



COMFORT CHARACTER OF LANDSCAPE FEATURES OF TRADITIONAL STREETS IN AMMAN, JORDAN

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Abstract

Fast expanding of urban development changes the street function and gives priority for vehicles, which effects the urban fabric and cultural life of the city. It makes walking in the street difficult and uncomfortable. Hence, this research aims to explore the influence of landscape features towards comfort character of traditional streets in Amman, Jordan. The case study was Rainbow Street in Amman, the capital city in Jordan. Mixed-method approach was used in this study, which involved direct observation (visual and behavioural) and user perception (survey and in-depth interviews) techniques. The data was analysed through thematic analyses for qualitative data and descriptive statistics for quantitative data. The results show that landscape features that contribute towards comfort character could be divided into two main categories, namely, pedestrian amenities and sidewalk. This should be taken into consideration in the design of the existing and future streets in Jordan.

Keyword: Landscape, Comfort, Character, Traditional Street, Sidewalk, Pedestrian amenities.

INTRODUCTION

Streets have been described as a significant part of the urban open space that also defined as the bones of the city (Rahman, Shamsuddin, & Ghani, 2015). Streets serve as a venue for social interaction via different types of human behaviour, including talking, playing, observing, and lingering. Streets also function as a space for families and friends and sometimes a living room or a dining room for city dwellers (Oranratmanee & Sachakul, 2014). Thus, streets symbolize the public realm where people spend a majority of their time (Jacobs 1961; Ja'afar, Rahim, Samad, & Rahim, 2017; Zaidin, Hussain, Tukiman, & Shahli, 2015). According to Carr (1992), there are five major reasons why people go to public places. These are 'comfort, relaxation, passive engagement with the environment, active engagement with the environment and discovery. Rahman et al. (2015) identified comfort as the most basic of needs and the most important design criterion for a liveable street as it has a direct effect on place satisfaction.

Comfort is not just offering protection from sun, wind, and rain, but also providing a physiologically suitable setting of the street environment to support a convenient environment where various activities and outdoor culture events can occur in open public spaces (Mehta, 2006; Hajmirsadeghi, 2015). It is about providing a safe, accessible, convenient and pleasant place for people to spend their time and having their social activities (Zakaria & Ujang, 2015). If streets are alive, secure, pleasant and exciting spaces, they can attract more people (Mehta, 2006). In this regard, the level of comfort could be determined by the length of time where people would spend in the public space (Carmona, Heath, Oc, & Tiesdell, 2003).

At the same time landscape elements, both hard (lighting, urban furniture, paving, and public art) and soft (planting), play a significant role in creating a sense and meaning of place and affect the type of activities such as walking or sitting within the street environment. Consequently, comfort is a characteristic that should be considered when designing a convenient, safe, and friendly street environment which is one of the basic human needs in urban spaces (Carr, 1992; Jacobs, 1996; Carmona et al., 2003; Rahman et al., 2015). It influences the vitality and liveability of urban setting (Shahideh, 2013). Thus, comfort is defined as the pleasant state of physiological, psychological and physical harmony between the human body and the environment (Zakaria & Ujang, 2015).

ISSUES AND PROBLEM STATEMENT

According to Gehl (2015), when public space became unattractive, unwelcoming and uninspiring, people will be discouraged from using it, either by enjoying its surroundings or having social activities in it. But modern urban planning pays more attention to requirements of automobiles rather than pedestrians' needs. The development of modern highways and high-rise buildings destroy the traditional urban fabric and harm urban quality (Jalaladdini & Oktay, 2012; Ultav, Çağlar,

& Drinkwater, 2015). Modernization adversely affected the key role played by traditional streets as a public space that enhances city appearance. When urban design focuses on motor vehicles, a lost local character must be identified (Tawil, Reicher, Ramadan, & Jafari, 2014). Nonetheless, the previously mentioned scenario is common. In fact, it occurs at both local and global scale, which directly affects the pattern of a street or city. Al-Asad (2004) indicates that walking in Amman city has become challenging, uncomfortable, and unsafe because some streets have a problem in the continuity of good and comfort sidewalks. He adds that sidewalks in Amman were not properly maintained, as shown in (Figure 1).



Figure 1: Example of poorly maintained sidewalk in Amman
Source: Jafra News, 2015

Poor maintenance of sidewalks can also be observed in other cities in Jordan, such as Az Zarqaa. Some places have sidewalk pavements of varying heights (blocks have different levels as a result of many factors, such as rain), which affect the safety and comfort of pedestrians. Additionally, low-branching trees were planted in the middle of the sidewalks, causing difficulties to users. Sidewalks in front of markets are also used by traders to showcase their goods. All these resulted in difficulties to users and forced them to walk on the street, exposed to the danger of collision with motor vehicles. At the same time, heavy traffic also makes crossing the street as challenging and dangerous. It is, thus, important that streets are designed suitably as a social arena that gives priority to the comfort of the pedestrian. Therefore, this study aims to explore the influence of landscape features towards comfort character of traditional streets environment.

METHODOLOGY

This study examines the physical elements that contribute towards comfort in traditional street. As a case study, Rainbow Street, Jordan was selected (Figure 2). Street in traditional ambience was selected because according to scholars, the sense of place by its culture, local need and appearance could be felt. This is what makes a place or town is different from another town (Shamsuddin, Sulaiman, & Amat, 2012). Rainbow Street is located at the central location between east and west Amman, the capital of Jordan. It is well connected to the downtown area through magnificent steps. The street reveals a rich history and cultural heritage of the city of Amman; it represents a “distinctive Amman character” through its distinctive building. This street receives a high concentration of visitors and pedestrians from different ages and background, locals and foreigners due to its special location, mixed-use activities heritage and various activities (Turath Architecture & Urban Design Consultants, 2010).

This study adopted a mixed-method approach, where field studies, qualitative method and quantitative method were used. The main techniques that were used in this study were questionnaire survey, field observation (visual and behavioural surveys), in-depth interviews, and literature and document analysis.

The questionnaire survey was conducted on 330 street users who were categorized under two types of users: (i) static users - those who are permanently tied to the study area (shop owners, traders, officers, residents) along the street (ii) mobile users - those who do not live within the study area (shoppers and tourists). In-depth interviews were conducted on 21 street users. Thematic analysis using NVIVO 10 was undertaken for qualitative data and descriptive statistics using SPSS 22 were used for quantitative data.



Figure 2: Rainbow Street, Amman

Source: Turath Architecture & Urban Design Consultants, 2010

RESULTS AND DISCUSSION

The result of the analysis shows that landscape features influence users' feeling of comfort while walking along the Rainbow Street through (i) pedestrian amenities and (ii) sidewalk (Table 1).

Table 1: Landscape elements that contribute towards comfort character

Element	Interview			Survey N=330	Visual survey
	Yes	No	Σ		
1- Pedestrian amenities					
Public toilet	18	3	21		/
Seating	21	21	-	175(53%)	/
2- Sidewalk	20	1	21	194 (58%)	/

Source: Field work

Pedestrian amenities

Public Toilet

Clean and accessible public toilets are essential in urban public spaces (Ja'afar, Sulaiman, & Shamsuddin, 2012; Askari, Soltani, & Mohd, 2015) because urban public spaces must function as outdoor living room where users can fulfil their needs such as going to the toilet to ensure their comfort (Speck, 2013). According to the interviews, 18 respondents insisted on the importance of public toilet provision, and keeping it clean and well maintained, as this can contribute to the attraction and comfort of visitors to a street.

Based on observation, Rainbow Street lacks public toilet. Therefore, the provision of clean and well-maintained public toilets must be taken into consideration in improving the comfort character of Rainbow Street as well as in designing new streets so that they can attract visitors and prolong their stay in the areas.

Seating

Proper placement of seating in activity areas creates a sense of place, comfort, enjoyment and successful urban area. The results of the survey show that 53% of the respondents feel comfortable with the seating provided in the study area. However, some of the respondents said there should be more seating in such crowded street. All of the respondents in the interview (n=21) mentioned that they like to sit and watch the street activity and the panoramic view.

“I like sitting on the side benches with my friend and having our sandwiches from Al-Quds cafeteria watching people.” R13 street user.

The quotation above indicates that the users enjoy sitting on the street benches and watching the street activity, socializing, and having their snacks. Public seating should be oriented toward interest points such as panoramic view, water view, open spaces, or the street itself if it is lively and perpendicular to the curb.

Meanwhile the visual survey (as shown in Figure 3) found that benches along the street have different shapes and designs that meet users' needs. Their placement is also concentrated in areas with more activities. However, shades in the seating areas is required to ensure users' comfort. Public seating should be comfortable, shaded and with different shapes that provide comfortable and active environment where people can rest, socialize, or eat and enjoying public space (Latip, 2011; Austin, 2002; Hajmirsadeghi, 2015).

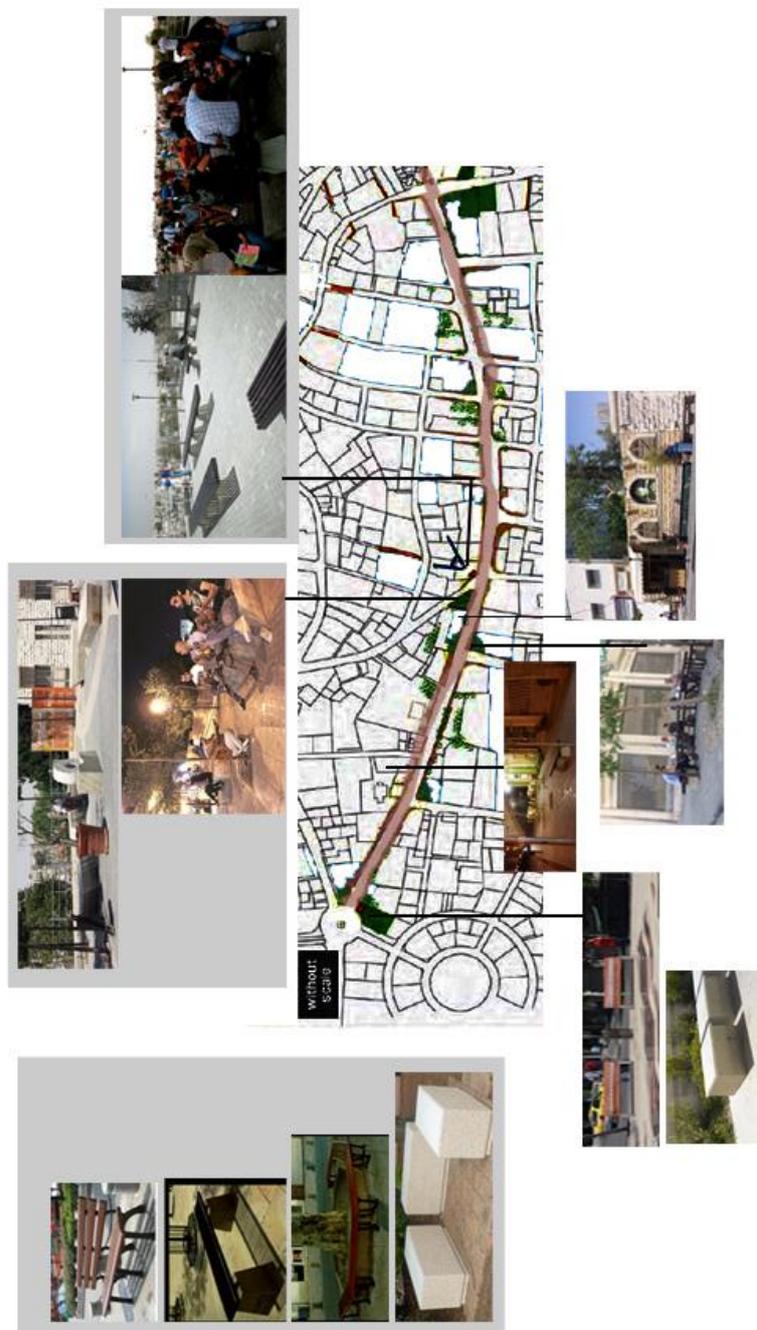


Figure 3: Location and types of seating on Rainbow Street
Source: Fieldwork

Pathway type & Pavement

The survey showed that 58% of respondents were satisfied with the sidewalk condition in the study area, and they feel comfortable while walking on the sidewalk as it was non slippery, free of obstacle most of the time and with a suitable width. Meanwhile, 14 respondents mentioned that they feel comfortable when using the sidewalk as it connects continuously the parking area to their destinations. Even when users were forced to walk on the road due to crowded sidewalk, they still feel safe because the design of the road forces the cars to reduce their speed.

“We can use the sidewalk most of the time. Its width is ok, but when the street is crowded it’s hard to walk in, so we need to use the vehicle path. It’s still okay as the street design is for pedestrian, and its rough pavement and narrow width force the cars to slow down.” R15 street user

The concept of “Traffic Calming” was applied in the design of the streets, thus reducing the speed of vehicle and increase safety to non-motorized users like pedestrians and cyclists, therefore guaranteed comfort environment for the street users (García, Torres, Romero, & Moreno, 2011; Yousif, Alterawi, & Henson, 2013; Karndacharuk, Wilson, & Dunn, 2014; Panchal, Khan, Sharma, Bharti, & Singh, 2017; Grey, Siddall, & O’Shea, 2011). At the same time, the use of suitable non-slippery pavement material for the sidewalk also contributes in enhancing the comfort of the users (Figure 4).

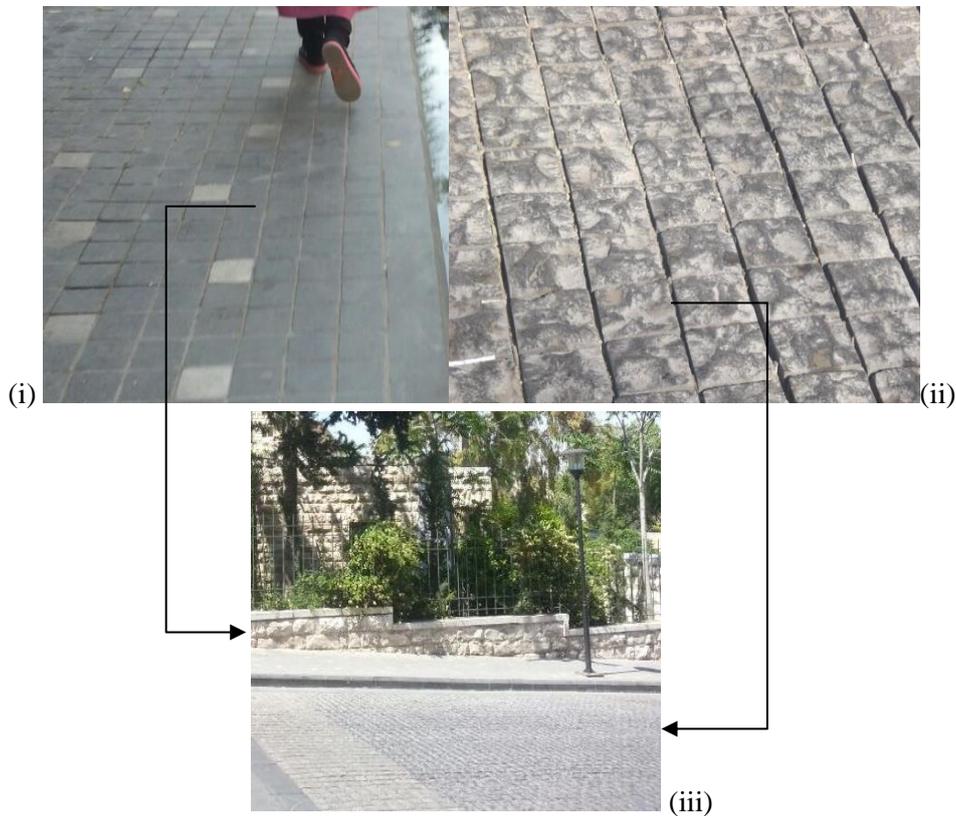


Figure 4: Sidewalk pavement of Bazalt Stone, cut finish (i) and road pavement of Bazalt Stone, light hammered finish (ii) being used at Rainbow Street (iii)
Source: Fieldwork

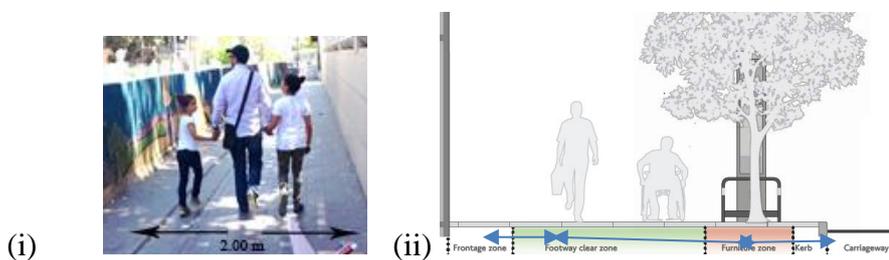


Figure 5: (i) Example of Sidewalk in Rainbow Street; (ii) Sidewalk Divisions
Source: (i) Field work, (ii) (Rice, 2017)

Visual survey also confirmed that the sidewalk is continuous, free of obstacles such as tree and lamp post, and with sufficient width, which ranges between 1.5m to 2m (Figure 5). The width of the sidewalk meets the dimension

suggested by many parties. For instance, Keat, Yaacob and Hashim (2016) suggest that sidewalk width should be between 1.8m to 3m. Meanwhile, Brezina, Graser and Leth suggest that it should not be less than 1.5m. Sidewalk with sufficient width would allow at least two people to walk comfortably side by side or in opposite direction, and also would allow wheelchair users to move conveniently. Wheelchair users require 1.5m width to turn around and 1.8m to pass other wheelchair users (Boodlal, 2004; Ja'afar, Sulaiman, & Shamsuddin, 2015; Ja'afar et al., 2017; Grey et al., 2011). Walking zone should be straight and continuous and free of all obstacle to allow people to walk in the most direct route possible. Meeting these requirements will ensure comfort, pleasant and safe environment for street users (Tariq, 2007)

CONCLUSION

Feeling comfort is one of the main reason why people use or go to the public spaces such as street, in addition, comfort is main criteria for the success of streets. At the same time, the landscape features are significant aspects that constitute the street. Accordingly, the purpose of this research is to determine the landscape features that contribute towards comfort while walking in the street in Jordan context, in this research it was revealed that the landscape features that contribute to comfort while walking in the street in Jordan context were mostly similar with the previous theories. The study shows, the landscape features that contribute to the comfort are (a) pedestrian amenities (public toilet and seating), (b) pathway type and pavement. This recognizes the factors that need to be considered in future guidelines and policies for planning and designing new street as a guide to create a comfortable street environment for the pedestrian that is lacking in new streets at present.

- a. The design of the pedestrian sidewalk with a minimum size (1.8 m).
- b. The sidewalk must be free from any holes or obstacles to ensure the safety of the pedestrians
- c. Using traffic calming techniques in designing the vehicle's path that reducing vehicle speed and improve street safety.
- d. Reduction of vehicular space to provide for the footpath, cycle lane.

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