

Effects of Physical Quality of Central Streets of Sabzevar City, Iran

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Abstract --- Streets as being one of the most important urban elements which determines the urban moving pattern as well as urban socio-economic life are equipped by streetscape that can play a significant role in social life of people. It depicts the physical appearance of city center related to streets and the feeling of what makes the streets a successful commercial axis. The important public spaces in Sabzevar Central Business District (CBD) streets need to be elevated under physical characteristics to create a pleasant urban space and to affect social, economic and cultural parameters. This paper attempts to comprehensively and objectively evaluate physical qualities of Sabzevar central street environment. Qualities such as historical monuments, mixed-use, architectural values, landscape, attractiveness and vital environment have been analyzed as the requirements of user's need in their daily activities. It is focusing on the physical profile of CBD streets and how a better street life and street quality can be provided.

Keywords: *Streets, Streetscape, Physical Characteristics, Street Façade, Sabzevar*



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1. INTRODUCTION

“The only legitimacy of the street is as public space, without it there is no city.” [1]. According to Kostof, street is “a complex made up of a roadway, mostly a pedestrian way and flanking building” [1]. Jacobs in terms of the physical qualities of the street noted that, when it comes to defining communities’ streets may not be the most crucial elements, but they can assist and are important [2]. Accordingly, the building design itself leads to define successful urban streets are seldom exaggerated [3]. Aesthetic quality of city merely could not define a good street but when it is mixed with possibilities for lingering, walking and meeting, good climate and scale, the city or street could be great [4]. In this regard Carmona stated that architectural style is important too, in order to convey meaning, identity and creating image [3]. And mostly people like the places with attractive visual qualities, and consequently, these spaces are more likely to be successful [3].

Sabzevar city’s commercial and business center also known as the city’s “financial district” is located within the sector three, one of the twelfth divisions of the city. The central part is encompassing the historic part as well as the main commercial hub in the city. Sabzevar’s shape and architectural pattern of Central Business District (CBD) reflects the city’s history and is surrounded by commercial, financial and administrative blocks. Sabzevar has a single central area that contains all the tallest buildings and acts both as the geographical center and the commercial and cultural city center known as central business district with urban density higher than the surrounding districts [5]. The CBD has residential share of 11.48 percent of the total city population and many of its plots have been converted into commercial and administrative offices. The CBD qualities are drawn from the factors influencing the physical design of the city. In this regard to understand the physical built character of Sabzevar main streets, the study adopted the structured observations of the users’ activities and physical environment and a mixed method approach to carry out an analysis based on both the quantitative and qualitative data, so that the street characteristics is examined in respect to the physical qualities through the analysis of space typology, physical setting and pictorial surveys and observations within the physical environment of the city center streets.

2. BACKGROUND OF SABZEVAR

Sabzevar City is situated in Razavi Khorasan province, its geographical coordinates are 36° 12' 52" North, 57° 40' 47" East and is located approximately 220 kilometres at west of Mashhad, the provincial capital and also 670 kilometres at east of Tehran, capital of the country. It is a capital of Sabzevar County, in north-eastern Iran. The city has an extent of about 2676 sq.km. The Central Business District (CBD) is surrounded by AsadAbadi Street in the north, Kashefi Street to the east, Atamalek Street to the west and

Modares Boulevard to the south. The proposed borders include all of the blocks and streets between these boundaries. The CBD area also holds the city centre as well as the transport axes.

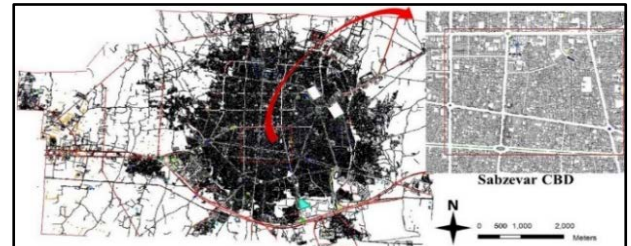


Fig. 1. Sabzevar City Map

The entire city of Sabzevar has been divided into twelve sectors by City Corporation and each sector has its own sub-sectors called quarters as presented in the Fig. 2. The Sector three in the middle is the oldest sector amongst all sectors of the city and is happen to be the city core. This sector is located in the place where the city is practically originated and is the center of different stages of development of the city. There are numbers of monumental buildings and heritage structures registered under protection of the cultural heritage organization in this sector addressing the age and history of this area. The distinct section of this sector is in the quarters of two and three which are identified to be the center of marketing, business and financial activities as well as dense built-up sector where lines of transportation converge from various parts and nearly from all directions. Therefore, it is known as the commercial hub of a city which is also called heart of the city as the city life is highly depends upon this region. In other words, heart of Sabzevar is a specialized area and a "distinctive region with a complex web of associated and interwoven land uses" [6].



Fig. 2. Sabzevar City Sectoral Division

Generally CBD resembles with a 'Trapezium' in shape (Fig. 2). Sabzevar CBD is a little away from the exact geographic center of the city where specialization of land uses have been developed to make the point of space a business-area of central order catering all sorts of people for all sorts of goods from all parts of a city. The shape of Sabzevar CBD is the result of city stages of development, direction of population growth and above all, land use. As the city has been developed during different periods throughout its history, therefore it has number of zones that have distorted its shape such as Golestan slum located in the city center. Similarly, zone of assimilation also have affected the shape by residences over its edge occupied by business community.

2.1 CBD Land Use:

Today Sabzevar's CBD is the commercial and business center of the city, it could even be called as financial district. Unlike many cities that have a central business district located away from its commercial or cultural city center, the city has all character in one area commercial, cultural, public, religious, and historical monuments are all gathered around the same zone and formed the CBD. It is also a central activities district. The CBD is typified by a concentration of retail and office buildings along with service sector and public uses. It is the commercially vibrant area and acts as focal point of city.

Since the city has emerged around CBD, it has residential land use with 46.69 percent. Although younger professionals and business workers tend to move into city center apartments or work centers in the departments located there. The rate of commercial land use is 15.21 percent which is relatively high and majority of the commercial axes are gathered around the same orbit. Existence of shops along with presence of the old market, Jame Mosque, Imam Zadeh Yahya and offices in the CBD, gathers a tremendous amount of daily visitors to the heart of the city for shopping, gathering, visiting, recreation, religious practices and administrative purposes. The total commercial land use in CBD is around 118,790 sq.m. It is interesting to notice that the CBD area contains the least amount of greenspaces with only 1.9 percent and minimal industrial uses of 1.1 percent.

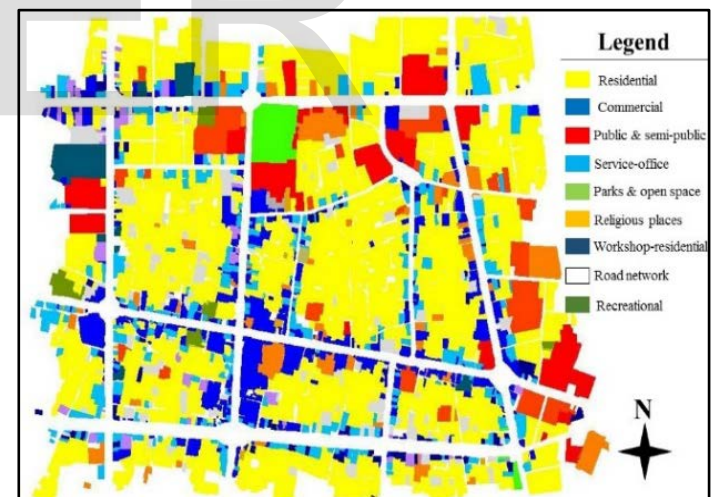


Fig. 3. Land use in Sabzevar Central Business District

2.2 Street Network System

The most important aspect of movement in urban area of Sabzevar is the hierarchy of street network and is important for two reasons: first, the skeleton and the composition of street network which shall be in such a way to perform movement in passages based on the defined roles, and secondly, the approximate width of the road network shall be set on the basis of their role in the hierarchy. The network of roads or streets have been classified as per Sabzevar City Corporation and is as follows:

Type 1 Arterial Roads: In type 1 arterial roads, the preeminence is given to the role of mobility. Therefore, the main functions of these arterial roads are to connect the outlying areas of the city with each other and connecting the city road network to the suburban network. The most fundamental geometric characteristic of these roads is access control. The city ring road connecting to Mashhad by national highway 44 from east and to Tehran from west are the prime example of type 1 arterial road in Sabzevar. Side street parking is not permitted in these types of roads. Social role is deeply in contrast with the performance of main arterial roads (type 1) and for this type of road, no social road is considered, therefore, to control that function, pedestrians and cyclists are exempted to cross it (except for interchange). Esfaraie highway and Quchan freeway are type 1 arterial roads within the city of Sabzevar, but no such road exists within the boundaries of CBD.

Type 2 Arterial Roads: In type 2 arterial roads mobility is an important role, but unlike the type 1 arterial, is not the only function and should compete with accessing role. Due to the conflict between the accessibility and mobility role, as roads becomes more accessible, instead the road performance in moving vehicles is reduced. Majority of CBD traffic load and public interaction of Sabzevar takes place in this type of roads. CBD main streets are all falling in this category. Streets such as Beyhagh and Kashefi are the two major important type 2 arterial in CBD. They constitute the core network within the city. In this type of roads mobility and accessibility of motor vehicles are both important. Because social roles are in conflict with the mobility, therefore emergence of any condition that imposes such role to the road should be prevented. The best solution to control the social role of these passageways is land use control as being applied in Beyhagh Street and use of proper streetscape. Type 2 arterial roads itself can be divided into two types of major and minor. In the major type mobility role is notable, but in the minor type accessing role is greater. Minor type 2 arterial roads are also called as collector or feeder roads. The streets of Ghaem, ShariatMadar, Farmandari and Basij are all type 2 minor, but streets namely Atamalek, Asrar, and Modares are falling in the major type 2 arterial roads. They have a very strong social-cultural role beside of just being a moving axes.

Local Roads: In local roads priority is given to social and accessibility roles, so that the vehicular movement is less and it is laid down in such a way that the street can perform its social responsibilities. One of the main functions of such street is providing access for motor vehicles. But these roles shall be carried out in coordination with social role and environmental requirement of the core city. The residential units behind the main streets are all connected through these types of roads. Pedestrians are allowed to walk and cross these streets at any point.

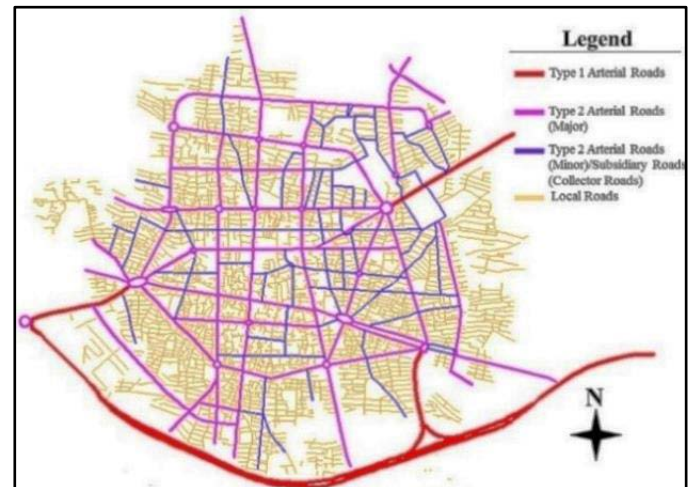


Fig. 4. Sabzevar City Road Classification

As it can be seen (Fig. 4) majority of the CBD vehicular traffic movement is carried by Type 2 Arterial Roads which almost spread equally within the city following a grid diagram pattern. These roads along with subsidiary roads play an important role in trade and commerce of the city as they are mostly commercial axis within the city border especially in the city core and in CBD areas. The main streets of Atamalek, Kashefi, Modares, AsadAbadi and Beyhagh divide this sector into five quarters.

3. CBD MAIN STREETS

Sabzevar city center is consisting of six streets which are classified by alphabetical order according to their priority suggested by Sabzevar Urban Authority (Fig. 5). Not all of these streets are primary retail streets of Sabzevar city. Among all these streets, only Beyhagh and Kashefi streets are focal point for shopping and retailers and are most often used in reference to retailing and socializing. The main street term, also described as High Street or Front Street is the term refers to a place of traditional values, also represents the interests of everyday people and small business owners, symbolizing the interests of large national corporations. Sabzevar main streets are not only the major roads running through the city, but the site of all street life, a place where people hang out and watch the annual Ashura parade, ceremonial and religious festival. The CBD streets stretching the length of the city center run from 22 Bahman Square and head up to west to Iraq square include Beyhagh junction, Dadgostari junction, Asrar and AsadAbadi Street and Modares Boulevard, among which Beyhagh and Kashefi are CBD's main streets.

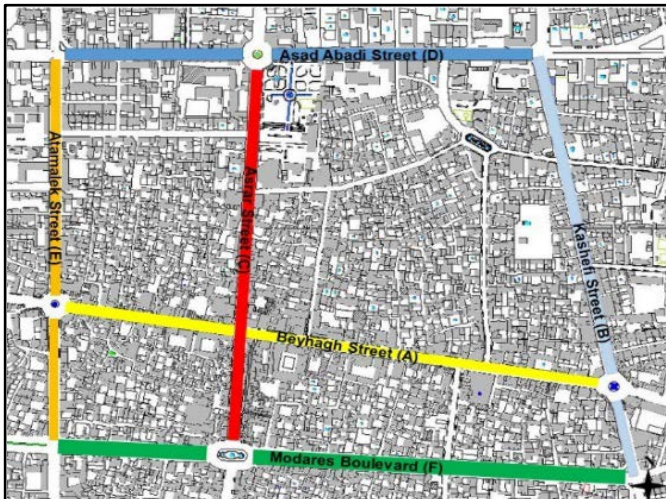


Fig. 5. Main Streets of Sabzevar CBD

A. Physical Characteristics of CBD Streets

Central streets in the city’s old tissue are where the city takes its roots from. They are the most important axes in this region and are not only the main commercial-public streets, but also contain numerous heritage architectural monuments as well as the important religious-cultural places. They are the most visiting streets among all city center streets with heavy vehicular and pedestrian traffic on the daily basis. Cost of land is the highest here, as it is the magnitude of activity. Sabzevar streets deal with the large scale of buildings, historical, commercial and public spaces within the streets, whole neighbourhoods and the entire city center. The physical profile of CBD streets such as length, width, landscape, parking etc., are presented in the table 1.

TABLE 1
PROFILE OF THE CBD STREETS OF SABZEVAR

Street Name	Street length (m)	Street width (m)	Sidewalk both side (m)	Both side landscape (m)	Parallel parking (m)	Special lane (m)	Carriage way (m)	Drainage (m)	Median island
Bevhagh	600	22.75	7.85	0	2.5	3.9	7	1.1	-
Kashefi	600	22.7	7.2	1.5	2.5	3.5	6.1	1.9	-
Bevhagh West	270	22.5	8	0	5	-	8	1	-
Asrar North	500	23.5	8.2	1.5	2.5	3.5	6.5	2.3	-
Asad Abadi	450	27.5	8	1.5	2.5	3.5	10.1	1.9	-
Asad Abadi South	290	25	7.4	1.5	5	-	9.65	1.45	-
Atamalek	440	23.8	7.5	2.3	5	-	7.5	1.5	-
Atamalek South	225	23.8	7.5	2.3	5	-	7.5	1.5	-
Asrar South	200	21.5	6.2	1.30	5	-	7	2	-
Kashefi South	114	24.43	7.48	1.45	5	-	8.6	1.9	-
Modares East	600	34.75	8.35	5	5	-	14	1.2	1.2
Modares West	266	34.75	8.35	4.7	5	-	13.7	1.2	1.8

The central business district streets have tremendous pressure to accommodate the required mobility pattern and network of all travel modes. Trips to, through and within CBD streets are only facilitated by city buses, taxi or personal vehicles. Priority for pedestrians, motorists, cyclists, and service functions is not balanced according to use and need. Every trip begins and ends with vehicles, so parking and transit stops are very crucial and though the bicycle facilities which can provide safe and amenable transitions to walking, is highly missing in this region.

The CBD streets are economically vibrant and healthy local economy. They attract diverse functions and

investment which supports social activity as well. The streets have been designed for 40kph to 50kph, but still they do not have safe, generous pedestrians’ pathways and cyclists’ tracks. Also, they highly lack in the provision of frequent safe crossing points. It is interesting to know that, the entire CBD is equipped with only one over crossing pedestrian bridge which is in total dysfunctioning mode due to bad quality and difficulty of use. Although, city center streets are attractive in terms of culture, history, commercial and economic, but they lack in streetscape design.



Fig.6. Pedestrian Bridge in CBD

One of the down sides of this region is that these streets are not environmentally responsible to provide an attractive and refreshing environment by working in concert with natural systems. Addressing environmental concerns such as storm water runoff, urban heat island effect, and green energy sources for urban amenities, planting maintenance, as well as air and sound pollution can be pointed out that they have decreased the value and durability of these streets. These streets have no role on reducing energy consumption, waste, and project costs. Fundamental physical parameters that affecting street qualities of Sabzevar CBD are as follows:

a. Building Scale: The building scale on CBD streets almost follows a uniform pattern except in few cases where the new structures are built or being renovated. Because, the building facades are located adjacent to the sidewalks and are positioned in close proximity to each other, the city center streets are walkable and can be easily transversed as a pedestrian. They are dense and all buildings are positioned on either side of the asphalted carriage way, with 3 to 4.3 meters setback called as adjacent sidewalk, making them favorable walking streets in the heart of Sabzevar.





Fig.7. Building Scale in Sabzevar CBD

b. Re-Use: Within the CBD, many old buildings from the old time have been reused over their history and some of the historic buildings have kept their original facade and architectural details. Many examples of this type of structure can be found in Beyhagh Street. Many retail shops on the road side or some of the old residences at the background have been re-used to put into a new function but the buildings still maintain the same old character (Fig. 8). Others along the street have been repainted, awnings or signage added above storefronts. These details are degraded and have a visual impact on the streetscape. The major character among these buildings is the brick and clay material that have given the uniform pattern of façade and shape.



Fig.8. Re-used buildings in Sabzevar CBD Streets

On Beyhagh Street, there are multiple numbers of ex-houses that have been converted into small production units, mixed uses, offices and retail shops. These houses have been repainted or refinished and most have signage added to the exterior. As the Fig. 8 shows, in some cases the old structure have been renovated or rebuilt but still have maintained the old character or material in the background. Majority of the buildings with direct access to the main street have been put into commercial or public uses and the

units within the tissue, behind the shops are either residential or semi-commercial or act as storage for frontage commercial units.

c. Historic: CBD historic buildings stem from their roots in the long history of Sabzevar and as being located in middle of the old city, are characterized by many brick buildings. Through time, many of these historic buildings have been lost, but those that remain include Jama mosque, Pamenar mosque, Imam Zadeh Yahya, Memarzadeh caravanserai and the roofed old market; others, mostly have been repurposed and house a variety of business types. Many buildings are preserving their original aesthetic quality and facade, thus informing the present streetscape.



Fig.9. Iconic Historic Buildings of Sabzevar CBD

Majority of historic buildings are built with brick giving them a predominant red colour with cream accents, distinct patterning due to the size of the brick, unique textural quality, and welcoming height and scale. As the Fig. 9 represents, both Jama mosque and Imam Zadeh Yahya are the two iconic monuments of religious-historic buildings dating back to 1758 and 1796 AD and in fact two of the main historic structure of the city center. Both have Islamic architecture style with tall arches at the entrance and minarets on either side. The Imam Zadeh also has a blue dome that has been recently renovated and repaired. In terms of material both the structures have brick as the main building material and blue Islamic tile work at the exterior. There are barrel vault built at the building of the south porch in Jama and Pamenar mosque. The roofed market is the remaining of the old Sabzevar market which is been listed in the national heritage buildings of Iran. The roofed market is about 140 meters long and is located along the north-south axis and has a total of nine entrance paths and exits. These entrance-exits are positioned in Asrar and Beyhagh Streets. Today, the market has 85 shops which are either gold and jewellery shops or fabric store. The market has been partially renovated but still maintains the old character in terms of material and architecture type.

d. Commercial:As the CBD block pattern moves from east to west of Beyhagh Street and south to north of Kashefi Street, the urban design language of city center is expressed more through the commercial uses. These commercial uses span multiple building time frames and include examples of architecture spanning from the 1700's to present. The old facades present a different type of quality to the street, such as brick walls and short structures that do not provide the same urban design aesthetic as those built recently with modern material and facades (see Fig. 10).



Fig. 10. Commercial Units in CBD Streets

Commercial use is the major land use of city center and other land uses are somehow in cooperation or in contact with the commercial use. The Beyhagh and Kashefi Streets are famous for their accommodation to the variety of shops and offices and have been declared as the main commercial axes among all other CBD streets by Sabzevar urban authorities. Therefore, they have the daily visitors of sellers, buyers, service providers, customers and window shoppers. Unlike Beyhagh, Kashefi Street is the modern business district of Sabzevar city. The streetscape in central business district of Sabzevar incorporates the existing character and mix of uses in city center with its rich history and culture to encourage development according to the needs of the growing and vibrant community. But the pattern and characteristics of all CBD streets are not uniform as each street has been developed during different period and the surrounding physical environment of each street is unique. Also the land use as being one of the most important drivers of city function is widely diverse in different areas and the same land use may not continue to the adjacent street or neighbourhood. Keeping the mentioned changes in mind, the CBD pattern as well as streetscape, experiences a drastic change once entering to Kashefi and AsadAbadistreets as the design language is expressed more through newly built structures. The

contemporary blocks are mostly commercial or office spaces.

e. Soft sites:Despite of having considerable stock of heritage buildings in Beyhagh and Asrar streets, significant areas are occupied by soft sites. Soft sites are underutilized areas of land that are vacant or occupied by surface parking lots, single-storey buildings, abandoned buildings or small buildings that do not use their lands intensively. They are identified as areas that could accommodate new development. They are mostly located at the background behind the facade; some of them are old buildings that have been abandoned over the course of time or the open private lands that have become the parking spot for daily visitors. It is interesting to know that such sites even exist on the main street side in AsadAbadi and Asrar streets. Majority of these sites are used as unauthorized parking lots by the daily visitors and the CBD workers.



Fig. 11. CBD Soft Sites

f. Skyline:There are black straight lines drawn on the picture connecting the points of the skyline and show the series of elevations and facade and blue lines represent the blocks at the background (ref. fig. 12). This method, although by no means foolproof, gives a good working picture of Sabzevar CBD skyline at CBD streets. It shows the front blocks in terms of their shape and bulk, whereas buildings seen against a backdrop of the existing skyline are shown in terms of the coloring and contrast of materials.

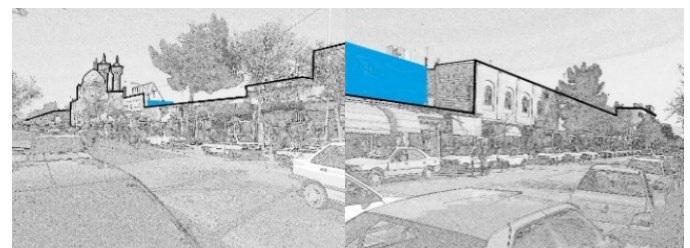


Fig.12. North View Skyline at Beyhagh Street (Western and Eastern side)

Skyline in the figure (12) represents the views from a distance of Beyhagh street area. Within this closely built up area, the assessment of skyline becomes a matter of examining roof lines and the gaps between buildings. In

fact there is no gap between the buildings. From the street level, the projection and recession of a facade contributes to the intricacy of skyline. In this area structures do not cross over two storey-height except in few cases and almost buildings follow uniform skyline except in Jama mosque and the Imam Zadeh. The skyline is not only representing the height of the structure throughout the street but also points out to the unique buildings that act as visual focal point within the city center and the Jama mosque is a good example in Beyhagh Street.

Unlike Beyhagh, The AsadAbadi street has a total different skyline as the building line is not continues and plots are positioned forth and back. Also the roof line and building height reaches up to G+4 or sometimes 5 storey building. One of the great features of CBD streets is that the skyline has been controlled by the local planning authorities in most of the streets other than AsadAbadi. In this case the adaption of such control has been considered at structure plan level in the form of a high restriction buildings policy. The tallest point in CBD is the Jama mosque minaret and no structure is allowed to cross that limitation.

4. DISCUSSION

The Sabzevar CBD streets are concerned both with development and preservation. They need a concerted effort to recognize the positive attributes of these streets, to enhance and conserve those attributes and to improve the present environment where it is less than satisfactory. Studying of CBD streets has identified the following limitations within the street which have caused the lack of monolithic elevation:

- Most of the buildings of CBD streets are owned by the private sector and these individual owners control the fate of the building's exterior and its activity.
- Building restoration and redesign is very costly.
- There have been no efforts for façade improvement grant programs by urban authorities to unify the street elevation.
- Public buildings such as hospitals, clinics and public departments do not follow any suggested specified exterior character.
- Streets lack in landscape elements and natural environmental considerations.
- Height restrictions have been violated in AsadAbadi and Modares street recently.
- Parking is the daily challenge of CBD streets.

The analysis also represent the fact that for many years, the streets have been the economic and emotional center of Sabzevar. During much of that time, the area thrived: religious buildings and caravansaries were constructed in the Islamic architectural styles; the city, at its core, prospered. But



eventually, decline set in. As structures aged, they were neglected or carelessly renovated or knocked down. Today the shoppers, workers, visitors are affected by this change. Attempts at renewal, such as changing traffic patterns and land-use change generally failed and did not elevate the aesthetical view of these streets. And yet the CBD streets remain vital. The streets still contain an exceptional number of architecturally significant structures and are the host of important, vibrant organizations, businesses and shops. To name just a few: Jama mosque, Memarzadeh caravansary, Pamenar mosque, Imam Zadeh Yahya, old city market, department of justice, Sabzevar municipality headquarter, department of city council and many shops and offices, some new, some long established. This wonderful variety of historic and contemporary public spaces along with residences and the dense fabric of buildings have created these streets their unique character.

5. CONCLUSION

Although the CBD area has a rich historical background, it is observed that it began to deteriorate in terms of physical and social qualities. Sabzevar main CBD streets such as Beyhagh and Kashefi are facing deterioration that encounters social, physical, economic and environmental problems which could be categorized as lack of landscape and greenery, high percentage of soft sites, lack of shadings in day life, lighting, lack of harmony in building facade, absence of street furniture and vehicular traffic congestion. As these streets are the important public spaces and attractive poles for not only locals but also the visitors, the qualities of the street under physical dimensions should be elevated to affect social, cultural and economic dimensions as well as creating a pleasant urban space.

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