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The Architectural Accessibility Standards within the Scope of "The Regulations on the Accessibility Monitoring and Auditing" Enforced in Turkey: Case of Yalova Government Building

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Abstract

Today, particularly the disabled and elderly people can fail to access easily the product or place they wish in their daily lives and can become dependent on someone due to accessibility problem experienced in numerous societies. This situation can also be encountered in the public buildings frequently used by the citizens. The areas such as wheelchair ramps, WC for the disabled, parking space for the disabled, access for the disabled, tactile pathways and stairs are incorrectly implemented or never implemented in many public buildings according to the standards for the disabled.

Within this context, an important step has been taken with the "Regulations on the Accessibility Monitoring and Auditing" which was published on 20.07.2013 in Turkey. The commissions have been established throughout the provinces with this regulations covering all kinds of buildings, which provide public services, open areas and public transport vehicles and the issues which are included in the scope have been started to be audited by these commissions through the monitoring and auditing forms, which involve many items and are annexes to the regulations. This significant development for the accessibility has been greatly welcomed by the disabled citizens and positive feedbacks have been received. However, there are solutions expected for several problems which are encountered in implementation of the regulations for the existing buildings.

The implementation of this regulation throughout the Government Building which was designed for Yalova will be examined in this study. Thus, "Accessibility Monitoring and Auditing Form for the Building", being one of the annexes to this regulation, is examined, the implementation of the accessibility standards, which must be considered in the architectural designs, for the public building is investigated and an example is presented.

Keywords

public building, government building, Yalova, accessibility standards, standardization

1. Introduction

The disabled citizens need to have an accessible environment so that they can equally participate in society and sustain their lives without facing with any physical obstacle in a problem-free manner. However, today, few societies have showed exactly such awareness and the accessibility issue cannot intensely occupy the agenda. Yet, accessibility is increasingly defined as a key element of a high quality, efficient, and sustainable transport system (Soltani et al., 2012). Therefore, awareness and consciousness regarding the accessibility need to increase.

First of all, once the lexical meaning of the word "Accessible" is examined, it is seen to be defined as "to be able to be reach or enter into (a place)" (Oxford Dictionaries, 2016). According to the United Nations (2007), the word "accessibility" derived from this word (Dharmadhikari and Lee, 2015) is to give equal access to everyone and without being able to access the facilities and services, the disabled persons will never be fully included.

Accessibility aims to ensure access to, approach to, and the ability to universally use facilities and surrounding spaces securely and autonomously (Yazigi et al., 2015). Accessibility, including mobility (physical movement), the quality and affordability of transport options, transport system connectivity, mobility options, and land use patterns, is influence by numerous factors and can be assessed from various perspectives, including a particular group, mode, location or activity (Litman, 2016).

As is seen, many implementation areas are available for the accessibility, one of which is the facilities. In particular, the public buildings must be constructed as accessible by decisions to be taken by the governments. Otherwise, the participation of disabled citizens in social life is impaired and interpersonal equality balance can be disturbed. Today, even though some steps are taken so that the disabled citizens can satisfy the basic needs by themselves in their lives without needing anybody, this problem is still ongoing on a large scale especially in underdeveloped and less developed societies. When we examined the buildings, the problems on the practices such as toilets for the disabled, access for the disabled, information desk for the disabled, tactile pathways, parking spaces, direction signs etc. must be solved according to the required accessibility standards.

When the situation in Turkey is reviewed, it is seen that the practices, which are not in compliance with the accessibility standards in many aspects, have been available until recently. Although the standards which must be present are involved in the legislation in a limited manner, it is seen that even the limitation in the legislation is rarely implemented in the construction sites or are misevaluated. However, the "Regulations on the Accessibility Monitoring and Auditing" which came into effect on 20.07.2013 in Turkey, aims to make all kinds of the buildings rendering public services, open areas and public transport vehicles accessible and usable for the disabled people. The requires standards have been specified by "Accessibility Monitoring and Auditing Form for the Buildings", an annex of the regulations, thus, the buildings must be brought in compliance with these standards and the new buildings to be constructed must also be in compliance with these standards. Owing to this improvement very important for the disabled citizens, Turkey has started gaining a significant momentum in terms of accessibility.

These standards in which even a lot of fine details are considered for the disabled people sometimes cannot be understood in the implementation phase, raise difficulties, and usually receive reactions. Therefore, the aim of this study is to realize an example of implementation of these standards. Additionally, main purpose of this study is to examine the accessibility standards via an example of public building. Within this context, it was decided under the course taken in doctoral program in Architecture Department of Kocaeli University to design a Government Building in the province of Yalova that would serve for this purpose. By taking the situation of the disabled citizens into consideration during designing of the project, a design was tried to be made in compliance with the standards determined by the said regulations.

It was concluded by the example project of the Government Building designed that the standards stipulated in the Regulations on the Accessibility Monitoring and Auditing can be implemented. It makes it easy and is important to address these standards and direct the design accordingly in the stage of project design. It is urgent and important to transform the buildings in accordance with this regulation so as to construct the accessible cities and buildings.

2. Implementation of the Accessibility Standards in Example of Government Building Designed for the Province of Yalova

Within the scope of this study, the Province of Yalova located in Marmara Region in Turkey was selected as the place for which the project was designed. Yalova, adjacent to the cities of Kocaeli and Bursa, is also close to Istanbul, the biggest city of the region, and can be reached by continuous ferry services. The city between the East Longitudes of 28°45' and 29°35' and North Latitudes of 40°28' and 40°45' has 6 districts including the central district and is the city with the smallest surface area in Turkey.

2.1. Project design approach

While the land was selected for the project planned to be carried out in Central (Merkez) district of the Yalova province; the properties of land such as not becoming distant from the city centre, being located on a good transportation network, having a size open for improvement due to the needs of time and being useful were considered. Thus, the developing region, which Sehit Omer Faydali Street is located at and the number of institutional buildings started increasing, was assessed instead of the crowded city centre.

The building having a closed construction site of approximately 12,000 m² is composed of separate masses connected with each other by means of courtyards and terrace roofs. The building designed also in compliance with the sustainability standards consists of basement, ground floor, and 1st floor. As the project was in the stage of design yet, the disabled people were considered and the suitable design principles were developed. For this, the elevation of entire building was generally kept low and horizontal design was adopted instead of a vertical distribution (Figure 1). The situation of the disabled citizens was considered for each of the different blocks emerging.



Fig. 1. Modelling study of the project of Yalova government building

There was a single elevation inside the building blocks and in garden, so the height differences were not occurred. It was tried to design a building that the disabled citizens can easily access anywhere by means of construction elements such as tactile pathways, elevators and ramps from the moment they entered the building area. In this project prepared for Yalova, it was tried to comply with the general accessibility standards and the Regulations on the Accessibility Monitoring and Auditing, implemented in Turkey. The practices carried out under the project and regulation are explained in the following sections.

2.2. Parking lot

In the project, all the parking lots were designed as closed and located on the basement floor. 7 of 72 parking spaces in total were arranged for the disabled people (Figure 2). This ratio which must be 5% according to the regulations was kept higher since the building of project was composed of different masses. The parking lots in sizes of 4,00×6,00 m were positioned as close as possible to the stairs core and the signs were used for making necessary directions.

2.3. Steps and stairs

The steps and stairs in the entire building were redesigned according to the following standards (Figure 3):

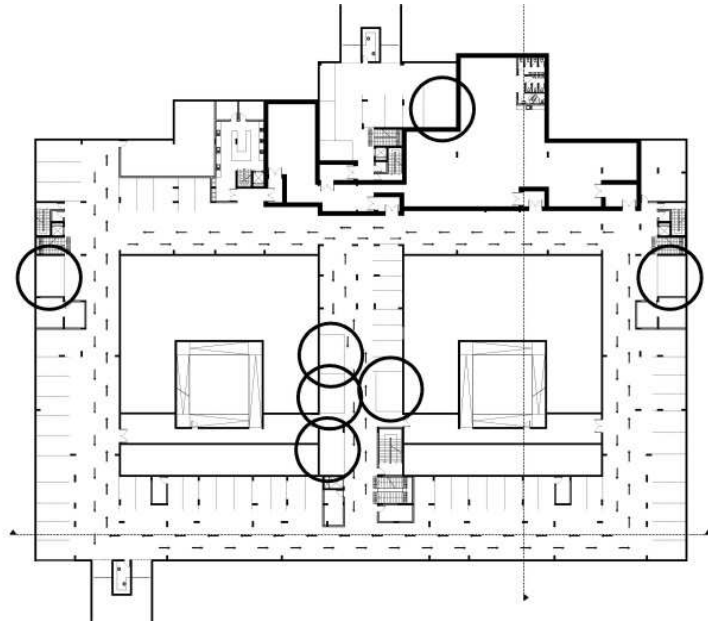


Fig. 2. Parking spaces for the disabled in closed parking lot

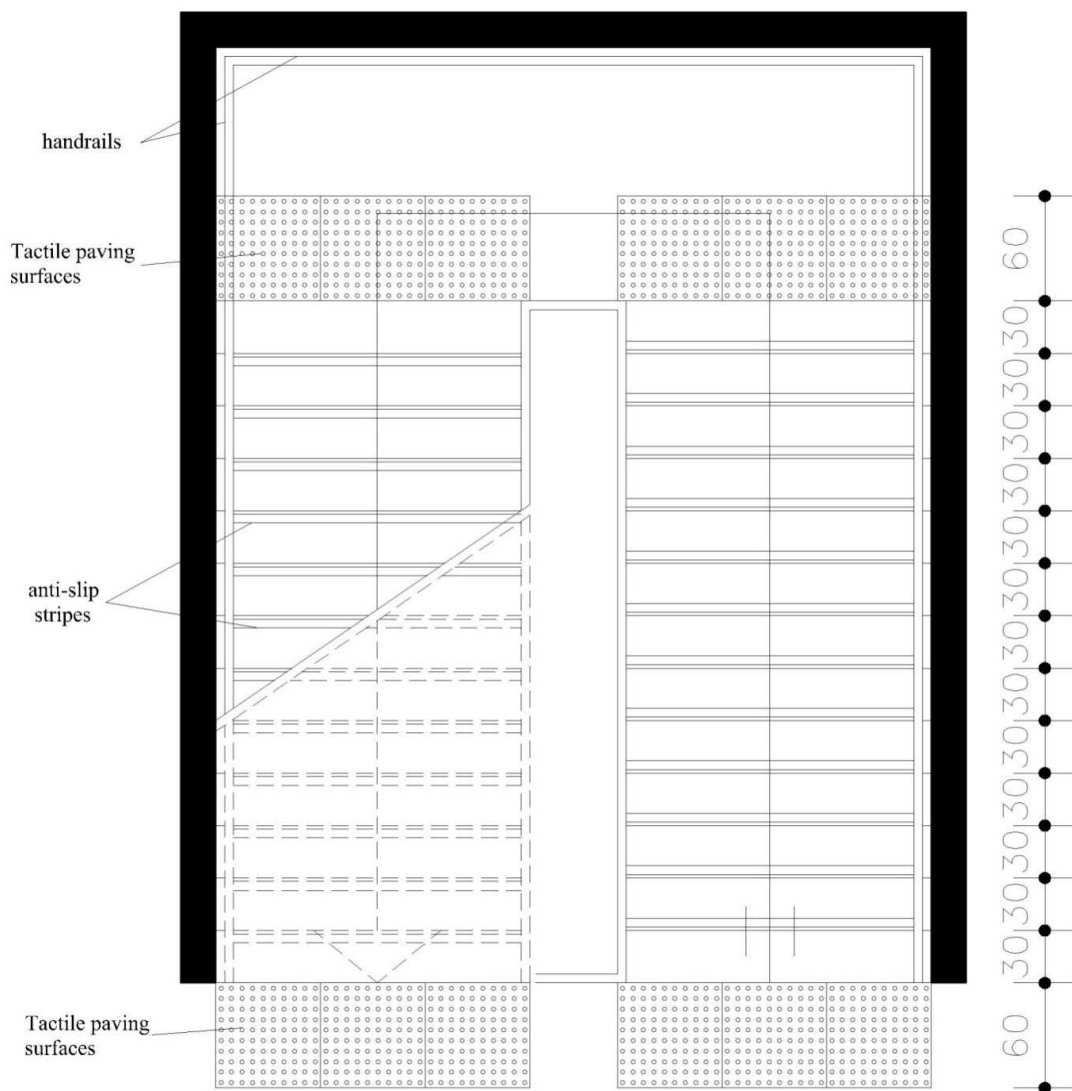


Fig. 3. Example of internal stairs from the project

- The coloured marbles were used and turned into anti-slip by applying anti-slip materials since the steps must be made of flat, fixed, durable, and wet-dry anti-slip materials.
- The width of steps is 30 cm in entire project since it is supposed to be 28-32 cm and at least 30 cm in internal and external stairs, respectively. The heights of steps in internal stairs and external stairs were 16.66 cm and 10 cm, respectively, since the maximum height of steps in the internal stairs and external stairs are supposed to be 15-18 cm and 15 cm, respectively.
- The width and height of all steps in the stairs were kept same; the closed stair risers were constructed and the edges of step were not protruding. Moreover, the anti-slip stripes having a width of 5 cm which are different coloured and can be easily sensed were used without ridge in the edges of step.
- The railing and handrails were fitted near the stairs and stair landings. Tactile paving surfaces in depth of 60 cm were made 30 cm before the stairs and 30 cm beyond the end of stairs.

2.4. Ramps

The height of all entrances of building and sidewalks was 10 cm in the project. Therefore, the ramps with a slope of 10% and a width of at least 100 cm were constructed in frequent intervals in the entrance sections and on sidewalks. The railings and handrails were not established as the height did not exceed 15 cm. The basalt was used for these sections and all other ramp solutions since it is flat, fixed, durable, and wet-dry anti-slip material.

Top of conference hall in the project was arranged as a ramp, so it is aimed that the users can reach the observation deck by walking (Figure 4). Moreover, the ramp-type exits which enable the users coming from the parking lot on the basement floor to go out the courtyard directly were formed. These parts (Figure 5) were constructed according to the accessibility standards required for the ramps and can be summarised as follows:

- Since the height covered with the ramp is more than 100 cm, the problem has been solved in a manner that slopes of the ramp will be 6%. The width of ramp which must be at least 100 cm according to the regulations was 2.00 m for the exits of courtyard and 125 cm for the ramp of observation deck (2 pieces).
- Since the direction of the ramps of the courtyard changes in the stairs landing, the required manoeuvring spaces which must be 150x150 cm were designed as 200x200 cm. The railings and handrails were constructed along both sides of the ramps.
- Since the length of ramp was more than 9 m, the resting areas of 150x150cm were formed in every 9 m. The problem of the resting area was solved with 2 resting areas of 3.00 m in this section, since the length of ramp of observation deck exceeds 30 m and it is required to form the resting areas of 2.50 m in every 30 m.

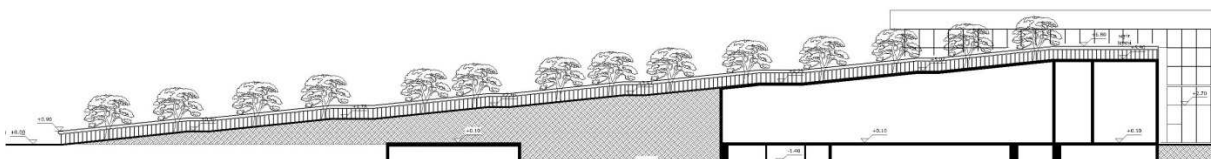


Fig. 4. Section of the ramp to the observation deck on the top of conference hall



Fig. 5. Modelling of the ramp to the courtyard (left) and ramp to the observation deck (right)

2.5. Railing and handrails

The railings and handrails were constructed for all the stairs and the ramps exceeding a height of 15 cm in the project (Figure 6). The following standards were followed for them.

- The handrail was 90 cm above the flooring. There was a second handrail in the height of 70 cm. Moreover, the edges of the handrail were rounded.
- The diameter of handrails was selected as 40 mm as it is required to be between 32 and 40 mm. The colours of the railing and handrails were selected contrary to the environment so that they can be easily sensed. The handrails start 30 cm before the beginning of ramps and stairs and end 30 cm beyond the end of stairs.

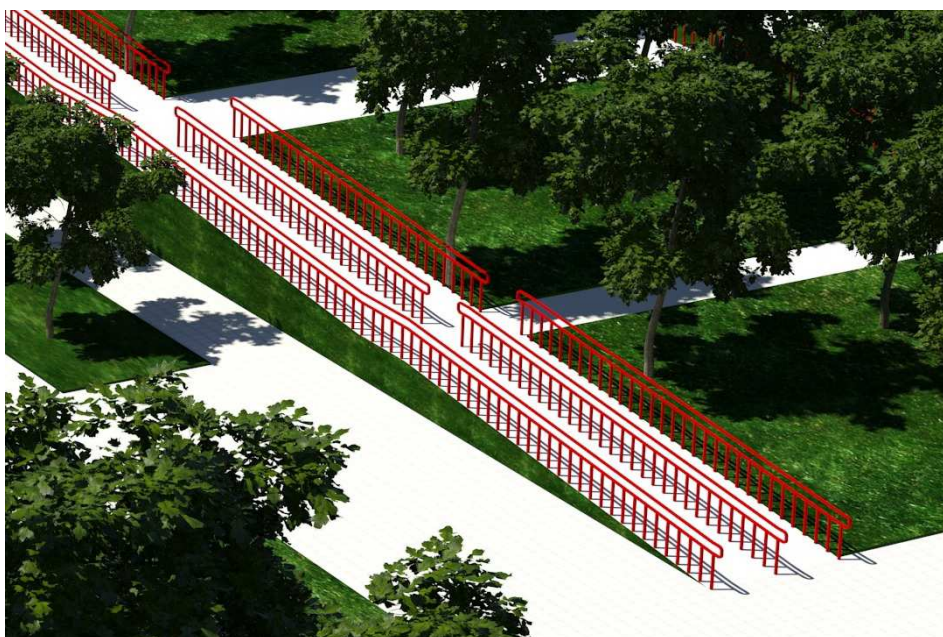


Fig. 6. Modelling of railings and handrails

2.6. Toilet (WC) for the disabled

A toilet for the disabled is present for toilet groups in all separate blocks inside the building. Therefore, there are 13 toilets for the disabled in total. The following standards were complied while constructing these toilets (Figure 7):

- The sizes of toilets and layout of furnishing were arranged so as to be suitable for the manoeuvring space with a diameter of 150 cm. The width of doors is supposed to be at least 90 cm, however, it was designed to be 110 cm and the matt ceramic was preferred as the floor covering is required to be flat, fixed, durable, and anti-slip material. Moreover, necessary direction signs regarding the toilets for the disabled were provided inside the building.
- The sinks suitable for being used by the disabled people were used. These sinks would be at least 75 cm until the lower part and max 86 cm until the upper part in height, and have a knee clearance with at least 20.5 cm depth. The soap dispensers would be 80-110 cm above the ground and the height of water closets would be between 43 and 48 cm.
- The taps and siphons can be used with one hand without any necessity for grasping and the height of button of siphon would be maximum 112 cm above the ground. The toilet paper holder and bidet nozzle would be 43-48 cm above the ground and be in an easily accessible point. The bottom edge of mirrors would be maximum 90 cm above the ground and be placed with oblique angle.
- The grab bars were installed on both sides of the water closet. The one adjacent to the wall side is fixed, while the other one is movable (a folding type). The grab bar on the wall side would be 80-95 cm above the ground and the distance between the bar and wall would be 4 cm. The distance between mid-point of water closet and the bar would be 30-35 cm. Emergency call apparatus which can be operated by pulling the cord was positioned in a manner that the disabled person can reach at the seated position and on the floor when the disabled has fallen.

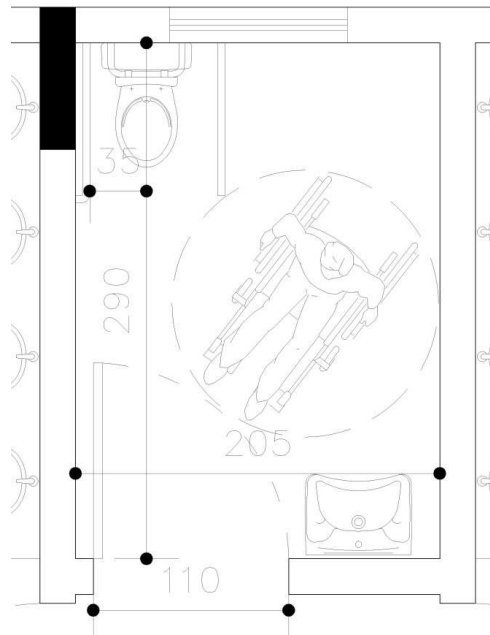


Fig. 7. An example of toilet for the disabled from the project

2.7. Doors

The clear opening width of all doors was allowed to be at least 90 cm and no threshold was available. Yellow warning tapes were applied on the glass entrance doors of the building (first level was 130-140 cm above the ground and the second level was 90-100 cm above the ground, and a width of at least 7.5 cm) (Figure 8).



Fig. 8. An example of applying warning tapes on glass surfaces, Yalova Armutlu state hospital (Archive of Sahin Durak, 2016)

2.8. Tactile Pathways

In our project composed of different blocks, the tactile surfaces were laid until the entrances of all blocks for the visually impaired (Figure 9). Moreover, these surfaces were laid until the information desk for the disabled located inside the front block which is main entrance. The tactile pathways start from the point where pedestrian entrance starts. Also, they were connected to the exits of courtyards from the basement.

While the guiding marks were used on the walking axis of the tactile pathways, the warning surfaces were used for the areas such as turning point or entrance. The height of tactile surfaces was in the same elevation with the surrounding surface and it was yellow so as to be contrary to the environment. The width of warning surfaces was 60 cm and the width of guiding surfaces was 40 cm, a value which is supposed to be between 30 and 60 cm.



Fig. 9. Tactile pathways

3. Conclusion

This study aiming to determine the accessibility standards tries to answer the question "what can be done for the disabled citizens in the projects to be carried out" and to reveal a concrete example of project. For this purpose, the standards determined in the Regulations on the Accessibility Monitoring and Auditing which are started to be implemented in Turkey were taken as basis. Thus, it has contributed to the better comprehension of the articles of the regulations and to how the accessible type buildings can be designed

It has been concluded from the example of public building that the standards implemented pursuant to the related regulations are of great importance so as to obtain accessible buildings. Even though the implementation of most of these standards for current buildings is not economic and practical in terms of the applicability, the correct implementation of these standards during the designing process of new buildings is highly practical. Therefore, it is of great importance for the accessibility to consider and implement these standards especially in the designing processes of the buildings.

Individuals should completely participate in all social and vital activities in the region. Therefore, the obstacles of any kind which may prevent the disabled citizens with specific disadvantages from participating in these activities should be eliminated by means of raising related awareness between both the government and other citizens, as well as their cooperative works. So, it is important that physical environment, buildings, transportation systems, public buildings etc. have accessible characteristics.

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