Fig. 10. Current situation analysis of Zafer square (source: author).

Despite heavy pedestrian and vehicle traffic, Zafer Square, one of the busiest areas in Konya, can be easily accessed by public transportation from the farthest points of the city. However, the pavements and walkways, ramps, charging stations, building entrances, pedestrian crossings, public toilets, plants, and signage have been examined under the headings of determining usage problems for wheelchair users (Table 2).

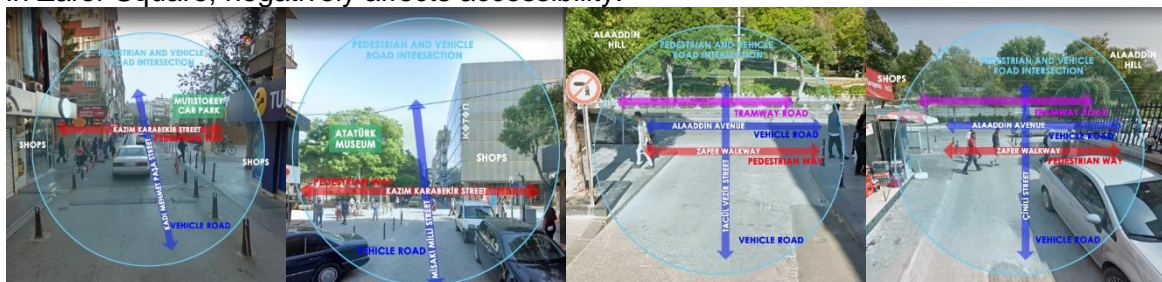**Table 2.** Analysing Zafer Square in terms of wheelchair users

Pavements and walkways
-Pavements and walkways on Atatürk Street connecting Zafer Square to Alaaddin Hill are less than 1.5 m wide. -The front of the bus stops is below 3.5 m width. -Parking of vehicles and urban elements on the walkway hindered accessibility.   Bus stop on Ataturk Street and entrance of Ataturk Museum (illustration: author). -The lack of controlled crossing systems at the intersections of Mehmet Paşa Street, Misakı Milli Street, Tacül Vezir Street and Çinili Street, where pedestrian and vehicle roads intersect in Zafer Square, negatively affects accessibility.   Pedestrian and vehicular roads intersecting in Zafer Square (illustration: author).

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Plants
- Unplanned positioning of elements such as trees, benches, transformers, etc. in Zafer Square negatively affects accessibility (according to ADA).

Trees and landscape elements in the Zafer square (illustration: author).

Direction signs
- Signs and guidance signs to provide easy access and orientation to urban areas are inadequate (according to UN,2022).

4.2 Alaaddin Hill

Alaaddin Hill is in the city centre of Konya. It consists of historical and cultural layers that date back four millennia ago, representing the first human settlement or settlement culture (Özcan & Yenice, 2008). The hill is one of the proto-historic settlement sites called mounds, with dimensions of 450 x 350 meters and a height of 20 meters. On the hill are the 3000-person Seljukian work, the Alaaddin Mosque, a wedding hall, four tea gardens, two children's parks, tree-lined green areas, a car park, fountains, small kiosks, and toilets (Tapur, 2009).
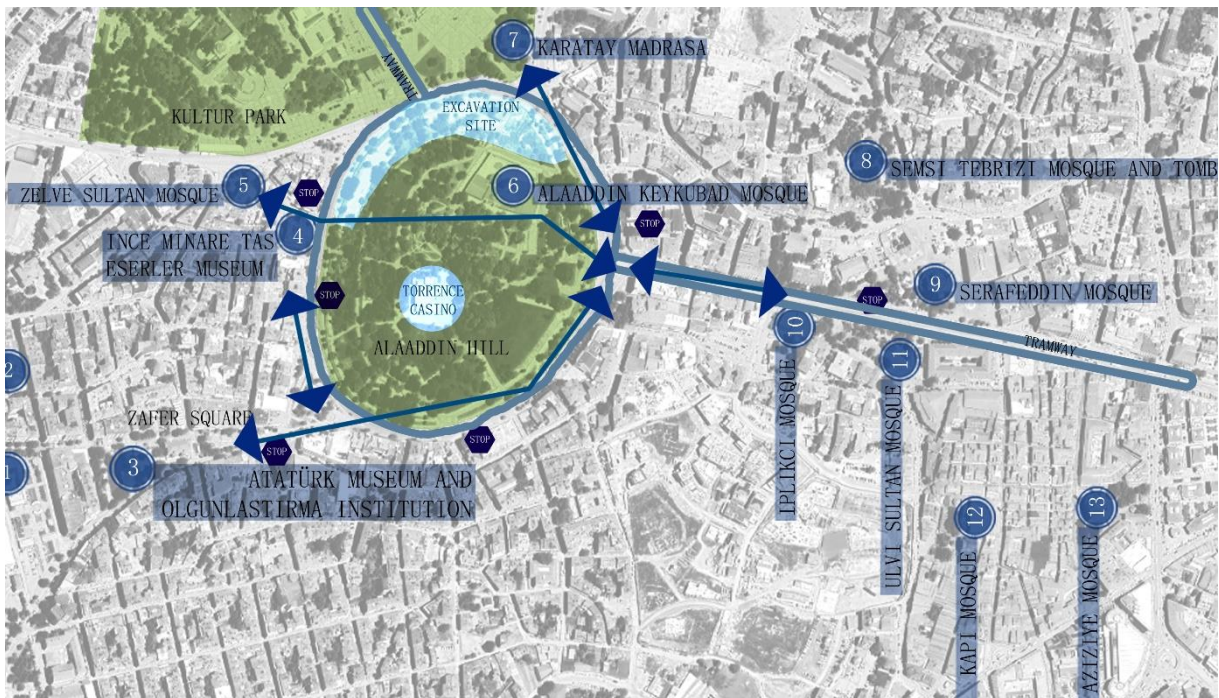

Fig. 11. Current situation analysis of Alaaddin hill (illustration: author).

The tramway, vehicle lanes and pedestrian roads surrounding Alaaddin Hill create many focal points where they intersect. These focal points require controlled passage for disabled

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Pedestrian crossings
-At the intersection of pedestrian and vehicle roads, there is a pedestrian crossing line that ensures the continuity of accessibility for disabled people using wheelchairs (according to TS9111).

Public toilets
-The public toilets considered on Alaaddin Hill are adequate but not accessible (according to TS9111).

Plants
- The regularity of the trees and landscape elements on Alaaddin Hill does not adversely affect the accessibility of wheelchair users (according to UN,2022).

Direction signs
- Signs and guidance signs to provide easy access and orientation to urban areas are inadequate (according to ADA).

4.3 Hükümet square

The Konya bazaar, surrounded by the Government Building, the Kapı Mosque, the Aziziye Mosque, and the Sultan Selim Mosque, was in Konya's centre at the end of the 19th century and the beginning of the 20th century (Uysal, 2010). The construction of the Government Building, which began in 1883, formed the square's focal point (Önder & Aklanoğlu, 2002). The Hükümet Square covers an area of approximately 33,000 m2. Mevlana and Tevfikiye Avenues are divided within the square into three different-sized areas. The square contains an underground bazaar, Kayalıpark, Ulvi Sultan Mosque, Şerafettin Mosque, and the Konya Governorship.
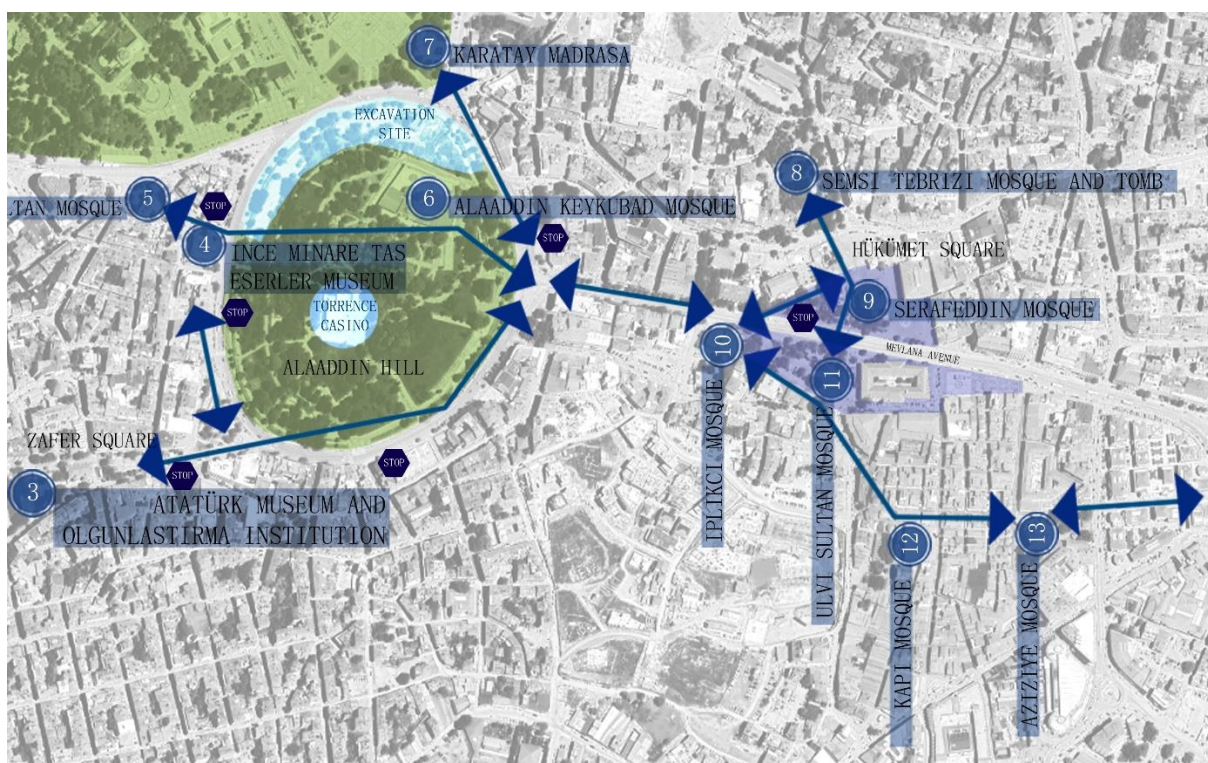

Fig. 12: Hükümet square case study developed by google earth (illustration: author).

Building entrances
- The entrances of Şerafettin mosque and Konya governorship building, accessed through the Hükümet Square, are suitable for wheelchair users. However, the level differences at the entrances of shops, insufficient sidewalk width, and steep ramps negatively affect accessibility (according to TS9111).

a) bank entry b) shop entrance c) governor's entrance d) Şerafettin mosque entrance (illustration: author). |
| **Pedestrian crossings** |
| -At the intersection of pedestrian and vehicle roads, there is a pedestrian crossing line that ensures the continuity of accessibility for disabled people using wheelchairs (according to TS9111). |
| **Public toilets** |
| - There is no public toilet in the government square (according to TS9111). |
| **Plants** |
| - Trees and landscape elements in Hükümet Square provide accessibility for wheelchair users (according to ADA). |
| **Direction signs** |
| - Sign and direction signs are insufficient in the Government Square (according to UN,2022). |

4.4 Mevlana square

Konya Mevlana Square and the Mevlana Mausoleum have played an essential role in becoming a globally influential centre in socio-cultural aspects, with significant religious, political, and commercial functions. The square covers an area of approximately 12,000 m2. Within the square, there are Sultan Selim Mosque and pedestrian paths.
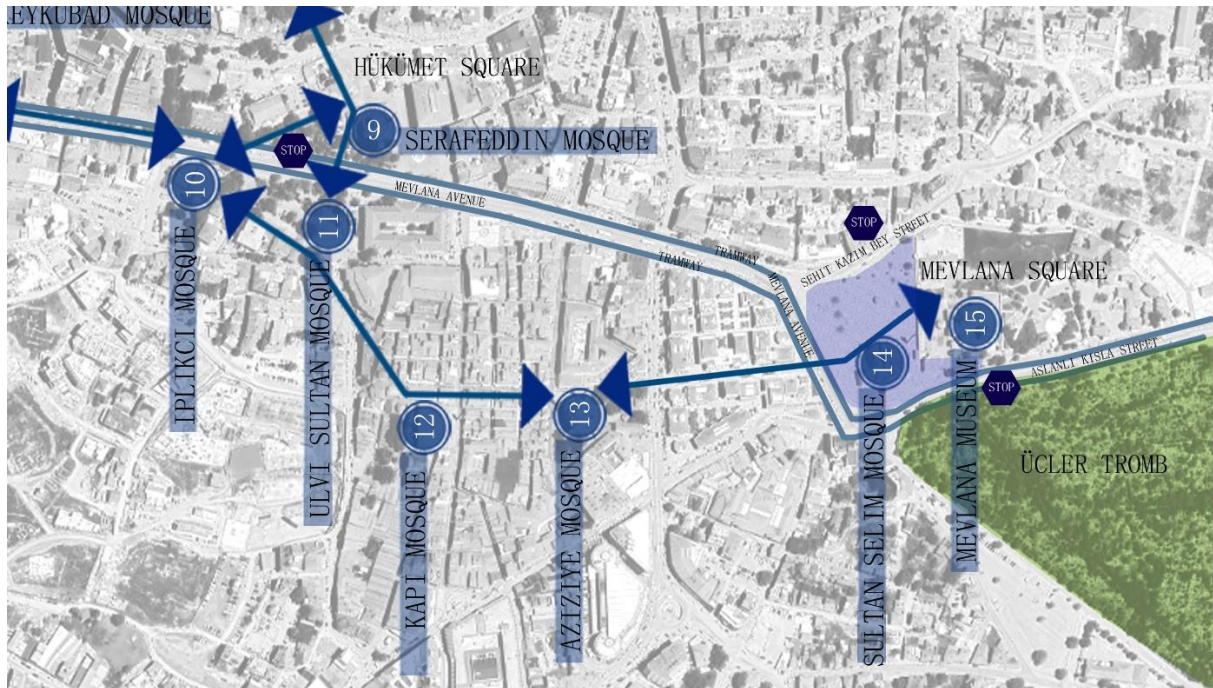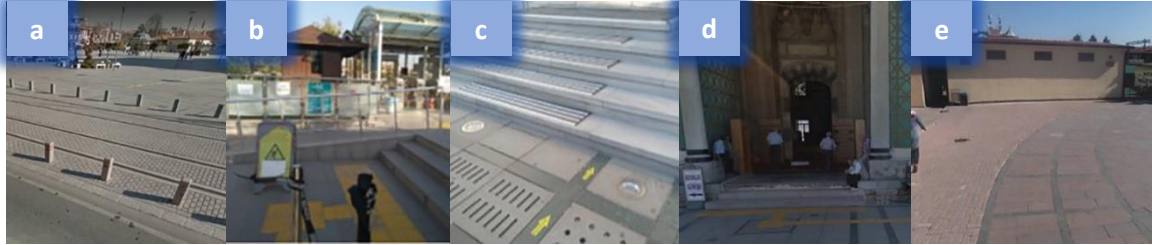

Fig. 13. Mevlana square case study developed by google earth (illustration: author).

Direction signs
- In Mevlana Square, written, visual, and auditory signage and wayfinding tools that facilitate easy access to urban spaces could not be identified. The lack of straightforward wayfinding tools that reduce confusion and increase comprehensibility makes it challenging to direct individuals who use wheelchairs (according to UN,2022).
a) roads b) Mevlana museum entrance c) Sultan Selim Mosque East Entrance d) Sultan Selim Mosque North Entrance e) Public toilet in the museum garden (illustration: author).

5. Development of the mobile application

Although Zafer, Alaaddin, Government and Mevlana squares have great historical, social and cultural importance, they face access difficulties due to their physical conditions. The solution to these problems can be a mobile application with a technological solution focus. The mobile application can enable wheelchair users to easily access historical and cultural values within the city. For this purpose, an accessible route was created between Zafer, Alaaddin, Government and Mevlana squares to enable wheelchair users to reach historical places. Google web-based Flutter coding tool was used to provide transportation. "Accessible Route" mobile application was developed through coding (Fig. 14).
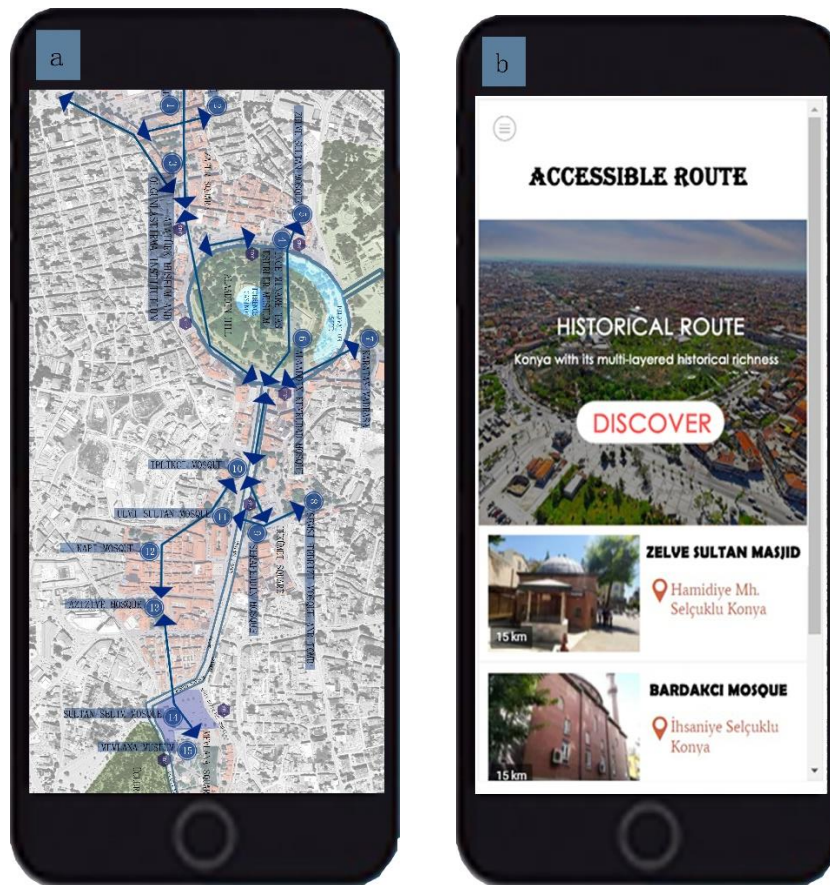

Fig. 14. a) accessible routes in the mobile app b) historical areas in mobile application (illustration: author).

When the mobile application is opened, it shows the historical architectures that should definitely be visited and seen in Konya city centre on its main page. In addition, photographs, historical information, and address information of the architectures are presented. If the mobile application user wants to go to any historical building in the city centre, it provides a route that shows the location and how to reach the building he wants to reach by using an interface that can work synchronously with Google map. This route does not encounter any obstacles for disabled people using wheelchairs, warns the user at the intersection of pedestrians and vehicles that may pose a danger, and also gives the estimated journey time. The mobile application development process is ongoing, and it is planned to provide different language options as well as access to food and beverage venues and other shopping points. In addition, various interface options for individuals with auditory and visual disabilities are also considered. In this way, it will be possible for disabled people to access the historical and cultural values of Konya more easily and without barriers.

6. Evaluation and recommendations

In this section of the research, based on the obtained information, an evaluation is made, and recommendations are put forward for accessibility (Table 6).

- When the sidewalks, walking paths, ramps, charging stations, building entrances, public toilets, plants, and directional signs in Zafer Square are examined, the accessibility for wheelchair users appears to be weak.
- When the sidewalks, walking paths, ramps, building entrances, public toilets, and directional signs in Hükümet Square are examined, the accessibility for wheelchair users appears to be weak. However, the charging stations and plants are accessible for wheelchair users with some modifications.
- When the charging stations, building entrances, public toilets, and directional signs in Mevlâna Square are examined, the accessibility for wheelchair users appears to be weak. However, the sidewalks, walking paths, ramps, and plants are accessible for wheelchair users with some modifications.

Table 6. Evaluation of Konya city center in terms of accessibility

	Zafer Square	Alaaddin Hill	Hükümet Square	Mevlana Square
Pavements and walkways	✗	✓	✗	✓
Ramps	✗	✗	✗	✓
Charging stations	✗	✗	✓	✗
Building entrances	✗	✓	✗	✗
Public toilets	✗	✓	✗	✗
Plants	✗	✓	✓	✓
Direction signs	✗	✗	✗	✗

Source: author.

Transportation and circulation problems faced by wheelchair users on pavements and pedestrian roads; Problems such as the presence of high pavements, the lack of a 6% slope to provide comfortable access, the insufficient width of the pavement, the parking of vehicles on the pedestrian paths and the arrangement of plant and landscape elements in a way that prevents access in the squares have been identified. There should be no obstacles on the road routes so that these problems can be eliminated and disabled individuals using wheelchairs can move comfortably and uninterruptedly on the transportation roads. Any non-compliance that would be dangerous for persons with disabilities should be avoided.