



Universal Design Approach in Shopping Centers: Sample of Kayseri

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Abstract

Shopping centres, today, are structures that have an important place in social life and consumption and meet many of our needs. Defined by closed, semi-open and open public spaces, these structures provide social interaction as well as commerce. Universal Design approach, which cares about the participation of all users in design instead of the standard users alone, aims to meet the expectations, requests and requirements of different user groups. In this context, it has become important to evaluate the design of shopping centres as well as with a high number of users based on a universal design approach. The aim of this study is to examine the spatial structure of shopping centres as well as their development in the historical process, to evaluate Kayseri Park, Forum Kayseri and Kaysermall (İldem Park) shopping centres, which provide services in different parts of the city of Kayseri for their universal design approach and to offer suggestions.

1. INTRODUCTION

The act of shopping varies according to; community structure, lifestyle, exemplary product quality and diversity, management etc. The concept of shopping is defined as a business of selling a product or service for money [1]. Hornbeck (1962) defined the concept of shopping as “the combination of the place where actions such as looking at a commercial product, learning the price, examining and purchasing are done through the exchange method” [2]. Baştuğ, on the other hand, stated that the act of shopping is the combination of three elements: product, seller and customer [3]. The common purpose of shopping places is facilitating the communication of people for the purchase and sale of goods and services and meeting their social needs. The act of shopping, which was initially carried out through barter in order to meet basic needs, has developed and changed over time with the existence of money and product variety, has paved the way for the differentiation of traditional shopping places and the emergence of new spaces used for social activities as well as commercial spaces. With the dimension, the characteristics of the shopping action and shopping venues have also changed. Traditional shopping places have evolved into shopping centers, where we see many examples in almost every city today, with entertainment, cultural and social activities.

The main purpose in the design of shopping centers, unlike traditional shopping places, is to attract users to the space and to have them spend more time in the shopping center and ensure shopping. For this reason, in shopping centers, in addition to the user’s education, entertainment, food and beverage, culture etc., the spatial layout, which is enriched with various activities and spatial elements to respond to the needs and to provide comfortable circulation, gains importance. Within this spatial setup, it is necessary to meet the wishes and needs of different user groups such as children, the disabled and the elderly, and to provide opportunities for all users to have a pleasant time.

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In disciplines including design, such as architecture, city and regional planning, interior architecture, industrial design and landscape architecture, the design is made over the average/standard user in terms of physical structure and anthropometric measurement, ability and perception level, and design arrangements are generally made after the application for disadvantaged groups such as children, disabled and elderly people. Meeting the needs of all users of different ages, genders, physical structures, abilities and perception levels has come to the fore in recent years, making designs that will make everyone's life easier by taking into account different users at all stages of the design process without marginalizing them, instead of making later arrangements, and making designs that appeal to all user groups. The concept of "Universal Design", which aims to present products, structures and environments, is accepted from a holistic perspective. Universal design concept; since the bodily dimensions, abilities and perceptions can change in human life, attaches importance to designing and follows Equitable Use, Flexible Use, Simple and Intuitive Use for designing product, space and building designs for everyone, Perceptual Information, Tolerance for Error, Low Physical Effort and Size and Space for Approach and Use principles. To that end, universal design concept make the lives of users easy by covering everyone, not a specific group as a user (Design in All and Inclusive Design) [4, 5], and offering design suitable for life-changing needs (Lifespan Design) [6]. User Friendly Design is used with different terms as Human Centered Design [1, 7] because it adopts an integrated and human-centered approach rather than a specific group in the design focus. The purpose of universal design is to increase the quality of lives of users and to create a livable, useful product and present environments by designing products, spaces, structures and environments that do not require special design and adaptation, that all user groups of different ages, genders, body sizes, abilities, senses and perceptions can use comfortably and easily under equal conditions. In this context, among the public spaces that serve the general public, the importance of shopping centers cannot be denied. They should be designed with a holistic perspective and qualified space setup as a structure that will respond to the expectations of other activities as well as shopping, which is functional, accessible and provides user satisfaction and supports their participation in social life. The aim of the study is to examine the spatial structure of shopping centers and the development of shopping centers in the historical process, to evaluate the Kayseri Park, Forum Kayseri and Kaysermall (Ildem Park) shopping centers, which provide service in different parts of the city of Kayseri with a universal design approach, and to offer suggestions.

2.SPATIAL STRUCTURE OF SHOPPING CENTERS











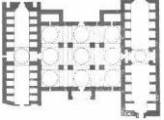

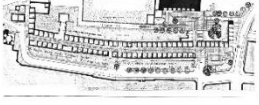





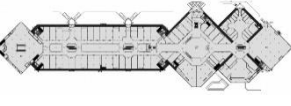


Throughout history, there has been a search for various places to realize the shopping action. Today, the act of shopping brings to mind shopping centers spatially. Spatial structure of shopping centers in the 21st century has turned into modern, dynamic and living centers that contain many functions and aim to meet the needs of all user groups. Today, it is necessary to design the spatial structure of shopping centers with functional, aesthetic, safe, high level of physical comfort and environmentalist policies in a way that will respond to the wishes and needs of all user groups at the maximum level, attract their attention and offer a pleasant time.

2.1. Shopping Places in the Historical Process

Although they are not shopping centers as we perceive them today, it can be said that the first shopping center examples in this period emerged to meet the need of urban users. In the historical process, the shopping places preferred by the societies to meet their needs have been spatially differentiated and called with different names such as agora, stoa, forum, bazaar, covered bazaar, market place, market, arasta, shopping centers [2, 8]. In the past, the city generally developed around the shopping areas and remained in the center. After the 19th century, with the start of mass production with the Industrial Revolution, the production spaces and the buildings and residences where the commercial, social and cultural activities of the workers who will work in these places were needed, and the cities we perceive in today's sense were formed. In the process, with the increasing population in cities, technological developments, the user's desire to use time more effectively and the admiration of Americans for -big stores, the places called "mall" came to fore. In addition to shopping; it has turned into shopping centers where social and cultural activities are carried out. In terms of meaning, it is stated that the concept of mall, which defines walking and strolling areas on a line formed with trees, developed over time with the inclusion of indoor spaces

where the shopping action takes place [9]. In the past, trade places were where products were exchanged and/or only necessary items were sold. With the increase in product variety, these places became arasta where the same type of product was sometimes produced and sold, or turned into covered bazaars where different products were sold. And today, they have become shopping centers with mixed-functions which also serve for social. In this context, it can be said that shopping places have differentiated with the effect of social, social structure and culture, and have evolved into shopping centers as they are used today by showing diversity and change in spatial terms (Table 1).

Table 1. Historical Development of Shopping Places [developed from 1]

	SAMPLE		ARCHITECT	LOCATION	FUNCTION
ANTIQUÉ PERIOD	ROME			Rome and Hellenic It is in the central region. The city develops around the Forum/Agora/Stoa . The forum was located in the neighborhood of the main street instead of the main street intersection in the majority of ancient cities in the post Augustus period [10].	Rome and Hellenic: Commerce, worship, management, public and social areas are included.
	HELLENIC				
MIDDLE AGE	OPEN BAZAAR		Tebriz Bazaar 	Open Bazaar and Tebriz Bazaar Located in the city centre.	Open Bazaar Public and social spaces that combine many functions. Tebriz Bazaar Social areas with commercial functions.
	TEBRIZ BAZAAR				
17 TH AND 18 TH CENTURY	COVERED BAZAAR			17th and 18th Century Shopping Venues It is usually located in the city centre.	17th and 18th Century Shopping Venues Social Areas where commerce function is at the forefront.
	MARKET				
	ARASTA				
19 TH CENTURY	PASSAGE			The Mall is located in areas that will allow new urbanization around it.	Passages are social areas where the commercial function is at the forefront. Malls , on the other hand, are shopping places where the commercial function is realized with the social areas coming to the fore.
	MALL				
20 TH CENTURY	SHOPPING CENTRE			20th Century Shopping Venues are located in the city centre or outside.	In the 20th Century , Shopping Venues began to transform into multifunctional structures where commercial and social areas coexist.
21 ST CENTURY	SHOPPING CENTRE			20th Century Shopping Venues are located in the city centre or outside.	21st Century Sopping Areas are multifunctional structures that combine commercial and social areas. The functional diversity of shopping malls has increased.

Gostiny Dvor, which is considered as the first modern shopping structures in Russia, was planned and built as a shopping centre in 1785, and later shopping centres were built in different countries. The first shopping centre, which was produced with the concept of mall instead of traditional commercial spaces in the city centre and forms the basis of modern shopping centres in today's sense, was designed and implemented by architect Victor Gruen. The desire of the users to enjoy shopping in places that offer quality and product variety, as if they were living and wandering in the city centre, without being affected by climatic conditions came to life in the first half-open Northland Shopping Centre consisting of masses and open spaces [8] (Figure 1). In the process, many buildings such as offices, residences, and hospitals were built around the shopping centre in support of Gruen's design thinking, and the shopping centre turned into a structure that created attraction for users. The fact that the access to the upper floor is provided by an escalator in the design of Northland Shopping Centre also shows that the upper floors of the shopping malls can be used functionally as well as providing a comfortable and third-dimensional space richness in the shopping action of the users, and that the exterior should be given as much attention as the interior design. In the process, many shopping malls adopting Gruen's design principles have been designed [2, 11].



Figure 1. Northland Shopping Centre, North-western, USA, 1952 [11]

Developments in the 20th century, on the other hand, caused the design of shopping centers to be re-evaluated with the target audience, product variety and changing social structure, and the spatial structure of shopping centers diversified. In this period, shopping malls have turned into an open or closed commercial building complex where many retail stores are located together in order for the visitors have a pleasant time, meet their needs, socialize in comfort and security [11]. Today, shopping malls are consumption-oriented spaces that meet not only the shopping needs but also entertainment, recreational, social, cultural, etc. need of people. They have been associated with public spaces that have various functions and are open to everyone [12]. In this context, it is seen that the change in shopping places has caused a change not only in shopping places, but also in the consumptions habits and behaviors of the users, and shopping malls have begun to be designed with different functions in spatial terms.

2.2. Classifications of the Shopping Centres

The International Council of Shopping Centers (ICSC) was established in 1957 in order to lead the development of shopping centers, to encourage architectural design research and to ensure correct management. The council evaluated the shopping mall concept, on the basis of size and capacity, and defined a shopping malls as a real estate's with leasable areas (L.A.) of 5.000 m² or more, which were built and managed holistically, which can have different functions other than trade, and which also offer common areas as shopping centers [8]. Shopping centers are generally evaluated with their structural size, diversity, and use as economic and cultural symbols as well as their spatial characteristics. In addition to the market features, ICSC classifies Shopping Centers by their orientations and locations. ICSC has made different classifications for the United States (USA) and European countries with different parameters in order to improve the spatial structure and standards of shopping centers. Classification for European countries is defined as standard [Extra Large, Large, Medium, Small Scale] and featured [Retail (Large, Medium, Small), Factory Sales and Themed Centers] according to construction area, size of leasable area, number of main stores and commercial domain (Table 2) [1, 13].

Table 2. Classification of Shopping Centers in Europe according to ICSC Standards [1, 13]

Shopping Centre Type		L.A. (m ²)	Description
Standard	Very large scale	80.000 ≥	At least 3 main stores, area of influence 8-40 km.
	Large scale	40.000-79.999	At least 2 main stores, area of influence 8-24 km.
	Medium scale	20.000-39.999	Supermarket and main store (daily need), area of influence 5-10 km.
	Small scale	5.000-19.999	Supermarket and at least 2 main store, area of influence 5-10 km.
Features	Shopping parks	Large	Designed in a traditional street-street layout, it is compatible with traditional art structures
		Medium	
		Small	
	Factory Outlets	5.000 ≥	It consists of stores where discounted products are sold. It is generally far from the city centre.
Theme centres	5.000 ≥	A small number of large stores were created by combining architecture and products in one theme.	

According to ICSC standards, the classification of the shopping malls in the USA is; Open-Air Centres (Neighbourhood, Community, Life, Power, Themed, Outlet Centres) and Indoor Shopping Centres (Regional, Super-Regional Centres) which are defined in two groups according to their designed size, location and concept (Table 3) [13].

Table 3. Classification of shopping centres in the USA according to ICSC standards [13]

Type		Concept	Size (m ²)
Open-Air Centres	Neighbourhood Centres	Daily needs	3.000-15.000
	Community Centre	General goods, daily needs	10.000-35.000
	Life Centre	Luxury shops, food, entertainment	15.000-50.000
	Power Centres	Big store, few tenants	25.000-60.000
	Themed Centres	For leisure, tourist-targeted	8.000-25.000
	Outlet Centres	Factory outlet	5.000-40.000
Indoor Shopping Centres	Regional	General goods, fashion	40.000-80.000
	Super-Regional Centres	Similar to regional but more variety	80.000<

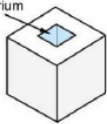
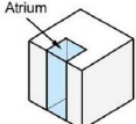
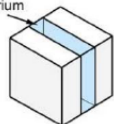
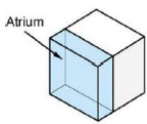
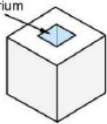
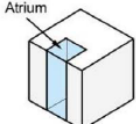
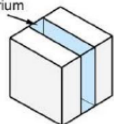
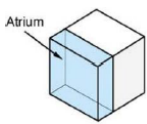
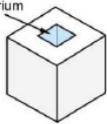
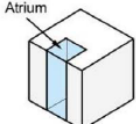
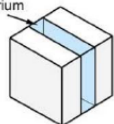
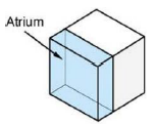
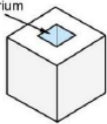
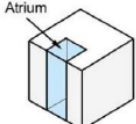
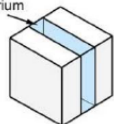
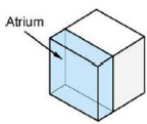
In Turkey, shopping malls first focus on their relationship with their physical environment (i) [Open, Semi-open and Closed], plan schemes (ii) [Linear scheme and its derivatives (Halter), Centre/Atrium Plan Chart, Comb Chart and derivatives, Cartesian, Mixed/Complex and Chaotic] and according to the standards and specifications of ICSC European countries (iii) [Standards and Specialized]. Later, thanks the increase in the diversity, number and characteristics over time, two additional classifications have been developed based on the functions of shopping centres (iv) [Shopping, Shopping and Entertainment, Shopping and Life Centre, Shopping centre and housing, Office (residences, Home Office) Mixed Function] and their user and product focus (v) [Product Oriented, Customer Oriented and Mixed] [8, 14].

Based on their relationship with their physical environment; shopping centres are classified as shopping venues consisting of open, semi open and closed spaces. Shopping malls, which consist of open, and semi-open spaces, generally provide services for the daily needs of consumers (supermarket, pharmacy, kiosk, bank branch, hair dresser, etc.) and are located in residences, holiday sites, university areas far from the centre when the climatic data is appropriate. In such shopping centres, there may be closed spaces, open or semi-open sheltered circulation areas and open and/or closed parking areas. Closed shopping malls, on the other hand, are considered as a single unit, even if they provide more than one building and transition to each other. In such shopping centres, which combine many functions, there are generally closed and sheltered spaces and open and/or closed parking areas that meet the needs of the users, provide them with a comfortable and high-quality living level. Semi-open shopping areas, which are also called mixed or, hybrid in some sources, are centres where indoor and outdoor shopping and social spaces are located together, including open or closed parking areas. In all classifications, total construction areas of 5.000 m² are considered within the scope of shopping centres according to ICSC standards [8, 14].

In classification according to the plan scheme with ICSC standards (according to the circulation and unit relationship and atrium design), it is possible to classify as Dump-Bell, 3T, Race Track, Parallel Edge,









Triangle, Lens, Mixed (Hybrid and Hybrid) and atrium layout based on the basic setup of the shopping action, the plan scheme that is shaped and changed according to the interaction of the environment, space, unit and circulation [8, 14, 15]. In addition, there are studies that classify atrium plan schemes as closed; open-edged; linear and adjacent (Table 4).

Table 4. Three Dimensional Charts of Shopping Centres According to ICSC Standards [16]

CLASSIFICATION TO PLAN DIAGRAM ACCORDING TO ATRIUM DESIGN					
		Closed Atrium	Open Edged Atrium	Linear Atrium	Adjacent Atrium
THREE DIMENSIONAL SCHEME	Atrium				
	Atrium				
	Atrium				
	Atrium				

Although it differs from the ICSC standards, the classification developed (according to circulation and unit relation) in addition to these standards includes linear L-U-T derived from linear schemes and linear comb and atrium plan schemes (Table 5) [8, 14, 15]. In addition, the location of entrances, circulation (service and user), commercial spaces, common areas and gallery spaces, core and wet volumes, whose quality and number can vary, gain importance in the design and orientation of the plan schemes of shopping centres.

Table 5. Shopping Centre Plan Scheme

CLASSIFYING THE PLAN DIAGRAM ACCORDING TO CIRCULATION AND UNIT RELATIONSHIP					
		Spaces		Circulation	
		Linear	L and U Plan Scheme)	3T/T Plan Scheme	Complex
PLAN SCHEME	Atrium				
	Comb				

Today, shopping centres have different functions with change and development as well as shopping action. A new classification has been defined according to the function, user and product-oriented nature of shopping centres in Turkey, by making use of ICSC standards, as structures on which the user and the product are fundamental. Accordingly, shopping malls are classified into four groups as Shopping-Oriented, Shopping and Entertainment-Oriented, Shopping and Living Centre and Mixed Functionality according to their relationship with the physical environment, and into three groups as Product-Oriented, User-Oriented, and User-and Product-Oriented according to their user-and product-oriented nature [8, 14] (Table 6).

Table 6. Classification According to Function, User and Product Orientation of Shopping Centres

CLASSIFICATION	FUNCTION	DESCRIBE
ACCORDINGS TO ITS RELATIONSHIP WITH THE PHYSICAL ENVIRONMENT	Shopping-Oriented	They are the traditional shopping malls. Social activity is limited.
	Shopping and Entertainment-Oriented	The main function is shopping and the side function is entertainment.
	Shopping and Living Centre	It has two different functions together.
	Mixed Functionality	It has functions such as housing, business, entertainment, shopping, education, etc.
ACCORDING TO USER AND PRODUCT ORIENTED	Product-Oriented	It serves with variety and brand superiority.
	User-Oriented	According to age, income level and expectation (Outlet, VIP, Child-Amusement Centres).
	User-And-Product-Oriented	They are specialized centres managed from a single centre.

Shopping centres aim to meet the demands and needs of users arising from social, psychological, physical, economic, and cultural factors [1]. Based on the determined capacity, shopping centre design principles include functional, aesthetic, high quality of space, accessible, readable and reliable criteria for

different functions and users. In the design phase of shopping centres, indoor and outdoor spaces supported by landscape, entrances and exits used for different purposes (customer and service entrances, garbage, etc.), shopping (sales units), service areas and squares, galleries, pedestrian and vehicle transportation (open-closed parking lot and spring transportation) created by associating with the road and street should be given importance. The most important feature of important feature of shopping places is their functionality. If it is planned and designed correctly in a way that responds to the needs of users and is perceptible and accessible, shopping centres will be able to maintain their permanence.

3. EVALUATION OF SHOPPING CENTERS WITH UNIVERSAL DESIGN PRINCIPLES

The term universal design has brought about economic, social and cultural changes in the life style that has changed with the development of technology and the effect of the period in the 20th century. After the Second World and Korean Wars, with the increase of disabled people, regulations were prepared with the “barrier-free design” approach for the disabled in the USA, and applications such as toilets, elevators and ramps for the disabled were made in accordance with the regulation. Since it was observed that the barrier-free design approach discriminated, marginalized and had restrictions in 1970, the more comprehensive “American with Disabilities Act” (ADA) was enacted in the USA in 1990, and y-the approach of accessible design” was adopted [1, 17-19]. Although the ADA law is comprehensive, it has emerged that there are deficiencies in accessibility, and usability in the applications and the need to adopt a design approach that will provide convenience not only for the disabled but also for individuals with different characteristics in the society. American architect Ronald L. Mace started by designing products, equipment and space suitable for him in the living area in order to solve the problems arising from the use of wheelchairs, and expressed that the design for right/left hand use was insufficient, although it was designed in ADA standards in a hotel he experienced. The Universal Design approach has come to the fore with the emphasis that design can be made in accordance with the demands and needs of all different users with age, skill, ability and perception differences, without needing another and without marginalizing [20].


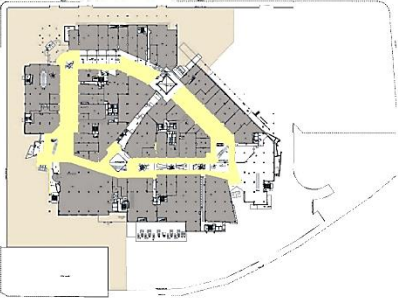
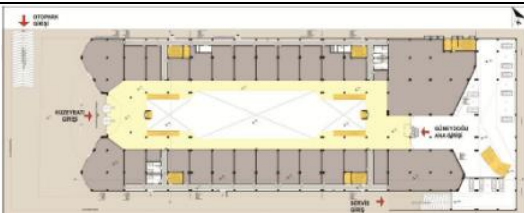
The clearest definition of the universal design concept is the design of products, services, spaces and environments suitable for universal use “anytime, anywhere, by everyone (3E) [1]. The aim of universal design is to have equal usage rights for all user groups and to will make everyone’s life easier by using less physical force. Just as people are in communication and interaction with the places they are in, places also gain meaning and form according to people. Mace created universal design principles and guidelines with a team from different disciplines (architect, engineer, and industrial and environment designer) at the Center for Universal Design, which he founded in 1977. The purpose of the established principles is to detail the universal design concept, to popularize its use, increase the standard of living and guide the users with holistic design.

The concept of universal design shows that it is possible to design products, services, spaces and environments suitable for the use of all individuals in the society, without marginalizing any group, with the principles that will guide the designers and provide ease of use to the user. Universal design principles that adopt the principle of human-oriented design, not a specific group, aims to design the user’s life in comfortable conditions and in a way that will provide satisfaction and make it easier. Apart from architecture, it is a concept that is associated with many disciplines and is effective in all areas of life. The seven basic principles of universal design are accepted worldwide; it addresses disciplines related to product, service, space and environmental designs. These principles are equitable use, flexible use, simple and intuitive use, perceptible information, tolerance for error, low physical effort and enough space for approach and use. Universal design principles can be applied to existing designs to guide and train the design process. All user groups have the right to use nature, open and closed public spaces equally, and this right also includes shopping centers. The fact that shopping centers are designed with universal design principles and have a simple, convenient, safe and comfortable understanding for everyone will also benefit economically, socially and culturally at the community level, and will increase the active participation and satisfaction of all user groups in social life.

3.1. Investigation of Shopping Centers in Kayseri

In Kayseri, where the trade action, has played an active role in shaping the city from past to present, shopping centres have also started to be used with the changing living conditions and the need for new commercial spaces, along with the traditional commercial spaces. Today, Kayseri has eight shopping centres located in different part of the city, as well as traditional commercial spaces known by names such as Düvenönü, Hunat, 27 Mayıs Avenue, Grand Bazaar, and Underground Bazaar. Within the scope of this study, the universal design principles of Kayseri Park, Forum Kayseri and Kaysermall (the name has been changed from Ildempark as Kaysermall on March 2019) were examined. The general characteristics of the examined shopping centres are presented in Table 7 [21].

Table 7. General Characteristics of Forum Kayseri, Kayseri Park and Kaysermall Shopping Centre [developed from 21]

	Architect	Construction Date	Function	Form	Size	Plan Scheme	Construction zone (m ²)	L.A.(m ²)
Kayseri Park	A Design Architect	2006	Trade	Closed	Medium	 Atrium (Lens)	64.000 m ²	27.000 m ²
Forum Kayseri	Tt Design Era Architect	2011	mixed functions	Closed	Large	 Complex It created with street and street texture	153.000 m ²	65.000 m ²
Kaysermall	İkon Project	2017	Trade	Closed	Small	 Atrium (Parallel)	40.000 m ²	16.000 m ²

Kayseri Park is located in Alparslan Neighbourhood, where the new housing pattern was dominant in 2006. Kayseri Park, which is designed as six floors with atrium plan scheme where commercial and social spaces are located, has a total construction area of 64.000 m² with a store area of 27.000 m². Kayseri Park can be reached from Eşref Bitlis Boulevard and Kızılırmak Street in the northwest direction. The entrance to the indoor parking lot is located at Kızılırmak Street, and the entrance to the outdoor parking lot is on the Eşref Bitlis Boulevard. Kayseri Park has a service for employees and customers. In Kayseri Park, which is also accessible by public transportation vehicles and bicycles, commercial and social spaces (Children's playgrounds, terrace and sitting area, food-beverage floor and cinema) are spread across five floors including one of the parking lot floors (Figure 2).



Figure 2. Kayseri Park Shopping Centre [22, 23]

Forum Kayseri was built in 2011 to replace the Kayseri Stadium in the city centre of Kayseri. Forum Kayseri, which is designed as four storey building with mixed functions including commercial, residential, hotel and complex plan, has a construction area of 153.000 m² and, a store area of 65.000 m². The shopping centre can be entered from four points: pedestrians from Sivas Boulevard, public transportation vehicles from the intersection of Sivas Boulevard and Mustafa Kemal Paşa Boulevard, and private vehicles from the intersection of Mustafa Kemal Paşa Boulevard and Hoca Ahmet Yesevi Boulevard-Nuh Naci Yazgan Avenue. In addition to private vehicles and public transport, there is also access by bicycle and scooter. There are closed car parks on Nuh Naci Yazgan Avenue and Hoca Ahmet Yesevi Boulevard and an open car park on Hoca Ahmet Yesevi Boulevard. Commercial and social spaces (children's playgrounds, activity and education areas, terrace and sitting area, food-beverage floor and cinema) are used in Forum Kayseri (Figure 3).



Figure 3. Forum Kayseri Park Shopping Centre [24, 25]

Kaysermall is located in Ildem Gesi-Fatih Neighbourhood, where the new housing pattern was dominant in 2017. Kaysermall, designed as five floors with an atrium plan scheme where commercial and social spaces are located, has a total construction area of 40.000 m² with 16.000 m² store area. Kaysermall can be reached by pedestrian and public transportation vehicles via the intersection point of Saffet Arıkan Bedük Street, Gün Sazak Street and Hanedan Street. Indoor and outdoor car park entrances are on Saffet Arıkan Bedük Street. In Kaysermall, one of the car park floor and four floors of commercial and social spaces (children's playgrounds, terrace and sitting area, food-beverage floor and cinema) are used (Figure 4).



Figure 4. Kaysermall Shopping Centre [26, 27]

Scope of the study; Kayseri Park, Forum Kayseri an Kaysermall shopping centres location, transportation, entrance and orientation, information and direction signs, circulation elements (elevator and stairs), toilets and baby care room and playgrounds were examined in accordance with universal design principles, observation and photographing interpreted with support.

Location: Kayseri Park and Kaysermall are located within the residential pattern. Forum Kayseri is located in the centre.

Transportation: Kayseri Park, Forum Kayseri and Kaysermall provide equal opportunities for public transportation in terms of transportation. The location of Kayseri Park is not too far from the centre and abundance of places for social and cultural activities in its surroundings makes transportation more frequent. Due to the location of Forum Kayseri, transportation is more convenient, comfortable and frequent. Kaysermall, on the other hand, is a shopping mall far from the centre and its surroundings are only residential, which causes transportation problems.

Entrance and Direction: Kayseri Park has two entrances and there are no embossed or palpable surfaces at the entrance. This situation creates a problem for visually impaired individuals and therefore does not provide equal use (Figure 5A). Forum Kayseri has embossed and palpable surfaces at all four entrances. The presence of an embossed and tactile surface ensures appropriate use for visually impaired and demonstrates its compliance with the principle of equal use (Figure 5B). There are no embossed and tactile surfaces at the entrances of Kaysermall. This situation creates a problem for visually impaired individuals and therefore does not provide equal use (Figure 5C). Table 8



Figure 5. Entrance and Direction A. Kayseri Park, B. Forum Kayseri, C. Kaysermall Shopping Centres [28]

Information Desk: Information desks should be designed according to TS 9111 [28]. There is an information unit only at the entrance on northwest facade of Kayseri Park. The information desk complies with the principle of simple and intuitive expression, with a simple and understandable design that is compatible with the area it is in. Since there is no sharp, angular design in the information desk, a design has been made in accordance with the fault tolerance principle. There is no under-knee space, but there are different heights which are suitable for everyone; hence, it partially complies with the principle of equal use and flexible design. Regarding counters, wheelchairs, strollers, etc. it has enough space suitable for users (Figure 6A). Forum Kayseri has a counter only at the entrance on the northeast facade. As in Kayseri Park, the information desk has been designed in accordance with the principle of simple and intuitive expression, fault tolerance and sufficient space. There is no under knee space, but its different heights are suitable for everyone; hence it partially complies with the principles of equal use and flexible design (Figure 6B). There is a counter at the single entrance of Kaysermall. As in the other two shopping centres, it complies with the principle of simple and intuitive explanation and sufficient space. It is designed in accordance with the principles of equal use and flexible design, but consists of angular, sharp lines that allow fault tolerance (Figure 6C). Table 8 shows the evaluation of location (1), transportation (2), entrance and orientation (3) and information desk (4) according to universal design criteria of Kayseri Park, Forum Kayseri and Kaysermall shopping malls.



Figure 6. Information Desk A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

Table 8. Evaluation of Location (1), Transportation (2), Entrance and Direction (3) and Information Desk (4) with Universal Design in Kayseri Park, Forum Kayseri and Kaysermall (developed from [1])

⊖ Negative ⊕ Partially ⊗ Positive

PRINCIPLES	KAYSERİ PARK				FORUM KAYSERİ				KAYSERMALL			
	1	2	3	4	1	2	3	4	1	2	3	4
EQUITABLE USE	⊗	⊗	⊖	⊗	⊗	⊗	⊗	⊗	⊕	⊗	⊖	⊗
FLEXIBLE USE	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊕	⊗	⊗	⊗
SIMPLE AND INTUITIVE USE	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
PERCEPTIBLE INFORMATION	⊕	⊗	⊖	⊗	⊗	⊗	⊗	⊗	⊕	⊗	⊖	⊗
TOLERANCE FOR ERROR	⊗	⊗	⊖	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊖	⊖
LOW PHYSICAL EFFORT	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
ENOUGH SPACE FOR APPROACH AND USE	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

Information and Direction Signs: Horizontal-vertical circulation, emergency escape points, and common areas are shown with the direction sign expressed with international visual signs and symbols in Kayseri Park. It is designed in accordance with perceptible information and provides comfortable use (Figure 7A). In Forum Kayseri, horizontal-vertical circulation, emergency escape points, communal areas and spaces are shown with direction signs expressed with international visual signs and symbols, digital touch screens. It is designed in accordance with perceptible information and provides comfortable use (Figure 7B). Kaysermall has similar features with the other two shopping centre. Information is also provided on the digital screen in Kaysermall (Figure 7C).

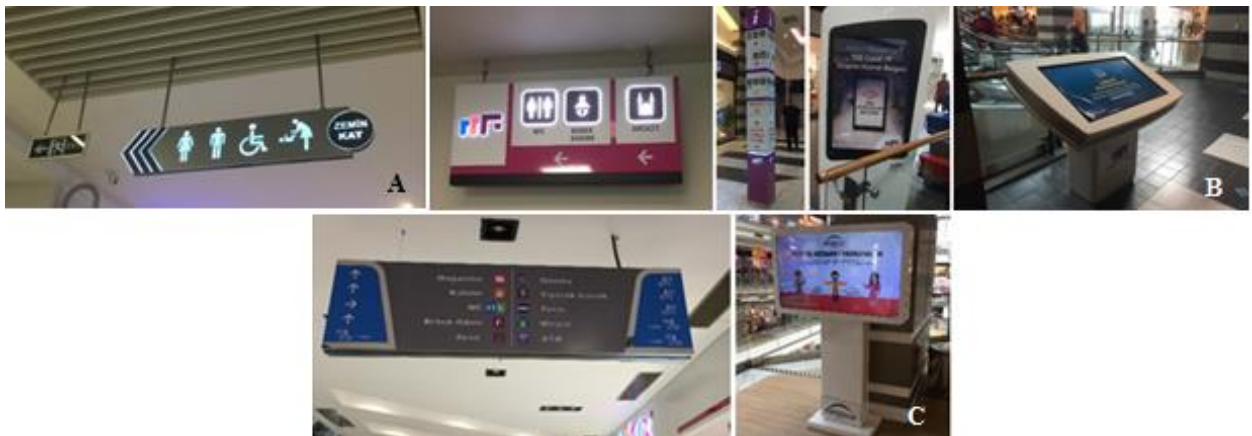


Figure 7. Information and Direction Signs A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

Circulation Elements (Elevators and Stairs): Kayseri Park and Kaysermall have a plan scheme with an atrium, allowing the circulation elements to be designed as a part of the atrium. In both shopping centres, circulation elements are clear, understandable, perceptible and accessible. Forum Kayseri on the other hand, is complex and more difficult to perceive due to its complex plan scheme. However, in Forum Kayseri designing information and direction signs at the closest part to entry-exit point's increases accessibility. Lift providing vertical circulation provide suitable usage for all user groups and there is sufficient space. It is located directly opposite to main entrance of Kayseri Park and is at the end of the

atrium. Thanks to this, it is perceptible and accessible (Figure 8A). In Forum Kayseri, there are elevators located in the main corridor and the service corridor (Figure 8B). All elevators are readable and accessible with information and direction signs. In Kaysermall, elevators are located at both ends of the atrium and are perceptible, readable and accessible (Figure 8C). Escalators providing vertical circulation in all three shopping centres are accessible, simple and understandable areas. At the same time, it does not create confusion as the landing and exit stairs are built together. They are non-slip, greppable and suitable for the right/left hand use. Escalators are generally located in gallery spaces where natural light can be used. At the same time, there are warnings, information signs or diagrams at the starting point of the stairs.



Figure 8. Circulation Elements A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

Toilets and Baby Care Rooms: Kayseri Park toilets, which have perceptible and uncomplicated plan scheme and the fact that the information and direction signs are clear and sufficient, provide better accessibility. There is a comfortable passage area in the corridor between the sales units. The entrance to the toilets is separated from the sink and cabins by a wall. The sink and cabinets are facing each other and this is an undesirable design. The choice of materials in white, wood and gray tones, as well as the lighting on the mirrors, has been effective in the design of the space. Separate lighting is preferred for each function. The corridor and cabins have sufficient width. There are no special toilets reserved for children. A single height is used in the washbasin and it is not suitable for the flexible use principle. The toilets have been designed in accordance with the principle of law physical power and equipped with motion-sensitive equipment (Figure 9A). Forum Kayseri toilets, which have a complex plan scheme, are accessible with clear and sufficient information and direction signs as well as, digital screens. The toilets, which are among the sales units, provide comfortable use with wide corridors and double-sided access. In the first access from the corridor, the toilets are hidden. There are only mirrors and usage areas at the first entrance. This has allowed a design that does not require the use of doors at the entrances to the toilet area. There is a clean-dirty footstep separation, the washbasin and toilet cabins are divided into separate sections and two types of washbasin areas are arranged. Materials arranged with brown and black tones were used and the space was designed with functional lighting. There is sufficient space between cabins and washbasins. One of the toilet cabins is reserved for children and is indicated with symbols and text on the cabin door. There is also a family toilet. There is a minimum height threshold in front of the cabin. The washbasin is designed at different heights and suitable for flexible use. Preferred equipment is with motion sensors requiring low power usage (Figure 9B). Kaysermall toilets, which are perceptible and uncomplicated with an atrium plan scheme and the adequate and clear information and direction signs increase their accessibility. There are comfortable and sufficient passage areas in the in the corridors between the sales units. Toilets and sinks are designed in separate areas and clean-dirty footstep is separated. Materials are selected in white and brown tones, and the fixtures are gray metal. Selected luminaries are low-power motion sensors or push-buttons. Function-oriented lighting is preferred. Corridors are given sufficient width. There are no special use sinks or toilets reserved for children. In addition, a single height is included in the washbasins. This design does not comply with the principles of equal use and flexible design. The sharp lines of sinks in all three shopping centers are not suitable for fault tolerance (Figure 9C).



Figure 9. Circulation Elements A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

In all three shopping centers, disabled toilets are designed as separate units. It is in the same corridor as the toilets and is designed according to TS 9111 standards [29]. The necessary width and comfortable transportation are provided for wheelchair users. Kaysermall has slightly narrower area compared to the other two shopping centers. There is visual and written information on the handicapped toilet door. It follows the principles of simple and intuitive use with perceptible information. In all three shopping centers, as specified in TS 9111 standards, there is a door opening to outside, a push door that provides low physical strength, an accessible and slotted washbasin at an appropriate height, toilet bowls and equipment, while maintaining the user's body position. Inclined mirror and motion sensitive ship-owners were not used in Kayseri Park, but they were used in Forum Kayseri and Kaysermall (Figure 10).



Figure 10. Disabled Toilets A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

Regulation on Shopping Centres No: 29636 requires, a sufficient number of baby care rooms be created in easily accessible places in shopping centre, not less than ten m² on each floor, in sufficient size and in number, with a sink, changing unit, breastfeeding chair and coffee table, with adequate air conditioning and hygiene conditions [30]. In all three shopping centres, baby care rooms, which are in the same corridor as the toilets, can be accessed with direction signs. Visual and written information is available on the doors of these rooms. The rooms have a sink, an open closed cabinet system under the sink, a changing unit, a nursing chair, a soap dispenser, a hand dryer, a garbage unit and an emergency call. In Kayseri Park, the floor is parquet, while in Forum Kayseri and Kaysermall it is ceramic tiled and the space is designed with pastel colours (Figure 11). Table 9 shows the Information and Direction Signs (5), Circulation Elements (6), Toilets and Baby Care Rooms (7) with Universal Design in Kayseri Park, Forum Kayseri and Kaysermall according to universal design criteria of Kayseri Park, Forum Kayseri and Kaysermall shopping centres.



Figure 11. Baby Care Rooms A.Kayseri Park, B.Forum Kayseri, C Kaysermall [28]

Table 9. Evaluation of Information and Direction Signs (5), Circulation Elements (6), Toilets and Baby Care Room (7) with Universal Design in Kayseri Park, Forum Kayseri and Kaysermall (developed from

[1]) ⊖ Negative ✓ Partially ● Positive

PRINCIPLES	KAYSERİ PARK			FORUM KAYSERİ			KAYSERMALL		
	5	6	7	5	6	7	5	6	7
EQUITABLE USE	●	●	✓	●	●	●	●	●	✓
FLEXIBLE USE	●	●	⊖	●	●	●	●	●	⊖
SIMPLE AND INTUITIVE USE	●	●	●	●	●	●	●	●	●
PERCEPTIBLE INFORMATION	●	●	●	●	●	●	●	●	●
TOLERANCE FOR ERROR	●	●	⊖	●	●	✓	●	●	⊖
LOW PHYSICAL EFFORT	●	●	●	●	●	●	●	●	●
ENOUGH SPACE FOR APPROACH AND USE	●	●	●	●	●	●	●	●	●

4. RESULTS AND EVALUATION

Historically, the development and change of shopping centers have been realized with physical, location, function and social dimension components. The development of shopping centers the differences in location and function components brought innovations in spatial terms and led to complex structures with increased functionality in building typology. Traditional street, square, and traditional commercial space setups have started to be integrated into contemporary project design. Shopping centers were seen as a social activity that took their place in daily life in the process, and today, the spatial structure of shopping centers has changed. Space organization in shopping centers has characteristics features that support consumption. In summary an order has emerged where the structure, not the material, is consumed in the process.

Shopping centers come to the forefront in order to appeal to different user groups and to make the time spent by their users in the shopping center productive with a design that supports consumption. Shopping centers have gone beyond just being the places where the shopping action takes place and their importance has increased as public spaces where socializations have increased. In design-for-everyone approach, there should be spaces where many users come together without being marginalized or segregated. This idea is important for the permanence and continuity of shopping centers.

Shopping centers, today are public spaces where various social activities apart from shopping (entertainment, events, eating and drinking, etc.) take place and that combine many functions. Due to the fact that shopping centers have a wide range of users, it is necessary to meet the wishes and needs of all user groups in society. Today, designing according to the user groups defined as average/standard in building and not providing suitability for different users causes problems. In this context, the problem has been tried to be solved by making arrangements for the convenience and accessibility of the buildings for the disabled, elderly and mobility impaired users. However, the Universal Design/Inclusive Design/Design for All approach was accepted after it was understood that such applications should provide equal use for everyone without discriminating and marginalizing users defined as “different”.

The examined shopping centers generally comply the universal design principles in terms of product, equipment and environment. Forum Kayseri has been designed in accordance with universal design principles. In Kayseri Park and Kaysermall shopping centers, a general deficiency was observed in the guide lines for the disabled, design of and the perceptible information about the information desk. It has been observed that the toilets in all three shopping centers are not fully compatible with fault tolerance and that the designs in Forum Kayseri are not included in the principles of equal and flexible use in Kayseri Park and Kaysermall shopping centers. Forum Kayseri, one of the shopping centres examined within the scope of the study has a universal design certificate. When shopping centres are evaluated as locations, it is seen that perceptible information criterion in Kayseri Park and fair use, equal use and perceptible information criteria in Kaysermall are partially provided. Regarding accessibility, all of the examined shopping centres are accessible by pedestrian and public transportation vehicles. However, there is no tactile surface application at the entrance to the building from the open and closed parking areas in all three shopping malls, except for Forum Kayseri where there is a tactile surface work made by

the Municipality in the area used for transportation from the pedestrian and open car park. All entrances in Kayseri Park and Forum Kayseri are without stairs. The entrance in the Saffet Arıkan Bedük Street direction in Kaysermall has stairs and a ramp (Figure 12). There is no tactile surface application in this area. It is seen that the three shopping centres comply with the universal design principles in terms of transportation. In order for the shopping centres to serve all user groups, it is recommended to apply a tactile surface in the area outside the building, and to ensure that public transportation and service vehicles are suitable for all users. When the examined shopping malls are evaluated as entrance and orientation, it is seen that Forum Kayseri meets all the universal design criteria thanks to its audible surface, audio description on the digital screen and Braille alphabet applications. It can be said that Kayseri Park and Kaysermall do not meet the criteria of equal use, perceptible information, and fault tolerance due to the use of slippery ground at the entrance tactile surface and lack of sufficient information. Also, notice boards at the entrance in the Saffet Saffet Arıkan Bedük Street direction in Kaysermall and the direction appear to have negative aspects due to uneven ground (Figure12).



Figure 12. Kaysermall Shopping Centre Entrance (Saffet Arıkan Bedük Street Direction) [28]

When the examined shopping malls are evaluated as entrance and orientation, it is understood that Kayseri Park and Kaysermall meet the universal design criteria, and Kaysermall does not meet the fault tolerance criterion due to not using soft lines. It is seen that the warning and information direction signs and circulation elements directing the disabled parking areas and emergency exits in the examined shopping centres are appropriate and sufficient. When the examined shopping centres are evaluated for toilets, toilets for the disabled and baby care rooms, it is understood that Forum Kayseri partially meets the criterion of fault tolerance, and Kayseri Park and Kaysermall partially meets the criterion of equal use. Similarly, it is seen that Kayseri Park and Kaysermall do not meet the criteria for flexible use and fault tolerance. Despite the fact that the universal design avoids marginalizing or segregating any user groups by aiming at a design suitable for all user groups, all three examined shopping centres fail to follow this basic universal design criterion because they treat handicapped toilets as special spaces.

Figure 13 compares the strengths and weaknesses of the examined shopping centres within the scope of universal design criteria. Although there are positive features among the examined shopping centres, it has been seen that Kaysermall is the most negative example within the scope of universal design criteria. Kaysermall's weakest points are its inability to meet the criteria of equal use, perceptible information and, tolerance for error at the entrance and direction and, tolerance for error at the information desk, and also flexible use and tolerance for error at the toilets and baby care rooms. Kaysermall partially meets the criteria of equal use, flexible use and perceptible information at location; and also equal use at the toilets and baby care rooms. Kayseri Park's weakest points are its inability to meet the criteria of equal use, perceptible information and, tolerance for error at the entrance and direction and also flexible use and tolerance for error at the toilets and baby care rooms. Kayseri Park partially meets the criteria of perceptible information at location and, equal use at the toilets and baby care rooms. Forum Kayseri meets all other universal design criteria, except that it partially meets tolerance for error at the toilets and baby care rooms. Therefore; it has been seen that the weakest shopping centre is Kaysermall within the scope of universal design criteria, and Kayseri Park has relatively stronger aspects. As a result of the study conducted, Forum Kayseri, which also has a Universal Design Certificate, is found to be the most positive/useful example among the examined shopping centres in terms of universal design criteria.

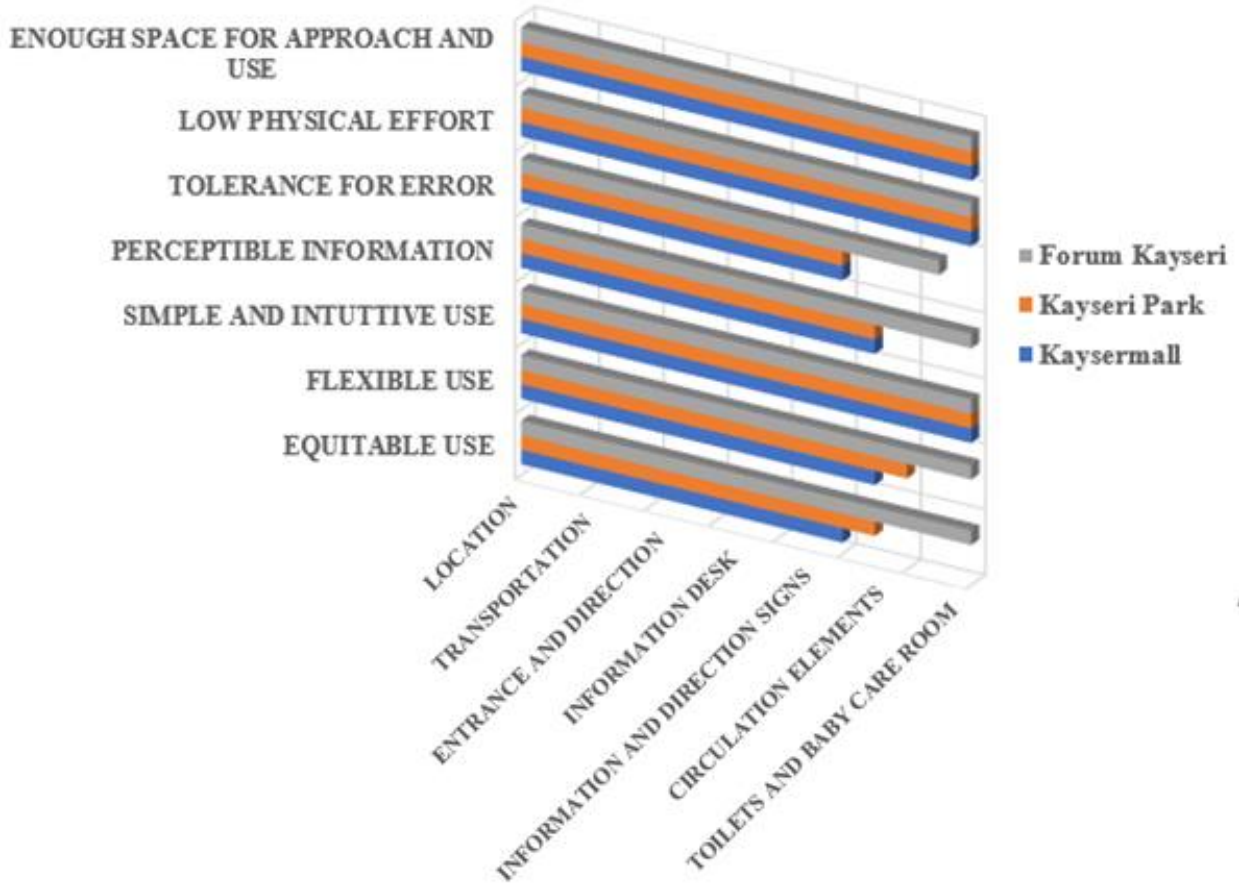


Figure 13. Comparison of Strengths and Weaknesses of Shopping Centres within the Scope of Universal Design Criteria

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