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ROLE OF PEDESTRIAN STREETS IN IMPROVING URBAN ENVIRONMENT AND LIVABILITY IN THE CITY: AL-TABOU STREET – BAQUBAH CITY -DIYALA- IRAQ

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Abstract

One of the priorities of the new cities that support sustainability is to encourage the community to move on foot and by cycling and reduce the use of the car, to provide liveable places characterized by an increase in the level of health and well-being of the community. The study area is distinguished by the transformation of land use from residential to commercial after 2008. The stabilization of the security situation in the Baqubah city makes the study area the most significant commercial axis in the Baqubah city, including the most important health centres, commercial complexes, and malls in Baqubah. The study area is affected by many issues, the first of which is traffic, architectural, social, environmental, and economic, which has negative health, psychological and social impacts on society and the city in general. The second issue is that it is closed on holidays and other celebrations, such as New Year's Day and others. The goal of the research is to create a social space in which the community interacts on various occasions and celebrations in the region, transforming the study area into a pedestrian-friendly environment and integrating economic activities with social activities to create a sustainable environment that takes into account environmental and social aspects and achieves a strong economic dimension. One of the most important conclusions of the research is most Iraqi cities lack the provision of pedestrian paths that encourage increased social interaction and a healthy and safe environment for the individual through which to improve the level of recreation and health.

Keywords: Baqubah city, Land use, Pedestrian streets, Urban environment, Walkable.

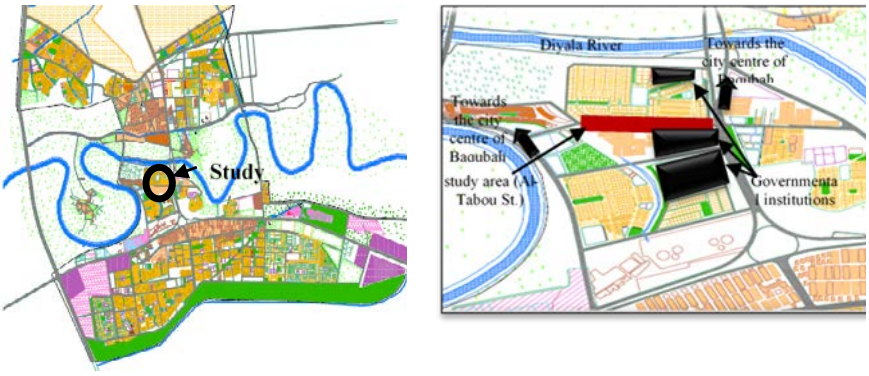
1. Introduction

The challenge in a rapidly growing world is to better understand the connection between built environment and urban processes in order to more sustainable urban processes [1]. Walking, the most common type of physical activity is considered to be a significant contributor to health [2]. It is necessary to consider ways to improve the quality of life, community integration and the general well-being of all people. To achieve this aim, fair access to the pedestrian infrastructures, i.e., public pedestrian urban trails [3]. Urban planning and construction are connected with the good urban design opportunities that generate an interaction between people and the urban environment [4]. Increased efforts to promote pedestrian mobility were made by urban designers and public health professionals. They strive to provide walking, community-driven, footpath, land-use mix and strategies such as programs for calming traffic [5]. Successful locations offer many occasions for informal and casual gatherings; friendly places; street markets [6]. A pedestrian level of service evaluates a number of criteria which are critical to this model, including safety, security, comfort and convenience. Identify four major categories of functional, protection, aesthetic and destinations that affect walking [7].

Researchers have reported beneficial effects when disabled people can take part in social and cultural events if accessible pedestrian infrastructure facilitates their participation [8]. To provide a pedestrian environment that requires: Cross-country facility, manageable walking distances, size and protection, visual appeal and community identification as well as air-conditioning, noise, air quality and efficient parking. [9]. The research is based on a descriptive analysis of the study area and suggests transforming the study area into a pedestrian street in which activities (commercial, entertainment, social, etc.) are practiced for increasing the social interaction of the community.

2. Study Area (Al-Tabou Street-Baqubah-Diyala)

Al-Tabou street is situated in the New Baqubah district in the centre of Baqubah city as in Fig. 1(a). The vital location of the site is characterized by its proximity to various government institutions, such as the main health complex of the Diyala governorate, Fig. 1(b).



(a). **(b).**

Fig. 1. Study area of the city of Baqubah, Diyala.

The street is situated in an area characterized by a high economic, cultural and educational level and its proximity to the two banks of Baqubah city, and between two central roads leading to the city centre of Baqubah. Al-Tabou street is considered to be one of the most important streets in the Baqubah city, particularly after 2008, as it became the most important commercial street, including a group of markets, malls, restaurants and medical complexes, as well as some government institutions. The study area is approximately (800) m long and (40) m wide. It consists of two streets to go back and forth where each street is (11) m wide, a central sidewalk (6) m wide, and two sidewalks (6) m wide each.

3. Reasons to Select the Study Area

There are important reasons for choosing the study area, for turning it into a pedestrian zone, and for achieving social interaction between the local community in the Diyala governorate. There are the following reasons:

- The most important commercial street in Diyala governorate and most people in the province are frequented for medical, commercial and other purposes.
- High human density most of the time, particularly in various occasions and celebrations, which leads to its closure and renders it to pedestrians only.
- There is no place for meeting and social activity in the governorate during the days of different occasions and celebrations.
- The recent development of the study area and the construction of modern multi-story buildings with no architectural identity representing the cultural identity of the city.

4. Land Use in the Study Area

Baqubah city has been subjected to terrorist operations and displacement since 2003 and the Central Business District (CBD) was situated on the other side of the Diyala River. After military operations to eradicate terrorism in the Baqubah city in 2008, the central business district was neglected and abandoned, which led to the transfer of most medical and commercial enterprises and activities to the new Baqubah city, particularly Al-Tabou street. The land uses in Al-Tabou street are divided into:

a. Land use before 2003: the bulk of land use on both sides of Al-Tabou street is residential use, in addition to educational and government use (Fig. 2).

Fig. 2. Land uses in the study area prior to 2003 according to physical planning directorate/Diyala.

b. Land use after 2003: transformations started after 2003 and, in particular, after 2008. The land use of Al- Tabou street has changed drastically due to its economic

attractions due to the availability of security and the large areas that can be updated. One of the most significant changes in land use is the residential use on Al- Tabou street and its complete conversion to medical and commercial uses (Fig. 3). The green zone in the study area was changed to government use according to the municipality's requirements and the need to establish a fire station in the area.

Fig. 3. Land uses in the study area after 2003 according to physical planning directorate/Diyala.

5. Problems in the Study Area

The study's field survey area showed that the most significant issues in the study area were:

A. Traffic problems: including:

- Traffic congestion: the traffic volume on Al- Tabou street increased after changing land use from residential to commercial use, which led to the attraction of many cars, especially private cars, and the lack of capacity for the road network, and the increase in the traffic volume. The traffic volume at peak times in the evening is 960 cars/hour, and it is considered a large traffic volume for the street, while the pedestrian volume is about 600 people/hour.
- Lack of parking spaces: the main cause of traffic congestion on Tabou street is the lack of parking spaces that contributes to parking on the road, causing traffic jams and increasing traffic congestion.

B. Architectural and urban problems:

- The difference in the skyline: the establishment of commercial buildings with different operations took place without official permits, which led to the proliferation of different heights of buildings and their non-compliance with urban restrictions and regulations.
- Architectural style distortion: most of the new buildings were built randomly by non-specialists, resulting in many buildings not connected to a particular architectural pattern, as well as the use of finishing materials that are not adapted to the climate and the local heritage of the city.
- Different setbacks: the method of constructing buildings in the street takes place informally and arbitrarily, taking the same setback gap for all buildings, showing the irregularity of the parallel line of buildings with the street.

C. Social problems:

- Harassment and lack of privacy: many people from different regions of Diyala Province come to Al- Tabou street, which caused the presence of strangers in

residential areas adjacent to Al- Tabou street, causing problems and reducing privacy in residential areas.

- Anxiety and discomfort: the effect is that parking lots of cars near residential units and the road is often blocked, which creates inconvenience and discomfort for residents.

D. Economic problems:

- Rising prices for land and buildings: prices rose with the great attraction of commercial and medical activities on Tabou street, reaching around $5 thousand and more per square meter.
- Rise in the cost of building and using the infrastructure: the increase in the number of activities has contributed to an increase in the consumption of electricity, water, sewage and other items, which creates pressure on them and their inability to accommodate the increase in them, which leads to their destruction with re-establishment.

E. Environmental problems:

- Environmental pollution: the rise in the number of cars on the road contributes to an increase in pollutant emissions at the site, which affects the health and psychological aspects of users and residents.
- Noise pollution: the increase in the number of vehicles causes an increase in noise on Al- Tabou lane, which affects the health of an individual.
- Increased dust and waste: the increased movement of vehicles through the streets reflects an increase in dust as well as an increase in waste arising from numerous street activities.

6. Proposals for Design and Planning to Improve the Social Fabric

After analysing the problems of the study area as a result of changing land use and increasing commercial and entertainment activities, the process of converting the study area into a pedestrian zone includes the preparation of proposals to improve the social fabric and provide the community with a healthy and secure atmosphere that helps them to sustainably increase social interaction. The following are these proposals:

First: Activities and events: In order to reinforce the social fabric in the field of study, it is important to be aware of the activities leading to the enhancement of social interaction which is characterized by the province and absorbed by the study area, and among those activities proposed in the field of study are:

- Commercial and entertainment activities: As medical activities, restaurants and malls overlap with each other, they are already present in the study field, but need to be coordinated and restructured.
- Religious activities: Iraqi community is distinguished by the presence of religious activities celebrated by all members of society, and the following are among those celebrations:
- The Birthday of the Prophet: Every Hijri year, Muslims celebrate the birth of the Prophet Muhammad (PBUH), and many community members gather on this occasion on the night of the birthday of the Prophet.

- Muharram: Many Muslims in Iraq participate in the revival of Imam Hussain's (PBUH) martyrdom rituals at the beginning of the Hijri New Year which last for 10 days and are usually revived at night, and this event involves the closure of many streets in the city, creating traffic jams in the city and in the study area.
- The holidays: The governorate of Diyala lacks entertainment and tourism places and any social place used for celebrations, especially on Christmas, Eid al-Fitr, Eid al-Adha and others.
- Social activities: The presence in the study area of some tourism and entertainment activities needs to increase and enhance the quality of service for these events, which includes the provision of open spaces for these events that are combined with closed spaces and the provision of a social atmosphere that communicates with passers-by.
- Artistic activities: In order to promote all kinds of artistic activities, painting, poetry, music, acting, etc., places are given to absorb the artistic energies, highlight them and give them importance to society through dedicated places that help to achieve the dynamism and vitality of the street on various days.

Second: Requirements for transformation: The process of converting the study area into a pedestrian street needs the following:

- Preparation of a law for the field of study to establish architectural identity, architectural style, construction materials and techniques, building density instructions, building heights, building setbacks, and other organizational actions.
- Preparing the architectural designs for the study area that include horizontal plans for the road and all its details, as well as the architectural facades of the road path, in order to achieve unity in the architectural style and building materials.
- Preparing a report to integrate the study area's proposals with the basic plan for the Baqubah city, to solve the problems and conflicts between them, and to achieve integration between the study area system and the total system of the Baqubah city.
- Establish vertical car parks to solve the parking problem in and around the study area by choosing investment areas for this purpose.
- Considering people with special needs, and service media such as ambulance, firefighting, sewage and others by providing alternative roads or allocating paths for them in the study area.

Third: Design and planning proposals: include the following:

- Close all the roads leading to the study area in front of the vehicles and use electronic gates which only open in emergency and humanitarian situations.
- Determining parking spots: The study suggests that 3 vertical parking spaces be created that are properly allocated to achieve a walking distance not exceeding 400 meters from each garage to the end of the two ends of the study area (Fig. 4).
- It was adopted to choose these places because of their location in the middle of the study area, that they are within the walking criteria, and they are offered for investment and their areas are suitable for establishing car parks.
- Creating a central meeting ground to be in a circular motion in the centre of the study area where different festivals and activities are held (Figs. 4 and 5).
- The allocation of the sidewalk (width of 6 m) in the study area on both sides as an open space to be combined with the adjacent events and closed activities

and to extend a shed of 2 m in length as a climate-different protected area. As for the middle sidewalk (6 m width) in the study area, it is specialized and used as stalls for the sale of heritage products, and its construction is comparable to the design of side beds in the study area (Fig. 6).

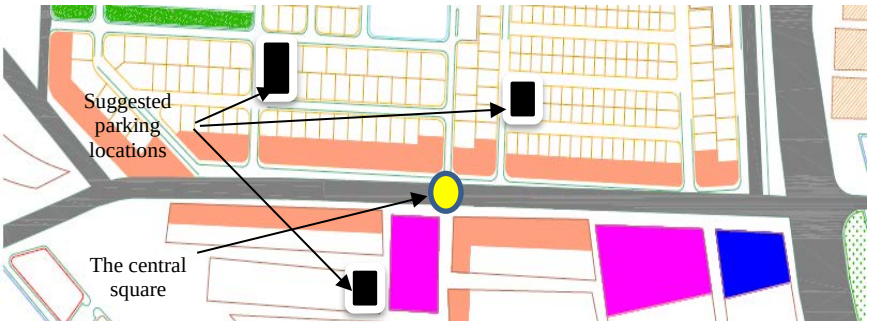


Fig. 4. The location of the proposed central square and vertical parking in the study area.

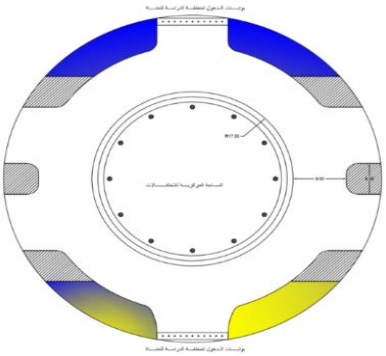


Fig. 5. A detail of the proposed central square location.

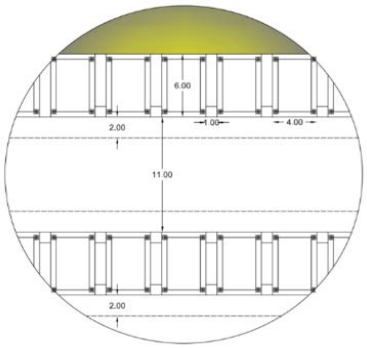


Fig. 6. Details of research proposals for the study area sidewalks.

- The central sidewalk dedicated to heritage stalls is divided into blocks of 49 * 6 m, with a 2 m protrusion, and each block is separated from the other by a distance of 8 m, which is used as pedestrian mobility areas between the two lanes (Fig. 7).

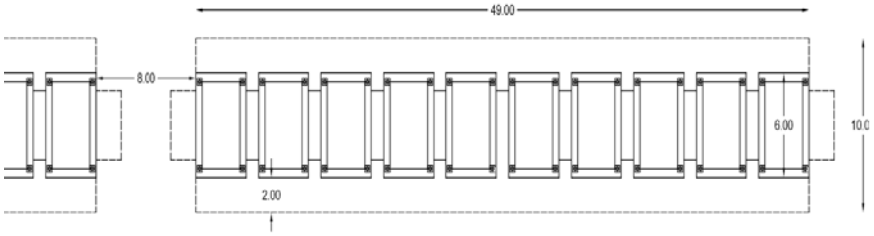


Fig. 7. Central sidewalk details in the study area.

- Use of finishing materials for facades as follows:
  - The use of bricks (Al Jafqim) in the facades of the proposed roofs on the side and middle sidewalks.
  - The concrete is used in the projections with white colouring.
  - Brush bricks are used on pedestrian floors with two lanes.
- Provide a path designated for people with special needs, which is distinguished by a different floor from the rest of the floors, using a different colour and providing safety and security requirements.
- The use of local and Islamic architectural vocabulary in the proposed facades, such as arches and domes, representing a local style that expresses the originality of the place.

These proposals work to activate and increase the social interaction of the community in the governorate by employing various social activities for all segments of society in the study area, due to the presence of a new investment environment that can be exploited in integrating the social and cultural dimension with the economic and entertainment dimension with a contemporary planning and design vision by establishing and developing a pedestrian street.

7. Conclusions

- Most Iraqi cities lack the provision of pedestrian paths that encourage increased social interaction and a healthy and safe environment for the individual through which to improve the level of recreation and health.
- The area of the proposed study in the research has the elements of converting it into a pedestrian street due to its recent emergence and the possibility of developing it according to a future vision.
- Pedestrian streets need vitality and sustainability through the presence of popular and community activities during the days of the year and they are continuous.
- The pedestrian street expresses the local identity of the region to represent a model for global identity marketing.
- Pedestrian streets create an economic investment opportunity in the city, through which it is possible to develop commercial opportunities and provide job opportunities.

8. Recommendations

The need to set up pedestrian streets in all Iraqi cities on the basis of their social, recreational, health and environmental social concepts. Prepare design and planning plans in each city that can be funded by opportunities for growth and investment in each governorate.

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