of air at the inner space. The existence of green spaces and water open spaces, help to the sustainability of the complex and shops are shaped around these spaces. The complex has used natural resources prudently and recyclable material has been used. The air, land and water pollution are minimized by using vernacular and environmentally friendly materials and giving the main access to people and not to vehicles.

There is social self-determination and cultural diversity in the Bazaar and it is compatible with local community. It protects and promotes human health through a healthy and safe working environment. Mixed land uses supports social sustainability and also supports the employment creation as well as helping local producers to sell their products. It has flexible design and spaces are used for different and various purposes contributing to a social and cultural sustainability and dynamics by keeping a daily activity.

### ***MAIN FINDINGS RELATED SOCIAL AND CULTURAL ASPECTS***

Traditional architecture in Iran is perceived as able to respond to environmental issues from a long period on the time line of their existence but also a fundamental social element. The social organization of the Bazaar provides to different groups, individuals, and community a platform for them to develop their economic activities and social interact in a way that makes the place socially sustainable and economically dynamic.



Results of the interviews conducted indicate that the majority of the traders or shop owners are satisfied with the Bazaar environment (85%) whereas a minority declares that they are not very happy with that environment (15%). Those respondents, who are satisfied with the Bazaar economic, social and architectural environment, state six different reasons for their satisfaction including: *i) Good income from the business/trade activities; ii) Mixed activities that take place at the Bazaar; iii) Friendly atmosphere; iv) Sense of belonging; v) Participation in religious celebrations inside of the Bazaar complex; iv) Growing number of customers.*

However the factors such as *i) cultural and language prejudice; ii) imitation of products, together with an increase number of iii) modern products are the reason for the less satisfaction of the respondents concerning the Bazaar environment especially among young and non-local traders.* In other hand: *i) integration of services and ii) lower price of the products* are the main reasons for the respondents to visit the Bazaar for making their shopping. Interesting to underline that the comfortable atmosphere and the good ventilation (architectural aspects) of the complex are also positive determinates when comes to choose the Bazaar instead of other shopping area in the city together with the mixed activities, diversity, local and handmade products.

Furthermore, the 'memories' the Bazaar brings to the people's mind are also one of the main causes for them to visit the place multiple times. The childhood memories of attending the school inside of the Bazaar, the public baths and playing at the courtyard, brings the memories from the past to the present. Those memories are important either, for the visitors as well for the developers (e.g. shop owners; traders) and enhance the sense of place of the Bazaar of Tabriz. Visitors and traders are tied to the bazaar ambience by emotion bonds.

The strong ability of The Bazaar environment to sustain its vibrant and dynamic atmosphere through the variation of activities embodies the high level of functional satisfaction and continuous committing. The Bazaar was made by the people, for the people and the way it was designed, the architecture, the sustainable materials makes the people feeling good to be at the Bazaar. Therefore, the high frequency of people keeps the place socially and culturally dynamic.

## REFLECTIONS AND CONCLUSION

Every city in itself has a private and a public realm where social, ethnographic, cultural and economic activities take place (Soltanzadeh, 1993). Personal realm could be a home or other private place (Falamaki, 1974; 1994). Public realm belongs to all the citizens (Falamaki, 1994). The bazaar as a public space belongs to all the citizens such to the urban population of the cities in Iran (Pirnia, 2007). Tabriz has been a place of cultural exchange since antiquity and its historic Bazaar complex is one of the most important commercial centres along the Silk Road. The Bazaar of Tabriz is located at the centre of the city and is almost accessible from every part. The

complex is also well connected to the main roads and accessible by public transportation. Additionally, main public services such as banks, governmental institutions, post office and other organizations and activities are located around the Bazaar creating a perfect environment for a multiplicity of activities. The Tabriz inhabitants can use other activities around the Bazaar during the same journey which helps to save their time and cost of traveling for fulfilment their daily requirement even at the peak of traffic hours. It is important to reflect that the high accessibility and the possibility to access the Bazaar by using public transportation is one to the main reasons for the users to choose the Bazaar for shopping.

The Tabriz Historic Bazaar Complex has preserved its sustainability both in terms of physical/structural stability and social and cultural aspect by keeping an exciting daily dynamic. The complex as preserved the economic, environmental and social dimensions up to the contemporary days (see Asquith and Vellinga, 2006). The shops (hojres), the saras, the timches and rastes contribute to the sustainability of the Bazaar by creating an appropriate social and economic interaction. The courtyards and their green elements and water wells help to use natural resources for ventilation and adjusting interior climate as well as creating a social space for increasing community well-being and creating the ambiance and spirit.

The existence of other public spaces, such as mosques and schools benefits the population of Tabriz and brings everyday visitants to the shopping area of the complex creating, therefore, a constant flux and social and economic dynamics. Ideas, cultural and intangible elements also emerge within the Bazaar complex structures. The place creates an imaginarium and still constitute a powerful part of the individual and social practices which people use consciously to transform the material world into cultural and economic realms of meaning and lived experience. The Tabriz Bazaar is a good example of sustainable architecture from the past to the present and that will stays for the future, thus contributing for sustainable and urban development of the city of Tabriz and the country as a whole.

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