# Impact of the Engendered Fo'raa Square on the City Expansion; Square Efficiency and Attraction

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## Abstract

Irbid City Municipality foresaw a potential for reviving its center by creating an opportunity to preserve a heritage building and to serve the location by engendering Fo'raa Square at its front. The plan was put to action in 2008, when the place was transformed from a bus station to a square to adapt to this change. It created an opportunity to absorb activities and attract the expanding city center to its direction.

The purpose of this paper is to study the square daily use and its efficiency in attracting business and pedestrians from the city center and its impact on the city expansion. This research documents change through collecting information from municipality archives; and successive interviews with the local senior residents, downtown stakeholders, and decision makers. Questionnaires consist of participation profile, social activities, and the meaning of the square for its users. Observations document patterns of static and dynamic uses in the square in accordance to surrounding land uses. Integration of space is also documented using space syntax analysis software.

The results show that, although the intention was to create a vista for pedestrians and a trigger for businesses, it acts against its intervention goals and objectives by failing to drive the city pedestrians and business towards the square. Instead, most of the square visitors are those wanting to ride on the busses at its periphery or wanting to take a short cut to reach their destinations. Very limited numbers of users occupy the space for leisure purposes or to meet others in the daytime. Its edge-type of location and the lack of active land uses are marginalizing its role as a square to the extent that it becomes a negative space at night. It is not considered a destination for shoppers or workers in the downtown. After 10 years of its establishment, it is still unknown to the majority of people shopping downtown.

## Introduction

At this age of fast-growing urban centers, and as affected by the booming population in the Middle East, city centers are growing without direct control. Building is evading agricultural fields and business is growing outside city centers. The main objective of this study is to investigate the impact of Fo`raa urban square on the City of Irbid downtown; the development of its commercial uses; and the development of social interaction of its users. It is also focused on understanding how the urban design is impacting the square activities and pattern of daily use.

Irbid city center is an active political and business center. It has many heritage buildings which gained the city its importance. As the city grew from its center towards its radial periphery, the city center importance declined and slowly its business retracted (Haddad and Fakhoury, 2016). The traffic congestion and lack of public open spaces had an influence on this as well.

Knowing this, Greater Irbid Municipality (GIM), together with Ministry of Tourism and Antiquities (MOTA) erected an initiative that would renovate some of the valuable buildings and create an urban space for the city. Eventually, Al-Nabulsi house was renovated and Fo'raa square was engendered as a city center destination for locals and tourists. After about ten years of its creation, this study is assessing the square impact on the city center. The researchers feel that the square—given its location—did not attract visitors as expected and did not direct new business to the center.

**Background and Literature Review**

Cities are made up of buildings, streets, natural areas, and spaces. However, what makes them live are people, enjoyable activities, and continuous daily flux. The contiguous growth of buildings left little meaningful places for the public. With the emergence of vehicles, almost all of these spaces were occupied by cars that pass or park, leaving but little for the everyday life of the pedestrians. In most cities, urban open squares become the most prominent expression of the society and culture.

For decades, urban spaces reflected the democracy of governance and the participation of society in the conduct of life (Lynch, 1981; Mossop, 2001; Das, 2008; Rakhshandehroo et al, 2015). People could mingle with each other and engage with the environment in these places (Halprin, 1981). These spaces often adjoined the main worship place; the surrounding schools; and the different markets where the activities indicated for the urban center. Building facades, their functions, and their main entrances defined the level of enclosure of a public open space (Soreiregen, 1965; Halprin, 1981).

Many researchers emphasized the need for open spaces in urban development projects (Whyte, 2003; Williams, 2008). They contended that open areas should be available in a manner that suited the population, served their different activities, provided them with healthy spaces, improved the quality of life, and maintained a social life which in turn had positive effects on urban economic activities. Marzukhi, et. al (2012) postulated that urban development must provide 10% of open spaces in a given neighborhood so as to provide recreational facilities to the population to ensure that people could obtain their needed comfort.

Conditions for a successful urban square

In terms of enclosure, urban squares vary from closed introverted spaces to semi-enclosed spaces to completely open spaces (Ashihar, 1981). Activity in the space includes rest activities (sitting), social interactions (talking and discussing things), and active existence (play and sports). Therefore, the space must be equipped with the possibilities that encourage comfort, supply it with the needed furniture, and add to it some attractive elements (Ashihar, 1981: Gehl, 1987) to become a vital mix of activities by different people and their culture (Balsas, 2007). Modernizations, improvisation, and streetscape changes encourages retail and urban completion (Balsas, 2007).

The shape of the space has an effect on its containment. The space based on its form can be divided into regular and irregular (Bentley et al, 1985). A regular shape such as square, circle or polygon gives a sense of stability while the rectangular shape gives a sense of movement in a particular direction. Irregular space

shapes are less attractive as a square but may be suited for multiple types of entertainment. The quality and the intensity of enclosure are determined by the relationship between the determinants of the spaces with each other (McCluskey, 1992). Outdoor spaces are bound by the surrounding structures that physically shape the space and the imaginary sky that covers the space.

Urban squares play an important role in raising the quality of urban life. They are considered physical spaces and a breather for the city residents (Whyte, 2003; Wiliams, 2007; Zakariya, et. al, 2014). According to Balsas (2007), successful squares provided city residents with renewed and varied experiences and activities that were suitable for them. Squares had positive influence on the quality of healthy social life; thus, positively affecting economic activities. Squares should be paved and surrounded by streets and buildings (Marcus et al, 1998). They must have an esthetic function, give the necessary shelter from sun, rain and wind, and should be furnished with different types of benches (Nordh et. al, 2010).

Rašković and Decker (2015) studied the impact of trees on public squares desirability. They conducted in-park surveys and online surveys to determine the impact of the presence or absence of trees on parks in Turkey. The results showed that trees have a positive effect on attracting people to the square. They improved the image of the place, enhanced attraction, and reduced noise.

Zakariya et. al (2014) analyzed the impact of time on square design and evaluation to suite the changes of city life in Melbourne Australia. The methodology focused on literature review, online articles and analysis using spatial diagrams. They studied a public square located at the city center surrounded by a hotel, a cathedral, a theater and a municipality building. The urban renewal of the place included adding a video screen, restaurants, outdoor cafes, corridors and waterfalls on the walls. These elements prevented visual contact between the square and the street. Missing on allocating green areas for rest reduced the attraction of tourists. The city council made efforts to mend the limited accessibility by redistributing spaces, reestablishing street/square connections, reducing visual obstruction, and rearranging trees to reconnect to pedestrian corridor. The results showed that square design must meet the social, physical, and environmental needs to serve future demands.

Harun et. al (2014) addressed the urban squares and their role in shaping a socially sustainable and vibrant city in Malaysia. This study confirmed that preservation of such squares in the city was vital and squares could enhance interaction among the inhabitants of the city and achieve social justice. Squares were a sign of urban awareness, a breather, and suited for walking and relaxation. The questionnaire investigated population characteristics—social, economic, age and sex—to determine if they contain a prominent role in social sustainability. It questioned the purpose of the visit, types of activities, the meaning of the square for them, and the available services. Food stalls operating day and night and the presence of green corridors in the square made it successful. Visit purposes included entertainment, eating, meeting friends, business and attending cultural events.

Safari and Moridani (2017) proposed a new square in Kuala Lumpur. *Space syntax* simulated accessibility, connectivity, integration and intelligibility of the area. The study considered r=10 km for the analysis of the road network. The results of the analysis showing highest values for segment connectivity determined places most suited for locating the new square.

Study Area Analysis

Irbid Governorate is located in the North of the Hashemite Kingdom of Jordan (1,770,158 populations, 1,572 km$^2$) and it is approximately 80 km from Amman the capital city of Jordan (DOS, 2015). Irbid Qasabah (city) has a population of more than 739,212 (DOS, 2015).

The history of Irbid city goes back to 5000 BC where it has played a major role in shaping the development and cultural growth of ancient civilizations. Irbid Tal (Hill) is formed during the Bronze, Iron, Roman, Byzantine and Islamic Ages, which included a continuous history of 6000-7000 years. Irbid is one of the Decapolis (Arabella) which is located along the trade routes. Irbid city as a morphology grew from its Tal (Figure 1, 2). The city center attracted business activities to serve inhabitants, neighboring towns, and more than 300 villages in the governorate.



**Figure 1. View of the Tal facing South. a: Tal topography and building outlines, b: Tal photograph in 2007 (GIM archives).**
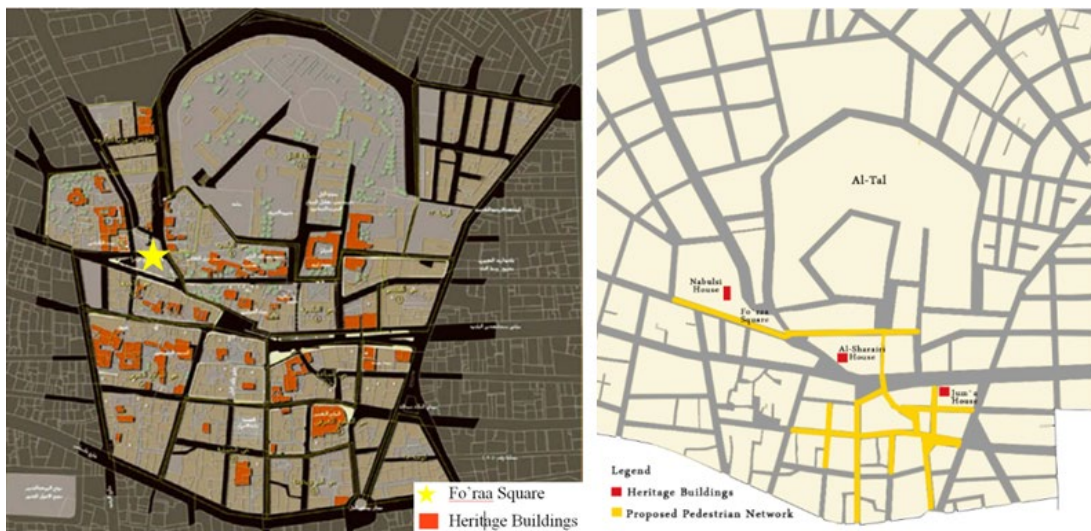


**Figure 2: Left; Heritage buildings in Irbid downtown (Al-Kheder et. al, 2009). Right; tourist track as planned by MOTA and GIM in 2007, image reproduced by the authors.**

The city grew with the more immigrants from Palestine, Lebanon, Iraq, Egypt, and Syria. Time laps of urban growth are documented by Irbid Municipality to show how the radial city grew over the years (Figure 3). The radial plan of the city encouraged the growth outwards especially when the topography permitted. Therefore, it grew towards the south as triggered by the establishment of Yarmouk University in 1976 and towards the East in order to provide further quality housing for the growing population. It was considered less attractive to settle behind the Tal towards the North and the West (Figure 4).

The radial plan attracted traffic to its center yet also helped to extract business from the center in the same level of easiness. The heavy in-traffic was coming from the South and East towards which the business plan spread. Most pedestrians visiting the city center came from 5 main bus stations in the city. The circulation was directed from these stations well into the center (Figure 5).
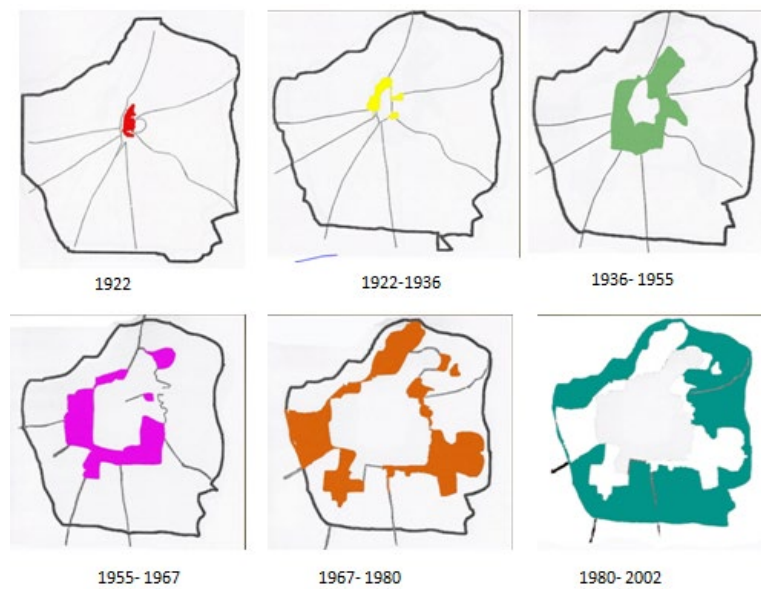


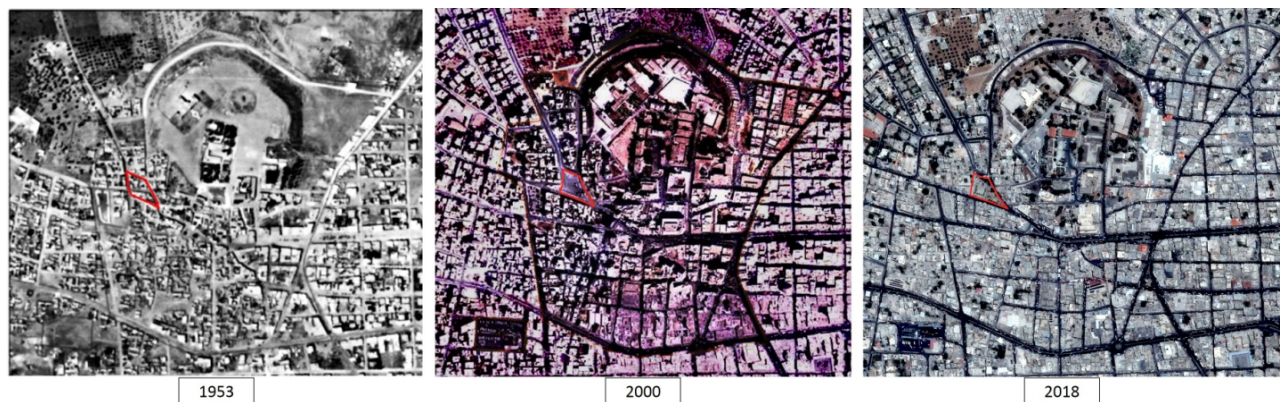**Figure 3: Urban growth of Irbid (GIM archives).**



**Figure 4: Urban growth of Irbid downtown, 1953, 2000, 2018 (GIM archieves).**
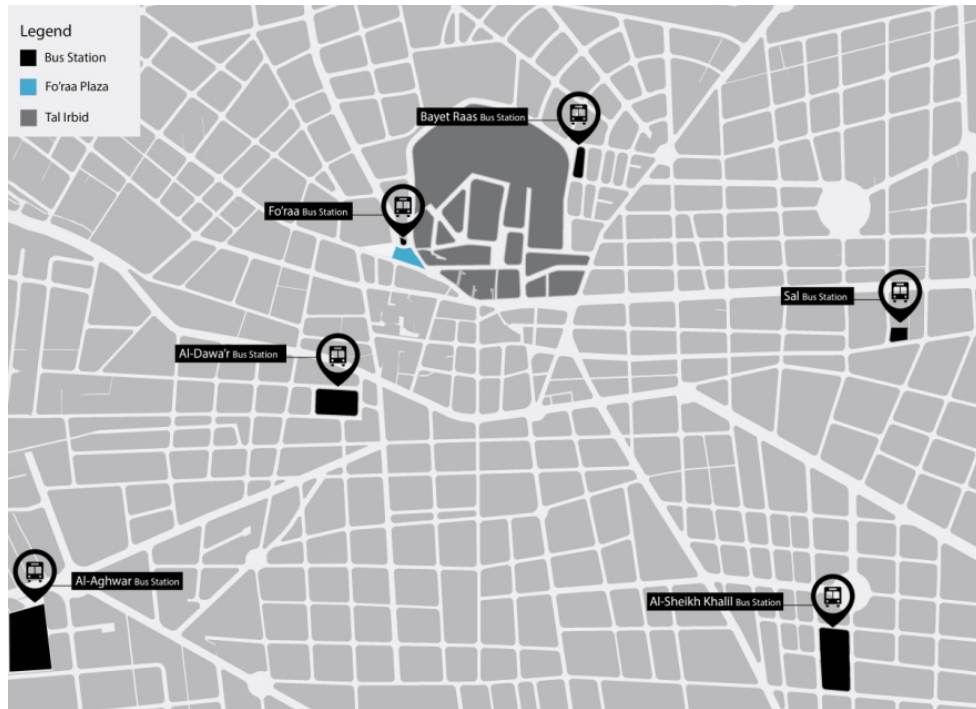
**Figure 5: Location of local bus station. Modified from Google Maps.**

The municipality maintained and renovated the Nabulsi House because of its cultural heritage (1920s). It remained in use until 1965, after which it became a school for girls for a period until it was recently expropriated by the GIM. Therefore, GIM removed the bus station at the house front and transformed it into a city square in 2008 (Figure 6). It was foreseen as a vital destination for visitors; a point along the pedestrian network; and an activator for the traditional markets.

## Goals and Objectives

The purpose of this study is to explore the efficiency in using public urban square and its ability to attract business growth from the city downtown area. It investigates the various types of uses; types of users; occupancy rates at the different times; and the impact of the square on its surroundings.



**Figure 6: Bus station in front of Al-Nabulsi house (2007) turned to Fo'raa plaza (2008).**

**Methods**

The methodology is predicated on: spatial analysis, questionnaires, interviews, and space syntax. In order to have a comprehensive analysis, this study outlined a methodology that is mainly based on two types of analysis; social and spatial. The social relies on documenting data by observation and questionnaire technique. In addition, the interviews are fundamental in understanding the character of the square and its meaning. The spatial relies on both the observations and the Space Syntax analysis. Firstly, the questionnaire will supply facts concerning demography and attitudes; then, the observation technique will provide data regarding the static and dynamic use patterns in the square; thirdly, the space syntax shall give an analysis for the existing situation of the street network connectivity. Other issues regarding attitudes are instigated from interviews. Participants were chosen randomly at the square. The questionnaire was made to understand how urban space should be organized to meet the needs of its users. In particular, the aim was to investigate first, who are the users (user characteristics) and how they use it; second, how they perceive squares and what they find attractive. In particular, we wanted to understand how users imagine a square by what it means to them and where the perception of users point out the usability of public spaces.

Researchers monitored square visitors to observe the types of use at different times, user types, time dependent activities, and frequency of use. They interviewed 15 visitors, stakeholders and decision makers to analyze the types of intentional uses. The questionnaire queried about the types of activities, participatory profiles, social activities, meaning of place and purpose of the visit.

The questionnaire aims to study and understand the impact of the urban space on its users and activities; user's profile; social activities; and the meaning of the square for its users. The questionnaire consists of Close-ended questions with multiple answers. They were collected from the seven different days of the week. Surveys included 120 subjects from 10:00 am—3:00 pm and from 7:00 pm—9:00 pm to ensure the accuracy of the samples. In addition, space syntax analyzed integration of the square with the rest of the downtown area. The researchers evaluated the level of achievement it is providing given the GIM and MOTO tourism plans.

**Results**

Results

User profile
The socio-demographic characteristics of the sample reveal that users are 81% Jordanian followed by Syrians at 12%; and Egyptians and Iraqis together at 7%. Users are mainly 20-40 year old (69%) followed by <20 years (15%), and older population >41 (16%). 73% of the visitors are males.

In terms of use and behavior, 39% are visitors while 61% are local residents. They mostly come in a group (71%) rather than alone. The majority access the square on foot (61%). The frequency of use is quite varied; 40% daily bases to go to school; 25% once week (Friday after prayer); while 19% twice on the weekend.

Based on the questionnaire, most users are school students who pass by the square in the morning and at the afternoon (49%). After 2:00 pm, the users are mainly families with their children, friends, and elderly (21%). In the evening, young males who dwell at close proximity to the square visit it (26%). None of the users were shoppers unless just passing through to go home (Figure 7).

**Figure 7: View of shoppers taking a shortcut through Fo'raa Square.**

Social activities

Based on the questionnaire, most of visitors come for sitting and relaxing (44%) at all times of the day; meeting friends (18%); waiting for their buses to take home (16%); playing children (6%); exercising (13%); touring (3%)(Figure 8).


**Figure 8: Kids playing at Fo'raa Square.**

Meaning of the square for its users

From the daily observations, most people use the square to make a short cut in their walk. From the surveys, 58% of the users say they cross through it because they like the square. However 42% of them say they cross through it because they must. 64% of the users express that they like to use the square. Some consider it attractive (46%) or comfortable (38%), while others consider it not attractive (54%) or not comfortable (64%). When asked what the square meant to them, they defended the place as a kid-zone for playing; a relaxing place; a meeting with friends place; and they thought it would be attractive for tourists.

Problems in the square

There are no shaded and sitting places (33%); lack of safety (18%); lack of plants (12%); lack of cleanliness (15%); lack of lighting (10%); and complexity of movement as caused by cars surrounding the square (14%). Based on the questionnaire the safety arises as a main problem suggesting a police point; increased control; and better lighting at night. Kids require fences, a designated kid's zone, and better landscape.

**Figure 9: Trees and green areas at Fo'raa Square.**

Trees used in square

*Jacaranda memosifolia* (4 m height - spread 3m) is still young and provide minimal shades. Washingtonias (height 7m - spread 0.8m) act as pillars rather than canopies. *Melia azedarach* (height 5m-spread 4m) is one of the best for providing shade in the summer. *Sophora* sp. as an evergreen tree (height 4m- spread 3m) provides little shade as well. In the summer, the tree canopies provided 424 $m^2$ out of the 3000 $m^2$ of the square area (14.1%). The tree selection and its shade location is unorganized causing a lack of shade and proper landscaping (Figure 9).

Space syntax

Space syntax was selected to simulate and examine the street network integration. Local integration (r=500) described the average depth of a space to all other spaces in the city center. It was an indicator for the easiness of reaching each segment from all other segments (number of turning times to reach the destination). The most integrated streets were the main streets along one of which (Al-Hashemi street) laid the square (Figure 10 a & b). Based on our observations, vehicular traffic at the main street can reach up to 1150 cars per hour at peak times slowing traffic at the bottle neck by the square's eastern corner.

Accessibility

Fo'raa square is located at an awkward triangular place surrounded by three streets. They have high to medium accessibility; however, the square has lowered degree of containment since it is defined by one side only, open on corners and on three sides reducing the sense of enclosure, protection and safety (Spreiregn, 1965; Cluskey, 1978) (Figure 10d).

Land use

The city core consisted of the Tal which acts as an edge for the center rather than a center in itself. Changes on the surrounding land uses were minimal. The interviews with locals showed that only three shops opened in the direction of the square. One home supplies shop, one cell-phone shop, and one kiosk serving coffees and soft drinks. Two commercial buildings were created towards the West, however they did not have connotations with the square for two reasons; they were not fully occupied yet, and accessibly for on-foot shoppers was usually done from the Southern street due to the inclining streets towards the square (Figure 11).
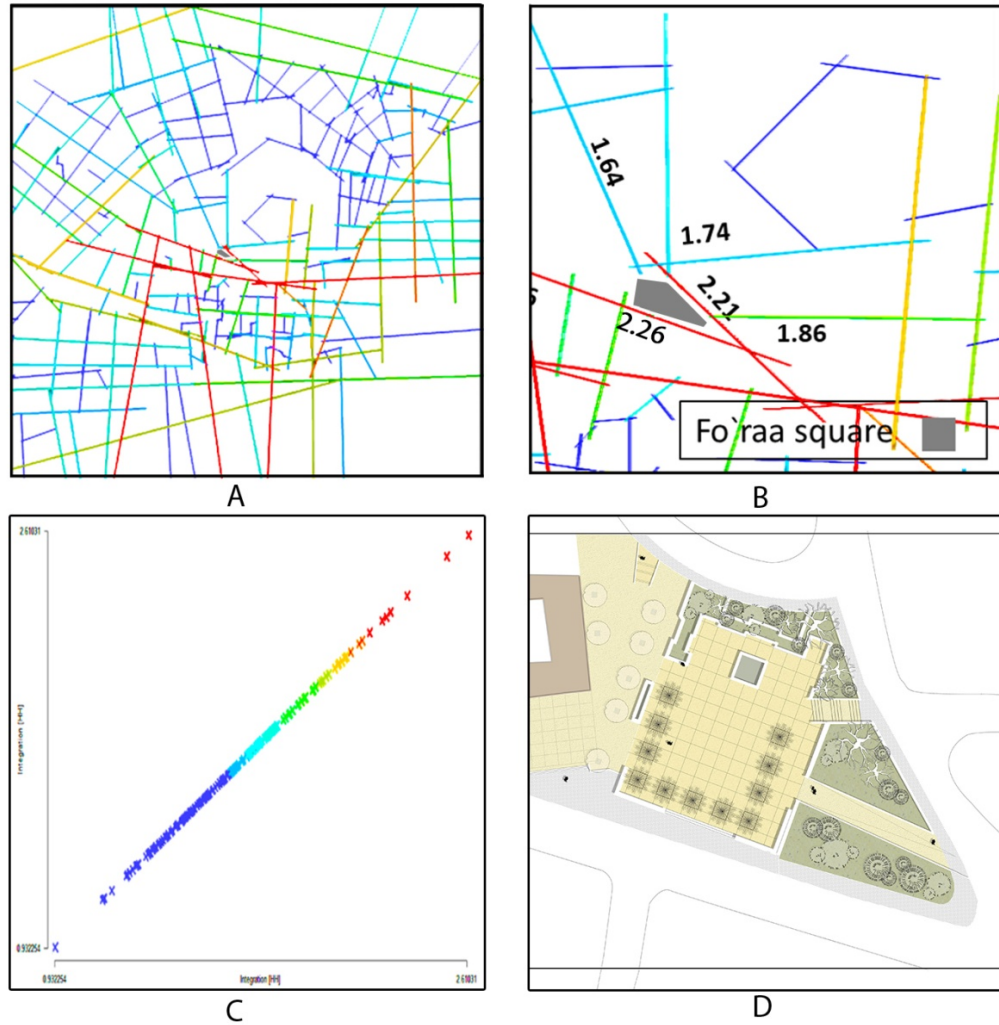
**Figure 10: a. axial local integration map of Irbid downtown, b. axial integration map of Fo'raa Square, c. axial integration values (Min=0.93; Average=1.63; Max= 2.61). d. Fo`raa square design.**
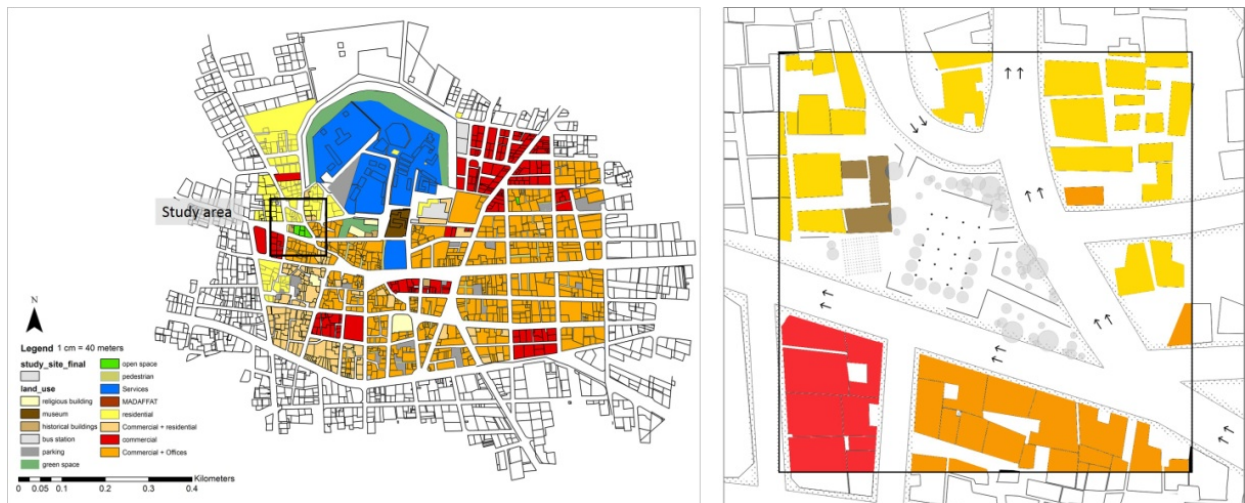


**Figure 11: land use for Irbid historic core in 2018 (Irbid Municipality archives).**

## Discussion and Conclusion

Based on the survey and the interviews, Fo'raa Square acts as a local park for the residents rather than a public square for the downtown. It serves the purposes of the local residents living at the edge of the downtown and provides a positive space in the daytime. It is also very active as a shortcut where shoppers go across to reach the other side to take a bus back home. Although the design is not suited for shade, children play, and elderly stay, it is the only opportunity to be outside in that neighborhood and they are attached to it as a breather. At night, the place is quite unsafe and insecure.

In ten-year time, the square attracts but little uses surrounding its periphery. The uses are not powerful enough to attract other businesses to the place. It remains unknown for the majority of shoppers unless they live in that direction. This failure is caused by the square's edge-type location that marginalizes its role. The square's irregular shape with exposed corners and sides creates an instable, insecure, and unsafe space (Figure 10). It lacks a sense of enclosure especially that the tree cover is minimal with limited canopies.

Respondents' views on the meaning of the urban square are interrelated. 38% of the visitors perceive the space as a comfortable one. However, declare that many services are missing such as: safety fence, kids playing area, lighting and plants.

Space syntax uncovered the most integrated streets at one side of the square (Al-Hashemi Street) (Figure 10). Despite this high integration value, the actual integration is minimal with the city center. The high integration is achieved in traffic movement where many vehicles must take this road to reach a western destination. However, shoppers have no motives to reach the square. In this case, the motives are limited to reaching their home, home store, a phone shop, and coffee kiosk.

The square did not play the role it is intended to do. It did not attract the public shopping downtown or the businesses and it is still unknown to the majority of people shopping near the place. The square did not serve as a valuable tourist destination. Creating an open square must be supported by the space design, surrounding land uses, and pedestrian patterns of movement. Studying the aspects of social and physical environments is a must. Missing one of the design layers, such as accessibility, dynamic and static patterns, green areas percentage and target categories could fail to support the square's activities. Further works are demanded to study the actual downtown space and morphology in order to propose a more suitable urban square location for the downtown.

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