



# Investigation of Basic Components Constituting Neighbourhoods: The Case of Safranbolu – Yenimahalle

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## Abstract

*To create a well-designed city, all the components of the city should be brought together properly and each of them should have the means and facilities to meet all the needs of the citizens. In order to achieve this, it is essential to thoroughly examine, adopt, and adapt existing design criteria from various locations around the world for each aspect of the urban landscape. Additionally, introducing new site-specific criteria when necessary and striving to incorporate them into urban planning are crucial steps in this process. In accordance with this approach, the study is centered around the neighborhood scale which is the smallest unit of a settlement. All the components that should be present in a neighborhood were determined and a literature review was conducted regarding the design criteria of each. It was aimed to test the extent to which these criteria are complied with in a sample settlement. Yenimahalle Neighborhood, located in the Safranbolu district of Türkiye's Karabük province, was chosen as an example. After conducting a thorough analysis of land uses, a comparison has been drawn between the development plan and the present situation. Based on the design criteria, this assessment has identified areas of both adequacy and inadequacy.*

**Keywords:** *urban design, components of neighbourhood unit, sufficiency, accessibility, Safranbolu*

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# Mahalleleri Oluşturan Temel Bileşenlerin İncelenmesi: Safranbolu – Yenimahalle Örneği

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## Öz

İyi tasarlanmış bir kent için, kentin tüm bileşenlerinin doğru bir şekilde bir araya getirilmesi ve her birinin kent sakinlerinin tüm ihtiyaçlarını karşılayacak araç ve olanaklara sahip olması gerekir. Bunu başarmak için, kentsel peyzajın her bir elemanına yönelik dünyanın çeşitli yerlerindeki mevcut tasarım kriterlerini kapsamlı bir şekilde incelemek, benimsemek ve uyarlamak önemlidir. Ayrıca gerektiğinde mekâna özgü yeni kriterlerin uygulamaya konması ve bunların şehir planlamasına dahil edilmeye çalışılması da bu süreçte önemli adımlardır. Bu yaklaşım doğrultusunda çalışma, bir yerleşim biriminin en küçük birimi olan mahalle ölçeğindeki durumunu incelemiştir. Bir mahallede bulunması gereken tüm bileşenler belirlenmiş ve her birinin tasarım kriterlerine ilişkin literatür taraması yapılmıştır. Örnek bir yerleşim yerinde bu kriterlerin ne ölçüde karşılandığının test edilmesi amaçlanmıştır. Bu çerçevede örnek olarak Türkiye'nin Karabük ilinin Safranbolu ilçesinde bulunan Yenimahalle Mahallesi seçilmiştir. Arazi kullanımları ayrıntılı bir şekilde analiz edildikten sonra imar planı ile mevcut durum arasında bir karşılaştırma yapılmıştır. Tasarım kriterlerine dayanarak, bu değerlendirmede yeterlilik hem de yetersizlik alanları tespit edilmiştir.

**Anahtar Kelimeler:** kentsel tasarım, mahalle biriminin bileşenleri, yeterlilik, erişilebilirlik Safranbolu

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## **Introduction**

According to Le Corbusier (1923), a house is like a machine. Based on this analogy, it can be said that cities are the machines we live in (Fend & Sans, 1994, p. 24). Just as every part of a machine must be in place and functioning for the machine to work effectively, a city must have the means and facilities to meet the needs of its inhabitants, and they must be brought together properly. In this case, every part of the machine, no matter how big or small, is important. Therefore, every single design component that makes up cities, from buildings to roads, from green spaces to parking lots, is also important, regardless of scale, and none of them should be overlooked.

For a well-designed city, it is essential that all components are brought together orderly. Planning approaches within the framework of an order in cities emerged after the Industrial Revolution (Ersoy, 2005, p. 138). According to Blumenfeld (1967), previously, settlements were in the form of fortresses surrounded by walls to provide security, but with the industrialization in the West, this situation has left its place to urbanization (Es & Ateş, 2010, p. 206). In this period, the most important factors determining urbanization were raw materials, transportation, and factories. Railways were brought to the factory, which was the core of the new city formation, to be used for raw material transportation and trade. Therefore, the development of an unfavorable settlement in the city center was inevitable.

In addition, the industrialization process, which started in cities, led to large population movements from rural to urban areas. While only 3% of the world's population in the 1800s lived in urban areas with a population of 5000 or more, this rate increased to 13% by 1900 and over 40% by 1980 (Es & Ateş, 2010, p. 207). However, due to the lack of preparedness for the problems brought by the increasing population, such as housing, transportation, infrastructure, and environmental issues, irregular urban areas have begun to form around the factories. According to Göçer (1975), these industrial cities, which lived in miserable and unhealthy conditions, are associated with the concepts of 'dirt and ugliness' (Es & Ateş, 2010, p. 207).

Despite attempts to intervene in this situation through individual initiatives, the concept of 'urban planning,' to be definitively implemented by the state on an urban scale, entered the world agenda towards the end of the 19th century (Ersoy, 2005, p. 206; Yetiş, Turcan & Dinçer, 2018, p. 505). In many capitals of Europe, wide avenues began to be opened with the aim of improving hygiene conditions and providing access to areas affected by epidemic diseases. New residential areas have begun to form away from the

factories or outside the city. In addition, according to Özücü (1972), the concept of 'social state' has begun to develop in order to increase the living standard of the people in industrial cities whose social fabric has deteriorated after the problems that have arisen due to population growth (Es & Ateş, 2010, p. 207). The industrialization that took place in the West and the subsequent urbanization process also affected other countries. The transition to regular planning in Anatolian cities was made after the proclamation of the Republic and the development plans of the cities began to be drawn (Yetiş, Turcan & Dinçer, 2018, p. 514).

Currently, the need for urban areas is increasing due to the rapid increase in population. There are guiding legislation and supporting guides for practitioners, local governments, city planners, architects, landscape architects, and urban designers on the design of buildings and open spaces. However, due to limited available land, escalating population density, and soaring land values, the focus is predominantly on prioritizing the construction of additional residential blocks at the neighborhood level. Based on the 'machine-city' analogy mentioned before, sufficient care is not taken in the studies on urban open spaces, which are another part of this machine. A common example of this is the uniform, non-standard, non-functional parks in the neighbourhoods.

However, in well-planned cities, one of the important components is open spaces. Although a large part of a neighbourhood consists of residential areas, these areas are supported by open spaces as well as other built-up land uses such as institutional and commercial facilities. In this study, it was aimed to evaluate the basic components constituting a neighbourhood, which is the smallest unit of a settlement, through a case. Yenimahalle, located in the city center of the Safranbolu was chosen as the case. With its four faculties and two vocational schools, it is a student-focused and commercially intensive area. The adequacy and inadequacy of its components for both local people and students are examined according to the design criteria determined in the light of the information in the literature to be explained in the next section.

### **Neighbourhood design principles and basic components**

Neighbourhood-scale planning for the development of residential areas is based on the walking distance principle. According to Brody (1912) and Alexander (2009), there are models developed by the United States and the United Kingdom in the early twentieth century, based on this principle, and

have had a great impact on neighbourhood planning around the world (Lee & Park, 2018, p. 1). According to Barton (2000) and Hongyu (2013), pedestrian-friendly areas were created considering the daily physical activities of children and housewives in the neighbourhood at that time, and security was tried to be provided against automobile traffic (Lee & Park, 2018, p. 2).

As in the whole world, planned urban approaches have started to appear in Türkiye as well since the Industrial Revolution. Today, for the planning and implementation of urban design, the 'Preparation of Design Guides Project' was launched in cooperation with the Ministry of Environment, Urbanization and Climate Change of the Republic of Türkiye and Mimar Sinan Fine Arts University between 2016-2021. Within the scope of this project, exemplary urban design models from the world were examined, a model specific to Türkiye was tried to be defined, and an urban design guide for a pilot settlement (Meram district of Konya) was created to ensure the dissemination of this model. The publications created as a result of the project have demonstrated flexible and dynamic urban design principles (RTMEU, 2016, p. 147). Within the scope of this study, the principles and standards in the published urban design guides were examined at the neighbourhood scale.

According to the Regulation on Spatial Planning and Construction (2014) in Türkiye, within the neighbourhood center, there are uses such as administrative, social, cultural, commercial, educational, health, and sports facilities, places of worship, open and green areas, and general and regional parking lots. These areas are named 'social infrastructure areas' in the relevant regulation and enable to increase the quality of life by meeting the social, cultural, and recreational needs of the users. They are addressed as components of the neighbourhood in this research and examined in detail in the following.

### **Urban open spaces**

Open spaces, which are one of the important components of a well-planned city, are expressed as lands without buildings or structures (Nochian et al., 2015, p. 30; Badar & Bahadure, 2020, p. 1). In Meram Urban Design Guide (RTMEUCC, 2021), urban open spaces are classified as green spaces, streets, transportation and circulation, and waterfront. Green areas, streets, and car parks from transportation-circulation systems are examined within the scope of this study as they exist in the chosen study area (Yenimahalle).

### ***Green spaces***

According to Tüzin et al (2002), green spaces can be defined as open spaces

reserved for public or private use in urban areas and covered with vegetation (Atiquel Haq, 2011, p. 601). According to Loures et al (2007), in order to improve the quality of life of people in industrial cities that were rapidly formed in the era of the Industrial Revolution, the 'urban park movement' emerged (Atiquel Haq, 2011, p. 604). Thanks to this movement, very large green spaces have been created in developed cities. Notable examples of this are Central Park in New York City, City Park in Porto, and Amsterdamse Bos Park in Amsterdam.

Over time, some rules were needed about what should be considered when planning green spaces. In this way, consistency was tried to be achieved in the cities. The approach of setting standards was born for this purpose. As stated by Theobald (1984), its beginning was England towards the end of the 1800s (Maryanti et al., 2016, p. 370). Since the 1920s, it has been one of the methods frequently used to create livable cities around the world. Wilkinson (1985) suggests that the standards approach serves as a flexible guide for planners and provides viable solutions to ensure green space adequacy (Maryanti et al., 2016, p. 371). It contains rules for users to access these areas and meet their social needs.

Veal (2013) mentioned that there are five types of standards used in the expression of open space targets of cities around the world. These are the standards based on population-ratio, area percentage, catchment area, facility specifications, and local conditions (Maryanti et al., 2016, p. 371). The definitions of these expressions are given in Table 1. According to Theobald (1984), among these, standards based on population ratio are the most preferred standards in green space planning by countries (Maryanti et al., 2016, p. 371). It can be calculated as per 1000 population or per person according to national planning criteria. For instance, in Table 2, city-based green space standards are expressed by both methods.

**Table 1.** The types of standards regarding open space targets (Veal, 2013, as cited in Maryanti et al., 2016)

<b>Types</b>	<b>Description</b>
1. Population-ratio/fixed standards	A prescribed level of provision of open space related to the level of population – typically per 1000 population.
2. Area percentage standards	A specified percentage of land to be allocated for open space (e.g. 10% from the total development area is allocated for open space).
3. Catchment area-based standards	Distances which residents should have to travel to gain access (e.g. ¼ mile walking distance from users' neighbourhood).
4. Facility standards	Specifications (size, markings and equipment for a sports field).
5. Local standards	Standards of provision specific to a local area based on local conditions and data, locally determined or expressed in any of the above formats.

Urban green spaces should be planned within the framework of certain standards in terms of quantity, quality, and accessibility as follows:

#### *Green areas in terms of quantity*

It covers the number and size of green areas in cities depending on the number of users. The amount of green space that cities want to achieve is based on the guidance of the World Health Organization (WHO). According to WHO (2010), a minimum of 9m<sup>2</sup> is accessible, functional, and safe for each person in cities, and ideally, 50m<sup>2</sup> of urban green space should be offered (Maryanti et al., 2016, p. 370). Based on the planning guidelines and city guides put forward in line with these recommendations, it is tried to reach the targets set. The green space standards determined by some cities in this framework are given in Table 3. According to the Regulation on Spatial Planning and Construction (2014), the urban green space standard in Türkiye is 10m<sup>2</sup> per person (Özdede et al., 2021, p. 365). The minimum standards for how much green space is needed at different scales are shown in Table 3. Unlike Table 2, instead of establishing standards based on population ratio or person, standards were created on the basis of nearby areas. Accordingly, at least 1 hectare of green space should be in a circle with a radius of 400m in a neighbourhood.

**Table 2.** The standards of urban green space in several cities (Khan, 2012, as cited in Maryanti et al., 2016)

Cities	Size	Population	m <sup>2</sup> /person
1. Greater London	4 hectares	1000 residents	40
2. Edinburgh	2.9 hectares	1000 residents	29
3. Cambridge	4.6 hectares	1000 residents	46
4. Washington	3.8 hectares	1000 residents	38
5. Minneapolis	2 hectares	1000 residents	20
6. Los Angeles	4.85 hectares	1000 residents	48.5
7. Kansas City	3.64 hectares	1000 residents	36.4
8. Bristol	1.0 hectares	1000 residents	10
9. India	0.8 hectares	1000 residents	8
10. Pakistan	0.52 hectares	1000 residents	5.2

**Table 3.** Catchment area-based urban green space standards. The neighbourhood scale is enclosed in a rectangle by the authors (Herzele & Wiedemann, 2003, as cited in Atiquel Haq, 2011)

Functional level	Maximum distance from home (m)	Minimum surface (ha)
Residential green	150	
Neighbourhood green	400	1
Quarter green	800	10 (park: 5 ha)
District green	1600	30 (park: 10 ha)
City green	3200	60
Urban forest	5000	>200 (smaller towns) >300 (big cities)

### *Green areas in terms of quality*

It covers the characteristics that determine how the green areas in cities are used, by whom, and for what purpose. It is evaluated in terms of the benefits it offers to users and the environment. These benefits, in Atiquel Haq's (2011) study, include environmental benefits (e.g., ecological benefits, and pollution and noise control), economic and aesthetic benefits (e.g., energy recovery and increasing the economic value of the area), and social, cultural and psychological benefits (e.g., relaxation, stress relief, interaction, contribution to the active living and the development of children). In order to increase human participation, these areas should possess interesting and satisfying qualities. Instead of uniform green space solutions, it is essential to create diversity in the design. To achieve this, it is important to consider the views and needs of all stakeholders who will benefit from these areas during the planning and design phase. From the point of view of social, cultural, and psychological needs, parks should be able to offer opportunities for users from all walks of society

to come together for different activities. Thus, it increases the livability of the city and improves the quality of life of city residents.

#### *Green areas in terms of accessibility*

In order to benefit from the green area potential as much as possible, green areas should be planned at an optimum level in terms of quantity and quality, as well as being easily accessible to all users (Atiquil Haq, 2011, p. 606). A green area is mostly used by people living around it. Therefore, they should be positioned equally and regularly throughout the city to increase human participation. Planning can be done based on the walking distance or walking time from the living areas to the green areas. According to Etzioni (1998), the green area at the neighbourhood scale should be located right in the center and access to this area from residential, public, or commercial buildings should not exceed 5 minutes. According to the British standards stated in the study of Moughtin and Shirley (2005), green areas should be located at a maximum distance of 300m from the residences (Atiquil Haq, 2011, p. 604).

In the European Commission Urban Audit Report (2000), it was stated that urban green spaces should be located within a 15-minute walking distance (Özdede et al., 2021, p. 369). According to Manlun (2003), Altunkasa (2004), Aydemir (2004), and Önder and Polat (2012), children's playgrounds should be reachable on foot in 10 minutes (400m), district-neighbourhood parks in 20 minutes (800m) and city parks in 30 minutes (1200m) (Özdede et al., 2021, p. 369).

According to Meram Urban Design Guide (2021, p. 124), parks should be located at a point where users can easily reach them and should be directly connected to the street network. Pedestrian roads in neighbourhood parks are a continuation of the street network, so access should be provided from all streets where the parks face. Ideally, playgrounds and pocket parks should be located within a 5-minute walk (400-500m) from the living area. Neighbourhood parks should be located at a walking distance of approximately 10 minutes (800-1000m) (RTMEUCC, 2021, p. 135).

#### **Streets**

The streets, which connect all the functions of the city and bring the city and the citizens together, are the backbone of public open spaces. In addition to providing movement, transportation, and access in settlements, it allows people to experience their settlements, socialize, and realize a common life. It reflects the identity and character of the city.

Although it is seen as an aim to provide fast-uninterrupted vehicle traffic in the design of the streets, the main thing should be to consider the pedestrians to take more place in these public spaces by planning walkable, accessible, perceptible, egalitarian, and safe streets. As stated in the Urban Design Guide (2021, p. 20), cities are for people and vehicles are only the means. In this direction, while designing the streets, urban vehicle traffic should be slowed down, and pedestrians should be prioritized. This can be achieved by increasing the diversity of pedestrian spaces (for instance, pedestrianized streets, shared streets, pedestrian paths in parks, and sidewalks). In addition, an integrated, balanced, and gradual transportation system should be established.

### ***Car parks***

Car parks are a part of the urban transportation system. Due to the increasing population with urbanization, vehicle density is also increasing, and accordingly, the need for parking spaces is increasing day by day. In order to meet the increasing demand, proper car park planning is important in urban planning.

The design criteria set in the Meram Urban Design Guide (2021, p. 60) are as follows: Car parks should be positioned ideally between/behind the buildings and should be accessible so that they do not obstruct the main entrance doors and pedestrian/vehicle crossing areas of the buildings. They should not be built near road turns and intersections. In the planning, instead of allocating large parking areas, small and numerous areas should be allocated. Ideally, arrangements should be made that can be used 24 hours a day, and that can be used at certain hours in some environments for dynamic needs. In mixed car parks, arrangements should be made to serve temporary users such as visitors and deliverers during the day and to serve the residents of the neighbourhood at night. In settlements where pedestrian use is intense, common parking areas should be reserved for use by more than one building. In public car park planning, more than one access point should be provided in order to prevent crowding at the entrances and exits. There should be a sufficient number of parking spaces for the disabled and their mobility should be taken into account when designing.

### **Residential areas**

A large part of a neighbourhood consists of residential buildings. If there is a commercial zone along the road in these residential areas, non-residential services such as shops, nursery schools, and kindergartens can be located on the ground/basement floors of the residential buildings facing the road. In

addition to this, buildings such as dormitories, training centers, commercial multi-story car parks, and special education facilities can also be located in these regions as independent from the residential buildings. According to the Turkish Regulation on Spatial Planning and Construction (2014), these areas are defined as mixed-use areas, and it is stated that a maximum of 30% of housing can be built in cases where the rate of housing use is not specified.

### **Socio-cultural areas**

Socio-cultural areas allow to increase the quality of the social life and cultural activities of the society. They consist of public or private uses such as exhibition halls, museums, cinemas and theaters, congress halls, libraries, public education centers, kindergartens, nursery schools, training centers, dormitories, orphanages, nursing homes, sports fields, and rehabilitation centers (RTMEU, 2013). According to the Regulation on Spatial Planning and Construction (2014), the sports fields, kindergartens, and nursery schools should be within 500m of walking distance from the living area.

### **Commercial and service areas**

Commercial areas contain places where consumption-related activities are carried out. According to Hongyu (2013), while commercial areas are located on a larger scale such as shopping malls in the center of a neighbourhood, they are on small scales where the needs for daily life can be met in neighbourhood housing clusters (Lee & Park, 2018, p. 9).

According to Parolek et al (2008), mixed-use developments with the combination of residential buildings with commercial and service areas promote the concept of a walkable neighbourhood (Lee & Park, 2018, p. 10). According to the Turkish Regulation on Planned Areas Type Zoning (2013), structures related to commercial and service functions are as follows: business centers, offices, multi-story stores, bazaars, commercial multi-story car parks, shopping centers, accommodation facilities, cultural facilities, entertainment units, administration buildings, banks, financial institutions, and training centers.

### **Educational areas**

Educational areas consist of the use of schools and facilities belonging to public or real/legal persons to serve as preschool, primary, secondary, and higher education (RTMEU, 2013). According to Oh (2008), Seo (2013), and Park et al (2015), Perry's neighbourhood unit model saw primary school as a fundamental element in neighbourhood planning. Based on Howard's

Garden City model, he defined the size of a neighbourhood as based on its capacity to house a primary school (Lee & Park, 2018, p. 10). Primary schools should be within walking distance of 500m, secondary schools 1,000m, and high schools 2,500m from the living area. They all should be located near open spaces so that children and youth can walk safely (RTMEU, 2014).

### **Religious areas**

According to the Regulation on Planned Areas Type Zoning (2013), places of worship are areas where people gather to worship and benefit from religious services. In addition to religious facilities, these areas also include units such as lodging, dormitories, courses, libraries, meal centers, fountains, toilets, ghusl rooms, and open or underground car parks. According to the Regulation on Spatial Planning and Construction (2014), masjids should be within 150m, small mosques within 250m, and middle (neighbourhood) mosques within 400m of walking distance from the living area.

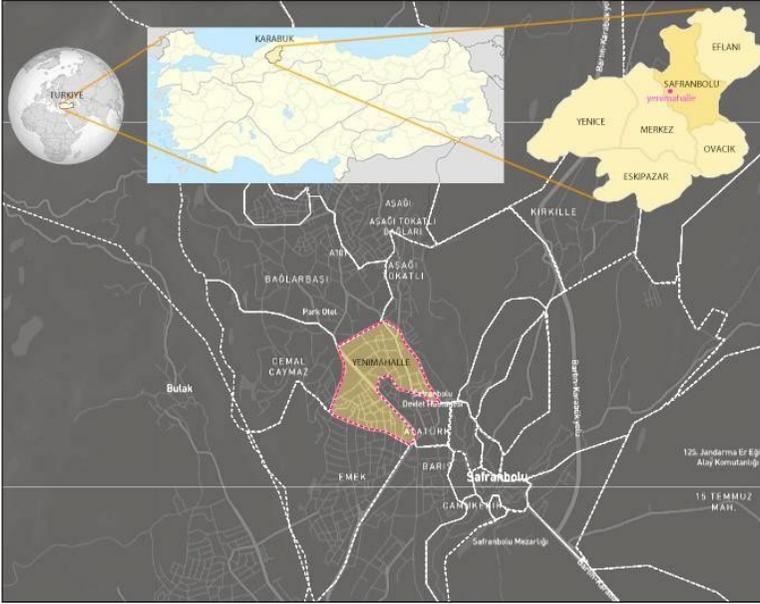
### **Healthcare areas**

These are areas planned for public or real/legal person facilities that serve as community clinics, family health centers, hospitals, maternity hospitals, polyclinics, and dispensaries (Ministry of Environment and Urbanization, 2013). There should be one community clinic in each neighbourhood scale.

## **Material and method**

### **Material**

Yenimahalle, one of the 21 neighbourhoods of the Safranbolu district in Karabuk province, was chosen as the study area of this research (Fig. 1). Safranbolu, located in the Western Black Sea Region, is the second largest district of Karabuk, after the Merkez. The total population of the district is 69,449 according to 2021 data of the Turkish Statistical Institute (TUIK, 2021). The total area of the district is 1013 km<sup>2</sup> (Anonymous, 2017). The historical city of Safranbolu has been inhabited since ancient times. This unique Anatolian city was included in the UNESCO World Heritage List in 1994 (Karabuk Governorate, 2019).



**Figure 1.** Location of Yenimahalle in Türkiye

Yenimahalle is the district center located in the Kirankoy area of Safranbolu and one of the first urban growth areas of the city. It is surrounded by Esentepe and Bağlarbaşı neighbourhoods in the north, Aşağı Tokatlı and İsmetpaşa in the east, Cemalcaymaz and Emek in the west, and Atatürk and Barış neighbourhoods in the south. After the opening of an Iron-Steel Factory in Karabük, which was initially a sub-district of Safranbolu, residences in the typology of apartments started to be built in Safranbolu with the effect of industrialization. In 1956, the main road known as Sadri Artunc Avenue, which connects the three historical regions of Safranbolu and passes through the middle of Yenimahalle, was built (Yetiş, Turcan & Dinçer, 2018). Residences and commercial units lined up on both sides of this avenue formed the current center of Safranbolu.

In the period following the development plan of 1968, cooperative-style apartment buildings were built on both sides of Sadri Artunc Avenue. In the 2000s, a vocational school and a university were established in Yenimahalle, respectively. Therefore, the population structure began to change. In order to meet the increasing number of students, changes have been experienced in the housing typology (Yetiş, Turcan & Dinçer, 2018).

Today, Yenimahalle is Safranbolu's third neighbourhood with the largest population. According to TUIK 2021 data, the total population is 6759. Its total surface area is approximately 62.3 hectares. It has 14 streets, 10 avenues, and

1 boulevard (Anonymous, 2014). It is a student-oriented settlement as it hosts 4 faculties and 2 vocational schools affiliated to Karabuk University. Due to the commercial spaces lined up on both sides of Sadri Artunc Avenue, which runs through the middle of the neighbourhood, the area is also commercially concentrated. The adequacy and inadequacy of the facilities it has for all its residents will be examined within the scope of this study.

### Method

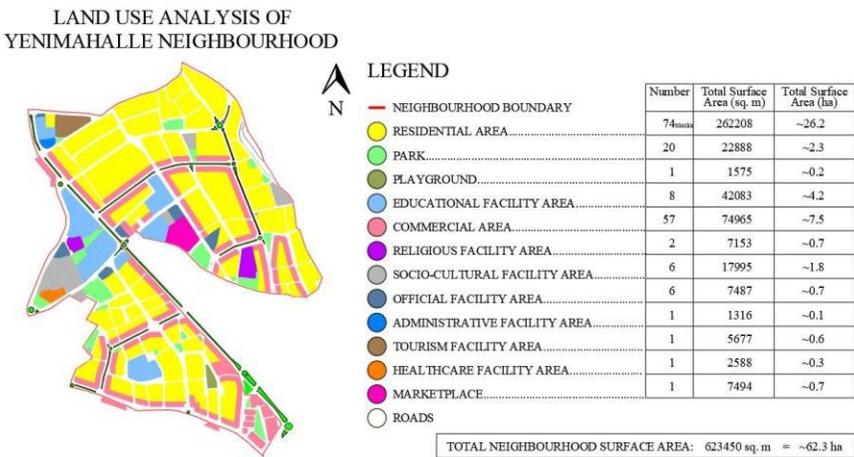
In this study, first of all, the development plan was taken from Safranbolu Municipality in the NetCAD environment, transferred to the AutoCAD environment, and then blocks were numbered and measured on the plan. Afterward, table 4 was created in light of the information in the literature about neighbourhoods' basic components and their design principles. Under the main headings of 'urban open spaces, residential areas, socio-cultural areas, commercial areas, service areas, educational areas, places of worship and healthcare areas' in the table, the characteristics of each block in the development plan have been revealed and evaluations have been made based on the design criteria of each.

**Table 4.** Basic components constituting neighbourhoods, and their planning criteria in terms of quality, quantity, and accessibility

Basic Components Constituting Neighbourhoods	Planning Criteria: Quality (a), Quantity (b), and Accessibility (c)
<b>Urban Open Spaces:</b>	
<b>Green Spaces</b>	a) diversity in park-type b) min 10m <sup>2</sup> per person/ no small in size and fragmented c) 5 min walking distance (400m)/ even and regular distribution/ at least half of the park front must face the road
<b>Streets</b>	a) walkable, accessible, perceptible, equitable, and safe streets/ pedestrians should be prioritized b) min 3.5m lane width/ min 7m road width/ no dead-end streets/ min 10m between buildings facing each other c) integrated, balanced, and gradual
<b>Car Parks</b>	a) diversity in car park type/ considering long or short-term use/ sufficient parking spaces for the disabled b) no large parking areas but small and many c) should not block the main entrance doors of the buildings and pedestrian-vehicle crossing areas/ no parking spaces near road turns and intersections/ should be resolved within the boundaries of each building block/ more than one access point
<b>Residential Areas</b>	a) diversity in residential type b) if the rate of residential use is not specified in mixed-use areas, a maximum of 30% can be built c) even and regular distribution
<b>Socio-Cultural Facility Areas</b>	a) diversity in facility type c) 500 m walking distance/ even and regular distribution
<b>Commercial Areas</b>	a) diversity in commercial type c) should be accessible and promote walkability and socialization
<b>Public Institution Areas</b>	c) should be easily accessible by vehicle-pedestrian-public transport
<b>Educational Facility Areas</b>	a) diversity in facility type/ should be placed near open spaces for children's safety c) primary schools should be within walking distance of 500m, secondary schools 1000m, and high schools 2500m from the living area
<b>Religious Facility Areas</b>	c) masjids should be within walking distance of 150m, small mosque 250m, and middle (neighbourhood) mosque 400m from the living area
<b>Healthcare Facility Areas</b>	b) at least one health center at the neighborhood scale c) should be easily accessible by vehicle-pedestrian-public transport

## Research findings

In this section of the research, the study area is evaluated under the titles of 'urban open spaces, residential areas, socio-cultural areas, commercial areas, service areas, educational areas, places of worship, and healthcare areas' through the development plan and the current situations. The land use map prepared in line with the development plan obtained from the municipality, and the numbers and the surface area values of each use are given in Figure 2.



**Figure 2.** Land use analysis of Yenimahalle (left), and the number of each unit and their surface area values (right)

### The current state of urban open spaces

Although there are guiding researches, regulations, and supporting guides for the design of urban open spaces in the literature, it is seen that there are inadequacies in these spaces of Yenimahalle. In light of the examinations made on the development plan and satellite images, and by the field trips, the current states of green spaces, streets, and car parks were given in the following sub-headings.

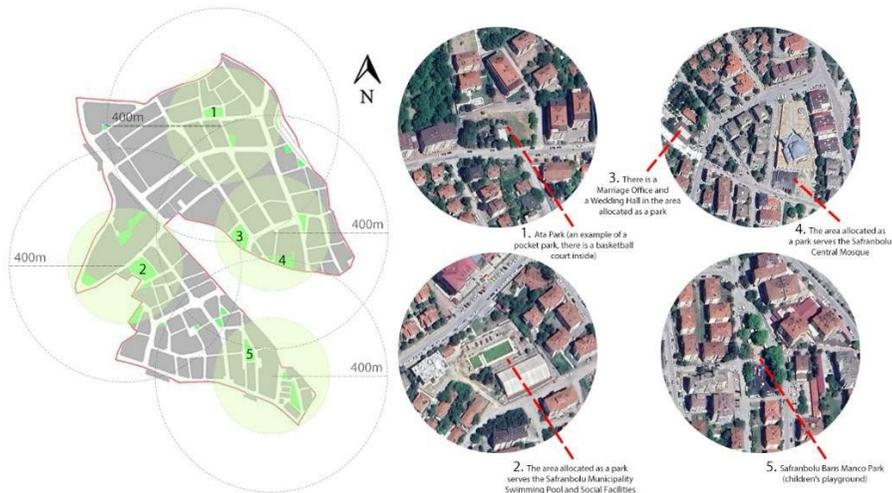
#### *The current state of green spaces*

According to the development plan, there are 21 parks in Yenimahalle, mostly small in size, formless and fragmented (Fig. 2). 20 of them are pocket parks and only one of them is a children's playground. They cover approximately 4% of the total neighbourhood area. They are interspersed at many

points of the neighbourhood such as corners and street intersections. As a result of including the parks located close to each other in a cluster and drawing circles with a radius of 400m from the center of each cluster, it is seen that the access of the residents to these parks from their living spaces meets the walking distance principle (Fig. 3). However, the access to the children's playground located in area 5 in Figure 3 is not within a 5-minute walking distance (400m) for users from other parts of the neighbourhood.

In addition, as mentioned earlier, the standard of urban green space in Türkiye is  $10\text{m}^2$  per person. According to the development plan, there is a green area of  $24463\text{m}^2$  in Yenimahalle. The total population of Yenimahalle is 6759 according to TUIK 2021 data. In this case, there is approximately  $3.6\text{m}^2$  of green area per person, hence it is well below the standard. On the other hand, as shown in Figure 3, while areas 2, 3, and 4 were planned as green spaces in the development plan, currently there are structures for different uses such as a marriage registry office, wedding hall, swimming hall, indoor football pitch, and mosque unit in these areas. As a result, due to the decrease in the number of parks that actually exist, the amount of green space per person decreases.

In addition to these, there is no neighbourhood park in Yenimahalle with a usage area of 1 to 5 hectares, as per the standards. Since there is also no existing neighbourhood park in the surrounding neighbourhoods within a 10-minute walking distance (800m) from Yenimahalle, it is seen that the park diversity is insufficient in the planning.



**Figure 3.** Accessibility to parks with 400m walking distances in Yenimahalle (left), and satellite images of some areas that were supposed to be allocated as parks (right)

**The current state of the streets**

Yenimahalle has 14 streets, 10 avenues, and 1 boulevard (Anonymous, 2014). The busiest street of the neighbourhood is Sadri Artunc Avenue, and it is observed that there is a crowd of vehicles and people along the street due to the educational, commercial, and touristic activities of the neighbourhood (Fig. 4). Since the neighbourhood is built on the right and left sides of this main axis, the residential streets and sub-residential commercial streets of the neighbourhood lead to this main commercial axis. This makes it easier for people to meet their needs such as transportation, access, and commerce, as well as allowing people to interact with the city and with each other. In other words, the streets and avenues of Yenimahalle are good examples of spaces for meeting, socializing, and realizing common life. When the development plan and the current situation are examined, it has been seen that the lane widths on the streets and avenues are in accordance with the standards (min 3.5m lane width and min 7m road width). However, due to irregularly parked vehicles, pedestrian and vehicle crossings and entrance areas of buildings are adversely affected. Also, pedestrian priority is not dominant in the planning of the streets. There are access problems, especially on the sidewalks of the neighbourhood's side streets (Fig. 4).



Sadri Artunc Avenue, the busiest avenue in the neighbourhood



Saglik Street, a residential street



A side street, commercial spaces under residential buildings



Interaction and socialization environment along Sadri Artunc Avenue



Interaction and socialization environment along Sadri Artunc Avenue



Ata Street, trees in the middle line of the sidewalk



Ata Street, inequitable sidewalk



A pavement type that is interrupted for no reason

**Figure 4.** Photos showing the current condition of the streets in Yenimahalle

### ***The current state of car parks***

Car parks in the study area are generally observed as on-road and open parking areas. In low-density areas, the need for parking is met by detached car parks in the private gardens of the residences. With a rough calculation, there are approximately 2580 flats in total in the residential areas consisting of approximately 430 buildings (generally three floors with two flats on each floor). Since it is necessary to allocate at least one car park per flat, a minimum of 2580 car parks are required for residential areas. However, it has been observed that the number of existing car parks is not enough, so empty lands and side streets are also used for parking purposes.

The area with the highest density in the neighbourhood is Sadri Artunc Avenue. This avenue has an intense use due to the commercial areas located on the right and left along the avenue, the four faculties and two vocational schools nearby, and the tourism activities in the city.

Therefore, parking areas are needed to meet both long and short-term uses. However, it has been observed that parking solutions are insufficient, especially in commercial areas, and problems arise in both vehicle and pedestrian traffic due to irregular short-term parking.

In addition, it was observed that the density of vehicles increases considerably around the central mosque during Friday prayers and around the bazaar established on Thursdays. Due to the inability to meet this temporary car park requirement, irregular parking and, accordingly, problems in vehicle-pedestrian traffic increase.

### ***The current state of residential areas***

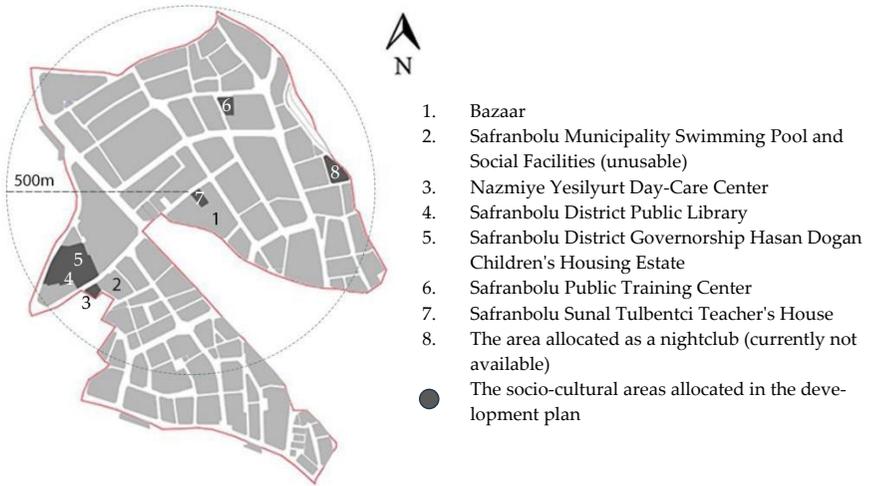
There are 74 residential blocks in the neighbourhood. This covers approximately 42% of the area. There are approximately 430 residences, most of them in apartment typologies, on a parcel basis. They are gardened-low-rise or social housing. There are also single-detached dwellings, but they are few in number. The residences on both sides of Sadri Artunc Avenue are mostly mixed-use cooperative-style buildings with sub-residential commercial activities. Due to the increasing student density in Yenimahalle, there has been a diversity in the housing typology.

Safranbolu consists of small parcels since it is located in the Black Sea Region of Turkey, which has rugged and steep terrain. For this reason, the floor area of the buildings in Yenimahalle is small (for instance, according to the zoning status, the floor area coefficient (TAKS) is 0.25 or 0.30).

### *The current state of socio-cultural areas*

The socio-cultural areas allocated in the development plan are a public training center, a district public library, a child welfare institution, a day-care center, a teacher's house and evening art school center, and a nightclub (Fig. 5). In addition to these, it was observed in the field trips that there are a bazaar, a swimming pool and social facilities, and private sports centers (Fig. 5, number 1 and 2). Apart from all these uses, the residents of the neighbourhood use the Leyla Dizdar Cultural Center located in Baglarbası Neighbourhood, close to Yenimahalle, to benefit from areas such as the conference hall, seminar and meeting hall, theater hall, and workshops.

In the literature, the principle of walking distance of 500m to the living area is taken as a basis for some socio-cultural areas. This information is generalized for all socio-cultural areas, and in Figure 5, these areas are circled within 500m. It is seen that the access of the people in the south of the neighbourhood to socio-cultural activities poses a problem. New facilities are needed in this region in order to ensure social integration.



**Figure 5.** Map indicating the socio-cultural facility areas in Yenimahalle

### *The current state of commercial areas*

Sadri Artunc Avenue passes through the middle of Yenimahalle and on both sides of it, mostly residential and commercial spaces are lined up. For this reason, a commercial density axis was formed in the middle of the neighbourhood (Fig. 6). Around this main axis, some streets have commercial activities under the apartment buildings. Residential areas and educational areas dominate the northern part of the neighbourhood, so

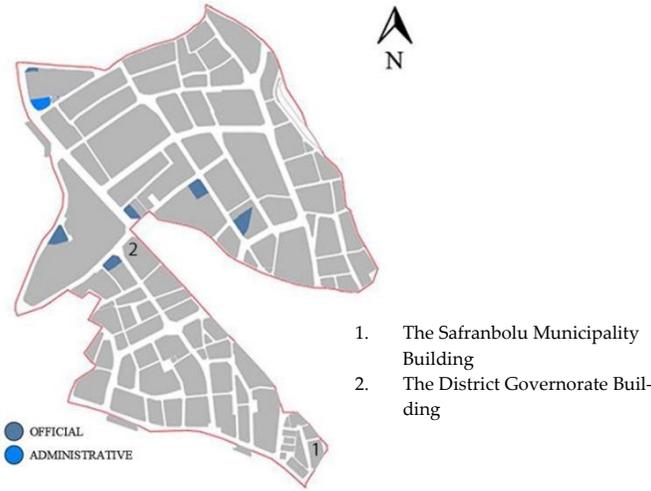
commercial activities take place mostly in the middle and southern parts of the avenue. The commercial activities of the residents, students, and tourists, especially along the main avenue, have enlivened the public life in this mixed-use axis. In this respect, walkability and socialization are encouraged in the neighbourhood.



**Figure 6.** Map indicating the commercial areas in Yenimahalle

### *The current state of service areas*

According to the development plan, there are 1 administrative and 6 official institutions in Yenimahalle. The police station is located in the north of the neighbourhood. In addition to this administrative institution, the Safranbolu Municipality building, surrounded by commercial activities, is located in the south of the neighbourhood, in area number 1 in Figure 7. The official institutions located in the western and middle parts of the neighbourhood are as follows: mufti's office, municipal charity bazaar, district governorate, district national education directorate, municipal urban social infrastructure service area, and district police department. In the current state, the district governorate building is located in area 2 in Figure 7, which is allocated as a vocational school in the development plan. Furthermore, the municipal urban social infrastructure service area is currently used as an open car park. Since all these areas are close to Sadri Artunc Avenue, it is easy to reach them by foot, vehicle, or public transportation.



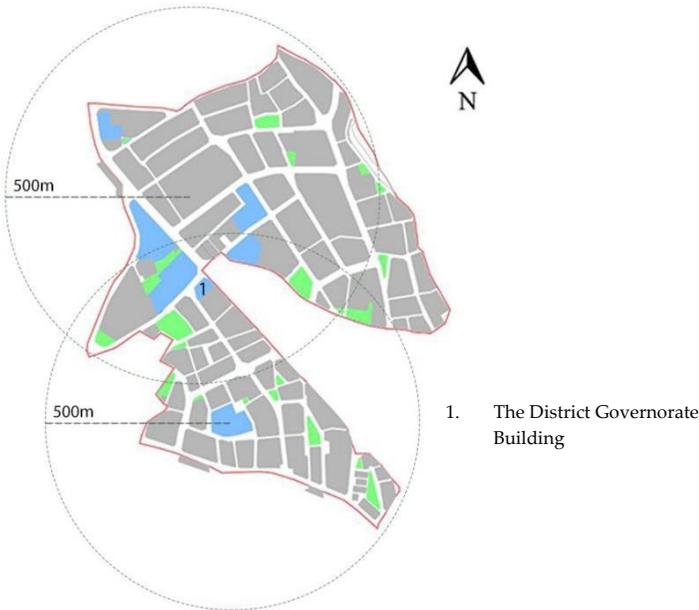
**Figure 7.** Map indicating the official and administrative areas in Yenimahalle

### *The current state of educational areas*

According to the development plan, there are 9 educational areas in Yenimahalle. These are 1 kindergarten, 1 primary school, 2 secondary schools, 1 primary school, 1 high school, and 3 university areas. Currently, the university area which was used as a vocational school in the past, is now used as a district governorate (Fig. 8, area number 1).

As stated in the literature, open spaces should be planned around the educational areas in order to ensure that children and youth can walk safely. To understand whether there is an approach in this direction for Yenimahalle in the development plan, both educational areas and green spaces are shown together in Figure 8. It is seen that there is no planning attempt specifically for this purpose. However, there is no access problem to green areas from education areas.

Another design principle given in the literature is that primary schools should be within walking distance of 500m, secondary schools 1,000m, and high schools 2,500m from the living area (RTMEU, 2014). Since the surface area of the total neighbourhood is not large, it can be said that there is no accessibility problem to the education areas included in 500-meter clusters.

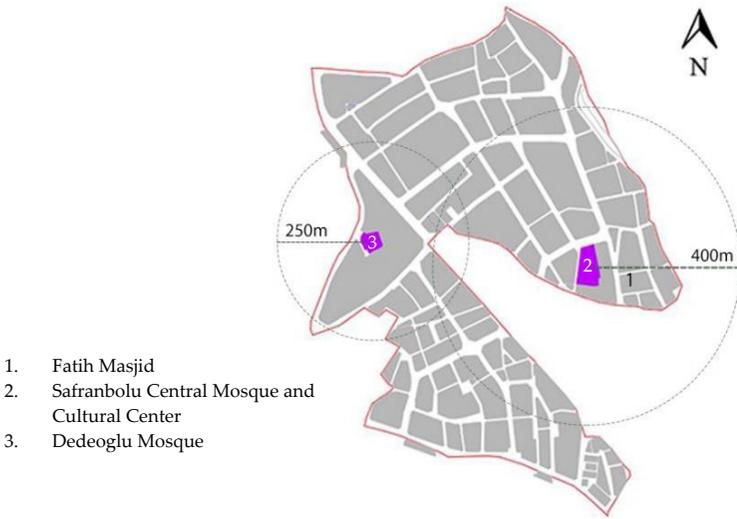


**Figure 8.** Map indicating the educational areas and green spaces in Yenimahalle

### *The current state of places of worship*

According to the development plan, there are 2 places of worship in Yenimahalle. One of them is small and the other is a middle (district) mosque. In addition to these two mosques, there is also a masjid in the current state (Fig. 9, area number 1).

As stated in the literature, masjids should be within 150m, the small mosque 250m, and the middle (district) mosque 400m of walking distance from the living area (RTMEU, 2014). As seen in Figure 9, although there is an access problem to places of worship from the north and south of Yenimahalle in terms of walking distances, it is observed that the need is met thanks to being close to the mosques in the surrounding neighbourhoods.



**Figure 9.** Map indicating the religious areas in Yenimahalle

### *The current state of healthcare areas*

In Yenimahalle, there is only one healthcare area in the development plan which is a community clinic in the current state. As mentioned in the literature, the existence of one healthcare facility at the neighbourhood scale is sufficient. However, as seen in Figure 10, it is quite far from other parts of the neighbourhood in terms of walking distance due to its location.



**Figure 10.** Map indicating the healthcare areas in Yenimahalle

Based on the design criteria of all these uses, which are discussed under

separate headings, the adequacy and inadequacy at the planning stage and in the current situation are given in Table 5 as a summary.

**Table 5.** Evaluation of adequacy (✓) and inadequacy (x) of existing land uses in Yenimahalle Neighbourhood in terms of quality, quantity, and accessibility

Existing Land Uses in Yenimahalle Neighbourhood	Planning Criteria	a) Quality	b) Quantity	c) Accessibility	Explanations of Inadequacy Situations
<b>Urban Open Spaces:</b>					
<b>Green Spaces</b>	a) diversity in park-type b) min 10m <sup>2</sup> per person/ no small in size and fragmented c) 5 min walking distance (400m)/ even and regular distribution/ at least half of the park front must face the road	×	×	×	a) available types are only pocket park and playground b) only 3.6m <sup>2</sup> per person/ small in size and fragmented c) the playground is not within 5 min walking distance (400m)
<b>Streets</b>	a) walkable, accessible, perceptible, equitable, and safe streets/ pedestrians should be prioritized b) min 3.5m lane width/ min 7m road width/ no dead-end streets/ min 10m between buildings facing each other c) integrated, balanced, and gradual	×	✓	×	a) not equitable/ no pedestrian priority planning c) due to irregularly parked vehicles, vehicle-pedestrian crossings and entrances of buildings are sometimes closed
<b>Car Parks</b>	a) diversity in car park type/ considering long or short-term use/ sufficient parking spaces for the disabled b) no large parking areas but small and many c) should not block the main entrance doors of the buildings and pedestrian-vehicle crossing areas/ no parking spaces near road turns and intersections/ should be resolved within the boundaries of each building block/ more than one access point	×	×	×	a) no approach that considers the distinction between long and short-term parking areas/ insufficient parking spaces for the disabled b) too few planned parking spaces c) due to irregular short-term parking, disruption in vehicle-pedestrian traffic, and blocking of the main entrance doors of the buildings
<b>Residential Areas</b>	a) diversity in residential type b) if the rate of residential use is not specified in mixed-use areas, a maximum of 30% can be built c) even and regular distribution	✓	✓	✓	
<b>Socio-Cultural Facility Areas</b>	a) diversity in facility type c) 500 m walking distance/ even and regular distribution	✓		×	c) difficulty in accessing socio-cultural activities for the people in the south of the neighbourhood
<b>Commercial Areas</b>	a) diversity in commercial type c) should be accessible and promote walkability and socialization	✓		✓	

<b>Public Institution Areas</b>	c) should be easily accessible by vehicle- pedestrian-public transport			✓	
<b>Educational Facility Areas</b>	a) diversity in facility type/ should be placed near open spaces for children's safety c) primary schools should be within walking distance of 500m, secondary schools 1000m, and high schools 2500m from the living area	✓		✓	a) for children to walk safely, no concern about planning green spaces around educational areas. However, no problem in accessing green areas from education areas
<b>Religious Facility Areas</b>	c) masjids should be within walking distance of 150m, the small mosque 250m, and the middle (neighbourhood) mosque 400m from the living area			✓	c) Access is restricted from the areas in the north and south of Yenimahalle. However, the need can be met thanks to being close to the mosques in the surrounding neighbourhoods
<b>Healthcare Facility Areas</b>	b) at least one health center at the neighborhood scale c) should be easily accessible by vehicle- pedestrian-public transport		✓	×	c) due to its location, it is far from other neighbourhood parts in terms of walking distance

### **Conclusion and recommendations**

In this study, first of all, the existing design criteria for the basic components that constitute a neighborhood were examined, and then it was questioned to what extent these criteria were complied with in Yenimahalle, which was chosen as the study area for being the district center of Safranbolu. In this context, the land uses in the neighbourhood were compared with the planned and the current state, and adequacy and inadequacy situations were determined based on the design criteria.

Regarding the green spaces of Yenimahalle, in order to increase the socialization of people in these public spaces, it is necessary to increase the amount of green space per person, improve the quality of existing green spaces, and ensure diversity. A more balanced distribution can be achieved by considering the walking distance standards. More green spaces can be planned around facilities such as healthcare, educational, and socio-cultural in the neighbourhood.

Regarding the streets and avenues of Yenimahalle, pedestrian priority approach can be achieved by slowing down vehicle traffic, increasing the diversity of pedestrian spaces, and ensuring the continuity of green areas. Walking and cycling should be encouraged with pedestrian and bicycle path arrangements. Equitable streets should be planned considering the designs for the disabled.

Considering the car parks in the study area, they are insufficient in terms of their location, design, and number. In addition, as short-term parking areas are not included in the planning, there are disruptions in pedestrian and vehicle traffic in commercial areas. The entrance doors of the buildings and pedestrian crossings are closed, and congestion occurs at the road turns and road junctions. To prevent these, the use of car parks can be prevented in pedestrianised spaces. Also, a periodically used car park system can be developed around the bazaar, mosques, public buildings, and commercial areas.

Moreover, access from the living areas in the southern parts of the neighbourhood to the socio-cultural areas is difficult. New socio-cultural facilities can be planned to the south. Furthermore, public open space arrangements that will enable students to walk safely are insufficient around the areas reserved for education. More green spaces should be planned around them. Green space solutions are also needed around public facilities in order to stimulate public life and encourage socialization.

With this study carried out in the district center of Safranbolu which has gained a reputation for its historic and natural structure, it was desired to support the plannings to be made from now on by revealing the deficiencies in the basic components of the neighbourhood. It is believed that important steps can be taken for a more livable city if the design criteria expressed in this, and similar studies are taken into account in the new regulations to be made by the competent authorities.

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