



مركز الأمير سلمان لأبحاث الإعاقة  
Prince Salman Center For Disability Research  
Science Benefiting People علم ينفع الناس



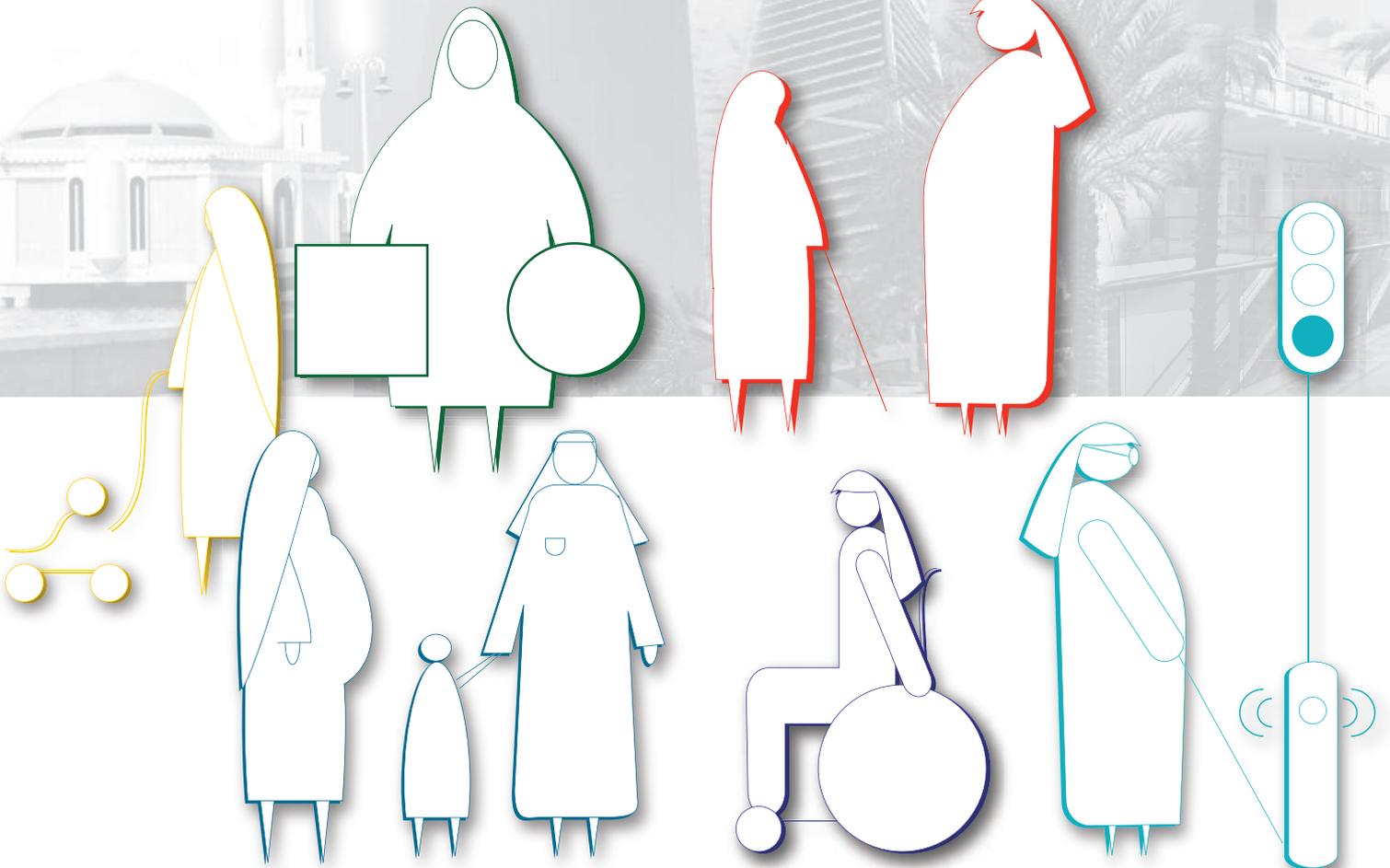
الهيئة العامة للسياحة والآثار  
Saudi Commission for Tourism & Antiquities  
تنمية مسؤولية

## Universal Accessibility

# Destinations & Places of Accommodation

Guidelines for the Kingdom of Saudi Arabia

1431 H -2010 G





The Universal Design is  
**Essential for 10%, Supportive to 40%, and Comfortable to 100%**  
of the Population



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# Introduction







In 2007, the PSCDR embarked on a Universal Accessibility Program (UAP) culminating in the completion of a UAP Compendium in 2008. This comprehensive resource document evaluates and benchmarks the existing level of universal accessibility within KSA against acceptable standards and international best practices in four areas: built environment, land transportation, marine transportation and destination and accommodation. Based on the UAP compendium, four stand-alone, user-friendly working manuals are now available: one on Universally Accessible Land Transportation (UALT), Universally Accessible Building Environment (UABE), Universally Accessible Marine Transportation (UAMT), and Universally Accessible Destination and Accommodation (UADA).

The intended audiences of the Universal Accessibility Built Environment Guidelines Manual are planners, architects, engineers and interior designers, as well as other practitioners and decisions makers in the public and private sectors in KSA. The technical design guidelines will assist them in applying UABE principles and specifications to new building projects, and in the renovation of existing facilities to accommodate all members of Saudi society – including seniors and people with disabilities.

The UABE guidelines in this manual are prescriptive rather than performance-based. They are structured in a way to include considerations of the current conditions and unique cultural and administrative characteristics of the Kingdom of Saudi Arabia (KSA). The scope encompasses guidelines for Government/Administrative, Health Care, Education, Religion, Commercial, Recreation and Residential facilities. To facilitate practitioners in applying the UABE guidelines, two checklists have been compiled to facilitate on-site verification across KSA. In support of this validation process, users of the checklists are encouraged to provide comments and suggestions to the Prince Salman Centre for Disability Research using the Feedback Form.

The initial chapters of the UABE Guidelines Manual set the scene for the entire body of work, and explain the concept evolution and key terms that lay the foundations of a UABE. It is followed by the detailed technical design guidelines for all facilities. The appendices contain supporting documentation. Since the UABE guidelines were developed based on known best practices and expert opinions, and are subject to validation through accessibility audits, a feedback form is attached as an Appendix, to solicit users' comments for future enhancements.

*“The issue of disability and its social and economic repercussions constitutes one of the most important challenges facing contemporary societies at present . . . (including) overcoming obstacles that constrain people with disabilities and limit their productivity and independence in society . . .”*

**His Royal Highness Prince Sultan Bin Salman Bin Abdul-Aziz Al Saud,  
Chairman of the Board  
Prince Salman Center for Disability Research**



The vision of His Royal Highness Prince Salman Bin Abdul-Aziz is that all people in the Kingdom of Saudi Arabia can fully participate and live independently in society, with access to public and private spaces for the purposes of education, employment, health, leisure and all other daily needs of living. Accessible tourism is an integral part of ensuring quality of life for all persons within the Kingdom of Saudi Arabia, as well as those visiting the Kingdom of Saudi Arabia.

To achieve this vision, the Kingdom has embraced the evolving philosophy of universal accessibility, which promotes the concept of designing for all people. This is the genesis of the Prince Salman Center for Disability Research (PSCDR)'s Universal Accessibility Programme.

This document, entitled "Universally Accessible Tourism Guideline" (UATD) is a complementary Tourism-Specific Guidebook, that will be used as an tool for Tourism Service Providers and those working within the Tourism Sector to obtain specific information relating to information regarding Universally Accessibly Tourism. This UATD provides, generally speaking:

- Guideline materials for implementation of universal access within the accommodation establishment environment;
- Guidance to enable tourism stakeholders to ensure minimal levels of accessibility at destinations.

This playbook covers all places of accommodation and includes:

- Hotels
- Furnished Residential Units
- Lodging in Tourism Resorts and Parks
- Youth Hostels
- Residential Compounds
- All other forms of temporary lodging excluding medical lodging/ accommodation
- It does not provide specific guidance to the following areas, but does reference back to other documentation available from the PSCDR, namely the UABE and UAT Guidelines:

- Resorts and Theme Parks i.e. amusement parks
- Participant and Spectator Sports Facilities/ Centers
- Retail and Commercial Centers
- Cultural Facilities such as museums, interpretative centers, exhibition centers and information centers
- Cornice and Waterfront Areas – Developed Waterside Facilities and Areas
- Boating Marinas and Boating Facilities
- Footpaths and Trails

The following areas are outside the scope of the current intended scope of this document and readers are referred back to the PSCDR's UABE and UAT Guidelines for further information:

- Pedestrian infrastructure outside of the tourist environment;
- All other built elements outside of the tourist environment;

- Transportation systems to and from places of accommodation or tourism destination sites, or within places of accommodation or tourism destination sites – reference is made, in some areas in this Guideline, to services offered by Operators – however, the technical details of vehicles etc. are not covered, and readers are urged to consult the UAT Guidelines in this respect.;
- Operational procedures and systems, including training (although some information has been included here, it falls beyond the scope of a set of technical guidelines to provide comprehensive training and operational procedures, material and guidance).

Note that the guidelines presented here have been developed based on known best practices and expert opinion. They will need to be validated through accessibility audits and feedback from KSA practitioners.

## 1.1

## Places and Accommodation

This section of the playbook covers all places of accommodation and includes:

- Hotels
- Furnished Residential Units
- Lodging in Tourism Resorts and Parks
- Youth Hostels
- Residential Compounds
- All other forms of temporary lodging excluding medical lodging/ accommodation

The following areas are outside the scope of this section:

- Tourism Destinations
- Information on Communication Accessibility
- Grading guidelines and checklists
- Pedestrian infrastructure outside of the accommodation environment;
- All other built elements outside of the accommodation environment;
- Transportation systems to and from places of accommodation, or within places of accommodation;
- Operational procedures and systems, including training (although some information has been included here, it falls beyond the scope of a set of technical guidelines to provide comprehensive training and operational procedures, material and guidance).

Note that the guidelines presented here have been developed based on known best practices and expert opinion. They will need to be validated through accessibility audits and feedback from KSA practitioners.



The guidelines in this section and throughout the playbook; are prescriptive rather than performance-based. They are structured in a way that includes consideration of the current conditions and unique cultural and administrative characteristics of the Kingdom of Saudi Arabia (KSA). In particular, this playbook was constructed to be parallel in form to documents, produced by the Supreme Commission for Tourism and Antiquities (SCTA) entitled “Kingdom of Saudi Arabia: Detailed Classification Standards for Tourist Furnished Units (Apartments and Studios)” and “Kingdom of Saudi Arabia: Detailed Classification Standards for Hotels”.

The reader is encouraged to familiarize themselves with the concepts of universal accessibility, and universal accessible tourism, provided in the document entitled “Introduction to Universally Accessible Tourism”, which provides a brief introduction to the concepts. The reader is also encouraged to familiarize themselves with the layout, structure and organization of this manual. This will provide the reader with an overview of the principal concepts and comprehensiveness of the technical design requirements for universally accessible places of accommodation. The playbook is intended to be used throughout the design, development and implementation phases of projects, as well as providing insight and assistance to operators and owners of places of accommodation.



*Figure : The main entry into Al-Musmak, Riyadh*

*The ancient fort in the city of Riyadh plays a significant role in the region’s cultural and tourism heritage. Adaptation of these facilities to Universal Access standards may only enhance the experience of this establishment, as well as foster growth into new realms of tourism.*

## 1.2

## Destinations

This section covers all areas intended as tourist destinations or marketed as tourist destinations. This includes spaces and areas such as, though not limited to, the following:

- Resorts and Theme Parks i.e. amusement parks
- Participant and Spectator Sports Facilities/ Centers
- Retail and Commercial Centers
- Cultural Facilities such as museums, interpretative centers, exhibition centers and information centers
- Cornice and Waterfront Areas – Developed Waterside Facilities and Areas
- Boating Marinas and Boating Facilities
- Footpaths and Trails

The following areas are outside the scope of this playbook:

- Places of Accommodation, Grading Guidelines and Checklists
- Other exclusions noted under Places of Accommodation

Note that the guidelines presented here have been developed based on known best practices and expert opinion. They will need to be validated through accessibility audits and feedback from KSA practitioners.



Figure : View of airplanes in wait, International Airport, Jeddah

*The development of various sectors to conform to Universal Access can only further enhance the appeal of the Kingdom of Saudi-Arabia as a popular tourist destination.*



## 1.3 Moving Forward

More than guidelines and awareness-raising will be needed to implement UATo. Strategies, policies and programs are needed to implement and ingrain UATo. This current document provides some guidance for the implementation of a draft framework for both the Supreme Commission for Tourism and Antiquities, as well as MAS.

Similar frameworks will be developed by the SCTA and other Roleplayers for:

- Ministry of Islamic Affairs & Religious Endowments
- Ministry of Pilgrimage
- Ar-Riyadh Development Authority
- Arab Institute for City Development
- Ar-Riyadh Municipality
- Directorate General of Passports & Immigration
- Gulf Cooperation Council
- Health Affairs Directorate for Ar-Riyadh Region
- Ministry of Information
- Ministry of Municipal and Rural Affairs (MOMRA)
- Ministry of Commerce and Industry (MoCI)
- Riyadh Passport Department
- Consumer Protection
- Council of Saudi Chambers
- Tourism Authority
- Kingdom of Saudi Arabia Embassy's

## Universally Accessible Tourism







## 2

## Universally Accessible Tourism

Recently, the Saudi Government passed a law allowing foreigners, both Muslims and non-Muslims, to visit the Kingdom on tourist visas. The new directive is expected to have a multiplier effect in the economy, bringing a new source of revenue. It will also entail extensive investment in this sector, especially to upgrade services at a number of historical and cultural sites. The Government has set up a Higher Council for Tourism, which will act as a regulatory and coordinating body to implement guidelines aimed at enhancing the tourist industry in Saudi Arabia.

Some of the steps that will be taken include establishing tourist information centers, identifying resort areas, tourist and camping sites, and building new hotels, motels and tourist villages. The private sector will play an important and major role. The new law will present new opportunities for international companies in the industry. There will be a need for both products and services. Official statistics are currently unavailable for the extent of the market and user-population base for accessible tourism, and this is a particular area that MAS needs to address in the near future.

This part aims to provide a general overview and history of this portion of the mandated project. The U.D.A. has been given the mandate of reviewing the existing accessibility status in the Kingdom of Saudi Arabia (hereafter KSA) by the Prince Salman Center for Disability Research (hereafter PSCDR), to undertake a study concerning the status of the various sectors outlined in the mandate (namely built environment, transportation and tourism), and to provide a framework and guidelines for the creation of fully accessible environments in the afore-mentioned sectors.

The over-arching concept's used in this report are firstly, the Universal Design notion summed up in the phrase "Tourism for all" and, secondly, the notion of the tourist industry as represented on the level of the agent/spectator as a series of linkage, the whole of which may be designated the "Tourism Service Chain."

Tourist facilities compete on the level of quality, price and provision of service and attractions. Providing accessible facilities and information provides an additional attraction for customers and gives a competitive advantage, as well as speaking to the very notion of rights. A crucial part of the underlying philosophy of Accessible Tourism is a clear understanding of the concept of accessibility as all-embracing i.e. it speaks to usage of elements of the Tourism Service Chain by people with or without functional limitations.

Many persons with disabilities are keen to travel, but wide variation in the level of access within destinations, combined with poor information and negative experiences, discourage potential customers. Improved accessibility will not only result in economic



benefit to the tourism industry but will also assist in overall social integration. If a person who is elderly, or a person with a functional limitation is unable to make use of accommodation, a destination or an information and/or services provider, it means that their family, friends and colleagues will be turned away or choose a different provider or destination.

Buildings and other facilities should be designed or refurbished with the needs of all potential users in mind, not just the anthropometric mean that seems standard at present. Another danger we should not fall into is to simply assume or create a body of anthropometrics that describes persons with varying forms of functional limitations and treat built and social environments to take cognizance of these only; the implementation of universal accessibility needs to speak to the widest and most universal of tourist needs. High standards of accessibility benefit everyone, and provide scope for catering for the needs of all potential visitors.

The Accessible Tourism market is a growing one. Given the growth in numbers of the elderly, new legislation (both in the KSA and internationally), there is an increasing awareness of the needs and rights of persons with functional limitations. The tourism industry as a whole can only hope to benefit from providing for this sector. Bluntly put, universal accessibility ensures that people's holiday expectations are met. This market encompasses up to 25% of the population and includes:

- Persons who are elderly;
- People with varying degrees of functional mobility, sensory or cognitive limitation – this would include persons whose mobility, senses etc. are temporarily limited; women in the later stages of pregnancy; people with younger children (especially when using push-chairs) and those who are carrying heavy baggage;
- Persons who care for a dependent relative or friend and Professional Nurses.

Unnecessary barriers should be the starting point for thinking about access. Instead of concentrating on an individual's impairment, tourist facilities and destinations should focus on the barriers to universal access such as:

- Poor interpretation and articulation of the built environment;
- The lack of equipment aimed at ensuring accessibility;
- Service and delivery issues related to training, operational and managerial issues;
- Poor presentation and availability of information;
- Misconceptions and misperceptions;
- Failure to address gender and culture related issues.



*Figure 3. Exterior and interior areas that are easy to navigate, provide sufficient ability to traverse and that have floor surfaces that do not present a tripping hazard, and have sufficient camber, are vital components in the formulation of unique and memorable tourist experience.*

[Source: [http://www.enil.eu/enil/images/stories/registered/zslkh/sightseeing\\_in\\_mainz.jpg](http://www.enil.eu/enil/images/stories/registered/zslkh/sightseeing_in_mainz.jpg)]



*Figure 4. Parking areas and passenger off-loading areas including so-called 'kiss-and-ride' facilities should be able to provide flat, level surfaces that are easily negotiable and offer distinct systems for orientation and wayfinding.*

[Source: <http://www.sundancevillas.co.uk/images/Ampelitis/Disabled%20Page/PICT2379%20no%20logo%20on%20VAN%20Lauren.jpg>]



To be accessible for all, many facilities and destinations may need to make physical and operational changes. Whilst this is to be encouraged, some organizations may currently lack the resources to make these changes. This does not necessarily mean that such facilities are inaccessible to everyone with a functional limitation. Good information on current accessibility allows persons with functional limitations to judge for themselves whether or not a facility is accessible to them. This provides immediate benefits for those persons who can access facilities, accommodation and destinations as they are, as well as increasing the market potential for the tourism sector.

Facilities, destinations and service providers should be aware that many barriers could be easily overcome with careful consideration and at little cost e.g. “disability awareness training” will not only help ensure service that is appropriate and generally what could be deemed to cater to the needs of accessibility, but will also train staff to identify access problems and suggest improvements. Accessible tourism helps to identify the conceptual notion that “special needs” are only special if social and physical environments make them so: persons with functional limitations only become ‘disabled’ when their environments fail to function in accessible ways. Many people have a functional limitation which does not usually result in any significant ‘disability,’ but which results in them being ‘disabled’ in certain circumstances e.g. a person with a functional auditory limitation who makes use of a hearing aid, would be ‘disabled’ when sleeping if she was unable to hear a fire alarm.

Spaces in which color, contrast and texture are used effectively (e.g. stairways) are much safer and give rise to fewer accidents. The quality of illumination, both natural and artificial is fundamental to communication, as are good acoustics, and both will have a substantial influence on visitor’s enjoyment of their stay e.g. for people with functional auditory or visual limitations, these factors will determine the difference between participation and isolation. Generally speaking, accommodation and facilities that are accessible will be easier to comprehend, easier to maintain, less prone to damage from baggage and trolleys etc.

A tourist destination is the result of an integrated system of attractions and services that is coming together of resources such to lead a traveler to wanting to take the necessary steps to travel and spend time there.

For a location to become a successful tourist destination, it is necessary for the riches and resources in the area (natural resources, architectural and historical heritage etc.), once considered sufficient to face the market, to be turned into true a competitive advantage through specific marketing strategies, targeted at addressing the increasingly sophisticated and articulated needs of potential clients and tourists.

Generally, the tourism industry is a complex system of independent providers which aim to serve the customer. A variety of stakeholders are involved which often have conflicting needs, wants and interest in the sector. The entire tourism system is defined by five elements: a traveler-generating region, a destination region, a transit region, a travel and tourism industry as well as the external environment.

The traveler-generating region also referred to as the place of origin, embraces all customer target groups that travel for leisure, business or other purposes. Whereas the traveler-generating region provides push factors to stimulate travel, the destination region creates the demand for tourism in pulling customers to individual places. Thus, the destination region is the place where tourism products and services are developed by primary suppliers and later experienced by customers. The transit region describes the period of time to reach a certain destination.

Within the travel and tourism industry, various businesses and organizations are involved in delivering tourism products and services. These are travel agencies, tour operators, Destination Management Organizations (DMO's), e-Mediaries, the transport industry as well as primary suppliers. Although not explicitly being part of the travel and tourism sector, some disability organizations and charities provide essential information with regard to accessible destinations and advice on how to travel with a disability.

The final element, the external environment, embraces all human, socio-cultural, economical, technological, physical, political and legal factors that have an impact on the tourism industry as a whole.

The types of tourists visiting the Kingdom of Saudi Arabia could be categorized into nine sub-categories:

- Tourists traveling to the Kingdom of Saudi Arabia as a destination per se
- Those persons visiting family members;
- Travelers on business-related trips;
- Tourists traveling for Religious Reasons (e.g. the Hajj)
- Travelers viewing heritage sites;
- Travelers involved in sports and cultural activities visiting the Kingdom of Saudi Arabia.
- Non-citizens working in the Kingdom of Saudi Arabia and non-residents working in the Kingdom of Saudi Arabia
- Travelers seeking medical treatments;
- Internal / Domestic Travelers;

A clear distinction needs to be drawn between each of these six groups, each with their own particular methods of accessing information, travel etc. in sort cognizance needs to be taken of the behavioral patterns of each group.



Providing tourism experiences for persons with a disability should now be considered to be an essential business practice, not a philanthropic gesture or good social tourism practice.

## 2.1 What “Universally Accessible Tourism”/ “Tourism for All”

The concept of Universal Design grows out of an extensive history related to Barrier-Free Design, Inclusive Design etc. (the history of this concept will be treated at a later stage). For the time being, we will content ourselves to broadly outline the concept of Universal Design. Universal Design, broadly, aims to create physical and social environments where the, so to speak, the ‘playing field is level’: broadly, to allow all physical and all social environments to be accessible to all persons to the greatest possible degree.

There are seven widely advocated principles of Universal Design:

### Equitable Use

Design should provide the same means of use for all users; identical wherever possible; equivalent when not. Avoid segregating or stigmatizing users, make provisions for privacy, security and safety equally available to all users.

### Flexibility in Use

Designs should provide choice in their methods of use. They should accommodate left or right-handed access or use. Designs should facilitate the user’s accuracy and precision, and should provide adaptability to the particular pace of the user.

### Simple and Intuitive to Use

Designs should eliminate unnecessary complexity; be consistent with user expectations and intuition; accommodate a wide variety of literacy and language skills; arrange information consistent with its importance; provide effective prompting and feedback before, during a task and after its completion.

### Perceptible Information

Designs should provide different modes (e.g. pictorial, text auditing, tactile systems) for redundant presentation of essential information; maximize legitimacy and comprehension of information, differentiate information elements in ways that can be clearly described i.e. make it easy to give and follow instructions or directions; provide compatibility and comprehension with the variety of techniques or devices used by persons with sensory limitations.



Figure 5. Specialist equipment becomes necessary where amusement rides and other entertainment/ tourist services are not designed with a view towards being universally design.

Source: <http://www.flickr.com/photos/loren85022/1500095906/in/photostream/>

### **Tolerance for Error**

Designs should be such that they arrange elements to minimize hazards and errors; provide warnings of hazards and errors; provide fail safe features; discourage unconscious action in tasks that require special vigilance.

### **Low Physical Effort**

Designs should allow users to maintain a comfortable body position; require reasonable operating forces; minimize repetitive actions; minimize sustained physical effort.

### **Size and Space for Approach and Use**

Designs should provide a clear line of sight to important elements for any seated or standing user; make reach to all components within range for any seated or standing user; accommodate variations in hand and grip size; provide adequate space for use of assistive devices or personal helpers.



## 2.2

## The Importance & History of the Universal Design/ Universal Accessibility Approach

The ‘Universal Design’ or ‘Universal Accessibility’ approach is an important step forward as it represents a more inclusive or holistic approach. It ensures that a high level of accessibility within the built environment for people of all abilities is a priority for the community as whole, giving freedom of choice and freedom of movements to all individuals throughout their lifetimes.

Universal Accessibility looks at the realistic picture. It accepts the reality that the broader population comprises of people of varying ages, heights, weights, language skills, abilities, etc. Following the principals of ‘Universal Accessibility’ results in an environment that benefits all levels of society - e.g. a built environment designed around these principles results in a more accessible environment for ALL people.

The ‘Universal Accessibility’ approach places the responsibility on the community to adjust a built environment to accommodate the individual rather than the individual working around the built environment. In other words, the key lies in the integration of Universal Access into the design and planning process.

Specifically, Universal Design makes the built environment more pedestrian friendly and reduces the need for specialized services such as para-transport and purpose built taxis. It also improves basic mobility which in turn can also have a positive aspect on income disadvantaged individuals.

The application of ‘Universal Design’ and ‘Universal Accessibility’ principles is a step forward in mitigating inadvertent prejudice against people irrespective of their race, gender, age, faith, political or other opinion and physical and mental limitations. Incorporation of ‘Universal Design and Accessibility’ principles also helps in empowering differently-abled individuals by conferring independence and mobility unto them. This in turn protects the self-esteem of differently-abled individuals and also creates new opportunities that overcome any manifest limitations.

A Universally Accessible facility will accommodate a wide variety of groups of society appropriately, safely, and with dignity, as well as optimizing their functionality in the system or environment in which they operate.



## 2.3 Accessibility and the Tourist

When traveling, people with functional limitations and generally all people have special individual requirements in terms of the accessibility of transportation, accommodation, sights, restaurants, streets and communication infrastructure. A well designed accessible infrastructure is the basis for ensuring that tourism products cater for all market segments.

The underlying prerequisite for an accessible infrastructure is that tourism facilities are either designed or modified in order to enable people with accessibility requirements to fully participate in physical access. Physical access is one of the most important supply-side issues in tourism. Buildings with easy access as well as with a range of disability-friendly products have to be provided in order to fulfill the criteria of a well-intentioned accessible design.

By focusing on physical access, Australian Tourism Researcher Darcy has characterized access from three main dimensions. The first dimension is related to physical access, which involves people with functional physical limitations using wheelchairs or walking aids. The accessibility provision for this dimension includes elements such as handrails, ramps, lifts, and lowered counters. The second dimension comprises people with functional sensory limitations and focuses on sensory access. Sensory access requirements include for example tactile markings, signs and labels, hearing augmentation systems and audio cues for lifts and lights. The last dimension concentrates on communication access which involves people that have difficulties with the written word, speech and language problems.

Some countries have introduced legislation designed to make it compulsory for tourism suppliers to create an environment that is accessible to persons with disabilities. Three examples of national legislation are the United Kingdom (British Disability Discrimination Act), America (American Disability Act), and Australia (Commonwealth Disability Discrimination Act). These countries represent the strongest attempts in creating legal accessibility standards.

Accessibility legislation has a two-fold effect on the travel and tourism industry. First, an enforcement of accessible facilities increases the economic gain for the industry from the purchasing power of persons with disabilities. Secondly, the lives of persons with disabilities and elderly persons will be enriched as a result of an increased interdependence.

However, the physical support of accessibility to make tourism products and services available and attractive to people with functional physical, sensory or cognitive



limitations is not enough. Also important are attitudes and sensitivity of staff. The two most cited complaints about tourism and travel staff is the consistent distribution of unreliable accessibility information and the second was about negative, demeaning or condescending staff attitudes. Staff training is an appropriate way to ensure greater customer satisfaction as well as improved interaction with guests who have disabilities.

## 2.4 Why make Establishments & Destinations more accessible?

It makes good business sense. The market for accessible tourism is expanding, as explained earlier. This growth in international, and the expected growth in regional tourism, represents a great business opportunity. Research has demonstrated that people with disabilities, the elderly, children and other people with functional limitations like to, and want to, take holidays in a mainstream environment. Many also the financial means to do so – given the right facilities. People with disabilities often travel with friends, family or carers, which brings in additional revenue. They frequently book well in advance and often return on a regular basis once they find the right facilities and establishments. The market is changing – there is an increase in so-called ‘grey tourism’, as well as an increase in medical tourism. With the opening of the Kingdom to the mainstream tourism market, the 2010 – 2020 year gap is of vital importance in establishing and retaining a segment of the international and regional market.

Accessible tourism is also good for guests:

- It increases the opportunity for guests with access issues to stay away;
- Improves the quality of their stay;
- Provides a more user-friendly environment;
- Gives potential guests confidence in choosing your accommodation;

### What Should Owners and Operators Do?

The SCTA will be implementing two integrated systems for implementing Universally Accessible Tourism:

- Firstly, UATo will be integrated into all grading criteria for places of accommodation within the Kingdom. This will ensure that all places of accommodation have a minimum level of accessibility when being graded.
- Secondly, the SCT will operate a stand-alone Universal Access Grading System that will act as a database and critical resource base for guests to plan their holidays and understand what levels of accessibility will be offered at which places of accommodation.

There are four main steps that you, as an owner or operator, may undertake in order to implement universal accessible tourism in your establishment or tourist facility.

#### Step One: Undertake a Self-Survey

As a first step, a place of accommodation or tourist destination – such as a hotel, bed and breakfast, compound etc. – should undertake a self-assessment, based on the general and technical guidance in this document, and the SCTA Universal Access Grading Guidelines. This assessment will help you to identify the current situation and your level of current compliance to accessibility standards and requirements, and what needs to be changed to achieve the minimum level of accessibility in your place of accommodation.

#### Step Two: Prepare an Action Plan

The assessment information that you have obtained may be used to prepare an Action Plan. This Action Plan helps identify how to overcome access problems through environmental changes, staff training, operational changes and other measures. It can also help to distinguish between urgent measures and low-cost improvements carried out as part of regular maintenance (such as redecoration or routine replacement of furniture and fittings). This will help spread the costs of improvements over time. Many measures to increase accessibility are also basic common sense. Simple changes to layout, better signage and information, and better training offered low-cost, high-impact results. Many actions will benefit other customers such as the elderly, people traveling with children etc. An important aspect of accessibility is staff awareness. As part of your Action Plan, you may wish to consider providing training to help ensure that they have the right attitude and feel confident to welcome and assist guests with disabilities.

#### Step Three: Produce an Access Statement

This is produced for the benefit of potential guests and customers and shows a commitment to accessibility. The statement can set out your aspirations and will be a statement of intent based on the work to be carried out as identified in the Action Plan. The information from your Action Plan together with your Access Statement can be used in your marketing. You may also wish to include diagrams showing the layout and dimensions of the property so that potential guests can assess its accessibility. These features could also feature on a web-site if your establishment has one.

#### Stage Four: Obtain an Annual Audit from the SCT to Assess your Level of Accessibility

Once you are confident that you have reached a sufficient level of accessibility to obtain formal recognition from the SCT, then contact with the SCT and obtaining a site inspection and audit from SCT is the next step. They will indicate what your level of compliance is, measured against the Grading Criteria, and offer suggestions to improve the level of accessibility. The SCT will provide you with a temporary Universal Access Grade, as well as indicating what provisions need to be made by your place of establishment in order to qualify for the next highest grade. Should you indicate to the SCT that you intend to make the necessary adjustments to be graded up; the SCT will provide you with a timeframe in which to undertake and make the provisions.



Figure 6. Designated routes designed with potential users in mind provide a wider range of use and consequently improve the tourist offering, as is the case here, where a designated route has been created on a beach to allow conventional wheeled-access.

[Source: <http://www.evas-apartments.com/susibeach.jpg>]

## 2.5 Accessible Tourism as a Growth Industry

Figures from Keroul, Canada, indicate that the population of persons with disabilities represents approximately 15% of that population, with a nominal 80% of that population able to take fairly frequent trips in Canada and abroad [Keroul, 1995].

A studied undertaken by Touche Ross [1993] entitled “Tourism 2000 Tourism for All in Europe”, indicated that the total percentage of persons with disability in Europe is officially claimed at 11% of the entire population. Another 3-4% should be added to this number to account for those, due to various reasons, who were not accounted for in the official statistics [Ross, 1993]. 14% of the population corresponds to about 50 million persons with disabilities in Western Europe. For various reasons (type of disability, socio-economic conditions), we cannot, however, consider the whole segment of people with disabilities as potential tourist customers. Touche Ross [1993] estimates that 72% of persons with disabilities are willing and able to travel. This

means a potential market, in Europe – at that time – of 36 million people. 5 to 6 million of this market were already regularly traveling in 1993 [Ross, 1993].

A study commissioned in November 2002 by Germany's Federal Ministry of Economics and Labor commissioned a project group, comprising the University of Munster and the consulting firms Neumannconsult and Reppel + Lorenz, aimed at studying the economic impulses of accessible Tourism for All [European Commission, 2004b]. The study showed that persons with activity limitations represent a considerable customer market.

Assuming a confirmed travel intensity of 54.3%, 3.64 million persons with severe mobility and activity restrictions travel each year. On average, each traveler undertakes 1.3 holiday trips per year, taking the total number of holiday trips for this group to 4.74 million. This study also found that 41.2% (i.e. 1.95 million) of these trips were undertaken in Germany [European Commission, 2004b]. With an average duration of 13.9 days, persons with severe disabilities spend € 27.1 million a year on holiday in Germany. This leads to around 65000 full-time jobs that are induced by the effects of tourists with disabilities. Thus, the tourism market for travelers with activity limitations is already highly important, and its significance will continue to rise.

A case in point is the growth of aged population in Europe. Many authors and organizations have supported the view that there is a strong correlation between ageing and disability [Schmidt, 2004; Gerlin, 2005; Bloch, 2000; United Nations, 1990]. As noted by the United Nations Disability Statistics Compendium [United Nations, 1990] there is strong and positive relation between ageing and disability globally. Reduced function and participation in daily activities associated with impairment and disability increases substantially after the age of 40 for most of the population groups [United Nations, 1993; Eurostat, 2001]. According to Blotch [2000], a high percentage of the population aged 65 and over will not have disability-free life expectancy. The fact that the abilities of older people deteriorate means that they share many of the access barriers faced by people with disabilities. This demonstrates that any industry that addresses these issues can attract significantly more customers [European Disability Forum, 2001]. It is therefore of tremendous importance to design inclusive services and products from an early stage in order to maximize the capacity for participation by the elderly population in daily activities, community life as well as for travel options. Given this strong correlation between age and functional limitation and having examined that elderly people experience similar access barriers depending on the type of functional limitation or long-standing health problem, the elderly population represents an important customer segment for accessible products and services.

In addition to people with functional limitations and the elderly population, it has to be taken into account that also able-bodied citizens have accessibility needs that have to be catered for. There is no clear line between those who are, and those who are



not, labeled as 'disabled'. Functional ability exists on a continuum where some people have exceptionally high ability, others have mid-range ability, and some have very low ability. Additionally, a person who might have a low ability in one area (e.g. mobility) might have exceptionally high ability in another (e.g. intelligence or sight). Often people who have temporary functional physical limitations do not seem themselves as 'disabled' and lack knowledge and expertise to cater for their own needs. Not only is there no clear line between those who do or do not have a disability or limitation, but almost everyone tends to lose functional ability as they age or at various times during the normal course of their life. Most people, at some point, break a bone and need to use crutches or some other aid, care for a young child or carry heavy and awkward suitcases.

The 'average' person often has 'non-average' needs or limitations. In addition to supporting those who have permanent functional limitations, universal design can make the transition to being older or having a temporary injury both easier and more affordable, while offering the option of living independently.

The economic potential that can be created by making provision for accessible tourist facilities and services is extensive. The tourism industry is especially called upon to acknowledge and exploit these opportunities. By avoiding and/or removing barriers, tourism service providers can open new high-growth market segments and gain economic and competitive advantages at domestic and international travel. It can be clearly seen through these cases that investments in accessible tourism are worthwhile investments [European Commission, 2004b]:

- a. Primarily, to older travelers and travelers with functional limitations for whom traveling becomes easier and more attractive;
- b. To all other holiday-makers as a result of enhanced convenience and quality;
- c. To tourism service providers as a result of a rising number of guests and higher capacity utilization;
- d. To destinations, which improve their competitive standing and gain more value added;
- e. And not least to Saudi Arabia as a tourist destination, due to new demand impulses and a stronger tourism industry.

Though the cases above do not directly refer to the Kingdom of Saudi Arabia per se, the implications and overall assessments do carry some merit in providing a basis for comparison.

The European Commission [Morelli, 2004] have outlined ten reasons for making destinations accessible:

## Increase of the Potential Demand

The presence of people accompanying customers with special needs creates a multiplying effect that increases the number of potential tourists with consequent increase of the potential demand.

## Market Growth

Some research studies shows that the European population has been increasingly ageing over the last few years. This could translate into a growth of the market where the target group is exactly the elderly.

## Opportunity to Develop Domestic Tourism

People with disabilities do not usually tend to travel abroad because they fear they might have to face more barriers. This is why accessible tourism could favor the development of the national domestic tourism industry.

## Customer Care

The offer of a holiday ‘with no barriers’ satisfies the needs of people with disabilities. Clients can consequently more easily become repeat clients and a powerful marketing channel by world-of-mouth. World-of-mouth is a very important marketing channel to build and spread a positive image of the destination. Satisfying the needs of people with disabilities could, therefore, translate into an increase of demand for a destination with positive economic returns for the tourist operators of the area.

## The Possibility for Off-Season Business

It was repeatedly highlighted that tourists with special needs sometimes prefer to travel during low season. This is because it is usually easier to find accommodation in and visit tourist destinations. As far as the supply is concerned, that would translate into a higher usage of the infrastructure across the seasons. It is easy to understand that it practically means positive economic returns for the tourist operators.

## Positive Effects also for the other Tourist Target Groups

Accessible tourism brings benefit also to other target groups such as families with small children and the elderly and also those who have, even if temporarily, some degree of functional limitation.

## More Benefit for Residents

When a decision is taken to make a destination accessible to all, the consequent enhancements will not only benefit the potential tourist, but, first of all, the residents and all those who, even if for a limited period of time, are to face difficult situations due to temporary disability.



### **Increase the Level of Knowledge**

Knowledge about services and packages validated as truly accessible also because experienced as such can be quickly spread by word of mouth.

### **Differentiation and Competitive Advantage**

Universal Design and design of accessible tourist services can be the basis for agreements between tour operators and tourist service providers. Accessibility would bring about a higher competitive advantage against competitors.



## Services







## 3 Services

### 3.1 Pre-Arrival/Booking

#### 3.1.1 General Guidance

- a. **Advertising Materials/Websites:** should contain information relating to accessible phone numbers in order to book accommodation. Advertising material/web sites should also include information on what equipment & services are available.
- b. **Provision for Textphones:** Establishments to provide textphone/ type talk for guests to book accommodation. This may be through a central reservations system.
- c. **Type Talk:** Reservation staff/ owner should have an understanding of type talk & prefixes used.
- d. **Entry to Establishment by Entry Phone:** Where entry to the establishment is by entry phone there should be amplification of sound & written instructions evident. Consideration should be given to providing portable inductive loop couplers. Where access to an establishment is via voice communication; there must be an alternative procedure for entry & clear written instructions for customers.

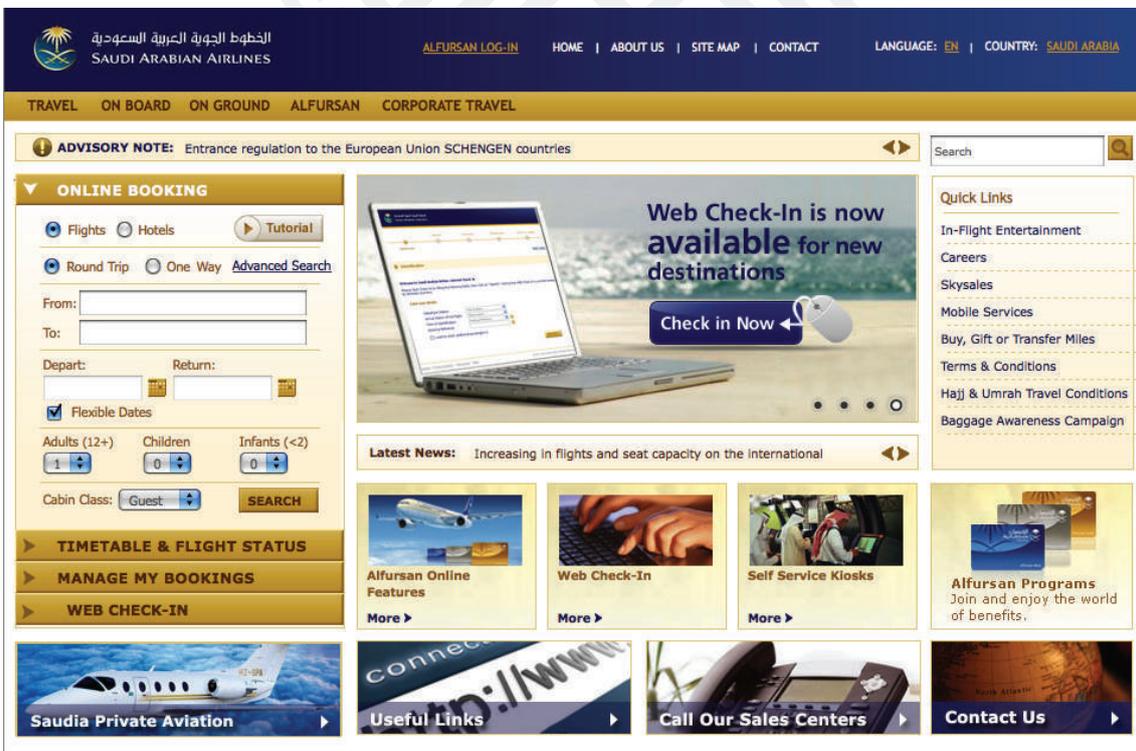


Figure 7: Homepage of Saudi-Arabian Airlines - One's journey begins prior to arrival and starts when accessing information from various sources. Each of which should provide each individual with equal opportunity to access such information. [Source: [saudiairlines.com/](http://saudiairlines.com/)]



## 3.2 Reception and Welcoming Services

### 3.2.1 General Guidance

- a. **Orientation:** should be offered to guests, on request, by staff members.
- b. **Briefing on Emergency and Evacuation Procedures:** should be offered so guests are fully conversant with emergency or evacuation procedures.
- c. **Alerting Sleeping Guests:** Flashing the bedroom lights on and off will help to alert a sleeping guest. Staff should ensure that female guests are woken by female staff, and male by male staff, if this is not possible, then guests should be informed and alternative arrangements made.
- d. **Communication in Emergencies:** The use of written cards to communicate an emergency will be important where there is no alternative visual communication facility.
- e. **Provision for Information:** All general information available in large print, Braille and audio format.
- f. **Access to Bedrooms:** requirements should be discussed on arrival. Guests' should be informed of any procedures that may impact on their privacy.
- g. **Reviewing Policies and Practices:** to ensure continued and improved levels of accessibility.
- h. **Commitment to Policies:** these must be clearly demonstrated and supported by all staff and will only be successful if this commitment is continually expressed by the Chair and Chief Executive of any large organization or by any individual or family who manages a bed & breakfast establishment or a small hotel. Ensure therefore that a policy to welcome all your guests is advocated by all managers to guest on a regular basis.
- i. **Action Plan:** Consider producing an action plan for the business, which expresses your aspirations.
- j. **Staff Training:** Regularly review and update staff training to ensure they meet the needs of your guests and deliver a high quality service.
- k. **'Special' Accommodation:** Accessible accommodation need not be regarded as 'special': it is roomy, comfortable accommodation with thoughtful design for any guest.

**l. Describing Establishment Layouts:** A brief description of the layout of the establishment can help guests with functional visual limitations or guests who have difficulty with unfamiliar surroundings.

**m. Publication of Access Policy:** Where possible publish your access policy and action access plan for guests' to see. A copy of it should be made available on request. You may consider putting your accessible policy on your web site with plans of rooms/ premises layout.

**n. Provision of Accurate Information:** Accurate information is essential on booking, guests with disabilities need to make an informed choice, to be aware of potential barriers and decide if they are able to use facilities, if given sufficient information to over-come obstacles.

**o. Storage of Mobility Aids:** Facilities should be made available to store and charge wheelchairs and other mobility aids.

## 3.3 Fire Safety and General Safety

### 3.3.1 Design Considerations

To be accessible to all individuals, emergency exits doors should include the same accessibility features as other doors specified in these guidelines. The doors and routes should be marked in a way that is accessible to all individuals, including those who may have difficulty with literacy, such as children or persons speaking a different language. Persons with a visual impairment will need a means of quickly locating exits; audio or talking signs could assist. In the event of fire when elevators cannot be used, areas of rescue assistance are an asset to anyone who would have difficulty traversing sets of stairs.

### 3.3.2 Application Guidelines

In facilities, or portions of facilities, required to be accessible, accessible means of egress should be provided in the same number as required for exits by the Kingdom of Saudi Arabia Building Code.

Where required exits from a floor level are not accessible, areas of rescue assistance should be provided on the floor level in a number equal to that of the required exits. A horizontal exit meeting the requirements of the Kingdom of Saudi Arabia Building Code will satisfy the requirements for an area of rescue assistance.



TABLE: Number of Rescue Assistance Spaces

Occupant load of the floor area served by the area of rescue assistance	Minimum number of rescue spaces in each area of rescue assistance.
1 to 400	2
Over 400	3 plus 1 for each additional increment of 200 persons in excess of 400 persons

Areas of rescue assistance should comply with this section.

### 3.3.3 General Guidelines

**a) Visual Alarms:** are provided throughout the primary circulation spaces, within all suites and bedrooms, meeting rooms, public washrooms and recreation areas.

**b) Exits:** All exits are clearly visible, are easily discernable and accessible from the areas they serve.

**c) Egress Route:** All access routes and passages leading to exits are clearly marked to guide guests. Hotel and lodging facilities are configured with direct exits to the exterior and/ or common circulation areas, so that occupants always have two ways of exiting.

**d) Illumination:** Exits are illuminated in darkness. Stairs and corridors should be equipped with emergency lighting.

### 3.3.4 Technical Guidelines

No technical guidance is offered for this part.

#### 3.1.1.4 Illustrations

No illustrations offered for this part.

### 3.3.6 See Also

2.2	Anthropometric Data
3.1.1	Ground Surfaces
3.1.2	Overhead and Protruding Objects
3.1.3	Sidewalks, Pavements, Paths and Routes
3.1.6	Kerb Cuts
3.1.7	Pedestrian Crossings
3.1.8	Medians and Middle Islands
3.2.3	Interior Ramps
3.2.4	Interior Stairs
3.2.5	Escalators
3.2.6	Lifts
3.2.7	Inclined and Vertical Platform Lifts
3.2.9	Doors
3.2.10	Windows, Glazed Screens and Sidelights
3.2.27	Gates, Turnstiles and Openings
3.3.10	Controls and Operating Mechanisms
3.3.13	Handrails
3.4.1	Signage
3.4.2	Public Telephones
3.4.3	Public Address Systems
3.4.4	Information Systems
3.4.5	Card Access, Safety and Security Systems
3.4.6	Detectable Warning Surfaces
3.4.7	Assistive Listening Systems
3.4.8	Visual Alarms
3.4.9	Emergency Exits, Areas of Rescue Assistance & Fire Evacuation
B1	Glare and Light Sources
B2	Illumination
B3	Materials and Finishes
B4	Texture and Colour
B5	Acoustics



**Environments**







## 4

## Environments

This section deals with the general requirements faced by the architect, developer, operator etc. in creating accessible environments, or ensuring that interventions themselves are accessible to the widest range of users.

### 4.1

### Parking and Passenger Loading Zones

#### 4.1.1 Design Considerations

Gaining Vehicular Access is a key, whether through the use of a private vehicle, bus or being dropped off, element in the usage of facilities. In particular, three main areas may be identified as providing access:

- Provision for parking and/ or passenger loading and off-loading zones;
- Accessible means of pedestrian access;
- The route of access from the point of entry into the site to the main entrance

The following considerations should be borne in mind when planning or rebuilding parking and passenger loading areas:

- **Parking:** The provision of parking spaces, minimizing travel distances, well-marked and free of steps and curbs, spatial requirements, heights above grade, and parking signs.
- **Passenger Loading Zones:** Space for the deployment of lifts or ramps and overhead clearances and protection from the elements.

#### 4.1.2 Application Considerations

Operators and other providing Tourist Services, or are responsible for Places of Accommodation and Destinations, shall conform to these application requirements.

#### PARKING

- This standard is applicable to all new parking structures and surface parking lots.
- For existing structures and surface parking lots undergoing renovations / alterations, these standards should be employed to the greatest extent possible.
- Designated parking spaces should include Accessible Parking Spaces and Limited Mobility & Caregivers Only parking spaces.



- Limited Mobility & Caregivers Only parking spaces are recommended for all facilities and required for all assembly buildings.
- The minimum number of designated parking spaces should be in accordance with the Table below and should be located on the shortest possible circulation route, with minimal traffic flow crossing, to an accessible facility entrance or to an accessible pedestrian entrance of the parking facility.

Table - Designated Accessible Parking Space Requirements		
Number of Automobile Parking Spaces	Number of Designated Accessible Parking Spaces	Number of Limited Mobility Parking Spaces
1 – 50	1 + x	1
51 – 100	2 + x	2
101 – 200	4 + x	2
201 – 300	5 + x	3
301 – 500	6 + x	4
501 and over	6 + x plus 1 for each 100 over 500	4 plus 1 for each 100 over 500

Where  $x$  indicates the number of mobility accessible rooms in the place of accommodation or establishment.

- In facilities with multiple accessible entrances with adjacent parking, designated parking spaces should be dispersed and located closest to the accessible entrances with appropriate directional signage locating the accessible entrance(s).

## PASSENGER LOADING ZONES

Where passenger-loading zones are provided, at least one should comply with this section.

- Accessible passenger-loading zones should be identified with signage
- If the passenger-loading zone is a designated mobility transit stop zone, it should comply with all relevant local bylaws.

### 4.1.3 General Guidelines

- a. **Setting-Down Point:** should be located in area with a shallow gradient/ slope so that users of wheelchairs may feel secure when transferring from car to wheelchair and back again.
- b. **Provision for Accessible Parking Bays:** There should be at least one parking bay for each accessible room provided. This must be clearly designated and signposted.
- c. **Maximum Distance from Parking Bay to Entrance:** Distance from designated parking bays to entrance should be no further than 50m, and should ideally be 20m.
- d. **Approach to Entrance:** should be free of projecting obstructions or features.
- e. **Entrance Route:** should be firm, even and slip-resistant.
- f. **Provision of Steps:** No steps en-route to entrance from street or parking.
- g. **Illumination:** Entrances should be adequately illuminated.

### 4.1.4 Technical Guidelines

#### Parking

- a. **Location:** Designated parking spaces should be located on an accessible route complying with Appendix 4.
- b. **Accessible Route:** An accessible route complying with Appendix 4 should be provided from each designated parking space to an accessible entrance into the facility. Where the location of the nearest accessible entrance is not obvious or is distant from the approach viewpoints, directional signs should be placed along the route leading to the nearest accessible entrance to the facility. Such directional signage should incorporate the International Symbol of Access and the appropriate directional arrows. There should be a curb ramp complying with the relevant sub-section below where there are curbs between the accessible route and parking spaces.
- c. **Identification Signage:** Designated parking spaces should incorporate signage that is at least 300 mm wide by 450 mm high which incorporates the International Symbol of Access. Signs should be mounted vertically on a post that is colour contrasted with the background environment, installed at a height of 1500-2500 mm from the ground/floor surface to the centre line of the sign; centred on the parking space (for perpendicular parking) or located toward the front of the parking space (for parallel parking) on the opposite side from the access aisle wherever possible. Mounting signs on fences or building faces should be avoided.



**d) Directional Signage:** Where the location of designated parking spaces is not obvious or is distant from the approach viewpoints, directional signage should be placed along the route leading to the designated parking spaces starting at the entrance area to the parking area. Such directional signage should incorporate the International Symbol of Access and the appropriate directional arrows.

**e. Pavement Markings:** Designated parking spaces should incorporate pavement markings containing the International Symbol of Access in accordance with the (UABE Playbook Figure 211). Markings to include a 1500 x 1500 mm white border and symbol with a blue background field colour.

**f. Layout – Side-by-Side Parking:** Designated accessible side-by-side parking spaces should be at least 2400 mm wide and have an adjacent access aisle at least 2100 mm wide clearly indicated by markings (See UABE Playbook Figure 72), and alternating between passenger and driver entry. In a renovation where it is technically infeasible to provide a 2100 mm access aisle, the access aisle may be reduced to a minimum of 1500 mm.

**g. Layout – Parallel Parking:** Designated accessible parallel parking spaces should be at least 2400 mm wide and have an adjacent access area at least 1500 mm wide along the length of the parking space.

**h. Layout – Angled Parking:** Designated accessible angled parking spaces should comply with (UABE Playbook Figure 74).

**i. Floor and Ground Surface:** Designated parking spaces should have a firm, stable, and level surface with a maximum of 1:50 (2%) running slope for drainage and have a maximum cross slope of 1:50 (2%).

**j. Overhead Clearance:** Designated parking spaces should have a height clearance of at least 2750 mm at the parking space and along the vehicle access and egress routes at outdoor parking. There should be a clearance of at least 2600 mm (a clearance height of 2750 mm is preferred) at indoor parking areas including vehicular entrances. Indoor parking facilities should incorporate a sign at the vehicle entrance indicating the minimum overhead clearance at the parking space and along the vehicle access and egress routes.

**k. Limited Mobility & Caregivers:** Limited Mobility & Caregivers Only parking spaces should be a minimum 3200 mm wide and incorporate signage in (UABE Playbook Figure 74).

## PASSENGER LOADING ZONES

- a. Location:** Passenger-loading zones should be on an accessible route complying with Appendix 4.
- b. Floor and Ground Surface:** Passenger loading zones should have a firm, stable, and level surface with a maximum 1:50 (2%) running slope for drainage and have a maximum cross slope of 1:50 (2%).
- c. Signage:** Signage for a designated passenger loading zone should at least 300 mm wide by 450 mm, incorporate the International Symbol of Access. Signs should be mounted vertically on a post that is colour contrasted with the background environment, installed 1500-2500 mm from the ground/floor surface to the centre line of the sign, and located at either end of the drop off area.
- d. Vertical Clearance:** Passenger loading zones should have a minimum vertical clearance of 3600 mm at the loading zone and along the vehicle access route to such areas, as well as to and from the site entrances.
- e. Size:** Passenger loading zones should provide an access aisle at least 2700 mm wide and 7000 mm long, adjacent and parallel to the vehicle pull-up space. In a renovation where providing a 2100 mm wide access aisle is technically infeasible, the access aisle width may be reduced to 1500 mm.
- f. Curb Ramps:** Where there is a curb between the access aisle and the vehicle pull-up space, a curb ramp should be provided in (UABE Playbook section 3.1.6).
- g. Protection from Environmental Factors:** Passenger loading zones should provide sufficient protection from wind, rain, sun, and other environmental factors, for persons embarking and disembarking from vehicles.

### 4.1.5 Illustrations

No illustrations offered for this part.



#### 4.1.6 See Also

Consult UABE Playbook:

3.1.6	Kerb Cuts
3.1.7	Pedestrian Crossings
3.1.8	Medians and Middle Islands
3.1.9	Vehicle Parking
3.1.10	Passenger Drop-off Areas
3.3.1	Information, Reception & Service Counters
3.3.10	Controls and Operating Mechanisms
3.3.11	Ticketing and Vending Machines
3.4.1	Signage
3.4.3	Public Address Systems
3.4.4	Information Systems
3.4.5	Card Access, Safety and Security Systems
3.4.7	Assistive Listening Systems
3.4.8	Visual Alarms
B1	Glare and Light Sources
B2	Illumination

## 4.2 Pedestrian Access and Points of Entry

### 4.2.1 Design Considerations

The following need to be taken into consideration when designing areas of pedestrian access and points of entry:

- Provision for parking and/ or passenger loading and off-loading zones;
- Accessible means of pedestrian access;
- The route of access from the point of entry into the site to the main entrance

### 4.2.2 Application Considerations

These provisions should apply to all external areas and approaches.

### 4.2.3 General Guidelines

#### APPROACH

- Approach to Entrance:** Should be free of projecting obstructions or features
- Entrance Route:** Should be firm, even and slip-resistant.
- Provision of Steps:** No steps en-route to entrance from street or parking.
- Illumination:** Entrances should be adequately illuminated.

#### POINTS OF ENTRY

- Transition Space:** Provide a transition space at the entrance to help customers get orientated to the facility;
- Clear Visibility:** Provide interior glazing or open access into all departments, offices or stores except those where privacy is desirable. Provide window treatments where privacy needs are variable;
- Sense of Place:** Where controlled access is necessary, make the initial entry space an inviting area. A reception/ information desk should be located immediately in or adjacent to this area, strategically located to prevent visitors from passing by without being cleared for entry;



#### 4.2.4 Technical Guidelines

- a. Slope:** The running slope of a curb ramp should be between 1:50 and 1:20 (2%-5%). In a renovation where it is technically infeasible to achieve these slopes, a running slope no steeper than 1:12 (8.3%) may be used.
- b. Width:** The minimum width of curb ramps, exclusive of flared sides, should be 1500 mm.
- c. Surface:** Surfaces of curb ramps should be firm, stable, and be slip-resistant, incorporate a truncated dome detectable warning surface in compliance with Appendix 18 and be 600 mm deep, starting 150 – 200 mm back from the edge of the curb; and extending the entire width of the ramp. There should be a 10-15 mm high transition between the curb ramp and adjacent roadway surface.
- d. Color Contrast:** There should be a pronounced colour contrast between the curb ramp and the surrounding environment.
- e. Flared Sides of Curb Ramp:** The flared sides should typically be 900 mm wide as illustrated (See UABE Fig 60). The width of the flared side should be measured at the curb location, with a slope not more than 1:12 where pedestrians are likely to walk across them. The flared sides of a curb ramp should be colour contrasted from its surroundings.
- f. Cross Fall at Curb Ramp and Street Gutter:** The maximum cross fall of gutters and road surfaces immediately adjacent to curb ramps should be 1:20.
- g. Drainage:** Curb ramp design should provide for appropriate drainage so that water will not accumulate on the path of travel.
- h. Location:** Curb ramps at pedestrian crosswalks should be wholly contained within the area designated for pedestrian use.
- i. Alignment:** Curb ramps should be located at all intersections and at locations where there may be a high number of pedestrians crossing a road. Curb ramps should be located within marked street crossings to provide an aid to straight line orientation for people with visual impairments by lining up one curb cut with another and be provided on both sides of the street. Continuous wrap around or corner curb ramps are not recommended and pose hazards for people using wheelchairs or scooters or with strollers, as well as for people with visual impairments by directing them out of the crosswalk and into traffic. If technically it is only feasible to incorporate a corner curb ramp at an intersection, then measures should be taken to ensure that a person with a visual impairment may align themselves directly with the curb cut across the intersection. This should include appropriately located detectable warning surfaces and pronounced colour contrast.

**j. Pedestrian Crosswalks:** A crosswalk across a street should be connected to an accessible walkway by curb ramps that are aligned on either side of the street. The crosswalk should include visual and tactile markings (colour and texture contrast) from the street surface to provide wayfinding information for people with visual impairments. As a minimum, the outside boundary lines should be contrasted sufficiently to provide a clear cue to both pedestrians and drivers of vehicles. Raised crosswalks are usually designed to slow traffic through intersections and can reduce the height differential from the sidewalk to the pedestrian crossing and potentially reduce the need for curb ramps. Care should be taken to ensure that edges of the raised crosswalks are properly marked. Alternatively, the street pavement may be sloped up to the sidewalk level at intersections to reduce or eliminate the need for curb cuts. Again care must be taken to ensure that street crossings are aligned to aid persons with visual impairments to safely cross the road.

**k. Configuration:** Curb ramp configuration should be as illustrated in **UABE Fig 60**).

**l. Traffic Control Signals:** It is important that traffic control signals provide enough time for people to cross the street safely. Time should be based on a slowly walking person, as well as including time for people with visual impairments to ensure that traffic has stopped perpendicular to the direction they are travelling. At all crossings with visual pedestrian traffic control signals, an audible signal should be included and be activated automatically when it is typically safe to cross the street at that location. It is an important feature for people with limited or no vision to have two different sounds north-south and east-west crossings. The audible sound should include directional information by emanating from each pole on opposite sides of the intersection and be loud enough to be heard over typical traffic noise. It is preferred that the audible signal be of a continuous, low sound in order for people with visual impairments to locate it.

**m. Traffic Control Buttons:** Where traffic or pedestrian signals are controlled by push button, the button should be colour contrasting from the surrounding surface, be a minimum of 100 mm in diameter mounted 900-1200 mm above grade and adjacent to a clear and level area suitable for an approach by a person using a wheelchair, scooter, or walker. Buttons should always be in good working order and placed parallel with the traffic signals.

**n. Traffic Islands and Medians:** Traffic islands and medians in roadways should be avoided as they pose difficulties both for people using wheelchairs and for people with visual impairments. When traffic islands are necessary, the path of travel through the traffic island or median should be level with the rest of the crosswalk, be a minimum of 1500 mm in width and be a minimum 1500 mm in length to ensure that a person using a wheelchair or scooter does not extend into traffic if forced to wait between traffic light cycles. The walkway across a traffic island or median should be colour



and texture contrasting from the surrounding surfaces. (both from the crosswalk and from the roadway) Wider medians or traffic islands may have a gently sloping curb ramp that becomes level with the main part of the median or traffic island.

**o. Traffic Island Detectable Warning Surfaces:** Within the pedestrian crosswalk, a traffic island that is level with the roadway should have a detectable warning surface that complies with Appendix 18. The detectable warning surface should be located at each edge or entrance to the street on either side of the traffic island or median, be the full width of the walkway, and be 600-650 mm in depth.

**p. Raised Pedestrian Crossing at Vehicular Roadways:** Raised pedestrian crossings should have a 600 mm wide truncated dome detectable warning surface in compliance with Appendix 18, continuous along the edges of walking surfaces where they abut the vehicular roadway. The clear width of the walking surface should be no less than 1500 mm. The ground surface of the pedestrian walking area should be visually and tactilely different from the adjacent road and ramp surfaces.

#### 4.2.5 Illustrations

No illustrations offered for this part.

#### 4.2.6 See Also

Consult the UABE Playbook Guidelines:

2.2	Anthropometric Data
3.1.1	Ground Surfaces
3.1.2	Overhead and Protruding Objects
3.1.3	Sidewalks, Pavements, Paths and Routes
3.1.6	Kerb Cuts
3.1.7	Pedestrian Crossings
3.1.8	Medians and Middle Islands
3.1.11	Landscaping Materials and Plantings
3.1.12	Street Furniture
3.2.1	Entrances
3.2.4	Interior Stairs
3.2.10	Windows, Glazed Screens and Sidelights
3.2.27	Gates, Turnstiles and Openings

3.3.1	Information, Reception and Service Counters
3.3.2	Waiting and Queuing Areas
3.3.4	Raised Platforms and Stages
3.3.7	Rest Areas and Benches
3.3.10	Controls and Operating Mechanisms
3.3.11	Ticketing and Vending Machines
3.3.12	Drinking Fountains
3.3.13	Handrails
3.4.1	Signage
3.4.2	Public Telephones
3.4.3	Public Address Systems
3.4.4	Information Systems
3.4.5	Card Access, Safety and Security Systems
3.4.6	Detectable Warning Surfaces
3.4.7	Assistive Listening Systems
3.4.8	Visual Alarms
B1	Glare and Light Sources
B2	Illumination
B3	Materials and Finishes
B4	Texture and Colour
B5	Acoustics



## 4.3 Reception and Welcoming Areas

### 4.3.1 Design Considerations

When looking at the design considerations for the reception and welcoming services it is important that the following are taken into consideration:

- Accessible Entrances which are a combination of infrastructural intervention and training/operational interventions
- Accessible Reception and service counters with a choice of heights
- Waiting Areas should permit users to move through the line safely and conveniently.
- Seating should provide convenient resting places for all individuals and should be placed adjacent to pedestrian walkways and be at the appropriate height.

### 4.3.2 Application Considerations

#### ENTRANCES

- This part shall apply to the main entrance or designated entrance at tourism facilities and places of accommodation.
- All entrances used by employees and/or the public should be accessible and comply with this section.
- Where it is technically infeasible to make all staff and public entrances accessible, at least 50% of these should be accessible and comply with this section.
- Where it is technically infeasible to make all public entrances accessible, the primary entrances used by staff and the public should be accessible.
- Accessible public entrances should be provided in a number at least equivalent to the number of exits required by the Kingdom of Saudi Arabia Building Code.
- If direct access is provided for pedestrians from an enclosed parking garage to a facility, at least one direct entrance from the parking garage to the facility should be accessible.
- If access is provided for pedestrians from a pedestrian tunnel, walkway, or pedestrian bridge, at least one entrance to the facility from each tunnel, walkway, or bridge should be accessible.

- If the only entrance to a facility or tenancy is a service entrance, that entrance should be accessible.
- Entrances which are not accessible should have directional signage which indicates the nearest accessible entrance.
- Accessible entrances should be identified with signage.

### RECEPTION:

Receptions counters or desks should have at least one section accessible to persons who use a wheelchair, scooter, or have balance problems that may require them to be seated.

### WAITING AREAS:

All waiting and queuing areas for reception desks should comply with this section.

### SEATING:

All benches or waiting seating provided in reception and entrance areas should comply with these requirements. (See UABE Fig 195)

### 4.3.3 General Guidelines

#### ENTRANCE:

The following section provides general guidelines for entrances (this must be read in conjunction with 'points of entry':

- Entrance Door:** should be fully closed or held open.
- Entrance Door Floor Surfaces:** Contrasting color and texture floor surface space on the inside and the outside of the entrance door.
- Door Closers:** Door closers should incorporate a delay mechanism.
- Clear Glass Panels and Doors:** Clear glass panels and doors should be clearly marked.

#### RECEPTION:

The following section provides general guidelines for reception areas:

- Clutter:** Reception areas should remain clutter free with unobstructed space at the reception desk.



**b. Lighting at Reception Desk:** Lighting should be positioned to illuminate the receptionist and desktop without creating glare. Lighting should be even, diffuse and non-glaring to aid lip readers.

**c. Non-Reflective Glass Partitions:** persons with functional hearing limitations will rely on sign language and lip reading, which is difficult when the reception staff are standing in front of a reflective panel or mirror.

**d. Reception Background:** Please refer to the UATo Accommodation document page for specific information on the accommodations needed for guests with functional hearing limitations.

**e. Provision for Reception Telephone:** A reception telephone should be provided with voice amplification. This will facilitate communication for guests with functional hearing limitations.

**f. Counter Loops:** A counter loop should be installed/ fitted to the reception desk. These are used to provide information to users of hearing aids. A microphone and amplification system is required to provide an audio signal.

**g. Provision for Lowered Counter:** A portion of the counter, conforming to the minimum requirements under the technical guidance, should be provided.

**h. Clear, Unobstructed Floor Space:** Provision should be made for clear, unobstructed floor space in-front of reception counters.

**i. Provision for Seating:** Seating should be provided at the lowered portion of the counter for use by guests.

**j. Background Noise:** Staff must be aware of the distraction from background music/ ambient noise when dealing with guests with functional hearing limitations. The reduction of background music may be essential for some guests.

### **CHECK-IN AND ARRIVAL:**

The following section provides general guidelines for check-in and arrivals at places of accommodation, tourist facilities and the ilk:

**a. Information on Facilities:** Information on facilities and their location, particularly accessible facilities, must be available in a written format. An orientation tour may also be included.

**b. Orientation Tour:** On arrival, the guest should be offered an orientation tour. Guests with functional visual limitations rely strongly on mental mapping of the environment if they are to negotiate independently. To achieve reliable mental mapping, it is essential that there is a structured orientation.

**c. Orientation Audio Tape:** Where possible, guests identifying themselves as having a functional visual limitation, should be provided with an audio tape providing detailed descriptions of routes, terrain, obstacles and hazards which also includes approximate distances to travel to reach milestones. This enables such guests to independently explore an establishment.

**d. Information in Multiple Formats:** Braille, large print and audio information on establishment surroundings should be made available. In addition, owners/ operators should consider using Braille, large print and audio cassette information at key points throughout the establishment.

**e. Provision of Accessible Facilities:** Facilities and location of facilities that are accessible, or specifically intended for guests with a functional limitation, should be made known to the guest on arrival e.g. accessible toilets, the placement of induction loops, alternative meal arrangements etc.

**f. Basic Signs Chart:** A chart with basic signs should be kept at reception. This is to be a chart that has sign language symbols with the letters of the alphabet to assist in communication with persons relying solely on sign language.

**g. Provision for Interpreters:** Operators/ owners should make provision to ensure that they have access to the services offered by sign language interpreters/ lip-speaker practitioners and deaf-blind interpreters, and to ensure that these interpreters are available when required to communicate with guests. This is to accommodate different levels of functional communication limitations.

**h. Pen and Pad:** Pen and pad should be made available to assist communication where required.

**i. Cellphone Communication:** Cellphone communication via SMS should be made available at reception. SMS facilitated communication through cellular technology is essential to have at the switchboard and/ or the reception desk. This is very convenient for persons who cannot sign.

**j. Training:** Mobility, communication, blind and sight impaired awareness training should be offered to managers and staff who interface with guests. A person that has basic knowledge of the mythology of speech reading should be made available at reception.



**k. Keys for Accessible Facilities:** A key to any accessible facility which is kept locked, should be offered (where applicable).

**l. Additional Room Keys:** An additional key to the bedroom must be provided, if requested, when there is more than one guest in the room.

**m. Facilities for Service Animals:** Facilities should be made available for service animals where necessary e.g. water provision and information on walking areas.

**n. Emergency Evacuation and Egress:** The fire points and fire assembly points must be pointed out or indicated to guests when checking-in. Where possible, guests should be provided with a map of the establishment showing these. Staff should arrange, where deemed appropriate, evacuation procedures in the event of an emergency, with a guest. This is particularly applicable for guests with functional limitations.

**o. Written Record of Guests:** Where appropriate ensure that a written record is made of guests' details, room and any specific requirements and passed to staff on changing shift patterns.

**p. Designated Staff Members:** Responsibility for guests in the event of an emergency or query could be designated to a member of staff.

**q. Luggage Assistance:** Assistance with Luggage should be a standard service offering by any place of accommodation.

#### 4.3.4 Technical Guidelines

No technical guidance is offered for this part.

### 4.3.5 Illustrations



Figure 8. Clear lettering at reception areas, such as at this airline check-in counter, as well as a variety of counter heights provides both legible and clear information, as well as flexibility in use. Note the design of the lowered counter, intended to provide seated users with maximum under-table space, as opposed to a clean drop at the counter edge. [Source: UDA Consortium]



Figure 9. Using a variety of techniques at a reception counter. Note the lowered and raised counter portions, the provision of chairs, the provision of an open space, as well as tactile guidance systems leading to the counter. Lighting levels, which are fairly good here, form a critical component of the ability of tourists to use reception and other service counters. [Source: UDA Consortium]



#### 4.3.6 See Also

2.2	Anthropometric Data
3.1.1	Ground Surfaces
3.1.2	Overhead and Protruding Objects
3.1.3	Sidewalks, pavements, Paths and Routes
3.1.11	Landscaping Materials & Plantings
3.1.12	Street Furniture
3.2.1	Entrances
3.2.3	Interior Ramps
3.2.4	Interior Stairs
3.2.5	Escalators
3.2.6	Lifts
3.2.7	Inclined and Vertical Platform Lifts
3.2.9	Doors
3.2.10	Windows, Glazed Screens and Sidelights
3.2.27	Gates, Turnstiles and Openings
3.3.1	Information, Reception & Service Counters
3.3.2	Queuing & Waiting Areas
3.3.6	Tables, Counters and Work Surfaces
3.3.7	Rest Areas and Benches
3.3.8	Lockers & Baggage Storage
3.3.10	Controls and Operating Mechanisms
3.3.11	Vending and Ticketing Machines
3.3.12	Drinking Fountains
3.3.13	Handrails
3.4.1	Signage
3.4.2	Public Telephones
3.4.3	Public Address Systems

3.4.4	Information Systems
3.4.5	Card Access, Safety and Security Systems
3.4.6	Detectable Warning Surfaces
3.4.7	Assistive Listening Systems
3.4.8	Visual Alarms
B.1	Glare and Light Sources
B.2	Illumination
B.3	Materials and Finishes
B.4	Texture and Colour
B.5	Acoustics





## 4.4 Public Facilities and Services: Circulation and Environment

### 4.4.1 Accessways and Passageways

#### 4.4.1.1 Design Considerations

Routes of travel through an establishment should address the full range of individuals that may use them. They must provide the clear width necessary for persons using wheelchairs, scooters, those pushing strollers, or those traveling in pairs. Consideration should be given not just to the width of items, such as wheelchairs and scooters, but also to their manoeuvrability. While a corridor may be wide enough for a person to drive a scooter in a straight line, it may not be possible to make a turn around a corner. The preferred minimum width for accessible routes is 1800 mm.

Strong colour contrasts and/or tactile pathways set into floors may be used to assist individuals with a visual impairment to negotiate an environment. Edge protection that guards a change in level is an important safety feature for all users.

#### 4.4.1.2 Application Considerations

All routes, paths or corridors should comply with this section.

**Exceptions:** The provision of an accessible route does not apply:

- to service rooms
- to elevator machine rooms
- to janitor rooms
- to service spaces
- to crawl spaces
- to attic or roof spaces
- to high-hazard industrial occupancies within portions of a floor area with fixed seats in an assembly occupancy where these portions are not part of an accessible route to spaces designated for wheelchair use; or

Accessible routes are permitted to include ramps, curb ramps, stairs, elevators or other elevating devices where a difference in elevation exists.

#### 4.4.1.3 General Guidelines

**a. Fixed, Level and Slip-Resistant Floor Finishes:** Any surface which is not fixed or is extremely smooth or slippery or even very rough, can be a hazard to persons with functional visual limitations. This measure is also a precautionary one, which applies to almost all people with functional mobility limitations. With and without a mobility aid, there is a potential of being outbalanced as a result of a functional physical limitation or the way that the physical environment is organized.

**b. Unobstructed Width:** The minimum required unobstructed widths given under technical guidance should be adhered to. Items that might possibly cause injury should be removed. Where possible protruding obstructions such as fire extinguishers, radiators must be recessed. Consideration should be given to protect obstructions by use of columns or ducts.

**c. Service Equipment:** Care should be taken with service equipment e.g. housekeeping trolleys, vacuum cleaners etc. When cleaning equipment is in use, thought should be given to trailing wires etc.

**d. Permitted Narrowing:** Narrowing of circulation routes at the location of immovable structural or service items (e.g. radiators, fire extinguishers etc). shall be permitted.

**e. Identification of Corridor Ends:** The end of a corridor should be highlighted by color, tone or light contrast between walls and floor coverings. In order to prevent confusion or accidents of misjudgment of length or depth caused by all the colors being the same, it is important to clearly demarcate the end of a corridor by using a contrasting color or piece of furniture. To avoid glare, use tinted glass or blinds.

**f. Interior Décor with Tonal Contrast:** Interior décor with tonal contrast between the critical surfaces. All critical surfaces (such as between wall and floor) need to be demarcated with contrasting colors so that guests with functional visual limitations may clearly identify the direction in which they move.

**g. Corridors Unobstructed by Features and Fittings:** Any obstructions or projecting features in a corridor may present a hazard to guests with functional visual limitations who need to negotiate their way independently.

**h. Doors with Unequal Widths:** The wider leaf of double doors of unequal width must all be located on the same side throughout the length of the corridor. There should be a clear understanding of which is the opening section of double doors and all doors should be orientated in one direction to avoid confusion. Doors must be left unsecured so anyone pushing the wrong side does not injure themselves.



i. **Glass Doors:** It is difficult to determine whether glass doors are open or in existence, therefore a suitable mechanism should be used to make it apparent.

j. **Height of Emergency Equipment, Switches and Controls:** Emergency Equipment, switches and controls should be located within the acceptable ranges. This is essential to enable the wheelchair user to reach the switches and controls from the wheelchair.

k. **Holding Area:** Holding area for patrons with disabilities in emergencies. To assure that in the case of an emergency exit, assistance and/ or help are available at a predetermined location.

#### 4.4.1.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.4.1.5 Illustrations

No illustrations offered for this part.

#### 4.4.1.6 See Also

Consult the UABE Playbook Guidelines:

2.2	Anthropometric Data
3.1.1	Ground Surfaces
3.1.2	Overhead and Protruding Objects
3.1.3	Sidewalks, pavements, Paths and Routes
3.1.6	Kerb Cuts
3.1.7	Pedestrian Crossings
3.1.8	Medians and Middle Islands
3.2.9	Doors
3.3.13	Handrails
3.4.1	Signage
3.4.3	Public Address Systems
3.4.4	Information Systems
3.4.6	Detectable Warning Surfaces
3.4.7	Assistive Listening Systems

3.4.8	Visual Alarms
3.4.9	Emergency Exits, Areas of Rescue Assistance & Fire Evacuation
B.1	Glare and Light Sources
B.2	Illumination
B.3	Materials and Finishes
B.4	Texture and Colour
B.5	Acoustics

## 4.4.2 Ramps

### 4.4.2.1 Design Considerations

Traditionally, ramps have been synonymous with wheelchair accessibility. However, ramps can be problematic in providing accessibility and can be difficult and dangerous to negotiate if not properly designed. The physical space required for ramps makes them cumbersome to integrate into a facility. However, where a change in level already exists or cannot be avoided, a properly designed ramp can provide access for those using wheelchairs, scooters, pushing strollers, or moving packages on a trolley.

The design of the ramp is critical to its usefulness and safety. A steeply inclined ramp is difficult to ascend when using a wheelchair, and can increase the risk of the wheelchair tipping backwards. Descending a steep ramp can also be hazardous. Any cross slope will further increase the effort required to negotiate the ramp. Manoeuvring space at the top and bottom are also important factors in a ramp's usability. Level areas at points along a long ramp enable an individual to rest before proceeding.

Textured surfaces, edge protection, and handrails all provide important safety features. Some people have difficulty negotiating slopes so stairs should be considered in conjunction with ramps where ramps are located.

### 4.4.2.2 Application Considerations

Any part of an accessible route with a slope steeper than 1:25 should be considered a ramp and should comply with this section.

### 4.4.2.3 General Guidelines

**a. Gradient:** The minimum gradient should be adhered to. It is difficult for guest with functional visual or mobility limitations to negotiate slopes that exceed this gradient, especially in a downward direction.



**b) Continuous Handrail:** Continuous handrails of a contrasting color, on both sides of ramps, with extensions before and beyond the end of the ramp should be installed.

**c. Kerb or Tapping Rail:** Consideration should be given to the installation of a tapping rail or low kerb.

**d. Ramp Transitions:** Contrasting color and texture should be incorporated into the transitions of the ramp. It is important to identify the beginning and the end of the ramp to assist guests with functional visual limitations with safe transitions off and onto the ramp.

#### 4.4.2.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.4.2.5 Illustrations

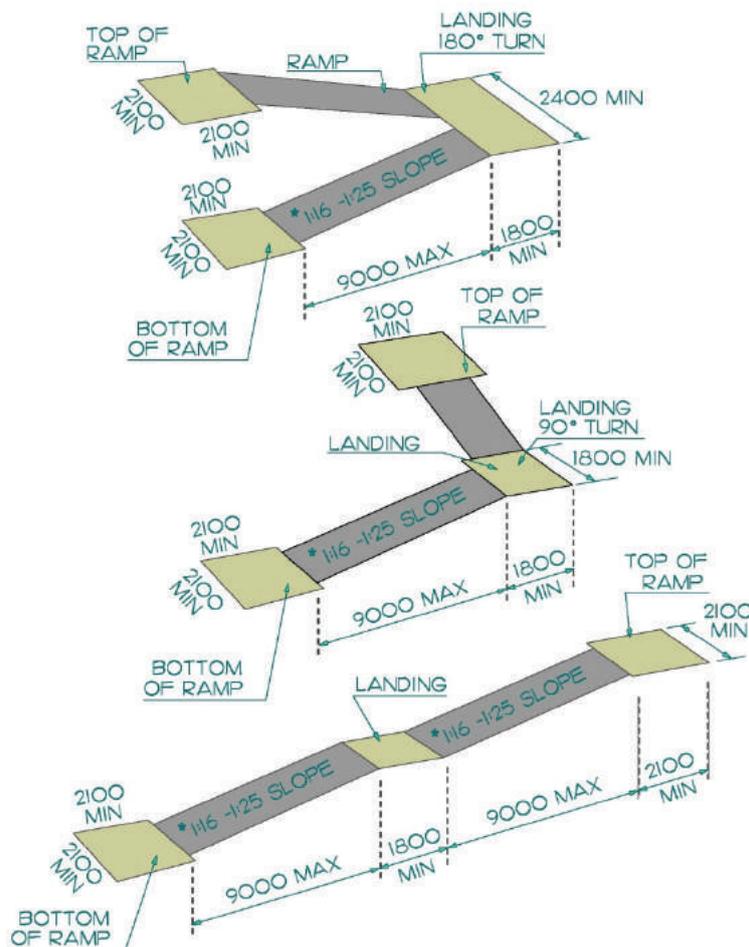


Figure 10. Minimum Ramp Landing Dimensions. Dimensions in millimeters.

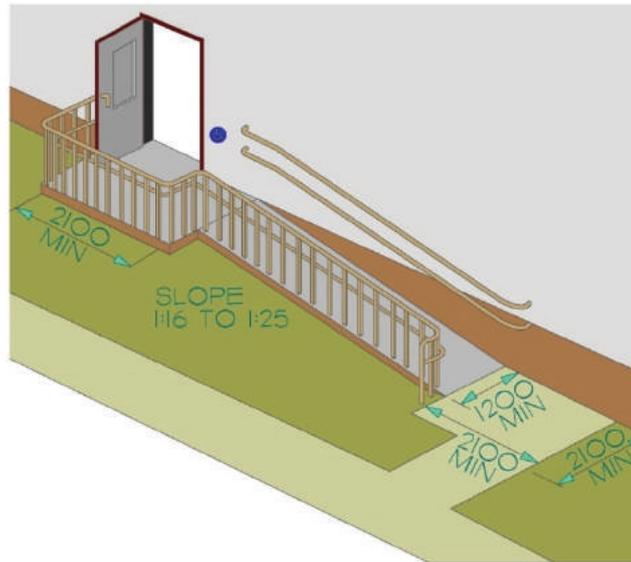


Figure 11. Ramp Criteria. Dimensions in millimeters.

#### 4.4.2.6 See Also

Consult the UABE Playbook Guidelines:

B.4.1.9 Ramps

### 4.4.3 Stairs

#### 4.4.3.1 Design Considerations

Stairs that are comfortable for many adults may be challenging for children, seniors, or persons short in stature. Poorly designed nosings can present tripping hazards, particularly to persons with prosthetic devices or those using canes. Stairs without nosings are preferred. Cues to warn a person with a visual impairment of an upcoming set of stairs are vitally important.

The appropriate application of handrails on both sides of the stairs will aid all users navigating stairways.

#### 4.4.3.2 Application Considerations

Where new stairs are planned at interior or exterior locations, stairs should comply with this section. In retrofit situations where existing stairs are located, dimensional changes to steps and landings are not required; all other design requirements should be met.



#### 4.4.3.3 General Guidelines

**a. Contrasting Color on Landings:** Contrasting color should be incorporated into the top, bottom and intermediate landings of steps. Guests with functional visual limitations need to have the start of the step identified.

**b. Tonal Contrasting on All Nosing:** Tonal contrasting should be incorporated into all nosings. Each step in a flight of steps needs to be identified.

**c. Square Closed Riser to All Stairs:** Consideration should be given to the use of a square closed riser to steps. Each steps needs to have a solid edge as it provides guests with functional visual limitations with an indicator for the next step. Steps need to have closed risers to prevent injury.

**d. Protected Soffits:** The soffits on the underside of stairway system strings needs to be demarcated or otherwise protected. This is to prevent guests with functional visual limitations from walking into the sloping underside of the stairs.

**e. Uniform Height Levels Between Landings:** As required by the technical guidance, the stairway flight should have a uniform height between landings with regard to other flights. There should be an equal number of steps on each flight of stairs as guests with functional visual limitations will count the steps and expect each flight of stairs to be the same.

**f. Continuous Handrail on Both Sides of Staircase:** A continuous handrail should be installed on both sides of the staircase, with extensions before and beyond the end of the stair. This should be at the applicable height. Ideally a tapping rail should also be installed at the lower level. Often the force of gravity pulls people with functional mobility and physical limitations forward, and without anything to hold onto to steady themselves while walking, one can find himself/ herself seriously injured.

#### 4.4.3.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.4.3.5 Illustrations

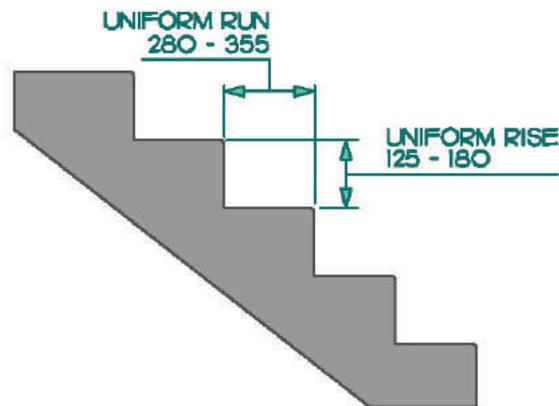


Figure 12. Riser Criteria (Unless otherwise noted, all dimensions are given in millimeters).

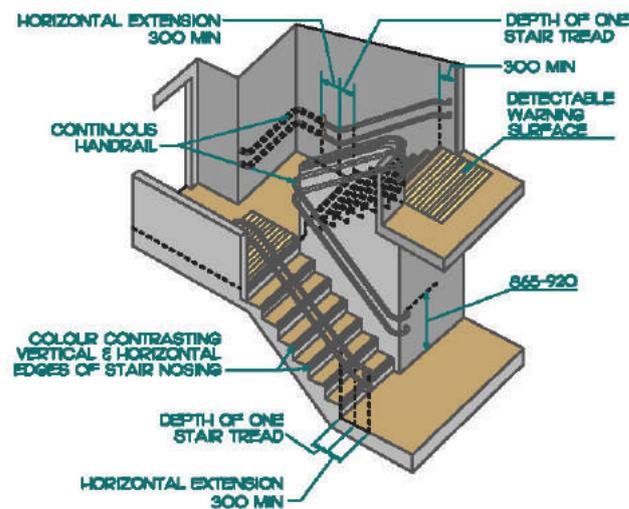


Figure 13. Stair Design Criteria (Unless otherwise noted, all dimensions are given in millimeters).

#### 4.4.3.6 See Also

Consult the UABE Playbook Guidelines:

B.4.1.11 Stairs



## 4.4.4 Elevators

### 4.4.4.1 Design Considerations

Elevators may be considered part of an accessible route and should incorporate appropriate accessible features to meet the requirements of a wide range of persons who may use it in the facility.

The buttons used on elevators need to address a range of functional issues, including reach, dexterity, and visual impairments, as discussed in Section A. More specific to elevators is the need to provide audible cues for individuals with a visual impairment to identify different floor levels and the direction of travel. These features are also useful to all users of the elevator. Adequate door-closing delays provide individuals using mobility devices additional time to reach, enter, or exit the elevator car. The installation of a mirror can assist individuals using mobility devices to back out of an elevator where there is not sufficient space to turn around.

### 4.4.4.2 Application Considerations

One passenger elevator complying with this section should serve each level, including mezzanines, in all multi-storey facilities, unless exempted below. If more than one elevator is provided, each passenger elevator should comply with this section. Freight elevators need not be required to meet the requirements of this section, unless the only elevator provided is used as combination passenger and freight elevator for use by the public and employees.

Elevator access is not required:

- in elevator pits, elevator penthouses, mechanical rooms, and piping or equipment catwalks;
- when accessible ramps in compliance with Sub-Section 6 on ramps below are used in lieu of an elevator;
- to levels of fire halls and ambulance stations not served by grade-level entry, which do not contain public use facilities; and
- when platform lifts (wheelchair lifts) in compliance with the section on platform lifts below and applicable Codes are used in lieu of an elevator, only under the following conditions:
  - to provide an accessible route to a performing area in an assembly occupancy;
  - to comply with wheelchair viewing position line-of-sight and dispersion requirements of Viewing Spaces to be provided at Fixed Seating;

- five persons, including, but not limited to, equipment control rooms and projection booths; and
- to provide access to incidental occupied spaces and rooms that are not open to the general public and which house no more than
- to provide access to raised judges' benches, clerks' stations, speakers' platforms, jury boxes and witness stands or to depressed areas, such as the well of a court.

#### 4.4.4.3 General Guidelines

**a. Operational Issues:** Staff must be made aware that if an elevator breaks down, it may contain a guest with functional hearing limitations.

**b. Communication of Emergency Elevator Procedures:** It is essential that guests are aware of the emergency procedures that are detailed within the lift. This must be communicated as part of the arrival procedure e.g. text messaging service.

**c. Demarcated Tactile and Color Contrasted Waiting Area:** A clearly demarcated tactile and color contrasted waiting area should provide an indication on where to wait in order to safely and quickly alight into the lift before the doors close.

**d. Size of Unobstructed Approach Space:** Should be according to the technical guidance provided. Users of mobility aids should have clear, unobstructed space in order to negotiate entrance and exit from the lift.

**e. Door Opening:** Door opening should be color-contrasted and conform to the requirements in terms of minimum clear opening width. Doors need to be easily identified by guest with functional visual limitations. Prescribed width is ideal for someone using a long cane to prevent bumping on both sides. There must be sufficient space for the user of a mobility aid to enter and exit the lift opening comfortably.

**f. Automatic Doors with Audio Enunciators:** Elevator doors should be automatic with audio enunciators. It is difficult for guests with functional visual limitations to operate a manual lift, as they are unaware of the position of the lift. The voice provides information to the guest as to when the lift arrives at the floor when alighting. Automatic doors should be controlled by a photo-eye/ infrared device to ensure doors do not make physical contact with people standing in the path.

**g. Internal Floor Level Synthesized Voice Annunciator:** An internal synthesized voice annunciator should provide an indication of the floor level. Enunciation in the lift car provides guests with functional visual limitations with a clear indication of the floor at which the lift is stopping.



**h. Braille or Raised Text:** Make provision for Braille or raised text on external and internal controls including emergency equipment.

**i. Fixed, Slip-Resistant Floor Surfaces:** Extremely smooth or slippery floors may cause guests with functional limitations to injure themselves by slipping and falling.

**j. Adhere to Minimum Lighting Levels:** Minimum lighting levels allows a clear indication of where controls and assistive devices are located. Internal lighting should be balanced. The use of spotlights, downlights and uneven lighting can cause confusing shadows for guests with visual impairments.

**k. Provision for Handrail:** A handrail should be provided on all sides of the lift car. Handrails provide guests with stabilization to hold onto whilst the lift is in motion.

**l. Internal Car Size:** The internal car size should meet the minimum requirements, given in the technical guidance.

**m) Emergency Phones or Intercom:** Emergency phones or intercoms should be color contrasted with Braille and tactile buttons and text. All emergency controls should be strongly contrasted with the background to ensure that persons with functional visual limitations can detect them in an emergency. Emergency buttons need to have rough surfaces in order for guests with functional visual limitations to distinguish them from other controls.

**n. Amplification on Emergency Telephones:** Emergency telephones should have amplified volumes and ringers. These features will facilitate communicating with guests who have functional communication limitations. Inductive couplers, flashing lights and text-phone alternatives should also be made available.

**o. Flashing Light:** A flashing light should be linked to alarms and emergency buttons.

**p. Visual Display:** A visual display is needed to show that help is coming.

**q. Internal Finishes:** Internal walls must have a non-reflective, matt finish contrasting with the floor in luminance and tone.

#### 4.4.4.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.4.4.5 Illustrations

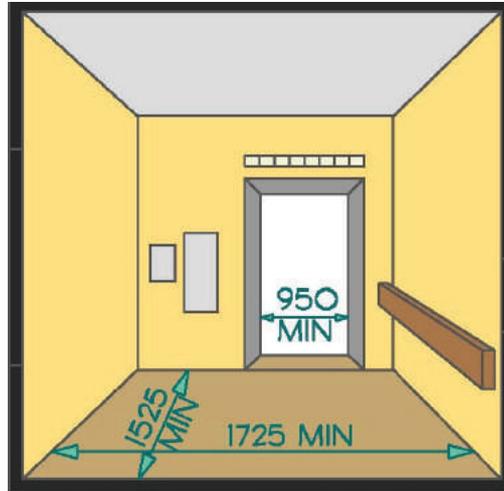


Figure 14. Elevator Cab (Unless otherwise noted, all dimensions are given in millimeters).

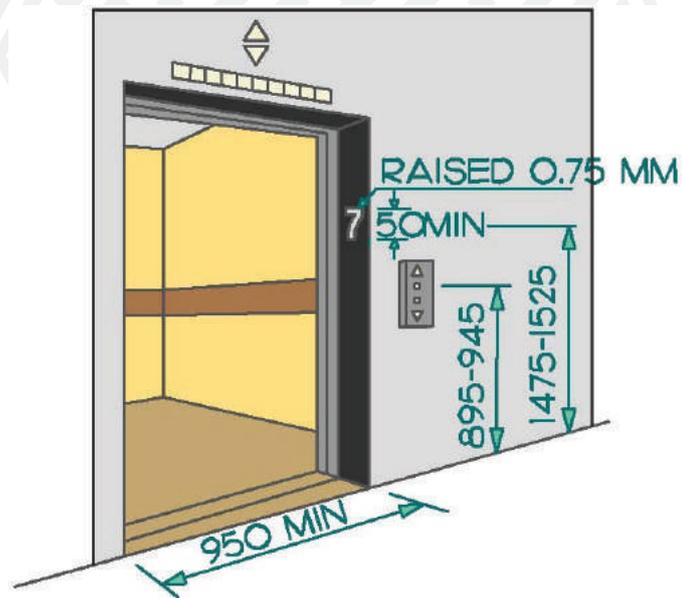


Figure 15. Elevator Entry (Unless otherwise noted, all dimensions are given in millimeters).

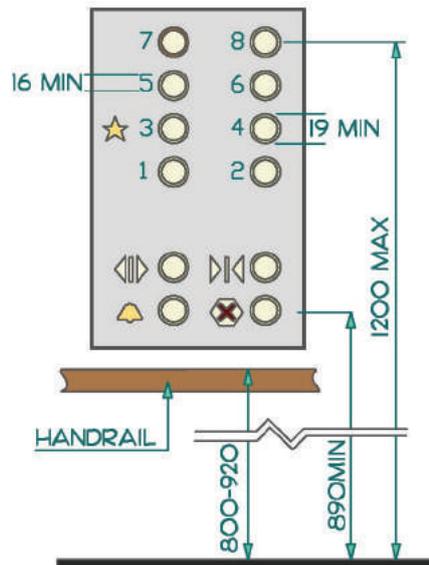


Figure 16. Control Panel (Unless otherwise noted, all dimensions are given in millimeters).

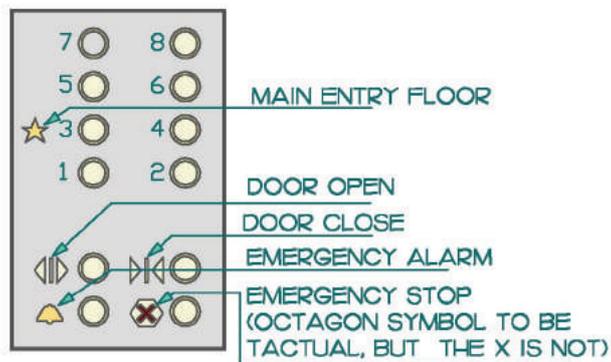


Figure 17. Tactile Symbols (Unless otherwise noted, all dimensions are given in millimeters).

#### 4.4.4.6 See Also

Consult the UABE Playbook Guidelines:

B.4.1.14 Elevators

## 4.4.5 Platform Lifts

### 4.4.5.1 Design Considerations

Platform lifts are common in retrofit applications. Elevators that are used by all facility users are preferred to platform lifts which tend to segregate persons with disabilities and limit space at entrance and stair locations. Furthermore, independent access is often compromised, as platform lifts are often controlled by key operation. Whenever possible, grading or integrated elevator access should be incorporated to avoid the use of lifts. If there are no suitable alternatives, lifts must be selected to permit the spatial requirement of larger mobility devices such as scooters.

### 4.4.5.2 Application Considerations

- Accessible platform lifts should comply with this section.
- Platform lifts may only be used in lieu of an elevator or ramp where allowable under the section on Elevators above. Exception: Where it is technically infeasible to install an elevator, LU/LA (Limited Use/Limited Application) elevating device, or other accessible means of change of level may be used.

### 4.4.5.3 General Guidelines

No general guidance is provided as part of this Sub-Section.

### 4.4.5.4 Technical Guidelines

No technical guidance is offered for this part.



#### 4.4.5.5. Illustrations



*Figure 18. A typical example of a platform lift.*

[Source: <http://aamcare-electropedic.com/Contact-Wheelchair-Elevators.html>]



Figure 19. Another example of a typical platform lift.

[Source: [http://www.pollocklifts.co.uk/wheelchair\\_platform\\_lifts.html](http://www.pollocklifts.co.uk/wheelchair_platform_lifts.html)]

#### 4.4.5.6 See Also

Consult the UABE Playbook Guidelines:

B.4.1.15 Platform Lifts



## 4.5

## Public Facilities and Services: Specific Use Areas

### 4.5.1 Waiting and Queuing Areas

#### 4.5.1.1 Design Considerations

Queuing areas for information, tickets, or services should permit persons who use wheelchairs, scooters, and other mobility devices, as well as, persons with a varying range of user ability to move through the line safely and conveniently.

Waiting and queuing areas need to provide space for mobility devices, such as wheelchairs and scooters. Queuing lines that turn corners or double back on themselves will need to provide adequate space to manoeuvre mobility devices. Providing secure handrails in queuing lines may be useful support for individuals, persons with balance problems, and guidance for those with a visual impairment. The provision of benches in or immediately adjacent to waiting areas is important for individuals who may have difficulty with standing for extended periods.

#### 4.5.1.2 Application Considerations

Waiting and queuing areas should comply with this section.

#### 4.5.1.3 General Guidelines

- a. Provide enough space for the expected number of people waiting during the peak periods of the day. An overflow area also can be provided that is used for other purposes during most other times;
- b. All waiting areas should have seating when it is expected that the wait will be longer than 15 minutes;
- c. A system for taking turns should be provided in locations where the clerk is likely to lose track of who is next e.g. baggage counters; retail service counters etc.
- d. Waiting and queuing areas should be well-lighted and have sound control to reduce background noise;
- e. If small children are present, a play area is advisable;

#### 4.5.1.4 Technical Guidelines

No technical guidance is offered for this part.

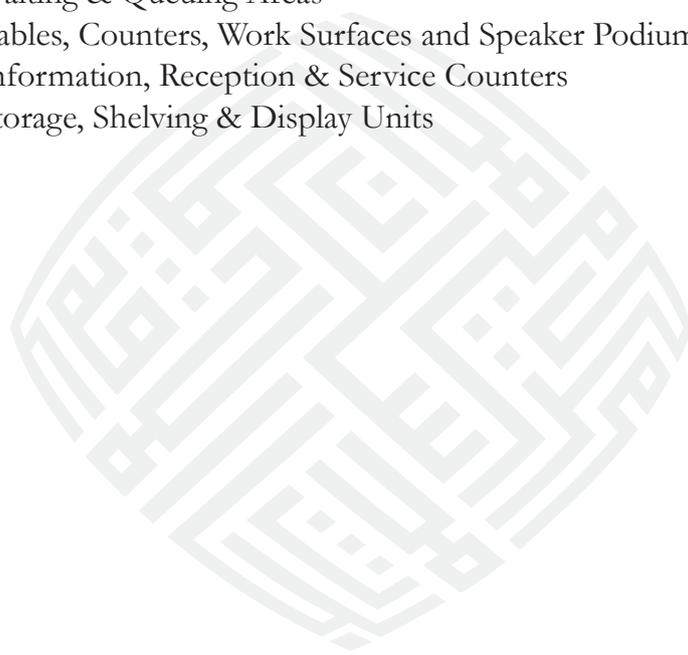
#### 4.5.1.5 Illustrations

No illustrations offered here.

#### 4.4.5.6 See Also

Consult the UABE Playbook Guidelines:

- B.4.3.5 Offices, Work Areas & Meeting Rooms
- B.4.3.6 Waiting & Queuing Areas
- B.4.3.7 Tables, Counters, Work Surfaces and Speaker Podiums
- B.4.3.8 Information, Reception & Service Counters
- B.4.3.9 Storage, Shelving & Display Units





## 4.5.2 Service Desks and Counters

### 4.5.2.1 Design Considerations

Information, reception, and service counters should be accessible to the full range of visitors. A choice of counter heights is recommended to provide a range of options for a variety of persons. Lowered sections will serve children, persons of short stature, and persons using mobility devices such as a wheelchair or scooter and persons with balance problems that may require them to be seated.

The choice of heights should also extend to speaking ports and writing surfaces. There should be provision for knee space under the counter facilitates for a person using a wheelchair or a scooter to pull up under to better accommodate their needs. The use of colour contrast, tactile difference, or audio landmarks (e.g., receptionist voice or music source) can assist individuals with a visual impairment to more precisely locate service counters or speaking ports.

### 4.5.2.2 Application Considerations

Counters for information or service should have at least one section accessible to persons who use a wheelchair, scooter, or have balance problems that may require them to be seated. .

### 4.5.2.3 General Guidelines

- a. Enough space for maintaining appropriate interpersonal distances should be provided;
- b. Seating, where provided, should be arranged to facilitate conversation where appropriate. Corner to corner seating or round tables may promote conversation more readily than face-to-face;
- c. Each person involved in a transaction or conversation should be at face-to-face level;
- d. The service provider should be at the same floor level as the recipient;
- e. Service counters should be low enough for use in a seated position or have a lower auxiliary or optional counter area. The lowered areas should have knee clearances and be wide enough for use by anyone;

f) Background noise in the service desk area should be controlled enough to ensure that quiet talking is understandable by all parties to the conversation;

g) At service desks where confidential information is communicated, consideration should be given to the provision of sound absorbing surfaces, privacy partitions and other measures to control access to confidential discussion. The ideal is for a private office that can be used if the conversation may result in emotional distress;

#### 4.5.2.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.5.2.5 Illustrations



Figure 20. A range of lowered and raised counter areas provides the maximum usage of space and equity of access; what is useful in this particular example is the usage of a continuous area under the higher counter to provide magazine's, information brochures and the ilk that are well within acceptable reach-ranges.

[Source: [http://www.eldon-square.co.uk/customer\\_facilities%28Customer\\_Services\\_Desks%29-2196.htm](http://www.eldon-square.co.uk/customer_facilities%28Customer_Services_Desks%29-2196.htm)]



Figure 21. Utilization of standard desk-sizes that provide equal viewing and usability are important for both employees and members of the public.

[Source: [http://www.okrehab.org/seekers/vr\\_svc/7steps.htm](http://www.okrehab.org/seekers/vr_svc/7steps.htm)]

#### **4.5.2.6 See Also**

Consult the UABE Playbook Guidelines:

- B.4.3.5 Offices, Work Areas & Meeting Rooms
- B.4.3.6 Waiting & Queuing Areas
- B.4.3.7 Tables, Counters, Work Surfaces and Speaker Podiums
- B.4.3.8 Information, Reception & Service Counters
- B.4.3.9 Storage, Shelving & Display Units

## 4.6 Public-Use Equipment

### 4.6.1 Public Telephones

#### 4.6.1.1 Design Considerations

The placement of telephones should address the limited reach of children, persons short in stature, or persons in a seated position. Longer cords facilitate the use of the phone for someone unable to get close to the phone due to a mobility device. Adjustable volume controls are important for persons who are hard of hearing, as are shelves that could support a text telephone (TTY) device. A fold-down seat is an asset to someone having difficulty standing for extended periods. Telephones projecting from a wall may present a hazard, particularly to persons with a visual impairment, if the sides are not configured to be long white cane detectable.

Care should be taken that telephones or their enclosures are not protrusion hazards on accessible routes.

Although an outlet and a shelf for portable text telephones (TDDs) should be included with each pay phone, access to permanently installed TDDs is the more preferred option.

#### 4.6.1.2 Application Considerations

Where public pay phones, public closed-circuit phones or other public telephones are provided, they should be comply to the extent required by the table below:

Number of Accessible Telephones Required	
Number of each type of telephone provided on each floor	Number of telephones required to comply with this section
1 or more single unit	1 per floor
1 bank	1 per floor
2 or more banks	1 per bank  An accessible unit may be installed as a single unit in proximity to (either visible or with signage) the bank. At least one public telephone per floor should meet the requirements for a forward reach telephone.



**Note:** A bank of telephones consists of two or more adjacent public telephones, often installed as unit.

All telephones required to be accessible should be equipped with a volume control. In addition, 25%, but never less than one, of all other public telephones provided should be equipped with a volume control and should be dispersed among all types of public telephones, including closed-circuit telephones, throughout the facility.

Signage should be installed complying with the requirements of Appendix 19.

Where a public pay telephone is provided as a single unit, the telephone should be located with its highest operable part no higher than 1220mm. Where public pay telephones are provided as multiple units, at least one phone should be configured for seated use, and at least one for standing use (see Figure below).

Where an interior public pay telephone is provided, at least one interior public text telephone (TTY) should be provided in the establishment in a public use area.

#### **4.6.1.3 General Guidelines**

**a. Location:** Accessible telephones should be on an accessible route complying with Appendix 4. Telephones, enclosures and related equipment should be recessed into alcoves located adjacent to the main path of travel. Telephones should be located away from noisy locations which could interfere with a user's ability to hear.

**b. Protruding and Overhead Objects:** Telephones, enclosures and related equipment where not located in alcoves, should be cane detectable and comply with Appendix 3.

**c. Clear Floor or Ground Space:** There should be a clear floor space of not less than 800mm x 1400mm deep in-front of the telephone to accommodate a forward approach. A space of 1400mm x 1400mm accommodates both a front and parallel/side approach. The clear floor or ground space should comply with Appendix 2. The clear floor or ground space may extend a maximum of 480mm beneath the telephone only if a clear height of 685mm is provided for knee space.

**d. Operating Controls:** Accessible telephones provided for persons who use a wheelchair or scooter should have the maximum height of operable portions, including the coin slot at 1220 mm above the floor and have operable portions within the reach ranges specified in Appendix 1.

**e. Push Button Controls:** Telephones should have push-button controls where service for such equipment is available.

**f. Push Button Characters:** The characters on the push buttons should contrast with their background, and the buttons themselves should contrast with their background. All surfaces should be of a non-glare (matte finish).

**g. Cord Length:** The minimum handset cord length of accessible telephones should be at least 1000 mm.

**h. Illumination:** The minimum illumination level at operating mechanisms, the directory, and shelf of accessible telephones should be 200 lux.

**i. Shelf:** There should be a flat telephone directory shelf available of at least 500 mm wide and 350 mm deep.

**j. Volume Control:** Telephone receivers should have graduated volume controls.

**k. Flux Coil Compatibility:** In order for telephones to be hearing aid compatible, they should have a flux coil in the receiver.

**l. TTY (Text Telephones):** Text telephones (TTY's) used with a pay telephone should be permanently affixed within, or adjacent to, the telephone enclosure. If an acoustic coupler is used, the telephone cord should be sufficiently long to allow connection of the text telephone (TTY) and the telephone receiver. Where telephones are for use by persons who are deaf, deafened, hard of hearing, or speech-impaired, the telephones should be a separate telephone from those provided for persons who use wheelchairs or scooters

**m) TTY Shelf:** A shelf installed to accommodate the use of a TTY should be at least 250 mm wide x 350 mm deep, with at least 250 mm clear space above the shelf. The shelf should be equipped with an electrical outlet, within or adjacent to the telephone enclosure, and be equipped with a handset capable of being placed flush on the surface of the shelf.

**n) Signage:** Accessible telephones should be identified by the appropriate symbol of; accessibility for mobility impaired, hearing impaired, heard of hearing, and the symbol for teletypewriter (TTY). When directional signs for telephones are installed, they should include the appropriate access symbols. See Appendix 19.

#### 4.6.1.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.6.1.5 Illustrations

Consult the UABE Playbook Guidelines:  
B.4.4.5 Public Telephones



## 4.6.2 Information Transaction Machines

### 4.6.2.1 Design Considerations

An increasing amount of information is transmitted and provided through service equipment such as ATMs, ticket machines and internet terminals. These machines are often called Information Transaction Machines (ITM's). All ITM's should be simple to use and easy to perceive.

### 4.6.2.2 Application Considerations

All information transaction machines should comply with this part

### 4.6.2.3 General Guidelines

- a. Provide step-by-step menus that present manageable chunks of information in a logical order;
- b. Group controls for similar functions and spatially organize the controls to reflect the sequence of events. Graphics that guide the use through the steps can also be provided;
- c. Include back-up and cancel modes to provide the option of correcting entry mistakes;
- d. All transactions should provide feedback on the result. Critical actions should have confirmation steps before proceeding;
- e. Reinforce correct choices with labels, symbols, color feedback messages and signals etc.;
- f. Provide input/ output modes that everyone can use (e.g. touch screen plus mono jack for verbal feedback);
- g. Allow different methods of payment (e.g. credit cards, cash, debit cards, etc.). Design the input slots for ease of identification and insertion without the need for fine motor control;
- h. Locate all operating controls within the reach ranges;
- i. Provide adequate lighting for all controls and directions;
- j. Provide knee space when the device must be used from a frontal position;
- k. Provide a display screen that can be adjusted to reduce glare, to optimize contrast and to accommodate the position of the user;

#### 4.6.2.4 Technical Guidelines

No technical guidance is offered for this part.

#### 4.6.2.5 Illustrations



*Figure 23. Providing a combination of different ticketing machines at varying heights, with clearly contrasting signage is an important element in the usability and accessibility of such systems. This image is of the BART System.*

[Source: <http://www.uloba.no/templates/Page.aspx?id=5141>]

#### 4.6.2.6 See Also

Consult the UABE Playbook Guidelines:

- B.4.4.2 Controls and Operating Mechanisms
- B.4.4.3 Vending and Ticketing Machines
- B.4.4.10 Information Systems
- B.4.4.11 Card Access, Safety and Security Systems



## 4.6.3 Ticket and Vending Machines

### 4.6.3.1 Design Considerations

Space in front of vending and ticketing machines allows for manoeuvrability of mobility aids. Seating areas and tables adjacent to vending and ticketing machines offer convenience and should accommodate the spatial requirements of a wheelchair or scooter user. The selection of the machines should include a number of factors. Operating mechanisms should be within reach of children, person short in stature, and individuals in wheelchairs or scooters. The mechanisms should be operable with one hand and with minimal strength, to accommodate a host of disabilities including arthritis, or the need to stabilize oneself with a cane, or by a person holding a handful of bags. Lighting levels and colour contrasts make the machine more accessible to those with a visual impairment.

### 4.6.3.2 Application Considerations

Vending and ticketing machines should comply with this section.

### 4.6.3.3 General Guidelines

- a. Clearly identify accurate prices, types of payment methods and the process for canceling an order and getting refunds;
- b. Provide alternative means of payment including credit or debit cards, change and bills;
- c. Bill readers should allow differentiation of bills and be tolerant of common flaws on bills;
- d. Automatic change features should be provided as part of the machine;
- e) Provide identification and instructions for operational controls in alternate formats (e.g. text, recorded or synthesized speech, and Braille);
- f. All controls should be operable using a closed fist or open hand;
- g. Provide enough space for both side and front reach approaches for any user whether standing or seating;
- h. Locate all controls, money input devices and product dispensing areas within a reach range for all people whether standing or seated;
- i. Product removal should be possibly using one hand.

### 4.6.3.4 Technical Guidelines

No technical guidance is offered for this part.

### 4.6.3.5 Illustrations



Figure 24. An example of where provision has been made for two different heights in ticketing machines, allowing for multiplicity of usage. This system found on the BART.

[Source: <http://www.seat61.com/London-Paris-train.htm>]



Figure 25. Another example of ticketing and vending machines at different heights. Note that the lowered ticketing counter is provided with sufficient side and front approach space. This particular system taken from the EuroStar.

[Source: <http://www.seat61.com/London-Paris-train.htm>]

### 4.6.3.6 See Also

Consult the UABE Playbook Guidelines:

B.4.4.3 Vending and Ticketing Machines



### 4.7.1 General Note: All Ablutions

In addition to the needs of tourists with regard to en-suite or collective ablation facilities associated with rooms, it is also necessary to carry levels of accessibility into general toilet facilities associated with lounges, restaurants or for public use.

A parent or caregiver with small children and strollers may also benefit from a large washroom incorporating the features laid out here.

The identification of toilets involves design issues related to signage. For children or someone who cannot read text, a symbol or pictogram is preferred. A person with a visual impairment would also benefit from accessible signage. Signage hanging from the ceiling or high on a wall should be visible from areas down a hallway or other common areas. Features such as color-contrasting door frames and door hardware will also increase accessibility.

Pre-fabricated restrooms may not meet these requirements, in which case it is recommended that they be altered to meet the requirements.

These requirements should apply to all toilet and ablation facilities throughout the facility.

These requirements also apply to mobility accessible toilets.

- **Unobstructed Space:** Provision should be made for clear, unobstructed space to allow movement in toilets using a long cane without injury caused by bumping into any of the ablation facilities or equipment.
- **Door:** Toilet stall doors should be fitted with an emergency release lock. This is to enable the door to open easily, should there be a need to escape in an emergency.
- **Floor Finish:** The floor finish should be firm, fixed and slip-resistant. Where carpets are used, they should be firmly fixed to avoid slipping.
- **General Finishes:** It is recommended that an 'all-white' finish to bathrooms be avoided.
- **Radiators and Hot-Pipes:** Radiators and hot-pipes should be protected if the guest is in any danger. Staff should set the required temperature of any heating element in consultation with the guest.

- **Signage:** All signage and other printed instructions should be provided in large print, Braille, and where possible, in an audio format.
- **Remote Emergency Alarm Call System:** A remote emergency alarm call system should be provided in the room, in order to summon assistance when required.
- **Audio and Visual Emergency Warning and Evacuation Systems:** Emergency warning and evacuation systems should be provided in both audio and visual formats. This enables guests with functional visual and hearing limitations with an enunciated call that there is an emergency situation and that they should commence with the evacuation procedures.
- **Emergency Evacuation:** All emergency evacuation systems should be linked to a flashing emergency light provided in each toilet stall.
- **Coat Hooks:** Coat hooks and other projections should not be allowed to project beyond the maximum distances allowed. It is important to ensure that no harmful obstructions project from the wall.
- **Color Contrast:** There should be clear color contrast between fittings, fixtures, wall and floor finishes to assist in determining their location.
- **Basin Controls:** Basin controls should have visual and embossed indicators to indicate hot and cold taps or directions on mixers. This assists all guests in obtaining a clear indication of which taps are hot and which are cold to prevent scalding themselves.
- **Basin action mixers should have balanced water supply. This allows reliable temperature control over the water supply.**
- **Environmental Controls, including Light Switches:** All environmental controls, including light switches, should be detectable on/ off with rocker action.

#### 4.7.2 Design Considerations

Circumstances such as wet surfaces and the act of transferring between toilet and wheelchair or scooter can make toilet facilities accident-prone areas. An individual that may have a fall in a washroom with a door that swings inward could prevent his or her own rescuers from opening the door. Due to the risk of accidents, design decisions such as door swings and materials have safety implications and therefore make toilet facilities a prime location for emergency call switches. The appropriate design of all features will increase the usability and safety of all toilet facilities.



### 4.7.3 Application Considerations

This part shall apply to all restrooms required to be mobility accessible. Note that although included in this part, showers are not required to be installed within accessible restrooms; however, the incorporation of shower-elements is advised.

Provision for mobility accessible toilets should be according to the following rules:

- The total number of mobility accessible toilets should not be less than 5% or 1, whichever figure is higher;
- At least one mobility accessible toilet shall be provided on each floor where non-mobility accessible toilets have been provided – even where this requirement means exceeding the 5% minimum given above;
- Where there is provision for more than 10 toilet points in a male or female ablution (i.e. urinals, squat and toilet pans added together), then at least one of these should be mobility accessible and be located within the ablution facility. These mobility-accessible toilets are not be included when calculating the overall 5% requirement.
- No part of the main public areas of the facility may be located further than 50 meters from an accessible toilet; where facilities in the public areas are located at a further distance, provision must be made for an accessible toilet to service these areas – even where this means exceeding the 5% minimum given above;
- With the exception of the provision for mobility-accessible toilets in same-sex ablutions (given directly above), all mobility-accessible toilets should be unisex;
- Where it is not possible, because of a retrofit, to place a mobility accessible toilet within the same bank or area of general toilets, it should be located no further than 30 meters, and clearly signposted;
- Although baby-change facilities may be installed in mobility accessible toilets, these toilets are not to be used as general baby change rooms or facilities; and where baby-change facilities are incorporated into the design of mobility accessible toilets, they should be included in non-mobility toilet facilities.

### 4.7.4 General Guidelines

#### General

**a. Floor Surface:** Fixed slip-resistant floor surface.

**b. Doors:** Doors should adhere to the requirements in terms of clear opening widths. There should be sufficient maneuvering and clear space in-front of doors. All bathrooms must have enough internal space in front of the doors to allow for door closure without any obstacle for a user of a mobility aid.

## Wash-Hand Basins

- a) Wash-hand basins should be located adjacent to the W.C. at the required height and distance. The trap should be covered with heat-resistant lagging if composition is heat-conducting. This is essential to allow a seated user to comfortably maneuver under the basin to make proper use of it, and to avoid slow burns to legs lacking sensation, which might come into contact with the warm trap.
- b. Lever action taps or a mixer should be used. It is easier for a person with a functional physical limitation to use the taps if they are lever action rather than knobs which have to be gripped and turned.
- c. A mirror should be located at a suitable height above the basin rim. This is to ensure that a seated user can see his/ her reflection at the basin while seated and still make it possible for persons with ambulatory limitations to see their reflections.
- d. Towel rails must be set within an acceptable reach range. It must be possible for a seated user to reach a towel-rail comfortably.

### 4.7.5 Technical Guidelines

#### General

- a. **Location:** All mobility accessible washrooms shall be located on an accessible route.
- b. **Signage:** All mobility accessible washroom facilities should be identified with a signage. If individual gender-specific washrooms are not visible from the common use washrooms, directional signage should be provided.
- c. **Entrance Doors:** All entrance doors to mobility accessible toilet rooms should comply with the minimum requirements in terms of accessibility. Entrance doors should not swing into the clear floor space required for any fixture, and should have a minimum 1700mm clearance between the inside face of an adjacent toilet stall. It is preferable not to have a door at the entrance to a common use toilet area. The entrance configuration should provide visual privacy to the interior of the washroom. Where doors are provided, they should have a power door operator.
- d. **Clear Floor Space:** There should be clear floor space in the mobility accessible washroom to allow a person in a wheelchair to make a 180-degree turn. In front of accessible wash-hand basins, there should be clear floor space at least 800mm wide by 1400mm deep of which no more than 450mm should be under the wash-hand basin. Clear floor spaces may overlap.



- e. Floor Surfaces:** Floor surfaces shall comply.
- f. Illumination:** A toilet facility should incorporate even illumination throughout of at least 200 lux.
- g. Washroom Doors:** Mobility accessible toilet stall doors should be provided with a clear opening of at least 900mm with the door in the open position. In a renovation where it's technically infeasible to provide the required clear opening, the clear opening may be reduced to 850mm. Doors should swing outward, unless additional clear floor space of at least 800mm by 1400mm is provided within the washroom and does not interfere with the arc of the door swing. Washroom doors should be equipped with gravity hinges so that the door closes automatically. Where possible, accessible washroom doors should be aligned with the clear transfer space adjacent to the toilet fixture.
- h. Washroom Door Locks:** The provisions for washroom door locks should comply with the requirements for operable parts.
- i. Door Hardware:** The provisions for door hardware should comply with the requirements for operable parts.
- j. Accessible Fixtures and Controls:** Accessible fixtures and controls within mobility accessible washrooms should be on an accessible route, and have a minimum clearance of 1400 (1500mm preferred) between the outside face of the accessible stall and any wall-mounted fixture or obstruction.
- k. Washroom Dimensions:** Mobility accessible washrooms should have internal dimensions of at least 1800 by 1800mm. In a renovation where providing the required internal dimensions are technically infeasible, the internal dimensions may be reduced to 1500mm by 1500mm. In such cases, the door must swing outward.
- l. Color Contrast:** Door handles and locking mechanisms should incorporate pronounced color contrast, to differentiate them from the stall door. Grab bars should incorporate pronounced color contrast, to differentiate them from the surface they are mounted on.

### **Toilet Pans/ W.C.'s**

Automatic flush controls are preferred. If flushing mechanisms are not automated, then consideration should be given to the ability to reach a flush handle and the hand strength or dexterity required to operate it. Lever style handles on the transfer side of the toilet facilitate these considerations.

Appropriate placement of grab bars makes sitting and standing or transfers between the toilet and a mobility device safer.

**a. Seat:** Toilet seats should not be spring-activated. A back support should be provided where there is no seat lid or tank. Where provided, toilet tank tops should be securely attached.

**b) Toilet Fixtures:** Toilet fixtures should have the top of the seat 460 – 480mm above the floor and be 460 – 480mm from the closest side wall to the centerline of the wall. Wall hung toilets are preferred.

**c. Transfer Space:** Accessible toilets should have a minimum 900mm wide clear transfer space on one side of the toilet fixture. In a retrofit situation where it is technically infeasible to provide a 900mm wide clear transfer space, this space may be reduced to 800mm. In washroom facilities where more than one accessible toilet is provided, the toilet transfer spaces should be configured with the clear transfer space (i.e. the open space beside the toilet). On opposite sides of the toilet fixtures. The clear transfer space should be free of obstructions (such as garbage bins).

**d. Flush Controls:** Flush controls should be automatic, or be designed to comply with Appendix 6. Toilet flush controls may be hand-operated and should be located on the transfer side of the toilet or be electronically/ automatically controlled. Hand-operated flush controls should comply with Appendix 6. It is preferred that toilet controls be of the automatic flushing type with a gentle warning sound and light system pre-flush to prevent confusion, alarm, or worry that flush will not occur. If a manual flush fixture is used, flush controls should be located on the transfer side of the toilet, be color contrasted with their surroundings, and be simple and intuitive to use.

**e. Grab-Bars:** Grab-bars should comply with the relevant part below. There should be at least two grab-bars located in an accessible toilet stall. One grab bar should be located behind and above the toilet. It should be at least 600mm in length, located 800 - 820mm above the floor, or at least 150mm above the top of a toilet tank. The second grab-bar should be on the side wall closest to the toilet fixture. It should be a cranked-shaped grab-bar, with each section of the crank 300mm long and bent at 45 degrees, mounted with the horizontal component 800 - 820mm above the floor, and the vertical component 150mm in-front of the toilet bowl. Consideration should also be given to the installation of a fold-down grab bar on the opening side of the toilet, at least 760mm in length, mounted 420 – 440mm from the centerline of the toilet, and 630 – 690mm above the floor.

**f. Coat Hook:** Washrooms should be installed with a collapsible coat hook mounted not more than 1200mm above the floor, on a side wall (adjacent and reachable to/ from the toilet pan) and projecting not more than 50mm from the wall.

**g. Toilet Paper Dispenser:** A toilet should be equipped with an accessible toilet paper dispenser. The toilet paper dispenser should be wall mounted and located below the grab-bar in line with or not more than 300mm in-front of the toilet seat, not less than 600mm above the floor, and have a clearance to the grab-bar of at least 60mm.



**h. Emergency Call Switch:** Accessible toilets should be equipped with an emergency call button or pull cord. A waterproof emergency call button or pull cord should be provided adjacent to the accessible toilet fixture. The emergency call button or pull cord should activate a bell or other signaling device, that is monitored from a location within the facility.

**i. Ablution-Hose:** An ablu-tion-hose should be provided at every toilet fixture, with a wall-attachment system for the hose head. The hose-head attachment should be located on the side wall closest to the toilet; no more than 200mm back from the front of the toilet, at a height midway between the underside of the horizontal grab-bar and top of the toilet seat. Ablution hoses should have operating mechanisms that comply with the requirements for operable parts.

**j. Color Contrast:** Toilet fixtures should incorporate pronounced color contrast, to differentiate them from the background environment. Grab bars should incorporate pronounced color contrast, to differentiate them from the surface they are mounted on. The emergency call button or pull cord, flush controls, toilet paper dispensers and ablu-tion hoses, should incorporate color contrast, to differentiate them from the background environment.

### **Wash-Hand Basins**

The accessibility of wash-hand basins will be greatly influenced by their operating mechanisms. While faucets with remote-eye sensor technology may initially confuse some individuals, their ease of use is notable. Individuals with hand strength or dexterity difficulties can use lever-style handles. For an individual in a wheelchair, a lower counter height and clearance for knees under the counter or basin would be required. The insulating of hot water and drain pipes protects the legs of an individual using a wheelchair. This is particularly important when a disability impairs sensation such that the individual would not sense that their legs were being burned. The combination of shallow sinks and higher water pressures can cause unacceptable splashing at wash-hand basins.

**a. General:** Wash-hand basins should be located on an accessible route.

**b. Mounting Location:** Accessible wash-hand basins should have the top located no higher than 820mm above the floor. Wash-hand basins should be located so that the minimum distance between the centerline of the fixture and the side wall is 460mm. A wash-hand basin must be located on the side wall adjacent to toilet pans, and located in such a way that it has its closest edge 150mm from the edge of the cranked grab bar.

**c. Knee Space:** Wash-hand basins should have a knee space that complies with the requirements set out in the UABE Playbook Guidelines. The drain should be offset to maximize clearance under the sink.

**d) Clear Floor Space:** Accessible wash-hand basins should have a minimum clear floor space of 800mm wide and 1400mm deep of which a maximum of 480mm in depth may be under the wash-hand basin.

**e) Faucets:** Faucets should comply with the requirements for operable parts and have a single long lever-style handle (not self-closing) operable with a clenched fist, or be electronically controlled. Faucets should be located so that the distance from the centerline of the faucet to the front edge of the vanity, is not more than 485mm. The hot and cold water should be marked with color contrasted and raised letters for identification.

**f) Dispensers:** Dispensers at accessible wash-hand basins, such as soap and towel dispensers, should be accessible to persons using wheelchairs or scooters (i.e. not having to reach over the wash-hand basin to access the devices) and be located so that the dispensing height is not more than 1200mm above the floor. Dispensers should be operable with one hand, and be color contrasted from the surrounding environment.

**g) Water Temperature:** Hot water and drain pipes should be insulated if they abut the clearances below the wash-hand basin as noted above. The water temperature should be limited to a maximum of 45 degrees Celsius.

**h. Shelves:** Shelves or other projections above wash-hand basins should be located so that they will not present a hazard to persons with a visual impairment.

**i. Mirrors:** A mirror should be installed to the requirements given below and located with its bottom edge no higher than 1000mm above the floor. In retrofit situations where a mirror's bottom edge cannot be located lower than 1000mm, a tilted mirror may be used.

**j. Color Contrast:** There should be color contrast between wall/ lavatory/ faucet and wall/ soap-dispenser/ towel-dispenser/ towel-disposal/ hand-dryer units.

## Washroom Accessories

Design issues related to washroom accessories include the hand strength and dexterity required to operate mechanisms. Reaching the accessories is another concern. Accessories that require the use of two hands to operate can present difficulties for a range of persons with disabilities when the ability to reach or balanced is impaired. Accessories in a washroom should be laid out logically, conveniently, and consistently in order that a person with a visual impairment may anticipate and easily find the location of accessories such as hand soap dispensers, paper towel dispensers, or hand-dryers, garbage cans etc.

**a. General:** In a mobility accessible washroom, where it is technically infeasible to make all washroom accessories comply, at least one of each type of washroom accessory should comply.



**b. Height of Operable Mechanisms:** At least one type of each washroom accessory provided should have operable portions and controls mounted between 900 – 1200mm above the floor.

**c. Clear Floor Space:** In front of each accessory in a washroom there should be a clear floor space at least 800mm wide by 1400mm in depth. The clear floor spaces of adjacent washroom accessories may overlap.

**d. Mirrors:** Where mirrors are provided, at least one mirror should be mounted with its bottom edge not more than 1000mm above the floor, or be inclined and adjustable from the vertical to be usable by a person using a wheelchair.

**e. Soap Dispensers:** At least one soap dispenser, mounted near the front of the sink, should be provided to allow users with short reaching range to use it independently.

**f. Paper Towel Dispensers/ Hot Air Hand Dryers:** In washrooms that are intended to be mobility accessible, at least two paper towel dispensers or hot air hand dryers should be installed at different heights above the floor. One that is accessible by a seated or a person short in stature with the centerline of its operable parts no higher than 1200mm above the floor. A second paper towel dispenser or hot air hand dryer should be provided with the centerline of its operable parts located no higher than 1500mm above the floor for use by a standing person. It is a good idea to have the paper towel dispenser and hot air hand dryers sensor operated for easier use by all.

**g. Garbage Containers:** A garbage container close to sink does not block access to the sink or the transfer or approach space for a toilet, if free standing should be provided. A wall recessed garbage container with an opening for garbage located between 900 – 1200mm above the floor is a good solution.

**h. Color Contrast:** There should be color contrast between the accessories in the washroom and the surface they are mounted upon.

### **Grab-Bars**

Grab-bars are an important feature to those who require assistance in standing up, sitting down, or stability while standing. Transferring between toilet and wheelchair or scooter is a typical scenario where a grab-bar is utilized.

**a. Diameter:** Grab-bars should be 30-40mm in diameter.

**b. Structural Strength:** Grab bars should be installed to withstand a load of at least 1.3 kN applied vertically or horizontally.

**c. Surfaces:** Grab-bars should be free of any sharp or abrasive elements, have a slip-resistant surface, and be color-contrasted with surrounding environment. Adjacent surfaces should be free of any sharp or abrasive elements.

d) **Clear Space:** Grab-bars should have a clearance of 35 – 45mm from the wall and any surrounding obstacle.

#### 4.7.6 Illustrations



*Figure 25. A variety of different wash-hand basin heights provides maximum flexibility in the use of such environments, enabling, as is the case here, for use by both shorter users and standing users.*

**[Source: UDA Consortium]**



Figure 26. An illustration of the typical placement of the components within an accessible toilet configuration.

[Source: IDC Consultants]

#### 4.7.7 See Also

Users are also directed to the following portions of the UABE Playbook Guidelines: Consult the UABE Playbook Guidelines:

- B.4.2.1 Toilet Facilities
- B.4.2.2 Toilet Stalls
- B.4.2.3 Toilets
- B.4.2.4 Lavatories
- B.4.2.5 Urinals
- B.4.2.6 Washroom Accessories
- B.4.2.7 Individual Washrooms
- B.4.2.8 Bathtubs
- B.4.2.9 Shower Stalls
- B.4.2.10 Grab Bars

## 4-8 External Areas

### 4.8.1 External Areas

Opportunities for recreation, leisure and active sport participation should be available to all guests including persons with disabilities. All guests should enjoy equal access to and use of external facilities and outdoor areas. These include  
Outdoor recreational activities:

- Landscaping
- Rest areas and benches
- Picnic tables
- Swimming pools

Consult the UABE Playbook Guidelines:

- B.4.1.1 Space and Reach Requirements
- B.4.1.2 Ground and Floor Surfaces
- B.4.1.3 Protruding and Overhead Objects
- B.4.1.4 Accessible Routes, Paths and
- B.4.1.5 Entrances
- B.4.1.7 Gates, Turnstiles and Openings
- B.4.1.8 Windows, Glazed Screens and
- B.4.1.9 Ramps
- B.4.1.10 Curb Ramps, Pedestrian Crossings, Traffic Islands and Medians
- B.4.1.11 Stairs
- B.4.1.12 Handrails
- B.4.3.1 Drinking Fountains
- B.4.3.2 Viewing Spaces at Fixed Seating
- B.4.3.3 Elevated Platforms
- B.4.3.7 Tables, Counters, Work Surfaces and Speaker Podiums
- B.4.3.8 Information, Reception & Service Counters
- B.4.3.11 Balconies, Porches, Terraces & Patios
- B.4.3.14 Landscaping Materials & Plantings
- B.4.3.15 Rest Areas and Benches
- B.4.3.16 Picnic Tables
- B.4.3.17 Street Furniture
- B.4.4.13 Lighting
- B.4.4.14 Materials and Finishes
- B.4.4.15 Texture and Colour
- B.4.4.16 Acoustics
- B.4.5.2 Outdoor Recreational Facilities



## 4.8.2 Street Furniture

### 4.8.2.1 Design Considerations

Street furniture can provide a resting place for any individual with difficulty walking distances. Such furniture should incorporate strong colour contrasts and be located off pathways, to minimize its potential as an obstruction to pedestrians.

### 4.8.2.2 Application Considerations

Street furniture, including but not limited to, waste receptacles, light standards, signs, planters, mail boxes, and vending machines contained within the site, should comply with this section, including furniture that is located inside or outside of facilities.

All waste receptacles, including those located in unpaved areas of parks, wilderness, beach, unpaved picnic areas should be accessible to persons using wheelchairs or other mobility devices. Exception: large industrial containers

### 4.8.2.3 General Guidelines

No general guidance is offered for this part.

### 4.8.2.4 Technical Guidelines

**a. Location:** Street furniture should not reduce the required width of an access route as specified in Appendix 4. Street furniture should be located to one side of the normal path of pedestrian travel, as illustrated in the Figure(s) below. Street furniture should be stable and securely mounted in its place.

**b. Protruding Objects and Overhead Hazards:** Street furniture should be cane-detectable, complying with Appendix 3.

**c. Waste Receptacles:** Waste receptacles should be large enough to contain the anticipated amount of waste, so that overflows do not cause a tripping hazard. Waste receptacles in accessible open areas, such as parks, wilderness areas, beaches or picnic areas, should be mounted on firm, stable, and level pads. Waste receptacles should be clearly identified by suitable lettering, in compliance with the relevant parts of Appendix 19. Where lids or openings are provided on waste receptacles, they should be mounted no higher than 1060 mm above the adjacent floor or ground surface. Opening mechanisms should comply with Appendix 6. An exterior waste receptacle should be provided close to each accessible public entrance.

**d. Colour and Texture Contrast:** Street furniture should incorporate pronounced colour contrast to differentiate it from the surrounding environment. There should be a minimum 300 mm wide continuous colour and texture contrasting indicator surface on either side of the main path of travel. On curb edges where street furniture may be located, this indicator surface should be widened to accommodate and contain all street furniture.

#### 4.8.2.5 Illustrations

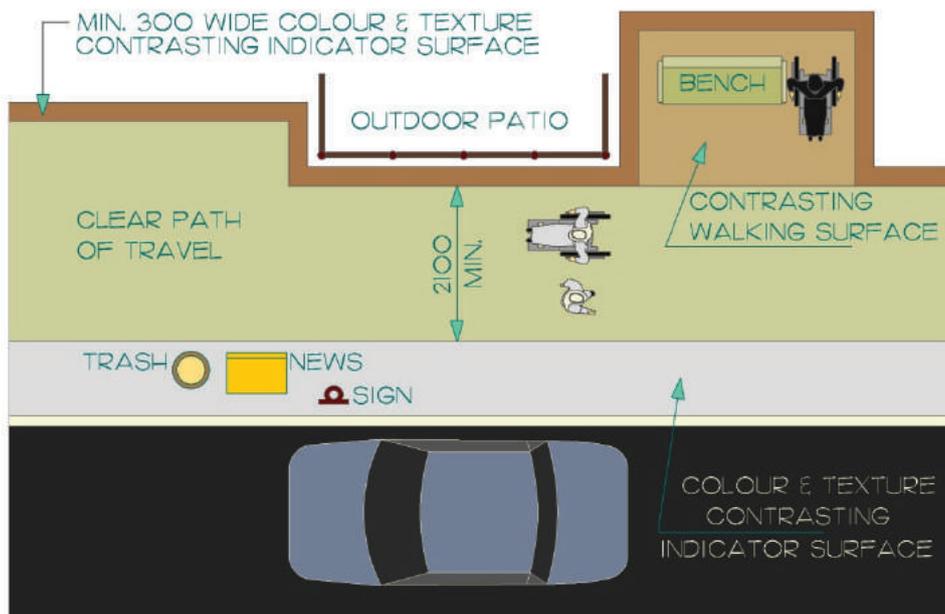


Figure 27: Streetscape. Dimensions in Millimeters.

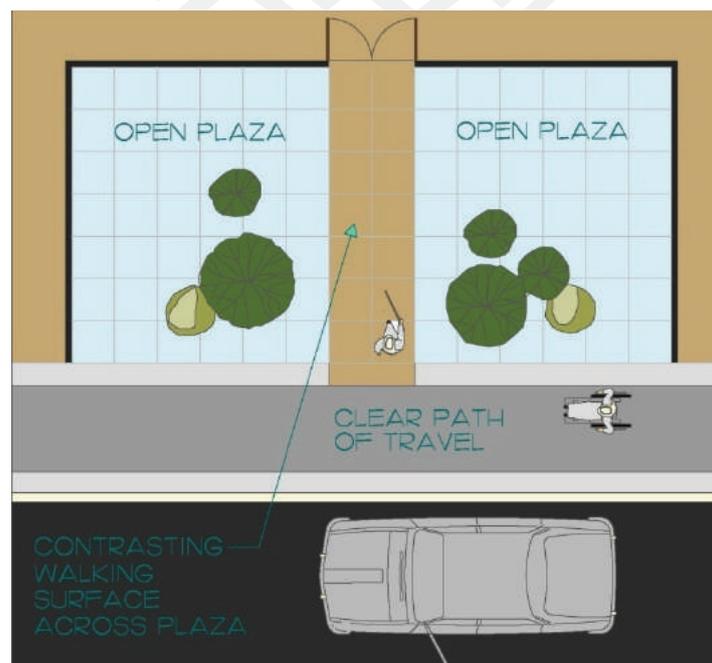


Figure 28: Pathway Across Plaza.



## 4.8.3 Rest Areas and Benches

### 4.8.3.1 Design Considerations

Benches provide convenient resting places for all individuals and are especially important for those who may have difficulty with standing or walking for extended periods. Benches should be placed adjacent to pedestrian walkways to provide convenient rest places without becoming potential obstructions. Appropriate seat heights can facilitate sitting and rising for individuals such as senior citizens or persons with strength problems. Armrests may also provide assistance in sitting and rising. A person with a visual impairment may find it easier to locate benches if they are located adjacent to a landmark, such as a large tree, a bend in a pathway, or a sound source.

### 4.8.3.2 Application Considerations

All benches, including those located in unpaved external areas or unpaved picnic areas, should be accessible to persons using wheelchairs or mobility devices.

### 4.8.3.3 General Guidelines

No general guidance is offered for this part.

### 4.8.3.4 Technical Guidelines

No technical guidance is offered for this part.

### 4.8.3.5 Illustrations



*Figure 29. Rest space with an allocated open space, possibly for a seated user. Note the clear floor surface allowing ease of movement. The usage of a middle handrail, although normally to discourage sleeping on such benches, also acts as useful support for the elderly as well as people who experience difficulty seating and de-seating.*

[Source:<http://www.cpdit01.com/resources/superintendent.accessible-playgrounds/general-information/Accessible%20Playground%20Features.pdf>]

Prince Salman Center for Disability Research

## 4.8.4 Landscaping

### 4.8.4.1 Design Considerations

Landscape materials, trees, shrubs and plants should be selected and located with a wide variety of users in mind. For instance, plants and shrubs with a variety of fragrances can provide an interesting orientation cue for persons with a visual impairment. Using contrasting flowers near walkways can also be helpful as a guide. Plants with thorns may constitute a walking hazard and should be avoided. Plants that drop large seed pods can present slipping hazards, as well as, difficulties for pushing a wheelchair. Plantings and tree limbs that overhang pathways can impede all users and be a particular hazard to an individual with a visual impairment.

Raised beds can better accommodate persons who use a mobility device or those that have difficulty in bending to enjoy or tend to plantings, however they may create loitering problems in those areas.

The use of unit pavers as a walking/ wheeling surface is not recommended, unless they are laid out in a location that is not subject to the effects of settlement and heave, such as over a structural slab or indoors. In addition, the space between pavers should be limited to prevent excessive vibration to persons using mobility devices such as wheelchairs or scooters.

### 4.8.4.2 Application Considerations

Landscaping materials and plantings contained within the site should comply with this section.

### 4.8.4.3 General Considerations

No general guidance is offered for this part.

### 4.8.4.4 Technical Guidelines

**a. Location:** Accessible plant beds should be located on an accessible route complying with Appendix 4.

**b. Height of Accessible Plant Beds:** Accessible plant beds should be raised 440 mm above the adjacent floor or ground surface.



**c. Curbs and Guards for Pedestrian Walkways:** The edges of planting beds located immediately adjacent to pedestrian walks should be clearly defined. Where variations in grading immediately adjacent to pedestrian walks are potentially hazardous (particularly to persons who are visually impaired), the hazardous edges of the walk should incorporate clearly defined, color-contrasting and cane-detectable curbs at least 75 mm high. Different materials could be used to accomplish this requirement including concrete or rocks for example.

**d. Hazardous Plants and Materials:** Shrubs with thorns and sharp edges should be planted at least 900 mm away from accessible pathways and seating areas. Plants that drop large seed pods should not overhang or be positioned near accessible paths or walkways.

**e. Guide Wires:** Permanent guide wires should not be used in any area which is intended for use by the general public, clients, customers, or employees. Temporary guide wires, such as those used when planting new trees, should be clearly identified using strong colour contrast.

**f. Overhead Protrusions and Tree Guards:** Tree guards should conform to Appendix 3. Overhanging branches of trees or shrubs over walkways or paths should not reduce the available headroom at any part of the walkway or path to less than 2100 mm.

**g. Floor and Ground Surfaces:** Common accessible surfacing materials for pathways include: poured concrete, interlocking stones, paving slabs, asphalt, rubberized surfaces, or crushed stone. For more information on these materials, see the Table provided below. Regardless of the surface treatment, it should be ensured that there is a cross slope of 1:50 (2%) for proper drainage.

**h. Orientation Cuing:** Plantings can be used to provide orientation cues, for example, by lining pathways with colourful flowers or strategic position of fragrant plantings. Fragrant plantings can also provide an environment that can be enjoyed by a broader range of users. Similarly, the use of features such as fountains, provide additional auditory cues to assist with orientation and wayfinding.

#### 4.8.4.5 Illustrations

No illustrations offered for this part.

## 4.8.5 Landscaping

### 4.8.5.1 Design Considerations

Primary considerations for accommodation persons using swimming pools who have mobility impairments include accessible change facilities and a means of access into the water. Ramped access into the water is preferred over lift access, as it promotes integration (everyone will use the ramp) and independence. Handrails are to provide support while entering the water are appreciated by everyone. Many persons who are visually impaired will benefit from color and textural cues along primary routes of travel and at potentially dangerous locations, such as at the edge of the pool, at steps into the pool and railings.

Swimming is an important recreational and therapeutic activity for many persons with disabilities. The buoyancy and freedom offered by an immersive water environment can be enabling in themselves. Primary considerations for accommodating persons who have mobility impairments include a means of access into the water. Ramped access into the water is preferred over lift access, as it promotes integration (everyone will use the ramp) and independence. Many persons who are visually impaired will benefit from color and textural cues along primary routes of travel and at potentially dangerous locations, such as the edge of the pool, at steps into the pool and at railings.

### 4.8.5.2 Application Considerations

In addition to the design requirements of Appendix 1 to Appendix 4, swimming pools, wading pools, hot pools, splash pads, spray pads, and therapy pools comply with this section.

### 4.8.5.3 General Considerations

- a. **Location:** Swimming pools should be located on an accessible route.
- b. **Ramped Access into Pools:** Ramped access is preferred over a pool lift.
- c. **Stair Access:** Where stair access is provided into pools, stairs into the pool should be clearly marked with color contrasted edges on risers and treads, and stairs are equipped with at least one handrail.
- d. **Depth of Pool:** The depth of the pool is clearly indicated on the edge of the pool.
- e. **Non-Slip Surfaces:** Pool areas incorporate non-slip floor surfaces.
- f. **Pool Boundaries:** Pool boundaries are clearly defined by both a textural change and color contrast.
- g. **Drainage:** There is adequate drainage on the pool deck to drain water quickly.



#### 4.8.5.4 Technical Guidelines

**a. General:** In addition to the design requirements specified in Appendix 1 to Appendix 20, swimming pools, wading pools, hot pools, splash pads, spray pads and therapy pools should comply with this section.

**b. Accessible Route:** Where indoor swimming pools, wading pools, hot pools and therapy pools are supplied, they should be on an accessible route in compliance with Appendix 4. The accessible route should proceed from the lobby/entrance area to the change rooms, and to the specific facility pool deck.

**c. Pool Perimeter Surface:** Pool boundaries should be clearly defined by both a textural change and a colour contrast to both the water surface and surrounding pavement surface. The floor finishes used on a pool perimeter, deck or paved area surrounding the pool should be firm, stable, slip-resistant, non-abrasive, and easy-to-clean. Pools should be of 'level-deck' design to accommodate various types of mobility devices.

**d. Pool Deck Drainage:** Adequate drainage on the pool deck should be provided to drain water quickly. Pool deck slopes in any direction should not be greater than 1:50.

**e) Ramped Pool Access:** Access from the pool deck into the water should be provided by a ramp sloped no steeper than 1:12. (A ramp slope of 1:16 to 1:20 is preferred.) In retrofit situations where it is technically infeasible to provide a ramp, a mechanical pool lift may be used. Ramped access into the water is preferred over lift access. The ramp should comply with the requirements of the Section above on ramps, including detectable warning surfaces and handrails.

**f. Sloped Entries:** Where sloped entries exist into a pool, they should extend to a depth 610-760 mm below the stationary water level. Where landings are required by the Section on Ramps above, at least one landing should be located 610-760 mm below the stationary water level at the bottom of the sloped entry. In wading pools, the sloped entry and landings, if provided, should extend to the deepest part of the wading pool. At all sloped entries into pools at least two handrails should be incorporated complying with Appendix 5 and having a clear width of 950-1200 mm.

**g. Pool Transfer Type Chair:** A pool / shower type chair should be available at each pool facility, if required for use and assistance in transferring a person with a disability into and out of the pool.

**h. Pool Steps or a Ladder:** Where steps and/or a ladder are provided to access the pool, steps and/or the ladder should be colour contrasted with their surroundings and be marked with a colour-contrasting strip of at least 50 mm wide, at both the riser and the tread of each step. The colour-contrasting handrails should be located

on both sides of the steps and/or ladder. Such handrails should extend at least 300 mm beyond the pool edge at deck level and at least to the water surface at the pool level. The handrail should not create a hazard and should return to pool floor, a post, or itself.

**i. Curbed Edge:** At a pool, where a curbed edge is provided, it should be a minimum of 200 mm and a maximum of 400 mm in height above the deck floor. It should also be colour contrasted from its surroundings.

**j. Pool-Depth Indicator:** Where pool-depth indicator markings are provided, depth - indicator markings, as well as 'SHALLOW END' and 'DEEP END' markings should be of a highly contrasting colour and of a sufficient size to be easily visible for various viewing distances available in the facility (See Section A 19).

**k. Diving Boards or Platforms:** Where diving boards or platforms are provided, they should be clearly marked and colour contrasted with their surroundings, and protected. Overhead clearances should be a minimum of 2100 mm or they should be protected by suitable guards complying with Appendix 20.

**l. Lanes, and/ or Lane Markers:** Where lanes, and/or lane markers are provided, they should be of a highly contrasting colour. Tie-off devices for lane markers should be positioned such that they do not create a tripping hazard at the pool edge.

**m. Starting Blocks:** Where starting blocks are provided, they should be of a highly contrasting colour and capable of being securely fixed in place.

**n. Safety Equipment and Other Accessories:** Safety equipment and other accessories should be stored so as not to create a tripping hazard, be in clear view, be colour contrasted from their surroundings, be on an accessible route, have appropriate signage indicating the location of the safety equipment clearly visible from all areas of the pool, and have a clear space in front of the equipment of at least 2100 x 2100 mm. The operating parts or access to the safety equipment and other accessories should be located no higher than 1200 mm above the floor. See Appendices 1,2, 4, 6 and 19.

**o. Lifeguard Chairs, Slides and Other Pool Related Structures:** Lifeguard chairs, slides, and other pool related structures should be in highly contrasting colours to the surrounding surfaces.

**p. Wading Pool:** Wading pool access should be safe and gradual so that a child with a disability can be assisted into the water easily and/or use a pool type wheelchair to enter. All surfaces of the wading pool deck and floor should be slip resistant.



**q. Change and Shower Facilities:** Where change and shower facilities are available they should be accessible and on an accessible route complying with Appendix 4. There should be a shower area available that complies with the Section on Showers above. There should be a shower chair available at each facility for use in the shower by a person with a disability that may require such a device.

#### 4.8.5.5 Illustrations



*Figure 30: Where care has not been taken to ensure that principles of access have been incorporated into the design of swimming pools and the like, expensive interventions such as lifts may become necessary.*

[Source: <http://www.bestbuymobility.com/store/images/liberty.jpg>]



Figure 31: Ramped access into pools provide independent movement for users into and out of these facilities. Although the use of clip-on elements and ad-hoc interventions should be considered in existing facilities, new pool facilities should have such elements designed as integral elements.

[Source: [http://www.ncaonline.org/files/nca\\_images/product\\_directory\\_images/ACCESS\\_RAMP\\_500.jpg](http://www.ncaonline.org/files/nca_images/product_directory_images/ACCESS_RAMP_500.jpg)]

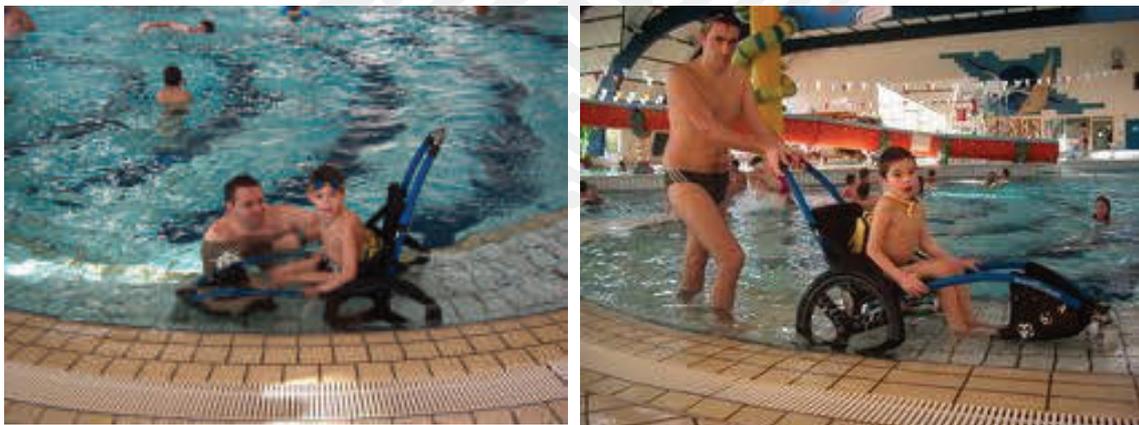


Figure 32: The usage of soft-entrances to pools, as is the case here, constitutes a best practice in terms of the ability of the pool to provide access. This is not only safer, as there is sufficient space in the pool before depth becomes an issue, but allows direct ramped access for users of assistive devices, and most importantly, is not a clip-on or 'added' element, but an integral and harmonized element of the entire pool.

[Source: [http://www.scooterdirect.com/Hippocampe\\_639.htm](http://www.scooterdirect.com/Hippocampe_639.htm)]



## Communication and Providing Information







5

## Communication and Providing Information

5.1

### Universal Accessibility: Some Guidelines for Conveying Information

#### 5.1.1 Pre-Arrival/Booking and Arrival

The Tourism Chain begins with the retrieval of information from either print or electronic sources and acting upon such information.

The provisions of this part shall be deemed to apply to the following:

- All promotional and advertising material produced by tour agents, travel agents, tourism operators.
- Promotional and advertising material produced by facilities and places of accommodation.
- Information supplied by tourism organizations or bodies.
- This part shall be deemed to apply for both printed and electronic forms of media.

The following considerations should be taken into account:

- a. Advertising materials / websites should contain information relating to accessible phone numbers i.e. Type talk, text direct or fax and e-mail addresses in order to book accommodation. Advertising material/web sites should also include information on what equipment and services are available such as loop systems in bedrooms, public telephones and inductive couplers.
- b. Establishments to provide textphone/type talk for guest to book accommodation. This may be through a central reservations system.
- c. At reception a pen and paper should be made available to assist communication where required.
- d. A counter loop system or portable loop system to be fitted. Where glass barriers are in-situ they should be non-reflective.
- e. Facilities and location of facilities for guests with functional hearing limitations should be made known on arrival e.g. written information. Establishments should provide signage/symbols to locate facilities.



- f. On arrival a familiarization tour should be offered by the proprietor/staff.
- g. Where appropriate a written record is made of guest and visitor details, room location and any specific requirements and passed to staff on changing shift patterns.

### 5.1.2 Bedrooms

The provision of communication and information systems in bedrooms at places of accommodation is a necessary provision for persons with functional sensory limitations.

The following considerations should be taken into account:

- a. Where a television is provided, teletext/listening devices and room loop to be made available.
- b. If places of accommodation and tourist facilities provide video tape libraries, consideration should be given to providing a closed caption decoder.
- c. Where telephones are provided in rooms they should have a flashing light, inductive coupler, and voice amplification, ring tone and loudness adjustment.
- d. A text phone should be made available for making and receiving external calls.
- e. Where wake-up calls are normally provided an alarm clock to be available with flashing light/vibrating facility incorporated.
- f. Information on services and facilities should be available in alternative format, e.g. large print and Braille and/or audio tape.

### 5.1.3 Conference, Entertaining and Banqueting Facilities

Conference, entertainment and banqueting areas are areas of high noise volume and are often visually difficult to negotiate. As such, provision needs to be made to ensure the maximum information/communication accessibility of these areas.

This part should apply to all public conference and banqueting halls or auditoria, as well as any venue designed for the gathering, meeting or entertainment of any group of persons.

- a. Staff need to identify specific requirements for persons with functional hearing limitations. This will mean the provision of good lighting/good quality sound systems, a portable or professionally installed induction loop and infra-red systems. Symbols should be displayed to show what equipment has been installed. It is recommended that induction loops are part of the standard equipment.

**b.** Live entertainment provided by the tourist facilities and places of accommodation should be available through a professionally installed public loop system.

**c. Microphones:** Where applicable, microphones should be used to ensure that no-one has to strain to hear a speaker. If the participants ask questions during a presentation or contribute to the discussion, a microphone should be made available to the audience. Cordless microphones work best. If a microphone is set up in an aisle, it should not impede traffic. If the presenter has a disability, it is important to give him or her the option of which microphone to use.

**d. Sound Systems:** The quality of sound systems should be evaluated before meetings in order to make necessary adjustments. Sometimes older systems and those of poor quality can produce extraneous noises or feedback that is amplified by hearing aids. It may be necessary to replace the system or rent appropriate equipment. Sound systems should also include assistive listening devices for persons who have functional hearing limitations.

**e. Sign Language Interpreters:** Sign language interpreters are certified professionals qualified to interpret effectively and accurately for persons with functional hearing limitations. There are as many as six types of interpretation, the most common being American Sign Language (A.S.L.). Because of the different types it is vital to assess participant and tourist preferences. If meetings are to last longer than two hours, then two interpreters are required to avoid fatigue.

**f. Captioning:** If videotapes or films will be shown during meetings, captioning will be necessary to allow access for persons with functional hearing limitations. Captioning is the display of spoken words or sounds as texts. Closed captioning allows the display of captions to be turned off or on. Another form of captioning sometimes used for presentations and meetings is called C.A.R.T. or Computer-Aided Real-Time Reporting. Using technology developed for courtrooms, a reporter types shorthand that is translated into text on a screen in real-time.

#### 5.1.4 Bathrooms, Washrooms and Toilets

Bathrooms, washrooms and toilets are areas of potential injury due to the presence of water, tiled floors and the like.

This part shall apply to all bathrooms in places of accommodation and shall apply to any bathroom, washroom or toilet as contemplated in the terms of reference.

**a.** Information on services and facilities should be available in multiple formats including, though not limited to, large print, Braille and audio tape.

**b.** A means of alerting proprietor/hotel staff in the event of an emergency. Pull alarm cords should be in reach of the floor and colored red.



### 5.1.5 Restaurants, Bars and Catering Facilities

Provision should be made for accessible information and communication formats to be made available to PWDs.

This part shall apply to all restaurants.

- Information should be available in alternative formats, if fixed menus and price lists this could include producing Braille, large print and/or audiotape. If changing menus this may mean providing staff to read a menu for example.

### 5.1.6 Tourist Information – General

The provision of tourism information specifically refers to counters etc. A choice of counter heights is recommended to provide a range of options for a variety of persons. The choice of heights should also extend to speaking ports and writing surfaces. There should be provision for knee space under the counter facilities.

The use of color contrast, tactile difference, or audio landmarks (e.g. receptionist voice or music source) should also be provided. Where tourism information bureaus or counters are present in places of accommodation, they should have at least one portion that is accessible to persons who use a wheelchair, scooter or have balance problems that require them to be seated.

The following should be considered:

- a. Location:** Information, reception and service counters should be located on an accessible route
- b. Waiting and Queuing Areas:** should comply with the requirements set out under Reception above.
- c. Clear Floor or Ground Space:** Wheelchair seating spaces should incorporate a clear floor space. Clear knee and toe space should be provided where a forward approach is used.
- d. Height:** Counters for information, reception or service should incorporate at least one accessible section.
- e. Knee and Toe Space:** Counters for information, reception, or service should incorporate knee and toe space.
- f. Speaking Ports:** should be provided at information, reception, or service counters
- g. Identification:** the tourism information counter should be clearly identifiable

## 5.2

## Assistive Listening Devices

### 5.2.1 Design Considerations

The provision of assistive listening devices is important for the range of individuals who may have difficulty hearing.

Adequate and controllable lighting is required for persons who lip-read, or those who require increased task lighting, due to a visual impairment.

### 5.2.2 Application Guidelines

*Assistive listening systems should comply with this section.*

This section applies to assembly areas where audible communication is integral to the use of the space (e.g., concert theatres, meeting rooms, classrooms, auditoria, etc.). Such assembly areas should have a permanently installed listening system in compliance with this section where: (1) they accommodate at least 50 persons or where they have audio amplification systems or where greater than 100 sq. meters in floor area; and (2) they have fixed seating.

For other assembly areas, a permanently installed listening system or an adequate number of electrical outlets or other supplementary wiring necessary to support a portable assistive listening system should be provided. The minimum number of receivers to be provided should be equal to 4% of the total number of seats, but no less than two.

### 5.2.3 General Guidelines

No general guidance is offered for this part.

### 5.2.4 Technical Guidelines

- a. General:** Induction loops, infrared systems, and FM radio frequency systems should be considered acceptable types of assistive listening systems for persons who are hard of hearing.
- b. Location:** Where the listening system provided serves individual fixed seats, such seats should be located within a 15 meter viewing distance of the stage or playing area and should have a complete view of the stage or playing area.
- c. Signage:** Signage complying with applicable provisions of Section A 19 should be installed to notify patrons of the availability of a listening system.
- d. Induction Loop System:** Where an induction loop system is installed, dimmer switches and other controls that incorporate transformer coils should be located so as not to interfere with the audio induction loop. Where an induction loop system is utilized, at least half the seating area should be encompassed.



- e. **Infrared System:** Where infrared assistive listening devices are used, overhead incandescent lights should be located so as not to cancel out the infrared signal at the receiver.
- f. **FM Loop System:** Where an FM loop system or other assistive listening devices are available in public facilities or meeting areas, portable headsets that are compatible with personal hearing aids should be made available.
- g. **Receiver Jacks:** Receivers required for use with an assistive listening system should include a 3.2 standard mono jack.
- h. **Installation:** Assembly areas should have permanently installed listening systems or an adequate number of electrical outlets or other supplementary wiring necessary to support portable assistive listening systems.
- i. **Ambient Noise:** Ambient and background noise from mechanical systems should be minimized.

## 5.2.5 Illustrations



Figure 33. Assistive listening systems come in a number of different forms and varieties, such as two-way communication assistance devices [top left - [http://www.freed.org/cate\\_info.html](http://www.freed.org/cate_info.html)]; audio amplification systems on telephones [top right - [http://www.ultratec.com/amplified\\_phones/crystaltone.php](http://www.ultratec.com/amplified_phones/crystaltone.php)]; and a variety of induction based and amplification-based devices [bottom - [http://www.centrumsound.com/Assistive\\_Listening\\_devices.html](http://www.centrumsound.com/Assistive_Listening_devices.html)]

## 5.3

## Visual Alarms

### 5.3.1 Design Considerations

Visual alarms are essential safety features for individuals who are deaf, deafened or hard of hearing such that they would not hear an audible alarm.

### 5.3.2 Application Guidelines

*Visual alarms should comply with this section.*

At a minimum, visual alarm appliances should be provided in facilities in each of the following areas: restrooms and any other general usage areas (e.g., meeting rooms), hallways, lobbies and any other areas for common use.

Visual alarm signal appliances should be integrated into the facility alarm system. If single-station audible alarms are provided, then single-station visual alarms should be provided.

A signal intended for the public to indicate the operations of a building security system that controls access to a building should consist of an audible and visual signal.

### 5.3.3 General Guidelines

No general guidance is offered for this part.

### 5.3.4 Technical Guidelines

**a. Location:** Visual alarms should be located in conjunction with audio alarms and should be placed at 2100 mm above the floor level within the space or 150 mm below the ceiling, whichever is lower.

**b. Visibility:** In general, no place in any room or space, common corridor or hallway, required to have a visual alarm or a visual signal appliance, should be more than 15 meters from the signal (in the horizontal plane). In large rooms and spaces exceeding 30 meters across, without obstructions and at 2000 mm above the finished floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum of 30 meters apart, in lieu of suspending appliances from the ceiling.

**c. Lamp:** Visual alarms and signals should be a Xenon strobe type or equivalent.

**d. Color:** The colour of the visual alarm out put should be clear or a nominal white (i.e. unfiltered or clear filtered white light).

**e. Pulse Cycle:** The maximum pulse duration should be two-tenths of one second (0.2 sec) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10 percent of maximum signal.



**f. Intensity:** The intensity of the visual alarm signal should be a minimum of 75 candela.

**g. Flash and Flash Rate:** The flash rate should be a minimum of 1 Hz and a maximum of 3 Hz. The visual alarms should be synchronized to flash in unison with flash rates set to minimize the risk of triggering an epileptic seizure.

### 5.2.5 Illustrations



Figure 34. Two examples of visual alarms: on the left, a combined sounder, beacon and visual alarm [<http://halmapr.com/news/apollo/2006/03/>] and on the right a small combined audio and visual alarm, this one intended for office usage [<http://www.fircrofttech.com/>].

## 5.4 Public Address Systems

### 5.4.1 Design Considerations

Public address systems should be designed to best accommodate all users, especially those that may be hard of hearing. They should be easy to hear above the ambient background noise of the environment and there should be no distortion or feedback. Background noise should be minimized.

Visual equivalents should be made available for individuals with a hearing impairment who may not hear an audible public address system.

### 5.4.2 Application Guidelines

Public address systems should comply with this section.

### 5.4.3 General Guidelines

No general guidance is offered for this part.

### 5.4.4 Technical Guidelines

**a. Location:** Public address speakers should be mounted above head level in compliance with Section A 3, and provide effective sound coverage in required areas, such as corridors, assembly and meeting room areas, recreational and entertainment facilities, educational facilities, and common use areas in institutional settings.

**b. Zoning:** Public address systems should be zoned so that information can be directed to key locations only and minimizing background noise in other areas. Where public address systems are used to broadcast background music, the music should not be broadcast continuously or throughout the entire facility.

**c. All-Point Call Systems:** All-point call systems should only be utilized for fire and emergency information.

**d. Paging Systems:** Paging systems for staff and other key persons should be discreet and low volume, and sound only at those devices or locations where such persons might expect to be located.

**e. Visual Systems:** Visual equivalents should be made available for individuals who may not hear an audible public address system.



## 5.4.5 Illustrations



*Figure 35. Accessible lectern with knee and toe clearance*

[Source: [http://www.access-board.gov/caac/report\\_clip\\_image002\\_0027.jpg](http://www.access-board.gov/caac/report_clip_image002_0027.jpg)]

## 5.5

## Detectable Warning Systems

### 5.5.1 Design Considerations

Detectable warning surfaces provide important navigational cues for persons with a visual impairment. These surfaces alert all pedestrians to potential hazards, such as crosswalks, stairs, or hazardous drop off edges at raised platform locations for example. Suitable surfaces include a change in texture and high colour contrast, but should not present a tripping hazard. Detectable warning surfaces should be used consistently throughout a facility.

### 5.5.2 Application Guidelines

Detectable warning surfaces at walkways, curb ramps, stairs and raised platforms should comply with this section.

### 5.5.3 General Guidelines

No general guidance is offered for this part.

### 5.5.4 Technical Guidelines

**a. Contrast:** Detectable warning surfaces should contrast visually with adjoining surfaces, being either light on dark or dark on light.

**b. Texture:** Detectable warning surfaces should be slip-resistant. All textured surfaces used as detectable warning surfaces should be clearly detectable by walking upon and be different from the surrounding surface. (See Section A 13).

Note: Applying a paint finish to a concrete surface does not provide appropriate detectability.

**c. Dome Size:** Detectable warning surfaces should be composed of truncated domes with a height of 4.5-5.5 mm and have a base diameter of 21-25 mm.

**d. Dome Spacing:** Detectable warning surfaces should be organized in a regular pattern with spacing of 55-65 mm on centre.

**e. Stairs:** Detectable warning surfaces at stairs should be provided at the top of the stairs and at landings. They should extend the full width of the stair for a depth of at least 900 mm commencing one tread depth back from the stair. The detectable warning surface should have the base surface level with, or not more than 3 mm above, the surrounding surface.



**f. Curb Ramps:** Detectable warning surfaces at curb ramps, if a walk crosses or joins a vehicular way and the walking surfaces are not separated by curbs, railings or other elements between the pedestrian areas and vehicular areas, the boundary between the areas should be defined by a continuous detectable warning surfaces, which is of a minimum 600 mm wide.

**g. Elevated Platforms:** Detectable warning surfaces at the edges of elevated platforms should be 600-900 mm wide and extend the full length of the public use area.

### 5.5.5 Illustrations

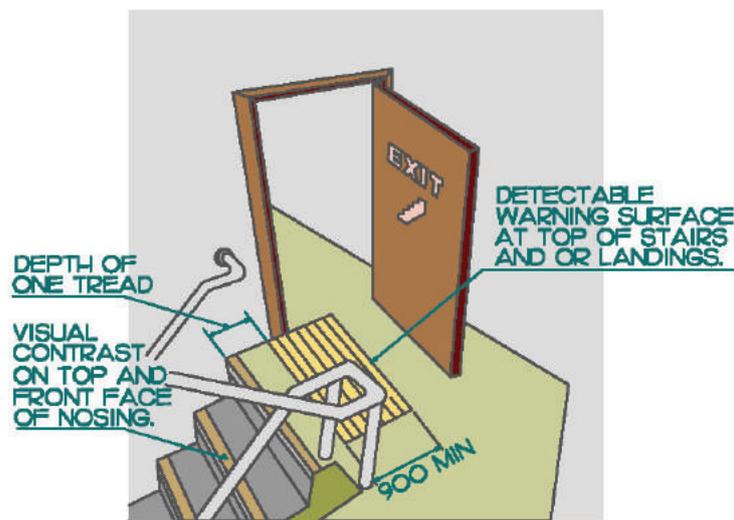


Figure 36. Detectable Warning Surfaces at Stairs. Dimensions in Millimeters.

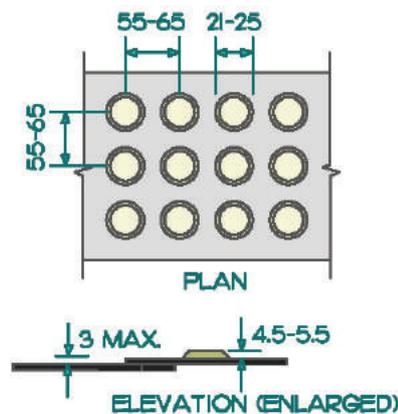


Figure 37. Truncated Dome Detectable Warning Surface. Dimensions in Millimeters.

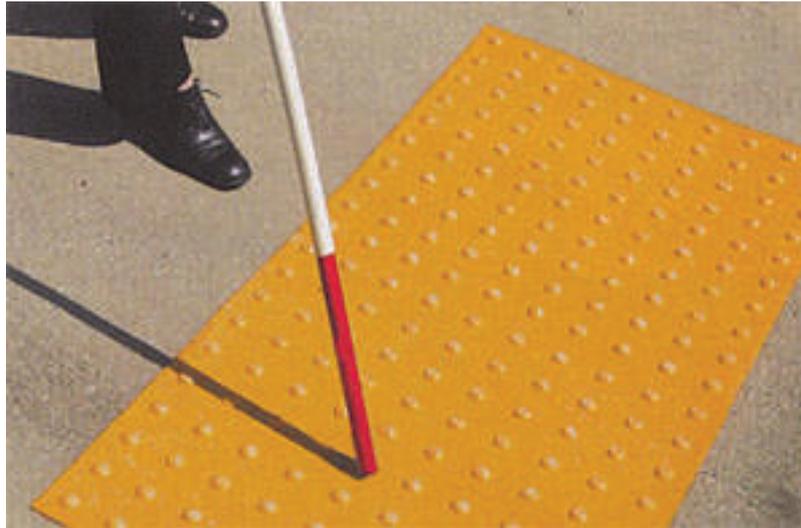


Figure 38. A Detectable Warning Surface in Use.

[Source: <http://www.westernsafety.com/FlintTrading/FlintCat1pg6-TopMark1.jpg>]



Figure 39. Detectable warning surfaces in usage

[Source: [http://www.armorcastprod.com/warningsys\\_tiles.htm](http://www.armorcastprod.com/warningsys_tiles.htm)]



## 5.6

## Signage

### 5.6.1 Design Considerations

Signage should be simple, uncluttered, and incorporate plain language. The use of graphic symbols is helpful for individuals such as children, those with a limited literacy level, or those who speak a different language.

Sharp contrasts in colour make signage easier for anyone to read, particularly someone with a visual impairment. The intent of a symbol where used must be evident, culturally universal, and not counterintuitive. To enhance readability, raised tactile lettering should incorporate edges that are slightly smoothed.

### 5.6.2 Application Guidelines

*Signage should comply with this section.*

Signs that designate permanent rooms or spaces should be wall-mounted and include tactile characters and numbers. Tactile markings should also supplement the text of

- regulatory signs, such as prohibition and mandatory signs;
- warning signs, such as caution and danger signs; and
- identification signs, such as rooms, titles, names, or numbers.

Signs that provide direction to, or information about, functional spaces, should comply with this section. Menus in eating establishments should also be available in alternative formats including Braille and large text. Exception: Facility directories and all other signs that are temporary are not required to comply.

Elements and spaces of accessible facilities that should be identified by the International Symbol of Accessibility are:

- parking spaces, designated as reserved for individuals with disabilities;
- accessible passenger loading zones;
- accessible ramps located in a barrier-free path of travel serving a building entrance;
- accessible entrances when not all are accessible (inaccessible entrances should have directional signage to indicate the route to the nearest accessible entrance);
- accessible toilet and bathing facilities, including single-use portable units, when not all are accessible;
- accessible telephones;
- accessible elevators and other elevating devices;
- accessible means of egress; and
- areas of rescue assistance.

Audible signs (infrared and digital) that are readable by persons with a visual impairment using a receiving device may be the sole orientation aid across open spaces. Consideration should be given to including wire drops for future installation.

### 5.6.3 General Guidelines

No general guidance is offered for this part.

### 5.6.4 Technical Guidelines

**a. Location – Rooms and Spaces:** Where permanent identification is provided for rooms and spaces, signs should be installed on the wall adjacent to the latch side of the door within 150 mm of the doorjamb and located a minimum 1350 mm and a maximum 1500 mm above the finished floor. Where there is no wall space to the latch side of the door, including at double-leaf doors, signs should be placed on the nearest adjacent wall. Signage should be consistently located throughout a facility.

**b. Location – Stairways:** Within stairways, tactile floor numbers should be located on the latch side of the door within 150 mm of the doorjamb and at a consistent height above the floor between a minimum 1350 mm and a maximum 1500 mm above the finished floor, throughout the building.

**c. Location – Decision Making Points:** Signs should be located at decision making points to be most useful, such as at intersections, stairs, elevators and escalators.

**d. Overhead Signage:** Any overhead signage should not create an overhead obstruction and comply with Section A 3. Signage should be duplicated and located within a designated and approachable area on the adjacent wall and compliant with Section 3-1. Signage placed behind counters should be duplicated with its centreline at a consistent height above the floor of between 1350-1500 mm, be easy to read from a seated or standing position, and be approachable and have sufficient contrast and size to be readable from appropriate distances. See the Table below.

**e. Case and Style:** Letters and numbers on signs should be sans serif and have Arabic numbers.

**f. Character Proportions:** Letters and numbers on signs should have a width-to-height ratio between 3:5 and 1:1 and have a stroke-width-to-height ratio between 1:5 and 1:10.

**g. Character Height:** Character height dimensions for viewing distance should comply with the Table below.

**h. Finish and Contrast:** Characters, symbols and backgrounds of signs should have an eggshell, matte or other glare-free finish. Characters and symbols should contrast with their background and be either light characters on a dark background or dark characters on a light background.



**i. Tactile Raised Characters:** Where signs are required to be tactile, letters and numerals should be raised at least 0.8 mm, not sharply edged, be between 16-50 mm high, and be sans serif and accompanied by Grade 2 Braille.

**j) Clear Floor and Ground Surface:** A tactile sign should allow a person to approach the sign within 100 mm without encountering protruding objects or standing within a door swing.

**k. Pictograms:** Pictograms should be accompanied by an equivalent visual and tactile verbal description and placed directly below the pictogram. The pictogram should be a minimum 150 mm in height. There should be a clear wall area around all signage of at least 75 mm.

**l. Illumination:** The minimum level of illumination on signs should be 200 lux.

**m) Audible Signage:** Audible signs should duplicate information seen visually into spoken form. These could include street and building signs, visual pedestrian traffic signals, and for interior wayfinding and information systems.

**n. Directories:** Directories and other informational systems should be presented vertically or raised horizontally at an angle and be approachable and reachable from a standing or seated position. There should be adequate manoeuvring and clear space adjacent to the directory complying with Sections A 1 and A 2.

**o. Comprehensibility:** Visual symbols are preferred to written instructions, eliminating confusion for people who have difficulty reading or understanding print, or people unfamiliar with the language. Colour coding can strengthen messages when used as a coherent and consistent system throughout a facility.

**p. Directional Signage:** Directional signs should be concise, have as few instructions as possible, and use plain language. Directional symbols such as arrows should be clear, sharp, and not highly stylized.

Table - Character Height on Signs

Minimum character height, mm	Maximum viewing distance, mm
200	6000
150	4600
100	2500
75	2300
50	1500
25	750

### 5.5.5 Illustrations



Figure 40. Color contrast on signs.



Figure 41. Pictograms

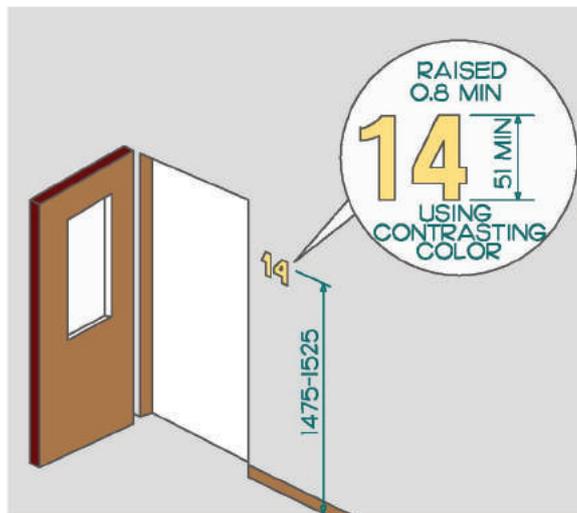


Figure 42. Tactile Lettering. Dimensions in Millimeters.



Figure 43. International Symbol of Access.

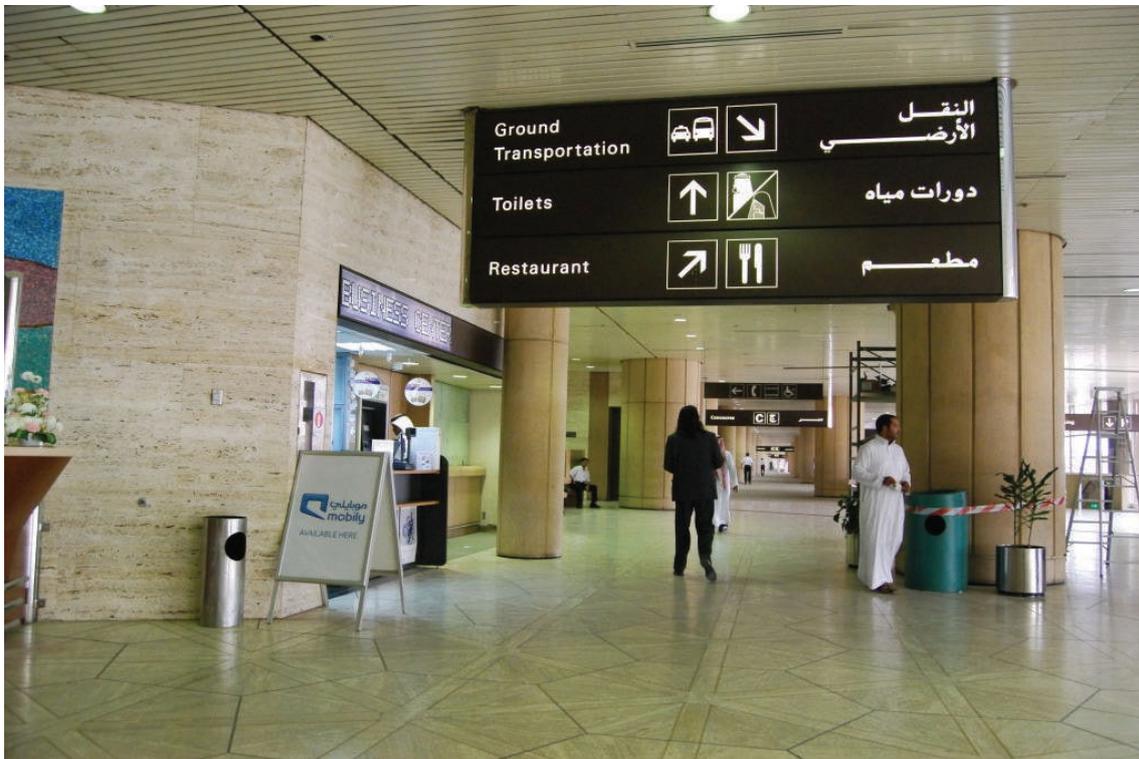


Figure 44. An example of the signage at arrivals, King Khalid International Airport. This is a good example of a Best Practice already in play in the Kingdom of Saudi Arabia. Notice that the legibility is good, there is clear directional signage and the iconography is also relatively good. [Source: UDA & Associates].

## 5.7

## Information Systems

### 5.7.1 Design Considerations

Information should be accessible to all facility users. Where universally accessible formats are not possible, alternate formats should be available. Video display terminals may present difficulties for persons with a visual impairment. Alternate technology or audio interfaces can be beneficial.

To ensure that a person using a wheelchair or scooter can access an information terminal, consideration should be given to the lower vantage point and reach ranges of all information systems provided.

### 5.7.2 Application Guidelines

Information systems, such as display kiosks and video display terminals, should comply with this section.

### 5.7.3 General Guidelines

No general guidance is offered for this part.

### 5.7.4 Technical Guidelines

**a. Video Display Terminals:** Where information is provided by video display terminals to the general public, clients, or customers, the same information should be provided in an alternative format, such as audio, Braille, and large-text print. The minimum font size for large-text print should be 16 point.

**b. Interactive Terminals:** Information systems designed for direct access by the public, such as touch-screen video display, keyboard or keypad access, should be mounted at a height suitable for use by a person using a wheelchair, scooter, or a person of short stature. (See Sections A 1, A 2 and A 6).

**c. Controls and Operating Mechanisms:** Push buttons or other controls for accessing public information systems should be clearly identifiable by colour and/or tone from the background colour, and should include raised numbers, numerals or symbols for easy identification by persons with a visual impairment. Controls and operating mechanisms should comply with Section A 6. Tactile identification should comply with Section A 19.



**d) Layout:** Labels and descriptive information should be inclined from the horizontal and at a height above the floor for easy access by a seated or standing person and complying with Sections A 1 and A 2.

**e. Alternative Formats:** Essential print information should be printed in large text on a highly contrasting background colour, and should also be available in other formats, such as audiotape and large-text print.

### 5.7.5 Illustrations

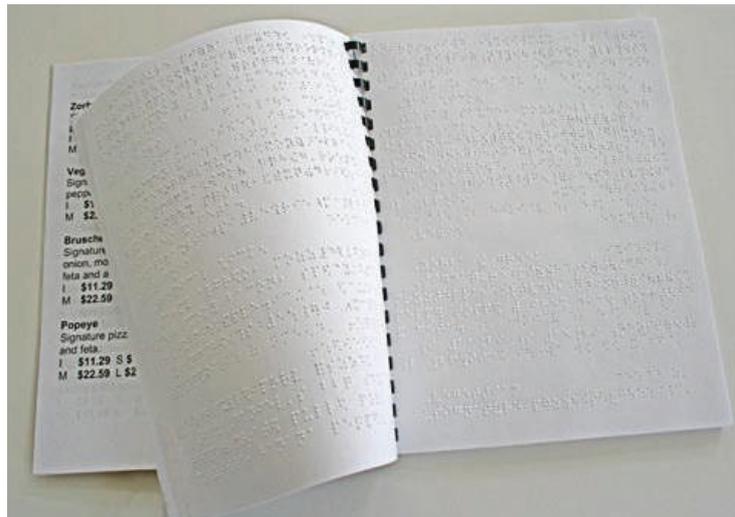


Figure 45. An example of a Braille Menu.

[Source: <http://www.braillemasters.com/nucleus/index.php?itemid=8&catid=5>]



Figure 46. An example of a control-system from the Al-Khomaza Hotel in Riyadh. A combination of different symbols, words and audio stimula improve the accessibility of this particular control, and the presence of such controls, linked to systems of information, are useful in assisting guests in making use of tourist services.

[Source: IDC Consultants]

## 5.8

## Accessibility of Information Content

### 5.8.1 Design Considerations

The accessibility of content of information is an important consideration for persons with functional cognitive and communication limitations. Furthermore, in cases where travelers and tourists are able to understand some English or Arabic, the use of simple, jargon-free language is vital in the transmission of information.

### 5.8.2 Application Guidelines

This part shall apply to the public documentation and signage produced by:

- a. Tour Operators and Travel Agents.
- b. Information and documentation supplied by the Governmental departments, commissions and the ilk.
- c. General wayfinding and information-based signage.

### 5.8.3 General Guidelines

No general guidance is offered for this part.

### 5.8.4 Technical Guidelines

**a. Abbreviations:** although an effective method of saving space they can be difficult to understand. Providing a glossary of abbreviations may only serve to further confuse rather than clarify. Some commonly used terms can also be ambiguous and should be avoided e.g. the terms ‘weekend’ and ‘weekday’ may cause confusion – instead, ‘Monday – Friday’ and ‘Saturday and Sunday’ should be used (Denmark, 2000: 31). Consistent use of terms is also helpful and industry wide protocols need to be developed to achieve standardization.

**b. Jargon:** The use of jargon is another pitfall and should be avoided where possible. Few people outside the tourism and transport industries know what a ‘headway’ is or the difference between an ‘inbound’ and an ‘outbound’ service. Where text is used, language should be kept simple.

**c) Inappropriate Language:** Avoid sexist or ageist language. Similarly refer to persons with disabilities as such, terms such as ‘the disabled’ or ‘the handicapped’ are offensive.

### 5.8.5 Illustrations

No illustrations offered for this part.



## 5.9

## Accessibility of Print

[Taken from Guide to Removing Communication Barriers for Travelers with Disabilities (CTA, 2006: 53)].

### 5.9.1 Design Considerations

For persons with functional sensory, cognitive and communication limitations, the format and accessibility of print in documentation is vital.

### 5.9.2 Application Guidelines

This part shall apply to all documentation, physical or electronic print, to be compliant with this part. The part shall only require information that is to be made available to the general public to comply with this part in its whole; private or internally distributed information at government organizations, at tour agencies and similar uses need not comply.

### 5.9.3 General Guidelines

No general guidance is offered for this part.

### 5.9.4 Technical Guidelines

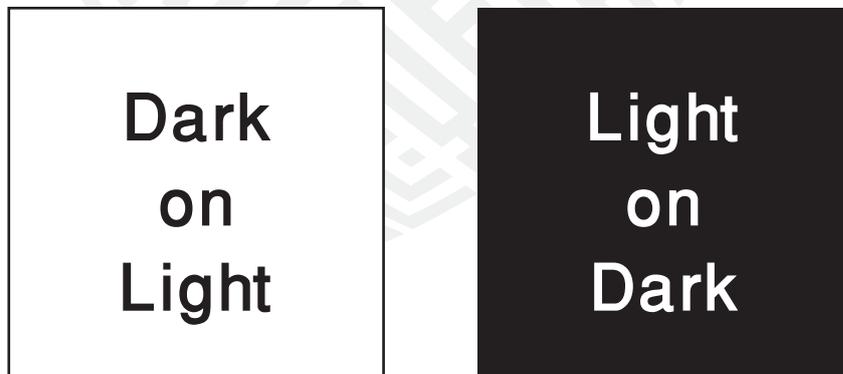
**a. Usage of sans serif fonts:** sans serif fonts do not have any serifs (i.e. tails that finish off the stroke of the letter).

- i. An example of a sans serif font is ARIAL
- ii. Examples of serif fonts are TIMES NEW ROMAN, GARAMOND and CG TIMES.
- iii. Complicated or decorative fonts should be avoided. Similarly roman numbers should not be used as many people do not understand what they mean (Bloch & Hoyt, 1992: 17).
- iv. Some numerals can be misread when the tails curl over (Gill, 1997: 23).  
Some sans serif fonts are like this:  
3 5 6 8 9 and 0 (with curled over tails can be misread)  
3 5 6 8 9 and 0 (without curled over tails are less likely to be misread).

**b. Font size:** Use of a font size between 14 and 18 allows persons with functional visual limitations to read the document.

**c. Presentation of Information:** Information should be presented in a clear and simple format. Avoid use of italics or outlining when using a visual display of information:

- i. Italics can be harder to read because the italic lettering makes it difficult to distinguish letters from one another.
- ii. **Bold text should be used sparingly.** Using shadowing also makes it more difficult to distinguish information on signs or travel documents.
- iii. USING ALL CAPITAL LETTERS MAKES IT DIFFICULT TO DIFFERENTIATE BETWEEN DIFFERENT WORDS. **THIS IS ESPECIALLY THE CASE WHEN BOTH BOLD TEXT AND CAPITAL LETTERING ARE USED TOGETHER.**
- iv. **Contrast:** Using good color contrasting is also important. If information appears on a background that is similar to that of the text, it will take longer to understand the information on the document or sign. The two graphics that follow illustrates how information should appear on a sign. The first picture shows dark-colored text on a light background. The second picture shows light-colored text on a dark background.

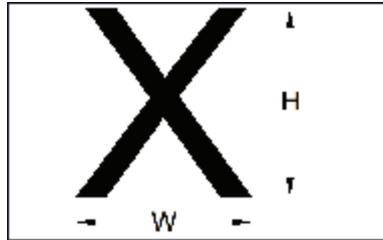


Use the highest possible contrast between print and background. High contrast helps provide good resolution which in turn assist in character recognition. Black on white should be used if possible – dark blue or dark brown are also acceptable. Avoid using red or green print.

The boldness of lettering and the distance between the letters should be chosen so that the shapes and intermediate spaces are clearly recognizable. Large print readers may make use of the patterns of space around each character rather than the letters themselves.

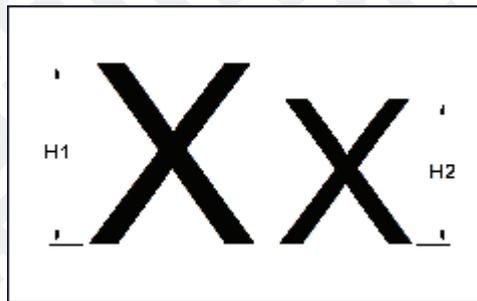


- d. Width-to-height ratios should meet the criteria in the images below:
- i. WIDTH



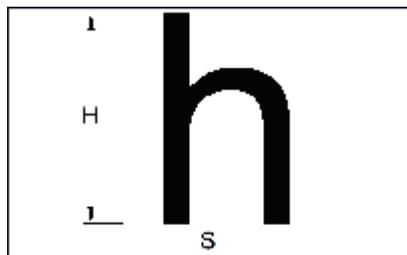
Ratio of width to height for an upper case letter “X” should be between 3:5 and 1:1. Fonts for an upper case X should not be wider than they are tall (TDC, 1996).

- ii. HEIGHT



Ratio for the height of a lower case letter ‘x’ to the height of an upper case letter ‘X’ should be about 3:4 (lower case letters should be about 75% the height of upper case letters).

- iii. WEIGHT



The stroke width to height ratio should be between 1:5 and 1:10. Text should not be too thin and light or too heavy.

e. **The horizontal spacing between characters should be 25% to 50% of characters within a word and 75% to 100% between words [Woodson, 1981].**

f. **Line Spacing:** the vertical spacing between lines should be at least 50% of character height [Woodson, 1981].

g. **Display Time / Scroll Rate on Electronic Media:** Scrolling information is very difficult for a person with a functional visual limitation; therefore text should be displayed in a fixed manner if possible [Gill, 1997: 23]. If scrolling is used, information should be left on the screen for at least twice the normal reading time [Harris & Whitney, 1993]. A fixed time of about 10 seconds is likely to avoid confusion [Barham, 1994: 34] so a display time of 10 to 20 seconds should be used.

h. **Glare:** Glare can cause discomfort and reduce readability of information on a display. It can be caused by a variety of factors including reflection of light from the display surface or surfaces surrounding the display, light emitted from the display itself and the illumination in the area of the display. It is recommended that a test be conducted of a prototype of the display in the intended location under all expected lighting conditions. To control glare, the following could be considered [Hunter-Zaworski & Watts, 1994: 33]:

- i. Placement of displays in relation to lighting sources;
- ii. Selection of materials for floors, wall and ceilings which limit reflection;
- iii. The use of glare-reducing screen treatments.

i. **Placement of Text:** Type should not run across photographs or illustrations. This can limit the contrast and confuse the eye [Gill, 1997: 22].

j. **Column Width:** Column width is an important factor that affects readability. If lines of type are too long the eye has difficulty in finding its way back to the beginning of the next line. A maximum of 8 words per line is recommended for continuous text on a screen [Gill, 1997: 23].

k. **Formatting of text:** Unjustified right-hand margins are helpful to people with functional visual limitations. Avoid splitting words at the end of sentences [Gill, 1997: 23].

l. **Navigation of electronic information:** Navigation should be clear and consistent. Color and shape can help. Icons and imagery are useful for persons with functional literacy limitations and help to minimize the need for translation. To feel comfortable and be willing to experiment, the user must know they can always backtrack to undo any mistake [Schofield and Flute, 1997: 38].



**m. Icons:** Ensure that icons are recognizable by all expected users. International symbols should be used where possible although it can be surprising how few people know these symbols or their meaning [Schofield and Flute, 1997: 37]. Labels placed beside symbols or icons can be helpful but care should be taken not to clutter the page with too much information.

### 5.9.5 Illustrations

No illustrations offered for this part.



## 5.10 Provision of Tourism-Related Information in Multiple Formats

[Largely taken from Part 1193 of the Telecommunications Act, Advisory Guidance (Federal Register, Vol. 63, No. 22, 1998: 5607 – 5641).]

### 5.10.1 Design Considerations

The variety of user groups of tourism-related information requires that information cannot be presented in a single format only; in order to ensure the maximum accessibility to and of information, it is necessary to adopt a best practices approach focusing on the usage of multiple-formats. This will ensure the e.g. persons with blindness, are able to obtain and assimilate information through reading Braille. Where multiple formats are not made available, certain segments of the population will be excluded from making use of the material or accessing information.

### 5.10.2 Application Guidelines

This part shall be deemed to apply to all tourism-related information, whether produced by governmental organizations or by organizations and individuals in the private sector. It shall be deemed to apply to external/ public information only. .

### 5.10.3 General Guidelines

No general guidance is offered for this part.

### 5.10.4 Technical Guidelines

**a.** Definition of Multiple Formats: formats that substitute or complement conventional print and video products and that address the communication needs of persons with functional visual or hearing limitations and persons with functional cognitive limitations. These include – though are not limited to – the following: computer diskette or electronic copy, large print, audio tape, Braille, captioned video, sign language video and described video.

**b. Rationale:** Not everyone is capable of reading traditional print. Creating a multiple format policy and guideline provides travelers and personnel what information is available in which format and how much time is necessary to obtain a copy.

**c. Large Print:** Many people with functional visual limitations can read large print. Documents can be converted to large print without the use of outside services.



Large print documents are often produced using a non-italic sans serif font such as Helvetica, Arial or Verdana in 16-point to 18-point type. It is very important to assess individual preferences about font type and size. Non-glossy light yellow or off-white paper is best to reduce glare. To obtain maximum results the following guidelines should be adopted:

**i.** It is preferable that the paper is a standard A4 i.e. 297mm x 210mm. Larger paper may be used, but care should be taken to ensure that the document does not become too bulky, thus making it difficult to read.

**ii.** The best contrast with the least glare is achieved on very pale yellow or cream-colored paper. Do not use dark colors and shades of red.

**iii.** Remove formatting codes that can make reading more difficult.

**iv.** There is no standard typeface or point size. For more universal access, use 16 – 18 point type. Use a good strong bold typeface.

**v.** Use upper and lowercase letters.

**d. Braille:** Braille is a system of reading by touch using raised dots that are arranged to represent letters. Not all people who are blind can read Braille. If Braille is requested, most Braille transcription services require receipt of materials in advance, at least two weeks is typical.

**e. Materials on Disk:** Persons with functional visual limitations may prefer materials on disk so they can use computers to access the materials via speech output or text magnification.

**f. Cassette Recordings:** Where provided for use by persons with functional cognitive or visual limitations, should comply with the following requirements:

**i.** The reader should be proficient in the language being recorded.

**ii.** The reader should be familiar with the subject. Someone who is somewhat familiar with the technical aspects of a product but who can explain functions in ordinary language would be a logical person to record an audio cassette.

**iii.** The reader should have good diction. Recording should be done in a conversational tone and at a conversational pace; neither too slow nor too fast.

**iv.** The reader should be familiar with the material to minimize stumbling and hesitation.

**v.** The reader should not editorialize. When recording a document, it should be read

in full. Graphic and pictorial information available to readers without functional visual limitations should be described in the narrated text. Tables and charts whose contents are not already contained in the text should be converted into text and included in the recording.

**vi.** The reader should spell any difficult or unusual words and words of foreign origin.

**vii.** At the beginning of the tape, identify the reader, i.e. “This document is being read by John Smith”.

**viii.** On each side of the tape, identify the document and the page number where the reader is continuing.

**ix.** For users with functional visual limitations, all cassettes should be labeled in Braille so that they can easily be referenced in the appropriate order.

### 5.10.5 Illustrations

No illustrations offered for this part.





## 5.11 Website Accessibility

[This section has been largely modeled after the Section 508 Checklist for HTML produced by the United States Access Board, 2007 and on Part 1193 of the Telecommunications Act, Advisory Guidance (Federal Register, Vol. 63, No. 22, 1998: §C.9).]

### 5.11.1 Design Considerations

Web-sites are the most effective and efficient means of information dissemination and are the most readily available to PWDs. The requirements here make provision to ensure the accessibility of web-based information with regard to the accessibility of web-based computing languages to ensure accessibility and usability with screen readers.

### 5.11.2 Application Guidelines

- a. All governmental websites shall comply with this part.
- b. The compliance of private sector organizations and individual websites shall be deemed a voluntary act. Provision should be made by the GCTA or other body to provide a reward-based system for voluntary compliance by the private sector.

### 5.11.3 General Guidelines

No general guidance is offered for this part.

### 5.11.4 Technical Guidelines

a. Creating an accessible web-site will provide access to a greater number of travelers. For example, persons with functional visual limitations who use screen readers or large print will be able to access web sites to obtain frequently updated information that they may not be able to access in print formats.

b. **Text tags:** A text equivalent for every non-text element shall be provided (e.g. via “alt”, “longdesc” or in element content).

- i. Every image, Java applet, Flash file, video file, audio file, plug-in etc. that conveys content has an equivalent “alt” description or text description, or is described in the adjacent text.

- ii. Complex graphics (graphs, charts etc.) are accompanied by detailed text descriptions, either through a description in the body of the page, a link to a description on a separate page, or the “longdesc” attribute.
- iii. The “alt” descriptions succinctly describe the content conveyed by the objects, without being too verbose (for simple objects) or too vague (for complex objects).
- iv. “Alt” descriptions for images used as links are descriptive of the link destination.
- v. Decorative graphics with no other function are inserted as background images using CSS or have an empty “alt” description (alt=””), but they never have missing “alt” descriptions. Images with text alternatives in element content are given empty alt text (alt=””).

**c. Multimedia Presentations:** Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

- i. Video files have synchronized captions.
- ii. Audio files have captions and/or transcripts.

**d. Color:** Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

- i. Color is not used solely to convey important information.
- ii. Sufficient contrast is provided.

**e. Readability:** Documents should be organized so they are readable without requiring an associated style sheet.

- i. Style sheets may be used for layout, but the document is still understandable (even if less visually appealing) when the style sheet is turned off.

**f. Server-Side Image Maps:** Redundant text links shall be provided for each active region of a server-side image map.

- i. provide the same hot spot areas. Separate text links are provided outside of the server-side image map to access the same content that the image map hot spots access. Client-side image maps CANNOT be used to.

**g. Client-Side Image Maps:** Client-side images maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.



- i. Client-side image maps are used and appropriate alt text is provided for the image as well as each hot spot region.

**h. Data Table:** Row and Column headers shall be identified for data tables. Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of rows or column headers.

- i. Data tables have the column and row headers appropriately identified (using the “th” tag)
- ii. Tables used strictly for layout purposes do NOT have rows or column headers.
- iii. Data table cells are associated with the appropriate headers (e.g. with the “id”, “headers”, “scope” and/or “axis” attributes).

**i. Frames:** Frames shall be titled with text that facilitate frame identification and navigation.

- i. Each frame is given a “title” that describes the frame’s purpose or content.

**j. Flicker Rate:** Pages should be designed to avoid causing the screen to flicker with a frequency greater than 2Hz and lower than 55 Hz.

- i. No elements on the page flicker at a rate of 2 to 55 cycles per second, thus reducing the risk of optically-induced seizures.

**k. Text-only Alternative:** A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of these standards, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

- i. A text-only version is created only when there is no other way to make the content accessible or when it offers significant advantages over the “main” version for certain types of functional limitation.
- ii. The text-only version provides equivalent content and is up-to-date with the “main” version.
- iii. The text-only version provides the functionality equivalent to that of the “main” version.
- iv. An alternative is provided for components (e.g. plug-ins, scripts) that are not directly accessible.

**l. Scripts:** When pages utilizing scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can read by assistive technology.

- i. Information within the scripts is text-based, or a text alternative is provided within the script itself.
- ii. All scripts (e.g. Javascript pop-up menus) are either directly accessible to assistive technologies and the keyboard or an alternative method of accessing equivalent functionality is provided (e.g. a standard link).

**m. Applets and Plug-Ins:** When a web page requires that an applet, plug-in or other application be present on a client system to interpret page content, the page must provide a link to a plug-in or applet that complies with the provisions given above:

- i. A link is provided to a page where the plug-in can be downloaded.
- ii. All Java applets, scripts and plug-ins (including PDF files and PowerPoint files, etc.) and the content within them are accessible to assistive technologies, or else an alternative means of accessing equivalent content is provided.

**n. Electronic Forms:** When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionally required for completion and submission of the form, including all directions and cues:

- i. All form elements have text labels.
- ii. Form elements have labels associated with them in the markup (i.e. the “id” and “for” or “label” elements).
- iii. Dynamic HTML scripting of the form does not interfere with assistive technologies and is keyboard accessible.

**o. Navigation Links:** A method shall be provided that permits users to skip repetitive navigation links.

- i. A link is provided to skip over lists of navigational menus or other lengthy lists of links.

**p. Time Delays:** When a timed response is required, the user shall be alerted and given sufficient time to indicate that more time is required.

- i. The user has control over the timing of content changes.



## 5.11.5 Illustrations

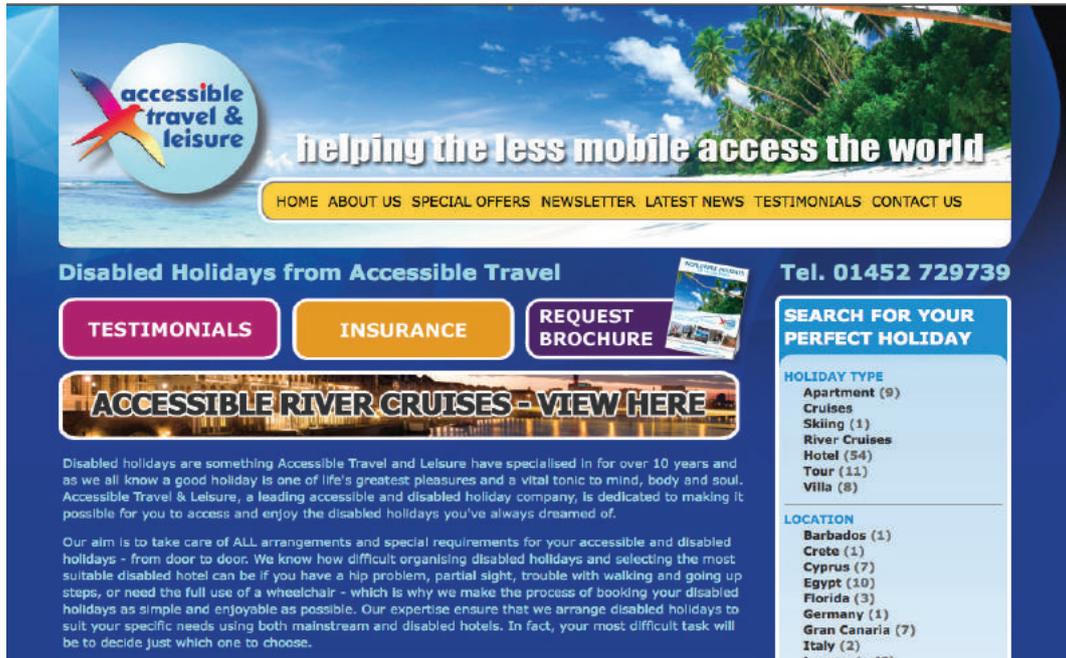


Figure 47. Well-laid, clear websites that provide information in an easy-to-find and consistent manner provide a useful means of engagement with potential users and improve the overall level of service offered.

[Source: <http://www.accessibletravel.co.uk/>]

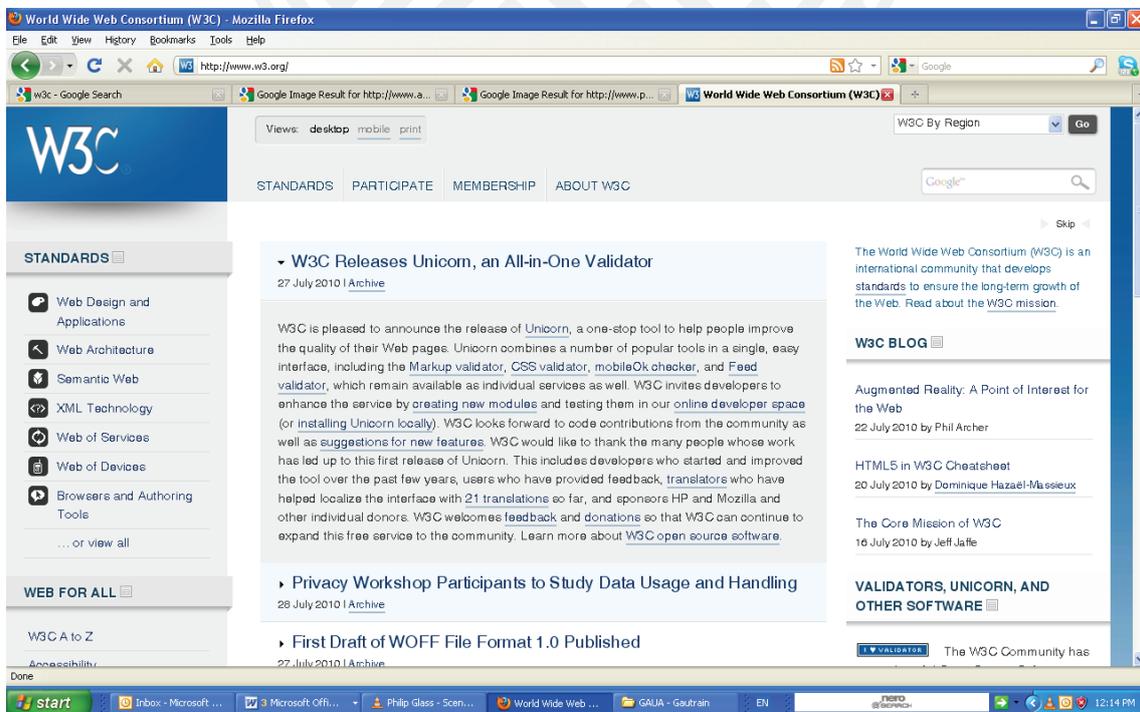


Figure 48. The W3C main web-page. The W3C provide a series of standard protocols for hyper-text markup language & other programming protocols, as well as the most comprehensive guidelines for achieving website accessibility.

[Source: <http://www.w3.org/>]

## 5.12 Symbols, Graphics and Pictograms

### 5.12.1 Design Considerations

The usage of symbols, graphics and pictograms are effective methods used to convey large amounts of information in a succinct and brief manner. Their accessibility to PWDs is important in this respect as often standardized symbols etc. convey consistent information that enables more usability in environments.

### 5.12.2 Application Considerations

Where symbols, graphics, and pictograms are used on signage, public information boards, or in documentation produced for public use by tourist organizations, they shall comply with this part.

### 5.12.3 General Guidelines

No general guidance is offered for this part.

### 5.12.4 Technical Guidelines

**a. Symbols:** A symbol is an object that stands for some other object or circumstance. A symbol or combination of symbols can make up a pictogram which is a symbolic representation of information through pictures. For people who cannot read, symbols can be very helpful. However, only symbols that are easily recognized should be used. Throughout the range of tourism information their use should be consistent e.g. using the universal symbol for a wheelchair is more meaningful than just using the letter 'W'. Coding landmarks with numbers or letters may save space but will complicate the task of interpretation and is not recommended (TTI & NuStats, 1998: 51). There needs to be cooperation between stakeholders and those who set tourism policy in order to settle on a consistent set of designs across the tourism industry. Symbols are sometimes misinterpreted and should be accompanied by a nearby label.

**b. Graphics and Pictographs:** Graphs and pictographs can be very useful for people who have difficulty reading. Their use worldwide is the major strategy for communicating with people of diverse language and with people with functional literary limitations [TTI & NuStats, 1998: ii – 11]. They can also save space by reducing the need for large tracts of text. However, they should be used with care. The shapes used should be clear and unambiguous. Very stylized or obscure shapes may look fashionable but can be confusing to some people. In a French study signs giving a concrete representation of an object were identified correctly with a higher frequency



than abstract representations [Velche, quoted in Hunter-Zaworski & Hron, 1994: 38]. Examples of easily understood symbols might be a cross for a hospital, a book for a library or an airplane for an airport. Using squares, circles, or “x” for landmarks makes them hard to distinguish by people who don’t read [Bloch & Hoyt, 1992: 10]. As no standard tourism pictogram bibliography is available in the Kingdom of Saudi Arabia, this will need to be developed.

**c. Borders:** If a border is drawn around a pictograph, its thickness should not exceed the stroke thickness of other characters on the sign. The distance between the inside edge of the border to the nearest point of the symbol should be at least 4 units in relation to a square border with a base of 75 units [TRB, 1996: 25], i.e. measure the length of the base of the border, divided by 75 and multiply by 4. The corners of sign borders should be rounded.

**d. Ambiguity of Symbols:** The majority of people are verbally orientated, absorbing most information through words, while the minority respond more quickly to visual devices, such as symbols. Most signs systems need verbal messages. Even the most simple symbol, an arrow, can be ambiguous: the difficulty comes in when the direction ‘ahead’ is indicated by an arrow. There can be confusion whether this means down or ahead or up or ahead, depending on the direction of the arrow.

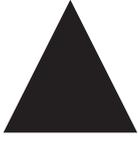
**e.** Symbols can be very helpful to some people but use easily recognized symbols such as the Universal Symbol for Accessibility. Do not use letters or numbers to indicate landmarks, equipment or facilities.

**f.** The thickness should not exceed the stroke thickness of characters on signs. The distance between the inside of a border and the nearest point of a symbol should be the length of the base divided by 18.75.

**g. Use of Arrows:** The arrow is one of the most commonly used symbols in a signage system. The arrow should be two times the upper case character height that is used in the message. Arrows pointing to the left or up should always be on the left of the message and vice versus [KRW, 1995: 8].

**h. Symbol Shapes:** These of symbols illustrated in the table below is based consistent use of geometric shapes and specific colors. These shape and color codes permit users to distinguish between the six types of symbols. The shape, color, function and subject area of each type are indicated below.

**Table: Classification of Graphic Symbols**

Class & Shape	Type & Color	Function of Symbols
 <b>Regulatory</b>	<b>Prohibition</b> Red & Black on White	To Indicate an order forbidding an action
	<b>Mandatory</b> White on Black	To indicate an action for obligatory action.
 <b>Warning</b>	<b>Caution</b> Black and White	To Indicate a potential hazard.
	<b>Danger</b> White on Red	To indicate a definite hazard.
 <b>Information</b>	<b>Emergency</b> White on Green	To provide information required in case of emergency
	<b>Guidance &amp; Information</b> White on Dark gray; or white on blue	To indicate Guidance; Information or Concessions Recreation General

Regulatory signs are also generally prohibitory and deal with such subjects as smoking or entry into restricted areas. In addition to regulatory signage, there are warning signs that provide warning of hazards. Consideration has to be given to providing warning information that will be equally useful to persons with varying forms of functional visual ability.



## 5.12.5 Illustrations



Figure 49. Using Shapes, color and layout to meaningfully and effectively communicate information.  
[Source: IDC Consultants]



Figure 50. Examples of different forms of the standard pictogram of the International Symbol for Access.  
[Source: <http://www.abledata.com/abledata.cfm?pageid=19327&top=10792&trail=22,10445/>]

## Places of Accommodation and Temporary / Transient Lodging







## 6 Places of Accommodation and Temporary / Transient Lodging

### 6.1 Guest room, Apartment/ Studio, Suites: Communication Accessible Rooms

#### 6.1.1 Design Considerations

Certain elements, as outlined in this guidance, must be incorporated into the design of rooms intended for usage by persons with functional hearing and communication limitations.

#### 6.1.2 Application Consideration

The provision of guests rooms with communication features, or that are defined as communication accessible bedrooms are defined by the table below:

Total Number of Guest Rooms Provided	Minimum Number of Rooms that are Communication Accessible
1 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 1 for each 100 (or fraction thereof) over 1000



### 6.1.3 General Guidelines

- a. **Circulation Space:** There should be unimpeded circulation space around and between beds and furniture.
- b. **Bedroom Doors (Opening Position):** Bedroom doors must be able to be fully opened against an adjacent bedroom wall.
- c. **Bedroom Doors (Sound Activation):** Bedroom doors with sound activation. A portable alarm system indicating that the bedroom door is being opened.
- d. **Color Contrast of Door Handles and Drawer Knobs:** Door handles and drawer knobs should have contrasting colors.
- e. **Power Points and Light Switches:** Power points and light switches should incorporate 'rocker-type' switches that are on/ off-detectable.
- f. **All Furniture with Rounded Edges and Corners:** All furniture should have rounded edges and corners. In order to prevent guests injuring themselves, it is necessary that the furniture in the bedroom does not have sharp edges.
- g. **Patterns:** No complicated patterned materials should be used for carpets and bedspreads.
- h. **Telephone Handsets:** Telephone handsets should incorporate a raised pip on the number five button.
- i. **Emergency I.D. Door Hangers:** Rooms that are intended to be communication accessible bedrooms should incorporate emergency I.D. door hangers. Identification of persons with functional communication limitations in a place of accommodation can greatly facilitate services that require access to the room. Ideally the provision of a flashing doorbell is the most reliable system. Keep in mind the use of door hangers is at the discretion of the guest.
- j. **Flashing Lights and Vibrating Pads:** All emergency evacuation systems should be linked to a flashing emergency alarm light in the bedroom and vibrating alarm pads that are placed under pillows.
- k. **Additional Television Devices:** Where televisions are provided, TV listening devices should be made available. TV extensions headsets or earphones can be used by guests with functional hearing limitations. Inductive loop extensions are very useful for users of hearing-aids. Where sub-titling is available, especially on video systems, this should be activated.

**l. Telephone:** Telephone's should have voice amplification, a flashing light, inductive coupler, ring tone and loudness adjustment. Where text phones are not available, provision of a text messaging service should be provided.

**m. Flashing Alarm Clock:** Alarm clocks, where provided, should be of a flashing kind, with vibrating pad placed under the pillow. A flashing alarm clock with a vibrating pad that is located under the guest's pillow is a simple plug-in device.

**n. Flashing Light Doorbell:** It is essential that a flashing doorbell is provided to facilitate all services delivered at the room.

**o. Room Loop:** A room loop will need to be installed.

### 6.1.4 Technical Guidelines

Consult the UABE Playbook Guidelines:

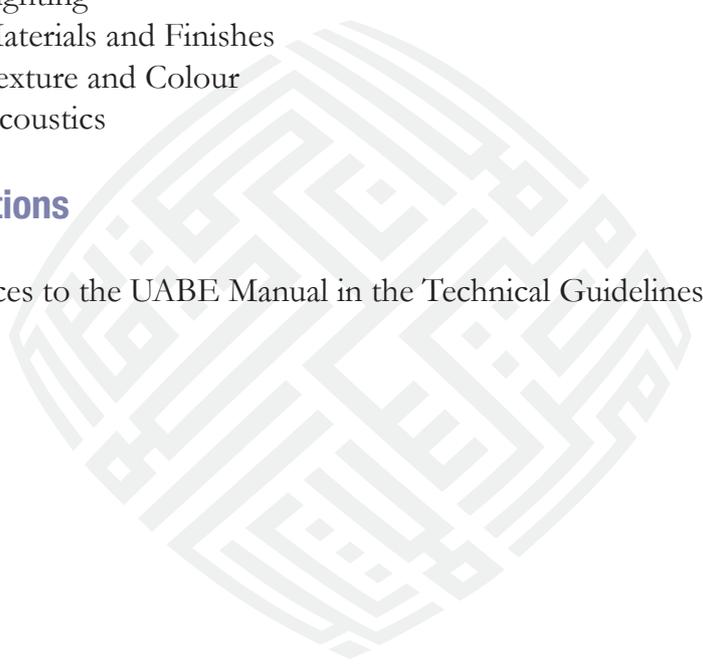
- B.4.1.1 Space and Reach Requirements
- B.4.1.2 Ground and Floor Surfaces
- B.4.1.3 Protruding and Overhead Objects
- B.4.1.4 Accessible Routes, Paths and
- B.4.1.5 Entrances
- B.4.1.6 Doors
- B.4.1.7 Gates, Turnstiles and Openings
- B.4.1.8 Windows, Glazed Screens and
- B.4.2.1 Toilet Facilities
- B.4.2.2 Toilet Stalls
- B.4.2.3 Toilets
- B.4.2.4 Lavatories
- B.4.2.5 Urinals
- B.4.2.6 Washroom Accessories
- B.4.2.7 Individual Washrooms
- B.4.2.8 Bathtubs
- B.4.2.9 Shower Stalls
- B.4.2.10 Grab Bars
- B.4.3.4 Dressing Rooms
- B.4.3.5 Offices, Work Areas & Meeting Rooms
- B.4.3.6 Waiting & Queuing Areas
- B.4.3.7 Tables, Counters, Work Surfaces and Speaker Podiums
- B.4.3.9 Storage, Shelving & Display Units
- B.4.3.10 Lockers & Baggage Storage
- B.4.3.11 Balconies, Porches, Terraces & Patios
- B.4.3.14 Landscaping Materials & Plantings



- B.4.3.15 Rest Areas and Benches
- B.4.3.18 Kitchens & Kitchenettes
- B.4.4.1 Emergency Exits, Fire Evacuation and Areas of escape Assistance
- B.4.4.2 Controls and Operating Mechanisms
- B.4.4.3 Vending and Ticketing Machines
- B.4.4.4 Visual Alarms
- B.4.4.6 Assistive Listening Systems
- B.4.4.7 Signage
- B.4.4.8 Detectable Warning Surfaces
- B.4.4.9 Public Address Systems
- B.4.4.10 Information Systems
- B.4.4.11 Card Access, Safety and Security Systems
- B.4.4.12 Glare and Light Sources
- B.4.4.13 Lighting
- B.4.4.14 Materials and Finishes
- B.4.4.15 Texture and Colour
- B.4.4.16 Acoustics

### **6.1.5 Illustrations**

Consult references to the UABE Manual in the Technical Guidelines for this section.



## 6.2 Guestroom, Apartment/ Studio, Suites: Mobility Accessible Rooms

### 6.2.1 Design Considerations

This part outlines the general requirements to ensure that bedrooms meet the accessibility requirements of persons using mobility aids, in particular the needs of walker, wheelchair and scooter users.

### 6.2.2 Application Consideration

The provision of guest rooms with mobility features, or those are defined as mobility accessibility bedrooms will be defined by the table below:

Total Number of Guest Rooms Provided	Minimum Number of Rooms that are Communication Accessible
1 to 25	1
26 to 50	2
51 to 75	4
76 to 100	5
101 to 150	7
151 to 200	8
201 to 300	10
301 to 400	12
401 to 500	13
501 to 1000	3 percent of total
1001 and over	20, plus 1 for each 100 (or fraction thereof) over 1000

*Note: All rooms with mobility features are required to have roll-in showers.*



### 6.2.3 General Guidelines

- a. **Circulation Space:** There should be unimpeded circulation space around and between beds and furniture.
- b. **Bedroom Doors (Opening Position):** Bedroom doors must be able to be fully opened against an adjacent bedroom wall.
- c. **Bedroom Doors (Sound Activation):** Bedroom doors with sound activation. A portable alarm system indicating that the bedroom door is being opened.
- d. **Color Contrast of Door Handles and Drawer Knobs:** Door handles and drawer knobs should have contrasting colors.
- e. **Power Points and Light Switches:** Power points and light switches should incorporate 'rocker-type' switches that are on/ off-detectable.
- f. **All Furniture with Rounded Edges and Corners:** All furniture should have rounded edges and corners. In order to prevent guests injuring themselves, it is necessary that the furniture in the bedroom does not have sharp edges.
- g. **Patterns:** No complicated patterned materials should be used for carpets and bedspreads.
- h. **Telephone Handsets:** Telephone handsets should incorporate a raised pip on the number five button.
- i. **Floor Surfaces:** Fixed, slip-resistant floor surfaces.
- j. **Unobstructed Space & Doors:** There should be clear unobstructed space in front of doors. Lack of clear unobstructed space can result in a person making use of a mobility aid being unable to enter the room.
- k. **Doors:** The doors should adhere to the minimum required opening sizes to allow a variety of different sizes and types of mobility aid. Doors should have easy-grip handles and ease of operation for the locking mechanism.
- l. **Unobstructed Access:** There should be unobstructed access widths between walls, features, furniture and fittings. It is essential that the room be free of any obstructions which might result in the person with a disability being unable to access certain provisions within the room, e.g. switches. Where feasible beds should have adequate space on both sides for wheelchair transfer.

**m. Access Space to Furniture:** There should be sufficient access space to all furniture to provide easy reach.

**n. Heights of Light Switches & Environmental Controls:** All light switches and environmental controls should be within the required height range and within reach ranges to enable all users to effectively use such switches and controls.

**o. Provision for Bed:** Beds should preferably be a King-Type with the mattress at the appropriate height. Guests with functional physical limitations need a firm surface to help their arms to lift the lower body. The height of the bed is also crucial, as it needs to be in alignment with the wheelchair that will be used for transfers. With the appropriate height of the bed there is less effort and less energy used in getting out of the bed. Folding/ sofa/ bunk beds are not acceptable. It is recommended that guests should be able to electronically control beds, or at least be able to raise beds by the use of bed-blocks, height adjusters etc. Zip and link beds should be considered where possible. This allows a carer to travel without having to pay for a second room, but gives flexibility where a double bed is required.

**p. Foam Bed:** A foam overlay for the bed to be available for guests who have pressure problems.

**q. Bedside Controls:** Bedside light controls should be provided. If there are no easily accessible controls, a person with a functional mobility limitation consumes enormous energy switching lights on and off. To conserve energy and avoid injury, light controls should be reachable from the bed.

**r. Provision for Remote-Controlled Television:** There should be provision, where televisions are provided in rooms, for a remote-control mechanism to assist users of mobility aids.

**s. Provision for Bedside Telephone:** Bedside telephones should be provided in rooms intended to be mobility accessible.

**t. Desks and Tables:** As room elements, desks and tables should have clear and sufficient knee and toe space under the desk, to allow someone making use of a mobility aid to be able to slide under the table.

**u. Curtains:** Where possible, curtains should be fitted with pull rods or closing cords. This is for easy reach and conservation of energy.

**v. Cupboards:** Cupboard handles should be within easy reach. This is to ensure that seated users can easily reach clothing. Cupboard hanging rails should be at an appropriate height.



w. **Remote Emergency Call Systems:** A remote emergency call system should be installed in the bedroom. This should be within easy reach for a seated user in the event of an emergency or need for assistance.

x. **Provision for Fire Extinguisher:** In order to be mobility accessible, a room should be installed with a fire extinguisher or fire blanket located at an appropriate height. In this way the fire extinguisher or fire blanket is accessible.

y. **Beverage Facilities:** Beverage facilities, where provided, should provide a cordless kettle at table level and close to electric sockets.

## 6.2.4 Technical Guidelines

No technical guidance is offered for this part.

## 6.2.5 Illustrations

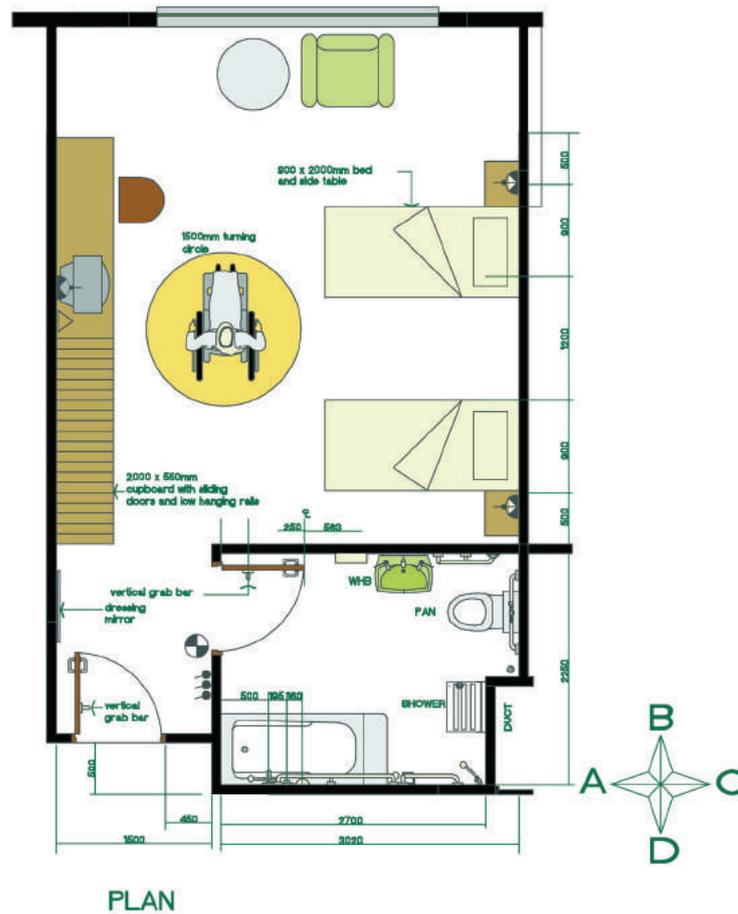
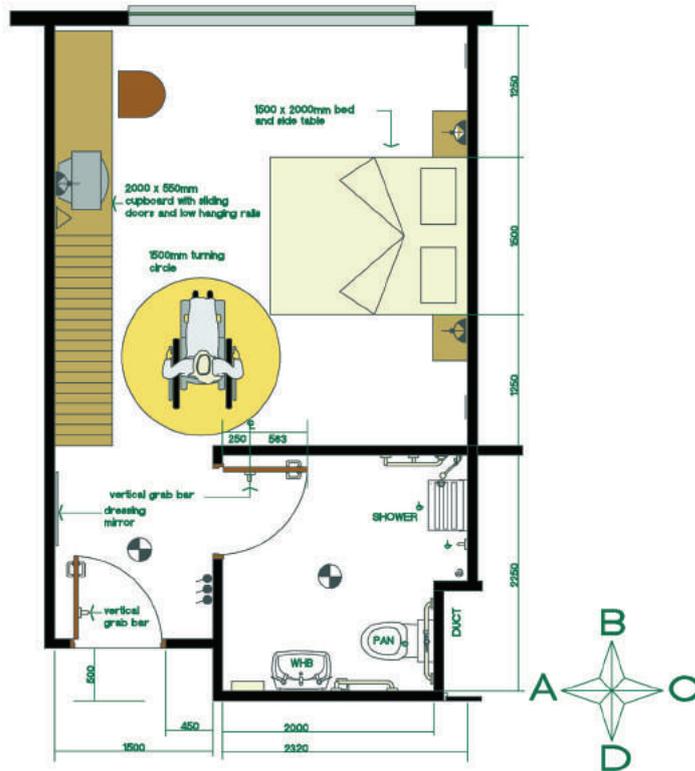
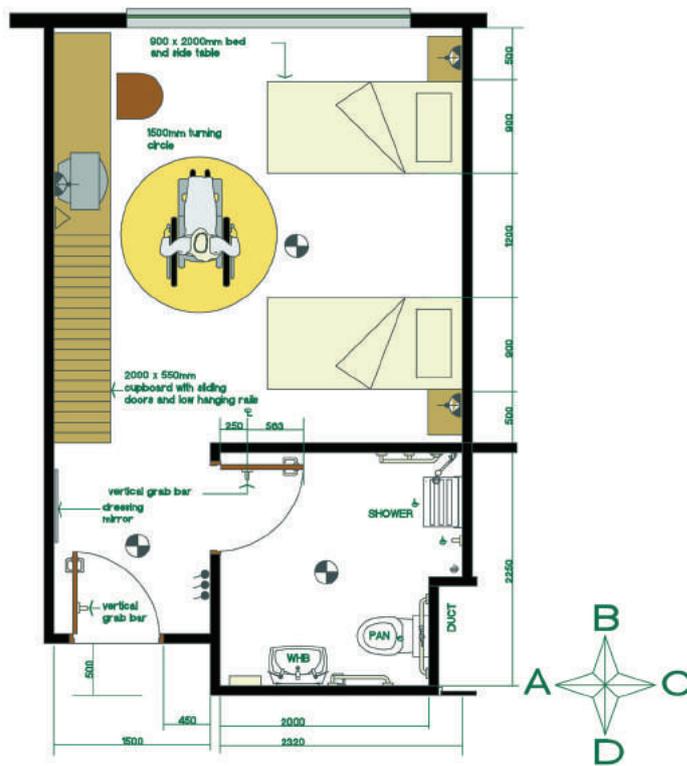


Figure 51. Typical Room Configuration.



PLAN

Figure 52. Typical Room Configuration.



PLAN

Figure 53. Typical Room Configuration.

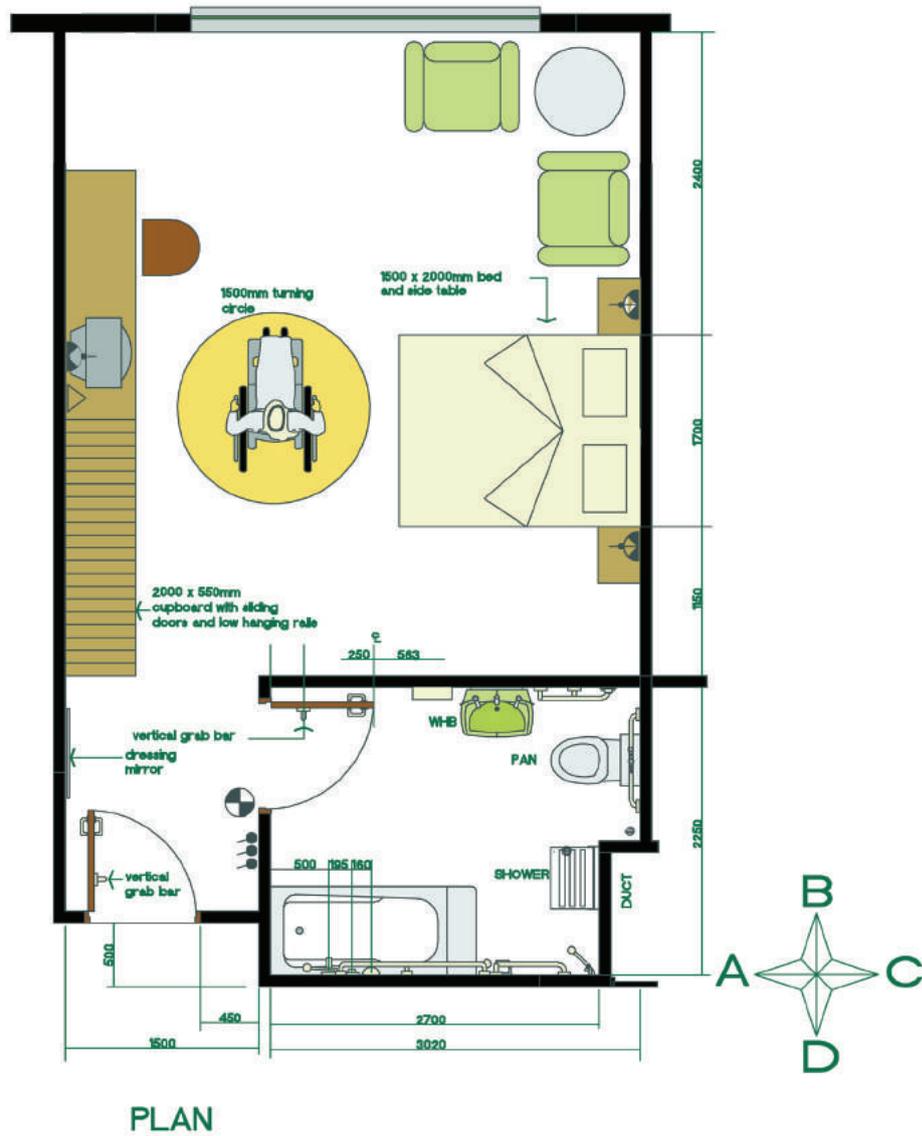


Figure 54. Typical Room Configuration.

## 6.3

## Bathrooms: General Requirements

### 6.3.1 General Note: All Bathrooms

Due to the unique nature of user groups of tourist facilities and places of accommodation, provision needs to be made for adequate bathroom to accommodate the greatest possible user group. This is particularly pertinent given that guest bathrooms must accommodate a wide range of tourists, with very different needs and requirements.

A parent or caregiver with small children and strollers may also benefit from a large washroom incorporating the features laid out here.

The identification of washrooms involves design issues related to signage. For children or someone who cannot read text, a symbol or pictogram is preferred.

Signage hanging from the ceiling or high on a wall should be visible from areas down a hallway or other common areas. Features such as color-contrasting door frames and door hardware will also increase accessibility.

These requirements shall apply to all washrooms/ bathrooms associated with guest bedrooms, whether they are en-suite or whether rooms share bathrooms, or communal bathrooms are used.

These requirements also apply to mobility accessible bathrooms/ washrooms.

- **Unobstructed Space:** Provision should be made for clear, unobstructed space to allow movement in bathrooms.
- **Door:** The bathroom door should be fitted with an emergency release lock. This is to enable the door to open easily, should there be a need to escape in an emergency.
- **Floor Finish:** The floor finish should be firm, fixed and slip-resistant. Where carpets are used, they should be firmly fixed to avoid slipping.
- **General Finishes:** It is recommended that an 'all-white' finish to bathrooms be avoided.
- **Radiators and Hot-Pipes:** Radiators and hot-pipes should be protected if the guest is in any danger. Staff should set the required temperature of any heating element in consultation with the guest.
- **Signage:** All signage and other printed instructions should be provided in large print, Braille, and where possible, in an audio format.



- **Remote Emergency Alarm Call System:** A remote emergency alarm call system should be provided in the room, in order to summon assistance when required.
- **Audio and Visual Emergency Warning and Evacuation Systems:** Emergency warning and evacuation systems should be provided in both audio and visual formats.
- **Emergency Evacuation:** All emergency evacuation systems should be linked to a flashing emergency light in the bedroom and bathroom.
- **Coat Hooks:** Coat hooks and other projections should not be allowed to project beyond the maximum distances allowed. It is important to ensure that no harmful obstructions project from the wall.
- **Color Contrast:** There should be clear color contrast between fittings, fixtures, wall and floor finishes to assist in determining their location.
- **Basin, Bath and Shower Controls:** Basin, bath and shower controls should have visual and embossed indicators to indicate hot and cold taps or directions on mixers. This assists all guests in obtaining a clear indication of which taps are hot and which are cold to prevent scalding themselves. Basin and shower lever action mixers should have balanced water supply. This allows reliable temperature control over the water supply.
- **Shower Spray Head:** Where present, a shower spray head should not be present within the range of obstructing or projecting free-standing objects.
- **Environmental Controls, including Light Switches:** All environmental controls, including light switches, should be detectable on/ off with rocker action.

### **6.3.2 Design Considerations**

Circumstances such as wet surfaces and the act of transferring between toilet and wheelchair or scooter can make toilet facilities accident-prone areas.

An individual that may have a fall in a washroom with a door that swings inward could prevent his or her own rescuers from opening the door.

Due to the risk of accidents, design decisions such as door swings and materials have safety implications and therefore make toilet facilities a prime location for emergency call switches.

The appropriate design of all features will increase the usability and safety of all toilet facilities.

### 6.3.3 Application Consideration

Note that in situations where either a roll-in shower or a bath can be installed, but not both, it is preferable to install a roll-in shower.

### 6.3.4 General Guidelines

#### General

- a. **Floor Surface:** Fixed slip-resistant floor surface.
- b. **Doors:** Doors should adhere to the requirements in terms of clear opening widths. There should be sufficient maneuvering and clear space in-front of doors. All bathrooms must have enough internal space in front of the doors to allow for door closure without any obstacle for a user of a mobility aid.

#### Wash-Hand Basins

- a. Wash-hand basins should be located adjacent to the W.C. at the required height and distance. The trap should be covered with heat-resistant lagging if composition is heat-conducting. This is essential to allow a seated user to comfortably maneuver under the basin to make proper use of it, and to avoid slow burns to legs lacking sensation, which might come into contact with the warm trap.
- b. Lever action taps or a mixer should be used. It is easier for a person with a functional physical limitation to use the taps if they are lever action rather than knobs which have to be gripped and turned.
- c. A mirror should be located at a suitable height above the basin rim. This is to ensure that a seated user can see his/ her reflection at the basin while seated and still make it possible for persons with ambulatory limitations to see their reflections.
- d. Towel rails must be set within an acceptable reach range. It must be possible for a seated user to reach a towel-rail comfortably.

#### Roll-In Showers

- a. A shower seat should be installed at a suitable height and position to allow for transfer.
- b. Vertical and cranked grab-bars need to be installed on either side of the shower-seat in the preferred configuration.
- c. A lever action shower mixer and hand shower should be installed on an adjustable rail. A user should be able to transfer from a mobility aid to the shower seat with ease, and be able to use the mixer and hand shower once seated; therefore these items must be at the appropriate height, and must not obstruct the ability of the user to maneuver their mobility aid into the shower.



d) A tiled run-off should be installed which negates the need for a threshold. This means that there is a natural flow to the outlet with no threshold.

## Baths

a. There should be sufficient access space adjacent to the bath. This is essential so that a mobility aid user can transfer comfortably from the aid to the bath without any obstacles at the side of the bath.

b. The height of the bath needs to be within the permitted heights. This would enable a user to transfer across from the wheelchair to the bath at the same height and back again – varying heights can make it impossible for the user to transfer into or out of the bath.

c. Provision for a broad seat at the end of the bath. This enables a person with a functional physical limitation to easily use a hand-shower with a lever action mixer rather than having to grasp and turn the different hot and cold knobs, which can often result in getting severe burns from hot water, which cannot be properly controlled.

d. A “T”-shaped grab-bar opposite the transfer space. The horizontal bar must be located at the appropriate height above the bath rim so that the user may lift himself from the bath onto the transfer space and across to the mobility aid.

e. Provision for a removable bath seat should be considered. People with certain functional physical limitations might need to have a removable bath seat due to a physical inability to transfer in and out of the bath. Elderly people who are too ill or weak would also require this, as they do not have the strength to get in and out of a bath.

### 6.3.5 Technical Guidelines

#### General

**a. Location:** All mobility accessible washrooms shall be located on an accessible route.

**b. Signage:** All mobility accessible washroom facilities should be identified with a signage. If individual gender-specific washrooms are not visible from the common use washrooms, directional signage should be provided.

**c. Entrance Doors:** All entrance doors to mobility accessible toilet rooms should comply with the minimum requirements in terms of accessibility. Entrance doors should not swing into the clear floor space required for any fixture, and should have a minimum 1700mm clearance between the inside face of an adjacent toilet stall. It is preferable not to have a door at the entrance to a common use toilet area. The

entrance configuration should provide visual privacy to the interior of the washroom. Where doors are provided, they should have a power door operator.

**d. Clear Floor Space:** There should be clear floor space in the mobility accessible washroom to allow a person in a wheelchair to make a 180-degree turn. In front of accessible wash-hand basins, there should be clear floor space at least 800mm wide by 1400mm deep of which no more than 450mm should be under the wash-hand basin. Clear floor spaces may overlap.

**e. Floor Surfaces:** Floor surfaces shall comply.

**f. Illumination:** A toilet facility should incorporate even illumination throughout of at least 200 lux.

**g. Washroom Doors:** Mobility accessible toilet stall doors should be provided with a clear opening of at least 900mm with the door in the open position. In a renovation where it's technically infeasible to provide the required clear opening, the clear opening may be reduced to 850mm. Doors should swing outward, unless additional clear floor space of at least 800mm by 1400mm is provided within the washroom and does not interfere with the arc of the door swing. Washroom doors should be equipped with gravity hinges so that the door closes automatically. Where possible, accessible washroom doors should be aligned with the clear transfer space adjacent to the toilet fixture.

**h. Washroom Door Locks:** The provisions for washroom door locks should comply with the requirements for operable parts.

**i. Door Hardware:** The provisions for door hardware should comply with the requirements for operable parts.

**j. Accessible Fixtures and Controls:** Accessible fixtures and controls within mobility accessible washrooms should be on an accessible route, and have a minimum clearance of 1400 (1500mm preferred) between the outside face of the accessible stall and any wall-mounted fixture or obstruction.

**k. Washroom Dimensions:** Mobility accessible washrooms should have internal dimensions of at least 1800 by 1800mm. In a renovation where providing the required internal dimensions are technically infeasible, the internal dimensions may be reduced to 1500mm by 1500mm. In such cases, the door must swing outward.

**l. Color Contrast:** Door handles and locking mechanisms should incorporate pronounced color contrast, to differentiate them from the stall door. Grab bars should incorporate pronounced color contrast, to differentiate them from the surface they are mounted on.



## Toilet Pans/ W.C.'s

Automatic flush controls are preferred. If flushing mechanisms are not automated, then consideration should be given to the ability to reach a flush handle and the hand strength or dexterity required to operate it. Lever style handles on the transfer side of the toilet facilitate these considerations.

Appropriate placement of grab bars makes sitting and standing or transfers between the toilet and a mobility device safer.

**a. Seat:** Toilet seats should not be spring-activated. A back support should be provided where there is no seat lid or tank. Where provided, toilet tank tops should be securely attached.

**b. Toilet Fixtures:** Toilet fixtures should have the top of the seat 460 – 480mm above the floor and be 460 – 480mm from the closest side wall to the centerline of the wall. Wall hung toilets are preferred.

**c. Transfer Space:** Accessible toilets should have a minimum 900mm wide clear transfer space on one side of the toilet fixture. In a retrofit situation where it is technically infeasible to provide a 900mm wide clear transfer space, this space may be reduced to 800mm. In washroom facilities where more than one accessible toilet is provided, the toilet transfer spaces should be configured with the clear transfer space (i.e. the open space beside the toilet). On opposite sides of the toilet fixtures. The clear transfer space should be free of obstructions (such as garbage bins).

**d. Flush Controls:** Flush controls should be automatic, or be designed to comply with Appendix 6. Toilet flush controls may be hand-operated and should be located on the transfer side of the toilet or be electronically/ automatically controlled. Hand-operated flush controls should comply with Appendix 6. It is preferred that toilet controls be of the automatic flushing type with a gentle warning sound and light system pre-flush to prevent confusion, alarm, or worry that flush will not occur. If a manual flush fixture is used, flush controls should be located on the transfer side of the toilet, be color contrasted with their surroundings, and be simple and intuitive to use.

**e. Grab-Bars:** Grab-bars should comply with the relevant part below. There should be at least two grab-bars located in an accessible toilet stall. One grab bar should be located behind and above the toilet. It should be at least 600mm in length, located 800 - 820mm above the floor, or at least 150mm above the top of a toilet tank. The second grab-bar should be on the side wall closest to the toilet fixture. It should be a cranked-shaped grab-bar, with each section of the crank 300mm long and bent at 45 degrees, mounted with the horizontal component 800 - 820mm above the floor, and

the vertical component 150mm in-front of the toilet bowl. Consideration should also be given to the installation of a fold-down grab bar on the opening side of the toilet, at least 760mm in length, mounted 420 – 440mm from the centerline of the toilet, and 630 – 690mm above the floor.

**f. Coat Hook:** Washrooms should be installed with a collapsible coat hook mounted not more than 1200mm above the floor, on a side wall (adjacent and reachable to/from the toilet pan) and projecting not more than 50mm from the wall.

**g. Toilet Paper Dispenser:** A toilet should be equipped with an accessible toilet paper dispenser. The toilet paper dispenser should be wall mounted and located below the grab-bar in line with or not more than 300mm in-front of the toilet seat, not less than 600mm above the floor, and have a clearance to the grab-bar of at least 60mm.

**h. Emergency Call Switch:** Accessible toilets should be equipped with an emergency call button or pull cord. A waterproof emergency call button or pull cord should be provided adjacent to the accessible toilet fixture. The emergency call button or pull cord should activate a bell or other signaling device, that is monitored from a location within the facility.

**i. Ablution-Hose:** An ablu-tion-hose should be provided at every toilet fixture, with a wall-attachment system for the hose head. The hose-head attachment should be located on the side wall closest to the toilet; no more than 200mm back from the front of the toilet, at a height midway between the underside of the horizontal grab-bar and top of the toilet seat. Ablution hoses should have operating mechanisms that comply with the requirements for operable parts.

**j. Color Contrast:** Toilet fixtures should incorporate pronounced color contrast, to differentiate them from the background environment. Grab bars should incorporate pronounced color contrast, to differentiate them from the surface they are mounted on. The emergency call button or pull cord, flush controls, toilet paper dispensers and ablu-tion hoses, should incorporate color contrast, to differentiate them from the background environment.

## Wash-Hand Basins

The accessibility of wash-hand basins will be greatly influenced by their operating mechanisms. While faucets with remote-eye sensor technology may initially confuse some individuals, their ease of use is notable. Individuals with hand strength or dexterity difficulties can use lever-style handles. For an individual in a wheelchair, a lower counter height and clearance for knees under the counter or basin would be required. The insulating of hot water and drain pipes protects the legs of an individual using a wheelchair. This is particularly important when a disability impairs sensation such that the individual would not sense that their legs were being burned. The combination of shallow sinks and higher water pressures can cause unacceptable splashing at wash-hand basins.



- a. General:** Wash-hand basins should be located on an accessible route.
- b. Mounting Location:** Accessible wash-hand basins should have the top located no higher than 820mm above the floor. Wash-hand basins should be located so that the minimum distance between the centerline of the fixture and the side wall is 460mm. A wash-hand basin must be located on the side wall adjacent to toilet pans, and located in such a way that it has its closest edge 150mm from the edge of the cranked grab bar.
- c. Knee Space:** Wash-hand basins should have a knee space that complies with the requirements set out in the UABE Playbook Guidelines. The drain should be offset to maximize clearance under the sink.
- d. Clear Floor Space:** Accessible wash-hand basins should have a minimum clear floor space of 800mm wide and 1400mm deep of which a maximum of 480mm in depth may be under the wash-hand basin.
- e. Faucets:** Faucets should comply with the requirements for operable parts and have a single long lever-style handle (not self-closing) operable with a clenched fist, or be electronically controlled. Faucets should be located so that the distance from the centerline of the faucet to the front edge of the vanity, is not more than 485mm. The hot and cold water should be marked with color contrasted and raised letters for identification.
- f. Dispensers:** Dispensers at accessible wash-hand basins, such as soap and towel dispensers, should be accessible to persons using wheelchairs or scooters (i.e. not having to reach over the wash-hand basin to access the devices) and be located so that the dispensing height is not more than 1200mm above the floor. Dispensers should be operable with one hand, and be color contrasted from the surrounding environment.
- g. Water Temperature:** Hot water and drain pipes should be insulated if they abut the clearances below the wash-hand basin as noted above. The water temperature should be limited to a maximum of 45 degrees Celsius.
- h. Shelves:** Shelves or other projections above wash-hand basins should be located so that they will not present a hazard to persons with a visual impairment.
- i. Mirrors:** A mirror should be installed to the requirements given below and located with its bottom edge no higher than 1000mm above the floor. In retrofit situations where a mirror's bottom edge cannot be located lower than 1000mm, a tilted mirror may be used.
- j. Color Contrast:** There should be color contrast between wall/ lavatory/ faucet and wall/ soap-dispenser/ towel-dispenser/ towel-disposal/ hand-dryer units.

## Washroom Accessories

Design issues related to washroom accessories include the hand strength and dexterity required to operate mechanisms. Reaching the accessories is another concern. Accessories that require the use of two hands to operate can present difficulties for a range of persons with disabilities when the ability to reach or balanced is impaired. Accessories in a washroom should be laid out logically, conveniently, and consistently in order that a person with a visual impairment may anticipate and easily find the location of accessories such as hand soap dispensers, paper towel dispensers, or hand-dryers, garbage cans etc.

**a. General:** In a mobility accessible washroom, where it is technically infeasible to make all washroom accessories comply, at least one of each type of washroom accessory should comply.

**b. Height of Operable Mechanisms:** At least one type of each washroom accessory provided should have operable portions and controls mounted between 900 – 1200mm above the floor.

**c. Clear Floor Space:** In front of each accessory in a washroom there should be a clear floor space at least 800mm wide by 1400mm in depth. The clear floor spaces of adjacent washroom accessories may overlap.

**d. Mirrors:** Where mirrors are provided, at least one mirror should be mounted with its bottom edge not more than 1000mm above the floor, or be inclined and adjustable from the vertical to be usable by a person using a wheelchair.

**e. Soap Dispensers:** At least one soap dispenser, mounted near the front of the sink, should be provided to allow users with short reaching range to use it independently.

**f. Paper Towel Dispensers/ Hot Air Hand Dryers:** In washrooms that are intended to be mobility accessible, at least two paper towel dispensers or hot air hand dryers should be installed at different heights above the floor. One that is accessible by a seated or a person short in stature with the centerline of its operable parts no higher than 1200mm above the floor. A second paper towel dispenser or hot air hand dryer should be provided with the centerline of its operable parts located no higher than 1500mm above the floor for use by a standing person. It is a good idea to have the paper towel dispenser and hot air hand dryers sensor operated for easier use by all.

**g. Garbage Containers:** A garbage container close to sink does not block access to the sink or the transfer or approach space for a toilet, if free standing should be provided. A wall recessed garbage container with an opening for garbage located between 900 – 1200mm above the floor is a good solution.

**h. Color Contrast:** There should be color contrast between the accessories in the washroom and the surface they are mounted upon.



## Bathtubs

Bathtubs can present a slipping hazard. Slip-resistant surfaces are an important feature and will benefit any individual, including those with disabilities. Grab bars will also provide stability. Operating systems are subject to limitations in hand strength, dexterity and reach.

- a. General:** Accessible bathtubs where provided should be on an accessible route.
- b. Clear Floor Space:** Accessible bathtubs should have a clear floor space of at least 900mm wide along the full length of the bathtub (wash-hand basins may encroach into the clear floor space a maximum of 300mm, provided the available clear floor space complies with the requirements given above).
- c. Faucets and Controls:** Faucet handles should be of the long lever type that is not spring-loaded. Faucet handles should be located at the foot end of the bathtub so as to be usable by a person seated in the bathtub. Faucets and other controls should be mounted not more than 450mm above the bathtub rim. The controls in the tub should be equipped with a pressure-equalizing or thermostatic-mixing valve that may be operable from the seated position, and be reachable by a seated person from the exterior of the tub. The water temperature of the water supply should not exceed 55 degrees C. Controls and faucets should be color contrasted with the surrounding tub and its enclosure surfaces. The hot and cold settings should be simple and intuitive to understand and set.
- d. Surface:** The interior bathtub base surface should be slip-resistant.
- e. Grab Bars:** Unless the bathtub is free-standing, it should be equipped with a “T”-shaped grab-bar and a vertical grab-bar conforming to the sub-requirements under grab-bars given below. The grab-bars should be mounted so that that the top of the T-shape is facing downwards. The horizontal leg of the T-shaped grab bar should be located 150 – 200mm above and parallel to the rim of the bathtub. The vertical leg of the “T”-shaped bar should be located 300 – 450mm from the control end of the tub. A vertical grab bar should be at least 1200mm long, mounted vertically at the foot end of the tub adjacent to the exterior clear floor space, with the lower end 180 – 280mm above the bathtub rim.
- f. Bathtub Enclosures:** Enclosures for bathtubs should not obstruct controls, interfere with a person transferring from a wheelchair into the tub, or have tracks mounted on the bathtub rim. Shower curtains are ideal as they may be pushed out of the way or removed entirely and will not encroach on the clear floor space in front of the bath tub area. The shower curtain rod should be reinforced and securely attached to the walls similar to grab bars to prevent someone from grabbing them and having them give way under pressure.

**g. Bathtub Seat:** A bathtub exterior seat may be located at the end opposite the controls. It should be the full width of the tub, level with the rim of the tub, be at least 450mm deep, and have a slight slope to the bathtub of no more than 1:50 to assist in draining water.

**h. Soap Holders:** A bathtub should have two soap holders, one that can be reached from the seated position and one that can be reached from a standing position. Ideally soap holders should be recessed.

**i. Shower Head:** A bathtub should be equipped with a showerhead with at least 1525mm of flexible hose that can be used both as a fixed position shower head and has a hand-held shower head. A shower-head should comply with the appropriate parts under shower stalls below. The shower spray unit should be reachable from the seated positions and have an on/ off controls.

**j. Shower Head Mounting Height:** The shower head should be mounted on a vertical bar, the height of the shower head should be adjustable form 1200mm upward. The vertical bar should be installed so as not to obstruct the use of any grab-bar or other controls in the bathtub. This vertical bar should have the appropriate characteristics of a grab bar, to prevent an accident is someone uses this item as a grab-bar.

**k. Lighting Levels:** The lighting levels in the bathtub area should be at least 200 lux.

**l. Emergency Call Switch:** A waterproof emergency call switch should be provided, located to be reachable by a person seated in the tub. It should be color and texture contrasted with the surrounding surfaces. The emergency call should be monitored from a location within the establishment.

**m. Color Contrast:** There should be pronounced color contrast between wall/ fixtures/ controls, wall/ grab bars, and wall/ washroom accessories.

## Shower Stalls

Roll-in or curbless shower stalls eliminate the hazard of stepping over a threshold and are essential for persons with disabilities who use wheelchairs or other mobility devices in the shower. Grab bars and non-slip materials are safety measures which will support any individual. Additional equipment such as a hand-held showerhead or a folding bench, may be an asset to someone with a disability but also convenient for others. Equipment that contrasts in color form the shower stall area itself will assist individuals with a visual impairment.

**a. Location:** The shower stall should be located on an accessible route.

**b. Clear Floor Space:** Shower stalls should have clear floor space at the entrance to the shower of at least 900mm in depth and the same width as the shower entrance to allow for proper transfer space to the shower stall seat. Fixtures are permitted to



project into that space, provided that the transfer space and access to the shower is not restricted. The interior of a shower stall should have a clear floor area of at least 1500mm in width and 900mm in depth. If space is available, the interior shower stall dimensions should be increased to at least 1500 x 1500mm for improved access.

**c. Floor Surface:** Both the interior and exterior entrance areas of the shower stall should have a slip-resistant floor surface. Shower stall floor areas should have minimum positive drainage. The floor slopes for drainage in the shower area should not exceed 1:50. The shower stall drain should be located below the seat or off to one side.

**d. Threshold:** Shower stalls should have no threshold, or have a beveled threshold not exceeding 13mm above the finished floor. A roll-in or curbless shower stall is the best solution for accessibility by persons who use wheelchairs or other mobility devices.

**e. Shower Seat:** A shower stall should be equipped with a wall-mounted folding seat that is not spring-loaded, or there should be provisions made for a portable seat. A shower stall seat should be 450mm deep and extend the full width of the stall, less the space allowed for the shower curtain. The shower stall seat should be color contrasted from its surroundings, have a smooth non-slip surface without rough edges, and be mounted 430 – 480mm above the floor. The shower stall seat should be designed to carry a minimum load of 1.33 kN and be located on the end wall for easier transfer.

**f. Grab-Bars:** Shower stalls should be equipped with a cranked and vertical grab-bar that conform to the requirements given below.

**g. Cranked Grab-Bars:** There should be a horizontal grab-bar with three sections each 300mm long. The first portion should be horizontal with the ground, the next angled at 45 degrees relative to the first, and the last at a 90 degree to the direction of the ground. It should be mounted approximately 800 – 820mm above the floor; located on the wall opposite the transfer space. It should be located with its furthest edge 800mm from the back wall (i.e. the wall on which the seat is located).

**h. Vertical Grab-Bar:** A shower stall should be equipped with a vertical grab bar at least 900mm in length and be mounted between the seat and transfer space, such that it is located 350 – 450mm from the centerline of the seat in the direction of the transfer space. The bottom of the grab-bar should begin 600 – 700mm above the floor.

**i. Water Control Valve:** Shower stalls should be equipped with a pressure-equalizing or thermostatic-mixing valve. Controls should be color-contrasted to the surrounding tub wall. The hot and cold settings should be simple and intuitive to understand and set. The main controls for the shower should be on the long wall of the shower stall and a maximum of 685mm out from the side wall where the folding seat is located. Controls should be located no higher than 1000mm above the floor to their centerline. It is a good idea to have a second set of controls off-set to the front of the shower

stall on a side wall and reachable from the exterior to improve accessibility. Shower controls should be of a lever type.

**j. Soap Holders:** A shower stall should have two soap holders one above the other with both ideally being fully recessed. One soap holder should be reached from the seated and the other from a standing position. The lower soap holder should be located on the long wall beneath the grab-bar and be no more than 600mm from the wall which has the seat.

**k. Shower Head:** Shower stalls should be equipped with a hand-held shower head with at least 1500mm of flexible hose that can be used both as a fixed position shower head and has a hand-held shower head. The shower spray unit should be reachable from the seated positions and have an on/ off control.

**l. Shower Head Mounting Height:** The shower head should be mounted on a vertical bar and be adjustable between 1200mm and upwards. The vertical bar should be installed as a grab-bar and should comply with the requirements for grab-bars given below, and not obstruct the use of other grab-bars in the shower stall.

**m. Shower Stall Enclosures:** Enclosures for shower stalls should not obstruct controls or obstruct transfer from a mobility device unto the shower seat. Shower curtains are ideal as they may be pushed out of the way or removed entirely and will not encroach on the clear floor space in-front of the shower area. Shower doors should be avoided. The shower curtain rod should be reinforced and securely attached to the walls similar to grab bars to prevent someone from grabbing them and having them give way under pressure.

**n. Lighting Levels:** The lighting levels in the shower stall should be at least 100 lux.

**o. Emergency Call Switch:** An emergency call switch should be provided within the shower area, located no higher than 450mm above the floor, and should be monitored from a location within the facility. It should be texture and color contrasted with the surrounding surfaces.

**p. Heat Lamp or Radiant Panel:** There should be considered the use of a heat lamp or radiant panel in the shower area for those who may have trouble drying off quickly after a shower.

**q. Color Contrast:** There should be pronounced color contrast between wall/ fixtures/ controls, wall/ grab-bars and wall/ washroom accessories.

## Grab-Bars

Grab-bars are an important feature to those who require assistance in standing up, sitting down, or stability while standing. Transferring between toilet and wheelchair or scooter is a typical scenario where a grab-bar is utilized.



- a. **Diameter:** Grab-bars should be 30-40mm in diameter.
- b. **Structural Strength:** Grab bars should be installed to withstand a load of at least 1.3 kN applied vertically or horizontally.
- c. **Surfaces:** Grab-bars should be free of any sharp or abrasive elements, have a slip-resistant surface, and be color-contrasted with surrounding environment. Adjacent surfaces should be free of any sharp or abrasive elements.
- d. **Clear Space:** Grab-bars should have a clearance of 35 – 45mm from the wall and any surrounding obstacle.

Users are also directed to the following portions of the UABE Playbook Guidelines:

- B.4.1.1 Space and Reach Requirements
- B.4.1.2 Ground and Floor Surfaces
- B.4.1.3 Protruding and Overhead Objects
- B.4.1.4 Accessible Routes, Paths and
- B.4.2.1 Toilet Facilities
- B.4.2.2 Toilet Stalls
- B.4.2.3 Toilets
- B.4.2.4 Lavatories
- B.4.2.5 Urinals
- B.4.2.6 Washroom Accessories
- B.4.2.7 Individual Washrooms
- B.4.2.8 Bathtubs
- B.4.2.9 Shower Stalls
- B.4.2.10 Grab Bars
- B.4.3.4 Dressing Rooms
- B.4.4.1 Emergency Exits, Fire Evacuation and Areas of rescue Assistance
- B.4.4.2 Controls and Operating Mechanisms
- B.4.4.4 Visual Alarms
- B.4.4.6 Assistive Listening Systems
- B.4.4.7 Signage
- B.4.4.8 Detectable Warning Surfaces
- B.4.4.9 Public Address Systems
- B.4.4.10 Information Systems
- B.4.4.11 Card Access, Safety and Security Systems
- B.4.4.12 Glare and Light Sources
- B.4.4.13 Lighting
- B.4.4.14 Materials and Finishes
- B.4.4.15 Texture and Colour
- B.4.4.16 Acoustics

### 6.3.6 Illustrations

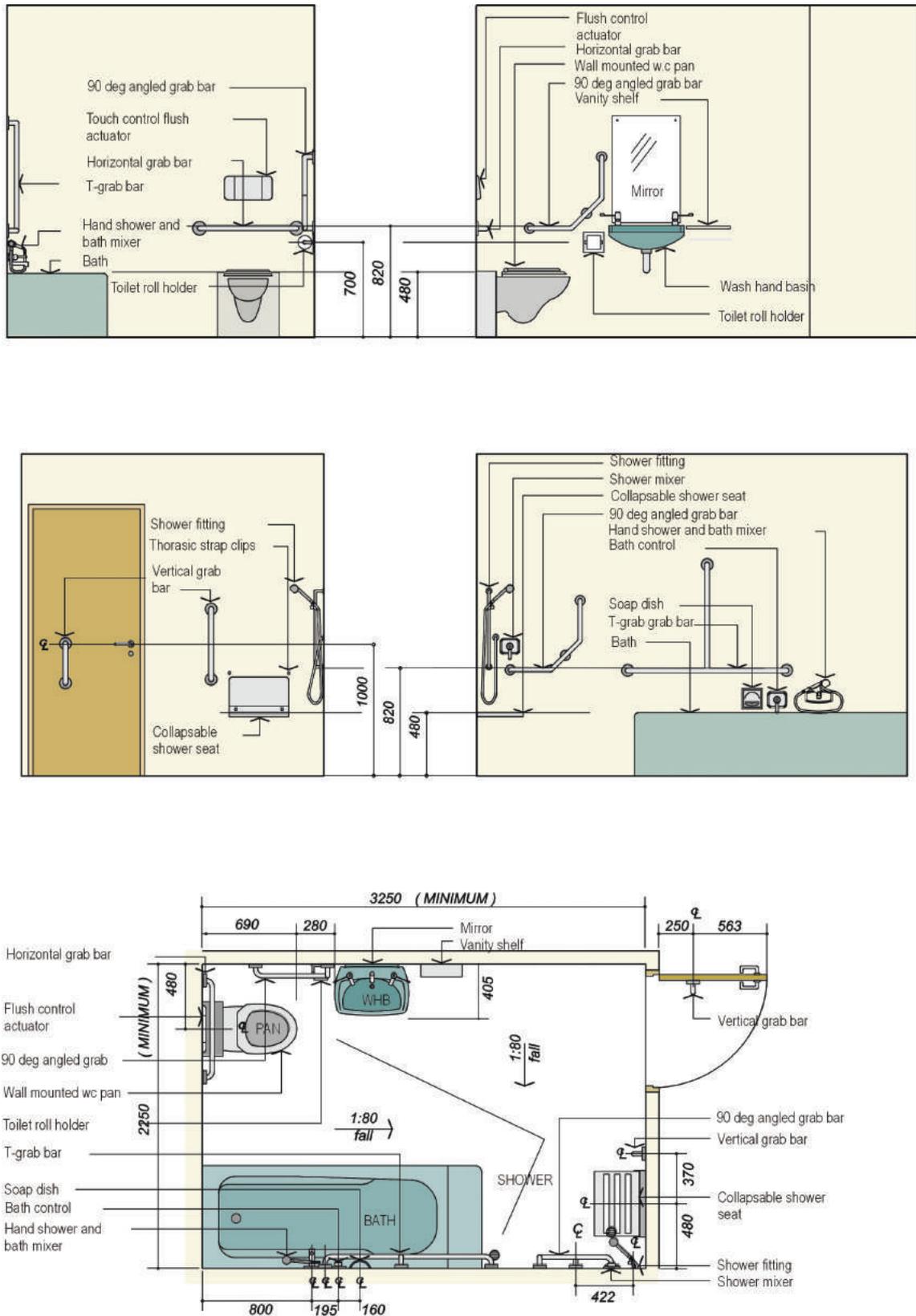
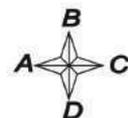


Figure 55. Typical Washroom Configuration.



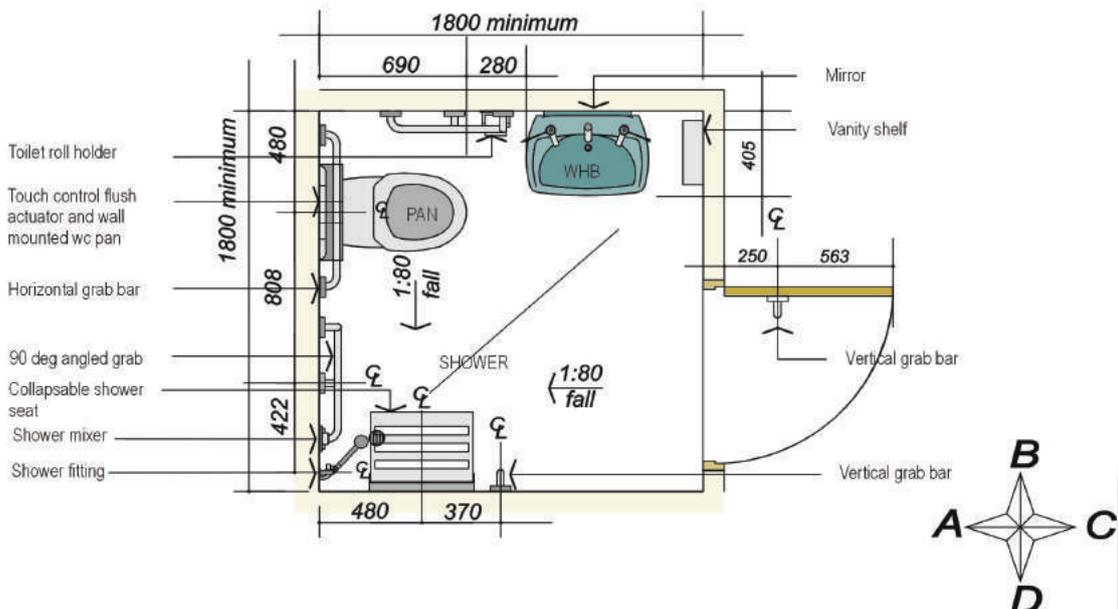
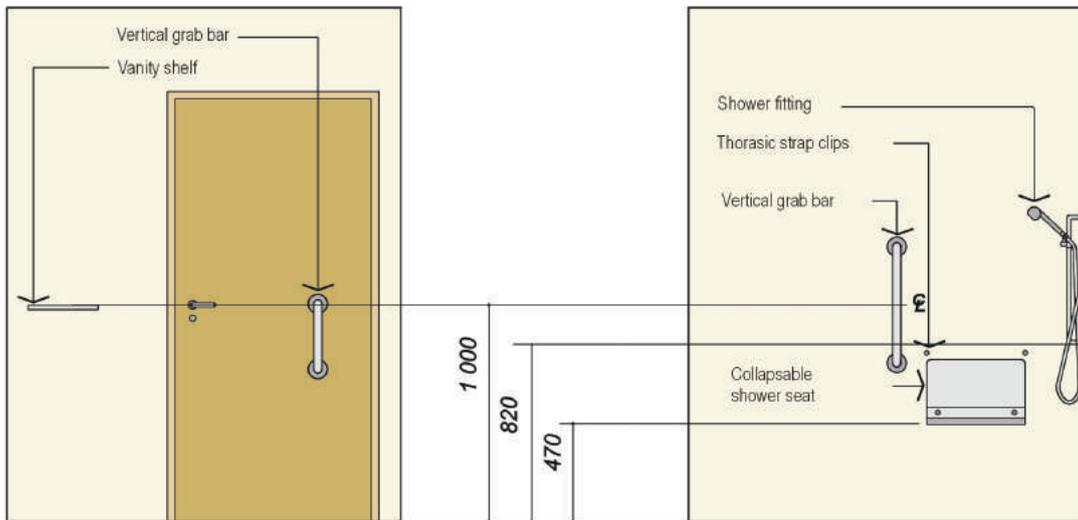
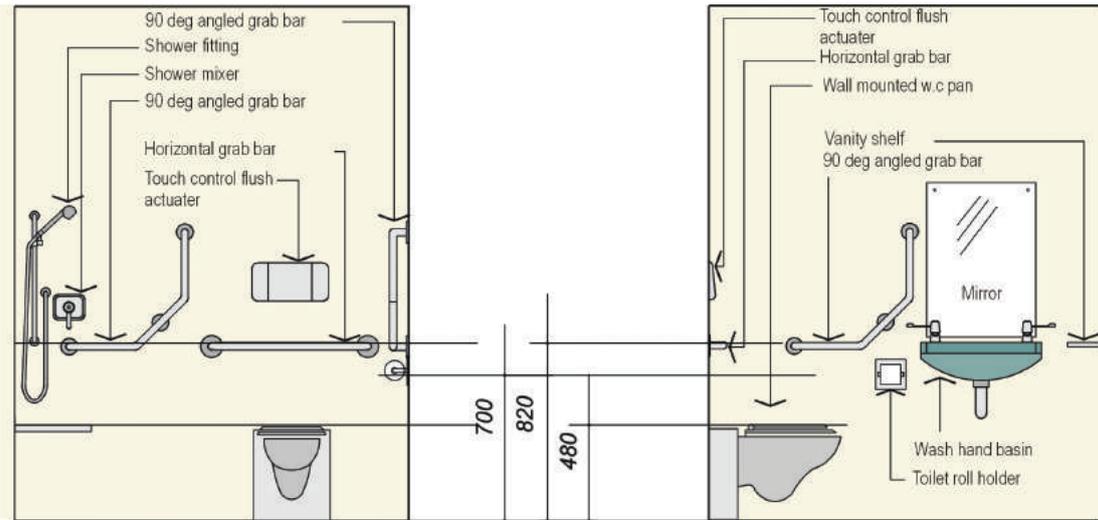


Figure 56. Typical Washroom Configuration.  
Prince Salman Center for Disability Research





## Retail Facilities







## 7

## RETAIL FACILITIES

### 7.1

### Product Distribution

#### 7.1.1 Design Considerations

Product displays expose patrons and customers to the range of products that are on offer. Space and illumination are critical concerns for access and produce selection. Accommodation for resting should be made where it is probable that a patron may need to be in an area for more than a few minutes.

The heights of storage, shelving, and display units should address a full range of vantage points including the lower sightlines of children, persons short in stature, or a person using a wheelchair or scooter. The lower heights also serve the lower reach of these individuals. Displays that are too low can be problematic for individuals that have difficulty bending down. Appropriate lighting and colour contrast is particularly important for persons with a visual impairment.

#### 7.1.2 Application Consideration

If fixed or built-in storage facilities, such as cabinets, closets, shelves, and drawers, are provided in accessible spaces, at least one of each type provided should contain storage space in compliance with this section.

Shelves or display units allowing self-service by customers in mercantile occupancies should be located on an accessible route complying with Appendix 4.

#### 7.1.3 General Guidelines

- a. Examples of the best and most interesting products should be displayed in a reachable location providing hands-on access;
- b. Focus more intense and dramatic lighting on special product displays;
- c. Keep all products within the comfortable reach ranges;
- d. The width of all aisles should be planned to provide effective access to all products;
- e. All aisles should enable at least two people, either standing or using a mobility aid, to pass each other while traveling in opposite directions;
- f. Provide a supporting surface for trays and packages (e.g. tray slide) in service and cashier lines;



#### 7.1.4 Technical Guidelines

No technical guidance is offered for this part.

#### 7.1.5 Illustrations



*Figure 58. Retail facilities, including restaurants, should provide easy means of access to all possible patrons. An initial first step is to ensure that there are no steps and clear circulation through such service areas for patrons.*

[Source: <http://www.petertan.com/blog/category/disability-issues/accessibility-in-public-places/page/28/>]

## 7.2 Sales & Service Counters, Teller Windows & Information Counters.

Implemented in accordance with Universal Accessibility Built Environment Guideline for Kingdom of Saudi Arabia.

### From the Building Environment

3.3.1 Information, Reception & Service Counters

3.3.1.1 Ticketing and Vending Machines

## 7.3 Check-Out Aisles

### 7.3.1 Design Considerations

Access to check-out aisles is an important consideration for persons with disabilities. Although typically the height of check-out aisles in major retail chain stores is sufficient, often the clear width required to move through the aisle is problematic. Smaller retail stores may need a lowered counter to serve as a check-out aisle.

### 7.3.2 Application Consideration

The number of check-out aisles required to be accessible should be in accordance with the table below:

Total Check-out Aisles of Each Design	Minimum Number of Accessible Check-Out Aisles (of each design)
1 to 4	1
5 to 8	2
8 to 15	3
over 15	3, plus 20% of additional aisles

Examples of check-out aisles of different “design” include those which are specifically designed to service different functions, and includes, though is not limited to features such as the length of belt or no belt, whether the aisle is a basket only or express lane etc.

### 7.3.3 General Guidelines

No technical guidance is offered for this part.



### 7.3.4 Technical Guidelines

**a. Clear Aisle Width:** Clear aisle width for accessible check-out aisles should comply with Appendix 1 and the maximum adjoining counter height should not exceed 865mm above finished floor level. The top of the lip should not be allowed to exceed 1100mm above floor or ground level.

**b. Signage:** Signage that clearly identifies accessible check-out aisles complying with Appendix 19 should be provided.

### 7.3.5 Illustrations

No illustrations offered for this part.



## 7.4 Security Bollards/ Gates

### 7.4.1 Design Considerations

Security gates, bollards and turnstiles should address the full range of users that may pass through them. Single-bar gates designed to be at a convenient waist height for ambulatory persons can be at neck and face height for children and persons who use wheelchairs or scooters.

Revolving turnstiles are a physical impossibility for a person in a wheelchair to negotiate. They are also difficult for persons using canes or crutches, or for persons with poor balance. An adjacent opening of an accessible width is essential for wheelchair and scooter access, as well as, access for those using other mobility devices, strollers, walkers or delivery carts.

### 7.4.2 Application Consideration

Gates, turnstiles, and openings should comply with this section.

### 7.4.3 General Guidelines

No technical guidance is offered for this part.

#### Technical Guidelines

**a. Security Bollards:** Any device used to prevent the removal of shopping cars from facility premises should provide access in accordance with Appendix 9, and should not form a hazard in terms of Appendix 3. An alternative entry is equally convenient to that provided for mobility aid users is acceptable.

**b. General:** Security gates and turnstiles should comply with the requirements of Appendix 9 where provided.



## 7.5

## Self Assistance

### 7.5.1 Design Considerations

Where patrons will require assistance to access products (e.g. canned goods on top shelves) this can be a universal service provided and available to everyone.

### 7.5.2 Application Consideration

All shopping centers and retail facilities should attempt to ensure staff assistance to all patrons.

### 7.5.3 General Guidelines

- a. Assistance should be advertised for all who cannot manage on their own. This may include signs indicating the type of services available;
- b. Assistance services should not be identified with the International Symbol of Access. Such labeling immediately creates the impression that one must use a wheelchair to receive such services;
- c. Service desks should be low enough for seated use. If standing is more desirable, they should have low sections for seated use and for children. There should also be knee clearance for both sides when the counter must be used from a frontal position;

### 7.5.4 Technical Guidelines

No technical guidance is offered for this part.

### 7.5.5 Illustrations

No illustrations offered for this part.

**Conferences, Exhibition, Business and  
Communication Venues**





## 8

## CONFERENCE, EXHIBITION, BUSINESS & COMMUNICATION VENUES

### 8.1

### Communication and Business Facilities

Business centers will be used by a diverse group of people, including guests with disabilities. The ability to maneuver throughout the business centre is important, as is the need to access and use computers, telephones, printing and copying facilities. Ideally, personal computers available for public use should be equipped with assistive technologies. Specific application considerations include: accessible tables/ counters/ equipment, storage or shelving and where possible, provision should be made for screen-reading technology.

General: Staff need to identify specific requirements for customers with hearing difficulties. This will mean the provision of good lighting/ good quality sound systems, a portable or professionally installed induction loop and infra-red systems. Symbols should be displayed to show what equipment has been installed. It is recommended that induction loops are part of the standard equipment.

Telephones: At least one telephone in the business center should feature volume control. At least one telephone in the business center should feature a TTY device.

Provision for W.C.: Ideally there should be a mobility accessible W.C. within 50 meters of the business center.

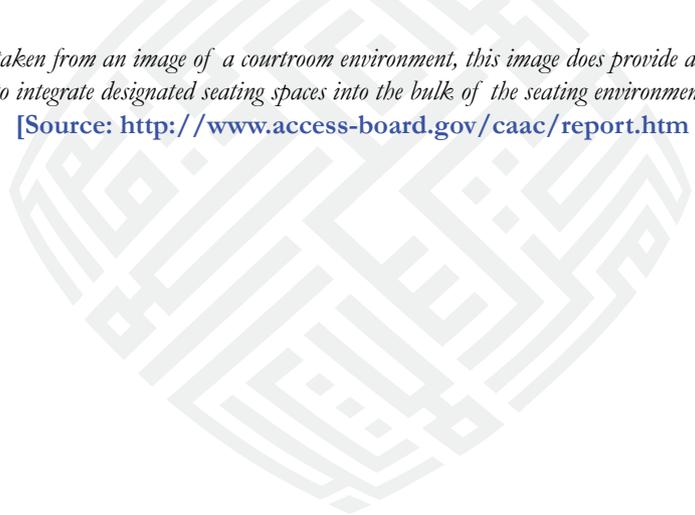


Figure 60. Example of accessible conferencing facilities, ideally the wheelchair seating should be integrated into the seating layout and not just provided on the sides



*Figure 61. Although taken from an image of a courtroom environment, this image does provide a better sense of the need to integrate designated seating spaces into the bulk of the seating environment.*

**[Source: <http://www.access-board.gov/caac/report.htm>]**









## 9

## Conference, Exhibition, Business & Communication Venues

### 9.1

### Amusement Rides

[note: largely extracted from U.S. Access Board. Accessible Amusement Rides. Sep.2002].

#### 9.1.1 Design Considerations

Amusement rides are a critical component of the resort and theme park experience. Although it is beyond the scope of these requirements to be able to provide rules and guidelines for access to every form of amusement ride, it is critical that access be provided to amusement rides.

#### 9.1.2 Application Consideration

Newly designed or newly constructed and altered amusement rides must comply with these requirements. Where there has been change in the structural or operational characteristics of a ride, or where the load and unload area of an amusement ride is newly designed and constructed, it will be expected to comply with these requirements.

Each amusement ride should provide at least one wheelchair space that complies with S.1.4.d) below, or at least one amusement seat designed for transfer complying with S.1.4.e) or at least one transfer device complying with S.1.4.f).

#### Exceptions:

Mobile or portable amusement rides will not be expected to comply. Amusement rides that are controlled or operated by the rider are required to comply with only Q.1.4.a) and Q.1.4.b) only.

Amusement rides designed primarily for children, where children are assisted on and off the ride by an adult, are only expected to comply with Q.1.4.a) and Q.1.4.b).

Amusement rides without amusement ride seats are only expected to comply with Q.1.4.a) and Q.1.4.b).



### 9.1.3 General Guidelines

No general guidance is offered for this part.

### 9.1.4 Technical Guidelines

**a. Accessible Route:** Where in the load and unload position, amusement rides that are required to be accessible shall be served by an accessible route that complies with Appendix 4. Any part of an accessible route serving amusement rides with a slope greater than 1:25 shall be considered a ramp and must comply with Section L. Where it is technically or operationally infeasible to comply with the requirements of Section L, a steeper slope will be permitted, provided that it does not exceed 1:8. Handrails will be not required in the load and unload areas or on amusement rides where compliance is structurally or operationally infeasible. Limited-use/ limited-application and platform lifts are permitted as part of an accessible route serving the load and unload area.

**b. Load and Unload Areas:** Load and unloaded areas serving amusement rides that are required to be accessible shall provide maneuvering space that complies with Appendix 1. The maneuvering space should have a slope no steeper than 1:50.

**c. Signage:** Signage shall be provided at the entrance of the queue or waiting line for each amusement ride to identify the type of access provided. Where an accessible unload area also serves as the accessible load area, signage shall be provided at the entrance to the queue or waiting line indicating the location of the accessible load and unload area.

**d. Amusement Rides with Wheelchair Spaces:** Amusement rides with wheelchair spaces should comply with this part.

**Floor or Ground Surfaces:** The floor or ground surface of wheelchair spaces should comply with the provisions outlined here and Appendix 2. Where there is a contradiction between the provisions outlined here and in Appendix 2, the provisions outlined here will take precedence.

**Slope:** The floor or ground surface of wheelchair spaces shall have a slope no steeper than 1:50 when in the load and unload position and shall be stable and firm.

**Gaps:** Floors of amusement rides with wheelchair spaces and floors of load and unload areas shall be coordinated so that, when the amusement rides are at rest in the load and unload position, the vertical distance between the floors shall be within plus or minus 16mm and the horizontal gap shall be no greater than 75mm under normal passenger load conditions. Where it is operationally or technically infeasible

to achieve these, a ramp, bridge plate or similar device may be used that can achieve a gradient of not steeper than 1:12.

**Clearances:** Clearances for wheelchair spaces shall comply with the provisions outlined here and Appendix 2. Where there is a contradiction between the provisions outlined here and Appendix 2, the provisions outlined here will take precedence. Where provided, securement devices shall be permitted to overlap the required clearances. Wheelchair spaces should be permitted to be mechanically or manually repositioned.

**Width and Length:** Wheelchair spaces shall provide clear widths and lengths required in terms of Appendix 1.

**Wheelchair Spaces – Side Entry:** Where the wheelchair space can be entered only from the side, the ride shall be designed to permit sufficient maneuvering space for individuals using a wheelchair, scooter or other mobility device to enter and exit the ride.

**Protrusions in Wheelchair Spaces:** Protruding objects will be required to comply with Appendix 3.

**Openings:** Where openings are provided to access wheelchair spaces on amusement rides, the entry shall provide a 950mm minimum clear opening.

**Approach:** One side of the wheelchair space shall adjoin an accessible route.

**Companion Seats:** Where the interior width of the amusement ride is greater than 1400mm, seating is provided for more than one rider, and the wheelchair is not required to be centered within the amusement ride, a companion seat should be provided for each wheelchair space.

**Shoulder-to-Shoulder Seating:** Where an amusement ride provides shoulder-to-shoulder seating, companion seats shall be shoulder-to-shoulder with the adjacent wheelchair space. Where shoulder-to-shoulder companion seating is not operationally or structurally feasible, compliance with these provisions should be attempted to the maximum extent feasible.

**e. Amusement Ride Seats Designed for Transfer:** Amusement ride seats designed for transfer shall comply with the provisions set out in this part when positioned for loading and unloading.

**Clear Floor or Ground Space:** Clear floor or ground space that complies with Appendix 1 and Appendix 2 should be provided in the load and unload area adjacent to the amusement ride seats designed for transfer.



**Transfer Height:** The height of the amusement ride seats should be between 450 and 500mm maximum measured above the load and unload surfaces.

**Transfer Entry:** Where openings are provided to transfer to amusement ride seats, the space shall be designed to provide clearance for transfer from a wheelchair or mobility device to the amusement ride seat.

**Wheelchair Storage Space:** Wheelchair storage spaces that provide sufficient space as per Appendix 1, should be provided in or adjacent to unload areas for each required amusement ride seat designed for transfer and shall not overlap any required means of egress or accessible route.

**f. Transfer Devices for Use with Amusement Rides:** Transfer devices for use with amusement ride should comply with this part when positioned for loading and unloading.

**Clear Floor or Ground Space:** Clear floor or ground space that complies with Appendix 1 should be provided in the load and unload area adjacent to transfer devices.

**Transfer Height:** The height of the transfer device seats should be between 450 – 500mm measured above the load and unload surface.

**Wheelchair Storage Space:** Wheelchair storage spaces that provide sufficient space in terms of Appendix 1 should be provided in or adjacent to unload areas for each required transfer device and should not overlap any required means of egress or accessible route.

### 9.1.5 Illustrations



*Figure 62. Example of Inclusive Amusement Area*  
[Sourced: Morgan's Wonderland, Can Antonio, Texas, USA]



*Figure 63. Interior view of an accessible ride.*  
[Source: <http://www.morganswonderland.com/Morgans-Wonderland-Special-Needs-Park-Images/Park-Attractions/Carousel.jpg>]



## 9.2

## Boating Facilities

### 9.2.1 Design Considerations

Boating facilities refer to recreational fishing piers and platforms, boardwalks in boating marinas and facilities, gangways and slips. The provisions outlined here are intended to allow persons with disabilities to access boats, to make use of piers and platform for fishing and angling.

### 9.2.2 Application Consideration

Newly designed or newly constructed and altered boating facilities should be expected to comply with the provisions set out here. Where boat slips are provided, boat slips should be provided in accordance with the Table below.

Total Boat Slips in Facility	Minimum Number of Required Accessible Boat Slips
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12 plus 1 for each 100 or fraction thereof over 1000

Where the number of boat slips is not identified, each 12m of boat slip edge provided along the pier shall be counted as one boat slip for the purposes of this section.

### 9.2.3 General Guidelines

No general guidance is offered for this part.

### 9.2.4 Technical Guidelines

**a. Accessible Route:** Accessible routes, including gangways that are part of accessible routes, should comply with Appendix 4.

#### Exception:

Where an existing gangway or series of gangways is replaced or altered, an increase in the length of the gangway is not required to comply with these provisions.

Where the total length of the gangway or series of gangways serving as part of a required accessible route is at least 25m the maximum slopes required as part of Appendix 4 and Section L will not apply to gangways.

Where gangways are connected to transition plates, landings will not be required.

Where gangways and transition plates connect and are required to have handrails, handrail extensions will not be required. Where handrail extensions are provided on gangways or transition plates, such extensions are not required to be parallel with the ground or floor surface.

The cross slope of gangways, transition plates, and floating piers that are part of an accessible route should be 1:50 maximum when measured in the static position. Limited-use/ limited-application elevators or platform lifts will be permitted in lieu of gangways on accessible routes.

**b. Dispersion:** Accessible boat slips should be dispersed throughout the various types of slips provided. Note that this provision does not require an increase in the minimum number of boat slips required to be accessible.

**c. Boarding Piers at Boat Launch Ramps:** Where boarding piers are provided at boat launch ramps, at least 10%, but no less than one of each of the boarding piers should comply with Section L and Appendix 1, and is expected to be served by an accessible route that complies with Appendix 4.

#### Exceptions:

Where the total length of the gangway or series of gangways exceeds serving as part of an accessible route exceeds 10m, the maximum slope specified in Section L will not apply to gangways.



Where an accessible route serving a floating boarding pier or skid pier is located within a boat launch ramp, the portion of the accessible route located within the boat launch ramp is not excepted to comply with Section L.

**d. Accessible Boat Slips:** Accessible boat slips are expected to comply with the provisions set out here.

**Clearances:** Accessible boat slips should be served by a clear space 1650mm wide minimum and at least as long as the accessible boat slip. Every 3m maximum of linear pier edge serving the accessible boat slips shall contain at least one continuous clear opening 1650mm minimum in width.

**Exceptions:**

Edge protection 100mm high maximum and 50mm deep maximum shall be permitted at continuous clear openings.

In alterations to existing facilities, clear pier space shall be permitted to be located perpendicular to the boat slip, where the facility has at least one boat slip that complies with this section, and further compliance with the section would result in a reduction in the number of boat slips available or result in a reduction of the widths of existing slips.

**e. Cleats and Other Boat Securement Devices:** Cleats and other boat securement devices are not expected to comply with Appendix 6.

### 9.2.5 Illustrations



Figure 64: Ramped access to jetties, gangways and slips – note that ramp requirements are equally applicable in this particular circumstances.

[Source: [http://www.rco.wa.gov/images/ada\\_examples/Bremerton-gangway.jpg](http://www.rco.wa.gov/images/ada_examples/Bremerton-gangway.jpg)]

Prince Salman Center for Disability Research



*Figure 65: An example of using gentle ramping to allow the maximum number of users to gain access. Ideally, provision should be made for some form of guard or protection rail to prevent persons on the quay from falling into the water.*  
[Source: [http://www.rco.wa.gov/images/ada\\_examples/float.jpg](http://www.rco.wa.gov/images/ada_examples/float.jpg)]



## 9.3

## Miniature Golf

[note: largely extracted from U.S. Access Board. Accessible Miniature Golf Courses. Sep.2002].

### 9.3.1 Design Considerations

The guidelines outlined here provide the minimal requirements for implementing accessibility on miniature golf courses. It is impossible to provide a collection or compilation of the different course designs that are feasible. As such, these rules must be read in conjunction with the remainder of this document and the specific requirements set out here in order to provide a general level of accessibility for persons with disabilities. The emphasis here has been placed here on ensuring that individuals can access courses and use a variety of elements. Individual course operators and owners must decide if they want to expand on the minimal requirements set out here.

### 9.3.2 Application Consideration

Newly designed or newly constructed and altered miniature golf courses are expected to comply with this section.

At least fifty percent of holes on a miniature golf course shall be expected to comply with the provisions of S.3.4.a) to S.3.4.c) and shall be consecutive.

### 9.3.3 General Guidelines

No technical guidance is offered for this part.

### 9.3.4 Technical Guidelines

**a. Accessible Route:** An accessible route that complies with Appendix 4. should connect the course entrance with the first accessible hole and the start of play area on each accessible hole. The course shall be configured to allow exit from the last accessible hole to the course exit or entrance and should not require travel back through other holes.

**Accessible Route – Located On the Playing Surface:** Where the accessible route is located on the playing surface of the accessible hole, the following exceptions shall be permitted.

Where carpet is provided, the requirements of Appendix 2 should not apply.

Where the accessible route intersects the playing surface of a hole, 25mm maximum curb shall be permitted for a width of 920mm minimum.

Landings required in terms of Section L and Appendix 4. should be permitted to be 1220mm in length minimum.

Landing slopes shall be permitted to be 1:20 maximum.

Handrails are not required in terms of Section L, Appendix 4 and Appendix 5.

**Accessible Route – Adjacent to the Playing Surface:** Where the accessible route is located adjacent to the playing surface, the requirements of Section Appendix 4, Section L and Section M shall apply.

**b. Start of Play Areas:** Start of play areas at holes should have a slope not steeper than 1:50 and shall be required to be 2100mm minimum by 2100mm minimum.

**c. Golf Club Reach Range:** All areas within accessible holes where golf balls rest shall be 920mm maximum of an accessible routes having a maximum slope of 1:20 for 1550mm in length.

### 9.3.5 Illustrations



*Figure 66: The usage of suitable ground and floor surfaces is an integral element in achieving accessibility in miniature golf facilities.*

[Source: <http://www.access-board.gov/recreation/guides/min-golf.htm>]



## 9.4

## Play Areas

[note: largely extracted from U.S. Access Board. Accessibility Guidelines for Play Areas. Oct.2005].

### 9.4.1 Design Considerations

These requirements outline the minimum accessibility for play areas. It does not provide a collection or compilation of ideal playground designs, but provides the basic specifications for elements within a play area to create a general level of usability for children with disabilities as well as for access by adults with a disability. Emphasis has been placed here on ensuring integration and continuity of access across a diversity of play components within the designated play area.

As a type, play areas may be located in a variety of setting such as parks, shopping centers, public gathering areas etc.

The term play component refers to an element designed to generate specific opportunities for play, socialization and learning. They may be natural or manufactured, may stand alone or be part of a integrated play structure. Swings, water tables, playhouses, slides, climbers etc. are some examples.

For the purpose of this guidance, ramps, transfer systems, steps, decks and roof are not considered play components as they are generally used to link elements into an integrated whole and are not intended primarily for play.

An elevated play component is a play component that is approach above or below the general floor or ground level and is part of an integrated play structure.

### 9.4.2 Application Consideration

Newly designed and newly constructed play areas for children 2 and over and altered portions of existing play areas should comply with this part. Where separate play areas are provided within a theme park for specified age groups, each play area should comply with this section. Where play areas are designed or constructed in phases, this section should be applied so that when each successive addition is completed, the entire play area complies with all the applicable provisions of this part.

These provisions should apply to amusement attractions as far as is applicable.

### **Ground Level Play Components:**

Ground level play components should be provided in number and type as required in this section.

Where ground level play components are provided, at least one of each type shall be located on an accessible route.

### **Elevated Play Components:**

Where elevated play components are provided, at least 50 percent should be located on an accessible route.

### **Exceptions:**

Stairs, or stair-like structures, are not expected to comply with the provisions of Part M.

### **9.4.3 General Guidelines**

No technical guidance is offered for this part.

### **9.4.4 Technical Guidelines**

**a. Ground Level Play Components:** Where ground level play components are required to sit on accessible routes, such accessible routes shall comply with Section S.4.4.c) below. These ground level play components should also comply with the provisions of S.4.4.e) below.

**b. Elevated Play Components:** Where elevated play components are required to sit on an accessible routes, such accessible route should comply with Section S.4.4.c). Elevated play components connected by a ramp should comply with Section S.4.4.e)

**c. Accessible Routes:** At least on accessible route that complies with Section A.4., and modified by the provisions laid out here, should be provided.

### **Exceptions:**

Transfer systems complying with S.4.4.d) should be permitted to connect elevated play components, except where 20 or more elevated play components are provided, no more than 25 percent of the elevated play components should be permitted to be connected by transfer systems.



Where transfer systems are provided, an elevated play component should be permitted to connect to another elevated play component in lieu of an accessible route.

Platform lifts and wheelchair lifts should be permitted to be used as part of an accessible route.

**Location:** Accessible routes should be located within the boundary of the play area and should connect ground level play components and elevated play components, including entry and exit points of the play components.

**Protrusions:** Protrusions should adhere to Appendix 3.

**Clear Width:** The clear width of accessible routes should comply with Appendix 4, with the following exceptions:

In play areas less than 100 square meters, the clear width of accessible routes will be permitted to be narrowed to 900mm, provided that at least one turning space complying with Appendix 1 is provided where the restricted accessible route exceeds 10m in length.

The clear width of accessible routes connected elevated play components may be reduced to 850mm minimum for a distance of 610mm maximum provided that reduce width segments are separated by segments that are 1250mm in length and 950mm minimum in width.

The clear width of transfer systems connecting elevated play components should be permitted to be 750mm minimum.

**Ramp Slope and Rise:** Any part of an accessible route with a slope greater than 1:25 should be considered a ramp and comply with Section L, with the following exceptions:

The maximum slope for ramps connecting round level play components within the boundary of a play area should be 1:16.

Where a ramp connects elevated play components, the maximum rise of any ramp run should be 350mm.

**Handrails:** Handrails should be installed and located where required, with the following exceptions:

Handrails are not required at ramps located within ground level use zones.  
Handrail extensions should not be required.

**d. Transfer Systems:** Where transfer systems are provided to connect elevated play components, the transfer system should comply with the provisions set out here.

**Transfer Platforms:** Play Components that are required to be accessible should be provided with a transfer platform where transfer is intended to be from a wheelchair or other mobility device. Such platforms should have a level surface 450mm minimum in depth and 650mm minimum in width. Such transfer platforms should be located at a height between 450 – 500mm above the ground or floor.

**Transfer Space:** A level space complying with Appendix 1 should be provided on the unobstructed side of the transfer platform.

**Transfer Supports:** A means of support for transferring should be provided.

**Transfer Steps:** Transfer steps should be provided where movement is intended from a transfer platform to a level with elevated play components required to be located on an accessible route. Such steps should comply with the relevant parts of Section M.

**Transfer Supports:** A means of support for transferring should be provided.

**e) Play Components:** Ground level play components located on accessible routes and elevated play components connected by ramps should comply with this part.

**Maneuvering Space:** **Maneuvering space that complies with Appendix 1. should be provided** on the same level as the play components. Maneuvering space should have a slope not steeper than 1:50 in all directions. The maneuvering space required for a swing should be located immediately adjacent to the swing.

**Clear Floor or Ground Space:** Clear floor or ground space should be provided at the play components and comply with the requirements set out in Appendix 1 and Appendix 4. Clear floor or ground space should have a slope not steeper than 1:50 in all directions.

**Play Tables – Heights and Clearances:** Where play tables are provided, knee clearance and toe space should be provided that complies with Appendix 1. Play tables designed or constructed primarily for children ages 5 and under should not be required to provide knee clearance if the clear floor or ground space is arranged for parallel approach. Play tables should have their top surfaces located 710 – 865mm above finished floor or ground level.

**Entry Points and Seats – Heights:** Where a play component requires transfer to an entry point or seat, the entry point or seat should be located between 450 – 500mm above the clear floor or ground space. The entry point of slides are exempt from this requirement.



**Transfer Supports:** Where a play component requires transfer to the entry point or seat, a means of support for the transferring should be provided.

**f. Ground Surfaces:** Ground and floor surfaces located under play components should comply with the requirements of Appendix 2.

**g. Soft Contained Play Structures:** Where three or fewer entry points are provided to soft contained play structures, at least one entry should be located on an accessible route. Where four or more entry points are provided, at least two entry points should be located on an accessible route. Transfer systems such as platform or wheelchair lifts should be permitted to be used as part of an accessible route.



*Figure 67. Usage of clearly demarcated plays areas, and specialized equipment to provide equitable access are important elements in achieving some sense of accuracy.*

[Source: <http://www.cpdit01.com/resources/superintendent.accessible-playgrounds/general-information/Accessible%20Playground%20Features.pdf>].



Figure 68. As this clearly illustrates, the usage of equipment for the conveyance of children must be a fundamental consideration in the design of such facilities. Adopting a universal access approach creates the necessary universality and inclusivity that avoids the creation of ad-hoc and/ or specialized interventions.

[Source: <http://www.landscapeonline.com/research/article/11315>]



Figure 69. Playground facilities and equipment must take account and cognizance of the requirements of a variety of children, especially as the necessity to remain active is an important and critical component in child development. As this illustration demonstrates, it is possible to create surfaces and circulation routes with sufficient width to accommodate various needs.

[Source: [http://amybarzach.com/wordpress/wp-content/uploads/2008/11/8\\_girl\\_in\\_yellow\\_shirt\\_jaff\\_xl.jpg](http://amybarzach.com/wordpress/wp-content/uploads/2008/11/8_girl_in_yellow_shirt_jaff_xl.jpg)]



## Footpaths, Trails and Nature Reserves







## 10

## Footpaths, Trails and Nature Reserves

### 10.1

### External Areas

Opportunities for recreation, leisure and active sport participation should be available to all guests including persons with disabilities. All guests should enjoy equal access to and use of external facilities and outdoor areas. These include

- Outdoor recreational activities
- Landscaping
- Rest areas and benches
- Picnic tables
- Swimming pools

Consult the UABE Playbook Guidelines:

- B.4.1.1 Space and Reach Requirements
- B.4.1.2 Ground and Floor Surfaces
- B.4.1.3 Protruding and Overhead Objects
- B.4.1.4 Accessible Routes, Paths and
- B.4.1.5 Entrances
- B.4.1.7 Gates, Turnstiles and Openings
- B.4.1.8 Windows, Glazed Screens and
- B.4.1.9 Ramps
- B.4.1.10 Curb Ramps, Pedestrian Crossings, Traffic Islands and Medians
- B.4.1.11 Stairs
- B.4.1.12 Handrails
- B.4.3.1 Drinking Fountains
- B.4.3.2 Viewing Spaces at Fixed Seating
- B.4.3.3 Elevated Platforms
- B.4.3.7 Tables, Counters, Work Surfaces and Speaker Podiums
- B.4.3.8 Information, Reception & Service Counters
- B.4.3.11 Balconies, Porches, Terraces & Patios
- B.4.3.14 Landscaping Materials & Plantings
- B.4.3.15 Rest Areas and Benches
- B.4.3.16 Picnic Tables
- B.4.3.17 Street Furniture
- B.4.4.13 Lighting
- B.4.4.14 Materials and Finishes
- B.4.4.15 Texture and Colour
- B.4.4.16 Acoustics
- B.4.5.2 Outdoor Recreational Facilities



*Figure 70. Providing sufficient space for multiple usages.*  
[Source: <http://fwpiis.mt.gov/content/2883,500,500,1.jpg>]



*Figure 71. Drinking fountains at multiple heights. Although useful, absolute best practice would be ensure that there is a vertical base from the spout to the floor.*

[Source: <http://www.cpdit01.com/resources/superintendent.accessible-playgrounds/general-information/Accessible%20Playground%20Features.pdf>]

## 10.2

## Hiking Trails

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.2.1 Design Considerations

Trails include, but are not limited to, trails through forested or wildlife parks, a shared use paths or country paths. It does not include sidewalks, pathways in amusement parks, commercial theme parks, carnivals or pathways between buildings.

Increased trail experiences can be provided to persons with disabilities by following the recommendations and guidance set out in this part. The degree of accessibility, either fully or partially accessible, is usually dependent on resource, topographic or other constraints. Some trails may not be fully accessible in that they cannot meet these requirements throughout the length of the trail. However, improvements could be made to any trail to expand the range of visitor use it can accommodate.

### 10.2.2 Application Considerations

Trails connecting to trailheads or designated accessible trails should comply with the provisions of this section. Where new trails are designed or existing trails modified or altered, they need to comply with the requirements of this part except where technically infeasible.

It is sometimes the case that trails constructed for pedestrian use may have other uses, e.g. bicycling. This section applies only to paths that are designated for use by pedestrian traffic. Hence a trail designed specifically for biking would not be considered a “pedestrian trail” whether or not pedestrians actually use the trail. However, a multi-use trail that is designated for both hiking and biking, for example, would be considered a pedestrian trail.

Where puncheon and trail bridges are constructed as part of a trail, they should be considered trail features and part of the trail tread, i.e. they should comply with the requirements for trails.

On any trail actively managed for pedestrian sand/ desert use, trails should comply with the requirements set out here.



### 10.2.3 General Guidelines

No general guidance is provided for this part.

### 10.2.4 Technical Guidelines

**a. Protruding Objects:** Protruding objects on trails should comply with the provisions of Appendix 3.

**b. Surface:** Trail surfaces should comply with the provisions of Appendix 2 as far as possible.

**c. Clear Tread Width:** The clear tread width of trails should comply with the requirements of Appendix 4. Where, in an alteration/ modification, to an existing trail, it is infeasible to obtain a clearance in compliance with Appendix 4, the clear tread width may be reduced to 850mm.

**d. Openings:** Openings in trail surfaces should be of a size that does not permit the passage of a 13mm diameter sphere. Elongated openings should be placed so that the long dimension is perpendicular or diagonal to the main direction of travel.

**e. Tread Obstacles:** Where tread obstacles, such as natural features, exist on trails, the obstacles should not exceed 50mm in height, maximum. Where running or cross-slopes are 1:20 or less, tread obstacles should be permitted to be 75mm high maximum.

**f. Passing Spaces:** Where the clear width of trails is less than 1500mm, passing spaces should be provided at minimum intervals of 25m. Passing spaces, where provided, should conform to the requirements of Appendix 4. Where noxious plants, steep or difficult terrain or limited sight lines are present, the provision of more frequent passing spaces should be considered. Passing spaces may be located to one side of the trail and co-located with resting intervals.

**g. Bridges/ Boardwalks:** Passing spaces that comply with the requirements of Appendix 4 should be provided at both sides of bridges, boardwalks and other features that cause the usable tread width to be raised off the natural ground level.

**h. Cross-Slopes:** Cross-slopes should not exceed 1:20 maximum.

**i. Running-Slope:** The running slope should require with one of the conditions present in the table below:

Total Boat Slips in Facility	Minimum Number of Required Accessible Boat Slips
1:20	Allowed over the entire length of the trail, for any distance.
1:15	Running slope may be 1:15 for a maximum of 50m. Resting spaces should be provided at the foot and head of such slopes.
1:12	Running slope may be 1:12 for a maximum of 10m. Resting spaces should be provided at the foot and head of such slopes.

**j. Rest Areas:** Resting areas should comply with the provision of Section I. below.

**k. Edge Protection:** Where edge protection is provided, it should be 75mm high minimum.

## 10.2.5 Illustrations



Figure 72. Level gangways provide wheeled users, and persons with difficulty walking, with opportunities to access hiking and trail experiences. The usage of lowered portions prevents wheels from slipping over gangway ends, as well as providing a mechanism for persons with functional visual limitations to detect and react accordingly, to gangway edges.

[Source: [http://www.nationalparkstraveler.com/files/storyphotos/Thundering\\_Falls\\_Boardwalk\\_rasudduth\\_via\\_Flickr.jpg](http://www.nationalparkstraveler.com/files/storyphotos/Thundering_Falls_Boardwalk_rasudduth_via_Flickr.jpg)]



*Figure 73. Where achievable, level trails with clear sign-posting open opportunities for tourists to experience such trails.*  
[Source: <http://www.flickr.com/photos/kevfary/3121188968/in/pool-wheelchairs>]



## 10.3 Outdoor Recreation Access Routes

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.3.1 Design Considerations

Outdoor recreation access routes refer to continuous unobstructed paths designed for pedestrian use that connect accessible elements within a picnic area, camping unit or designated trailhead.

Outdoor recreation access routes may also incorporate the following elements:

- Camping facilities such as camping spaces, accessible camping space parking and tent pad and tent platforms;
- Fixed picnic tables;
- Fixed pit toilets;
- Grills;
- Mobility device storage facilities;
- Fixed trash and recycling containers;
- Utility sinks;
- Utilities
- 

In general, the recommendations for outdoor access routes are identical to those for accessible trails, with the exceptions outlined in this part.

### 10.3.2 Application Considerations

At least one outdoor recreation access route should be provided, that complies with the provisions of this part that links and connects accessible elements within an outdoor recreation area.

Outdoor recreation access should coincide with or be located in the same area as general circulation paths.

Where multiple cooking surfaces are provided in an area, at least 40 percent, but no fewer than two, of the cooking surfaces, should be connected by an outdoor recreation access route.

Where multiple benches are provided in an area, at least 40 percent, but no fewer than two, of the benches should be connected by an outdoor recreation access route.



### Exceptions:

Elements located on trails should not be required to be connected by an outdoor recreation access route.

Where multiple picnic tables are provided in an area, at least 40 percent, but no fewer than two, of the picnic tables, should be connected by an outdoor recreation access route.

Where multiple fire rings are provided in an area, at least 40 percent, but no fewer than two, of the fire rings, should be connected by an outdoor recreation access route.

### 10.3.3 General Guidelines

No general guidance is provided for this part.

### 10.3.4 Technical Guidelines

- a. **Protruding Objects:** Protruding objects on outdoor recreation access routes should comply with the provisions of Appendix 3.
- b. **Surface:** The surface of outdoor recreation access routes should be firm and stable, and comply as far as possible with the requirements of Appendix 2.
- c. **Clear Tread Width:** The clear tread width of outdoor recreation access routes should comply with the provisions of Appendix 4. Where, in alterations/ modifications to outdoor recreation access routes, it is technically infeasible to comply, a minimum clear tread width of 850mm should be permitted.
- d. **Openings:** Openings in the surfaces of outdoor recreation access routes should be of a size that does not permit the passage of a 13mm diameter sphere. Elongated openings should be placed so that the long dimension is perpendicular or diagonal to the main direction of travel.
- e. **Tread Obstacles:** Where tread obstacles exist on outdoor recreation access routes, the obstacles should not exceed 25mm high maximum.
- f. **Passing Spaces:** Where the clear tread width of outdoor recreation access routes is less than 1500mm, passing spaces should be provided at intervals of 50m. Such passing spaces should comply with the provisions of Appendix 4.
- g. **Cross-Slope:** The cross-slope on outdoor recreation access routes should not exceed 1:25 maximum.
- h. **Running Slope:** The running slope should comply with the provisions set out in the table below:

Running Slope	Usage Allowance
1:25	Allowed over the entire length of the outdoor recreation access route, for any distance.
1:20	Running slope may be 1:20 for a maximum of 50m. Resting spaces should be provided at the foot and head of such slopes.
01:15:00 AM	Running slope may be 1:15 for a maximum of 10m. Resting spaces should be provided at the foot and head of such slopes.

**i. Rest Areas:** Rest areas should comply with the provisions of Section I.

**j. Edge Protection:** Where edge protection is provided, it should be 75mm high minimum.

### 10.3.5 Illustrations



*Figure 74. The usage of raised and leveled walkways and circulation routes, with intermittent passing areas constitutes an essential service offering for parks and tourist services relying on exterior interfaces.*

[Source: <http://www.americantrails.org/photos/accessible.jpg>]



*Figure 75. This image clearly illustrates the methods in which the usability of vistas, overlooks and exterior areas can be designed in a manner allowing the maximum feasible physical accessibility. Note, in particular, the usage of clear protective devices, which physically prevent harm, the clear distinction between environment and path, as well as the nature of the pathway surface itself.*

[Source: [http://labor.alaska.gov/ada/parks/region3/chugach\\_sp/misc/indian\\_rest\\_area/indian\\_ra\\_overlook\\_a2.jpg](http://labor.alaska.gov/ada/parks/region3/chugach_sp/misc/indian_rest_area/indian_ra_overlook_a2.jpg)]

## 10.4 Beach Access Routes

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.4.1 Design Considerations

Beach access routes are continuous unobstructed paths designed for pedestrian use that cross the surface of a beach.

Beach access routes will link main trail routes to the high-tide line at adjacent coastal beaches and the mean high-water level at rivers and creeks.

### 10.4.2 Application Considerations

Beach access routes should comply with the provisions of this part where the access route or means of access is new, or where alterations/ additions/ modifications are made to existing beach access routes. Beach access that are designated as being accessible should comply with the requirements of this Section.

Where new construction is undertaken on a beach, a minimum of one beach access route should be provided for every half-kilometer of beach.

#### Exceptions:

For existing beaches, a temporary beach access route should be permitted in lieu of establishing a permanent access route.

Routes which are created solely for shoreline maintenance are not required to comply with this section.

Routes provided solely as undeveloped public easements should not be required to be comply with this section.

Where existing beaches are replenished for beach nourishment, a beach access route should not be required.



### 10.4.3 General Guidelines

No general guidance is offered for this part.

### 10.4.4 Technical Guidelines

**a. Protruding Objects:** protruding objects on beach access routes should comply with the provisions of Appendix 3.

**b. Surface:** The surface of beach access routes should be firm and stable, and comply as far as possible with the requirements of Appendix 2.

**c. Location:** A beach access route should extend to the high tide level, mean river bed level, or the normal recreation water level.

**d. Clear Tread Width:** The clear tread width of beach access routes should comply with the provisions of Appendix 4. Where, in alterations/ modifications to beach access routes, it is technically infeasible to comply, a minimum clear tread width of 850mm should be permitted.

**e. Openings:** Openings in the surfaces of beach access routes should be of a size that does not permit the passage of a 13mm diameter sphere. Elongated openings should be placed so that the long dimension is perpendicular or diagonal to the main direction of travel.

**f. Obstacles:** Where obstacles exist on beach access routes, the obstacles should not exceed 25mm high maximum.

**g. Passing Spaces:** Where the clear tread width of beach access routes is less than 1500mm, passing spaces should be provided at intervals of 50m. Such passing spaces should comply with the provisions of Appendix 4.

**h. Turning Spaces:** Turning spaces should be provided at the high tide level, mean river bed level, normal recreation water level, or end of the beach access route.

**i. Cross-Slope:** The cross-slope on beach access routes should not exceed 1:25 maximum.

**j. Running Slope:** The running slope should comply with the provisions set out in the table below:

Running Slope	Usage Allowance
1:25	Allowed over the entire length of the beach access route, for any distance.
1:20	Running slope may be 1:20 for a maximum of 50m. Resting spaces should be provided at the foot and head of such slopes.
1:15	Running slope may be 1:15 for a maximum of 10m. Resting spaces should be provided at the foot and head of such slopes.

**k. Edge Protection:** Where edge protection is provided, it should be 75mm high minimum.

**l. Storage Facilities for Beach Assistive Devices:** Beach assistive devices, such as all-terrain or aquatic wheelchairs, can often provide the most integrated and independent experience for people with mobility limitations. Storage facilities for assistive devices should be located along an accessible outdoor recreation or beach access route and should meet the accessibility recommendations described for storage facilities in this section.

#### 10.4.5 Illustrations



Figure 76. An example of the usage of ramping to achieve access to beach surfaces. This particular example illustrates an important principle within the framework of universal access, namely achieving accessibility on the main circulation path instead of specialized provision.

[Source: <http://www.wheeliegood.com/pages/parks-amp-beaches.php>]



*Figure 77. Where possible, provision for gaining access to water by the usage of ramping allows the beach and sea-side experience to be maximized for all users.*

[Source: <http://www.greekhotel.com/peloponnese/loutraki/sirens/img/02.jpg>]



*Figure 78. An illustration of a beach wheelchair.*

[Source: [http://beachmobility.com/images/IMG\\_0242s.jpg](http://beachmobility.com/images/IMG_0242s.jpg)]



Figure 79. The usage of specifically designated routing to allow usage to beaches without specialized equipment (such as beach wheelchairs) allows independence in achieving access to a particular service.

[Source: <http://www.veragraham.com/pelee/images/runway.jpg>]



## 10.5 Camping Facilities

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.5.1 Design Considerations

Camping facilities includes facilities such as recreational camping vehicle or trailer spaces, tent camping spaces or camping shelters.

### 10.5.2 Application Considerations

Camping facilities, as defined above, should be provided in accordance with the table below:

Number of Camping Spaces	Minimum Number of Accessible Camping Spaces
1	1
2 to 25	2
26 to 50	3
51 to 75	4
76 to 100	5
101 to 150	7
151 to 200	8
201 to 300	10
301 to 400	12
401 to 500	13
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100 over 1000

### 10.5.3 General Guidelines

No general guidance is offered for this part.

### 10.5.4 Technical Guidelines

- a. General Use Parking Areas:** In campgrounds, at least one recreational camping vehicle or trailer parking space should be provided for each camping space required to be accessible.
- b. Clear Space:** Clear space for forward or side reach in compliance with Appendix 1 should be provided around tent pads or tent platforms.
- c. Surface:** The surface of tent pads and tent platforms, the clear space required above shall be firm and stable and comply as far as possible with the provisions of Appendix 2. Tent pad surfaces should allow the use of tent stakes and other securement devices.
- d. Slope:** Tent pads and tent platforms, and the clear space required above, should have a 1:50 maximum slope in all directions.
- e. Edge Protection:** Curb walls, railing or projecting surfaces that prevent people from slipping off the tent platform should be provided. Curbs should be a minimum of 75mm high.
- f. Connection:** The surface of the tent platform should be accessed by either a ramp, by transfer or directly from the adjacent ground surface.



## 10.5.5 Illustrations



Figure 80. Achieving external access – note the usage of clear floor surfaces and the re-routing of pathways to form ramped access. [Source: [http://www.ncaonline.org/files/nca\\_images/camp/camp0006.jpg](http://www.ncaonline.org/files/nca_images/camp/camp0006.jpg) ]



Figure 81. An example of an external bench and viewing area, where physical access has been achieved through the usage of compliant floor surfaces. [Source: [http://www.rco.wa.gov/images/ada\\_examples/Grills.jpg](http://www.rco.wa.gov/images/ada_examples/Grills.jpg)]



Figure 82. An accessible camping bench with knee and toe clearance  
[Source: [http://www.abilities.ca/health\\_activity/2008/12/15/wilderness\\_tips\\_picnic\\_table\\_530.jpg](http://www.abilities.ca/health_activity/2008/12/15/wilderness_tips_picnic_table_530.jpg)]

## 10.6

## Cooking Surfaces, Grills and Pedestal Grills

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.6.1 Design Considerations

The main considerations in the provision of cooking surfaces lies in the provision of suitable space to be able to interact around and make use of these surfaces. A secondary consideration is that, typically, cooking surfaces, become arena's for social engagement and interaction.

### 10.6.2 Application Considerations

Where one cooking surface, grill or pedestal grill is provided in an area, it should be required to comply with the provisions of this section.

Where more than one cooking surface, grill or pedestal grill is provided in an area, at least 50 percent, but no fewer than two, should be required to comply with the requirements of this section.

Cooking surfaces, grills and pedestal grills required to be accessible should be dispersed among the types of provided.

### 10.6.3 General Guidelines

No general guidance is provided for this part.

### 10.6.4 Technical Guidelines

- a. **Clear Space:** All usable portions of a cooking surface should be provided with clear space that complies with Appendix 1. Provision may be made for parallel or forward reach access to usable portions.
- b. **Cooking Surface Height:** The cooking surface should be 380mm minimum and 865mm maximum above the ground or floor surface.
- c. **Operable Parts:** Operable parts should comply with the provisions of Appendix 6.

### 10.6.5 Illustrations

No illustrations offered for this part.



## 10.7 Fire Rings

Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.7.1 Design Considerations

A fire ring is designed to contain a fire that is built directly upon the ground. Fire rings have no bottom, and are circular or semi-circular, and made of forged metal, stones, concrete etc. which surround and contain a fire.

### 10.7.2 Application Considerations

Where a single fire ring is provided in an area, it should be required to comply with the provisions of this section.

Where two or more fire rings are provided in an area, at least 50 percent, but no fewer than two, of the fire rings should be required to comply with the provisions of this section.

Fire rings that are required to be accessible should be dispersed among the types provided.

### 10.7.3 General Guidelines

No general guidance is provided for this part.

### 10.7.4 Technical Guidelines

**a. Clear Space:** All usable portions of a fire ring should be provided with clear space that complies with Appendix 1. Provision may be made for parallel or forward reach access to usable portions.

**b. Fire Surface Height:** The fire building surface should be a minimum of 250mm above the ground or floor surface.

**c. Raised Edge:** Where a raised edge or curb is provided on a fire ring, the combined distance over the edge or curb down to the fire building surface should be 600mm maximum.

## 10.7.5 Illustrations



*Figure 83. A fire-ring built in a manner such that physical access may be gained. Note the raising of the ring above the ground, which provides both safety for children and other users, as well as ensuring that persons with functional visual limitations are able to detect the position of the fire-ring.*

[Source <http://www.title-3.com/images/ToddHandiFireRing.jpg>]



## 10.8 Wood Stoves and Fireplaces

Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.

### 10.8.1 Design Considerations

Wood stoves and fireplaces are pre-constructed elements intended to contain an entire fire. They are typically found in more developed locales.

### 10.8.2 Application Considerations

Where wood stoves and fireplaces are provided, each wood stove and fireplace should comply with this section.

### 10.8.3 General Guidelines

No general guidance is provided for this part.

### 10.8.4 Technical Guidelines

- a. **Clear Space:** All usable portions of wood stoves and fireplaces should be provided with clear space that complies with Appendix 1. Provision may be made for parallel or forward reach access to usable portions.
- b. **Operable Parts:** All usable parts of wood stoves and fireplaces should comply with the requirements of Appendix 6.

## 10.8.5 Illustrations



*Figure 84. The height of fireplaces is an important component for three reasons: firstly, for safety both in terms of containing fire and avoiding children and seated users falling into fireplaces; secondly, it is essential that fireplaces and wood stoves are located at the right height for forward and side reach into the fireplace to feed it, and finally, detection of fireplaces by long or white cane users is difficult without cordoning off fireplace areas; raised fireplaces, provided that they provide sufficient warning, negate this particular problem.*

[Source: <http://luxury-ideas.com/page/2/>]





## 10.9

## Overlooks

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.9.1 Design Considerations

Overlooks and viewing areas are specifically designed to provide an observation of a vista or view, or to a specific point of interest, e.g. such as the view to a mountain range or down into a valley or to a waterfall or geologic formation. Each location provides a viewing opportunity to one or more distinct points of interest must have at least one unrestricted viewing area for each viewing opportunity. Safety barriers, guardrails and walls used to protect the visitor from an edge or drop off, may not restrict this viewing opportunity. Designs include see-through panels in walls, screened openings or elevated platforms away from guarded edge will provide an individual seated in a wheelchair or other mobility device with the same view.

### 10.9.2 Application Considerations

Where viewing areas are provided on designated overlooks, each viewing area should comply with this section. Where multiple viewing areas are provided at a designated overlook, at least one of each viewing opportunity for distinct points of interest should be expected to comply with this part, and not all viewing areas.

### 10.9.3 General Guidelines

No general guidance is offered for this section.

### 10.9.4 Technical Guidelines

- a. **Turning Space:** Viewing areas should provide sufficient space for a wheelchair or mobility aid user to execute a 360-degree turn. Such space should comply with the provisions of Appendix 1.
- b. **Unrestricted Viewing Opportunities:** Each location that provides viewing opportunities for distinct points of interest should provide at least one unrestricted viewing opportunity for each distinct point of interest that accommodates eye levels between 850mm minimum and 1300mm maximum.

## 10.9.5 Illustrations



*Figure 85. Designation of overlook areas and the provision of 'safe' areas with color-contrasting provides not only areas of use for seated users, but the achieved color-contrasting provides some level of warning of the position of telescopes and similar devices. The lowering of telescopes, as shown here, also allows children and seated persons to make use of such equipment.*

[Source: [http://www.njpalisades.org/taranto\\_1273.jpg](http://www.njpalisades.org/taranto_1273.jpg)]





## 10.10 Storage Facilities for Assistive Devices

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.10.1 Design Considerations

A storage facility for assistive devices is intended to provide storage for a particular usage type of assistive device e.g. beach chair, which is made available for public usage on certain conditions (e.g. rental-usage etc.). The intention is for the user to be able to withdraw the assistive device from the storage facility, and lock their own chair or mobility assistive device, in the storage facility.

### 10.10.2 Application Considerations

Where storage facilities are provided and individuals using wheelchairs or other individual mobility devices transfer from one individual mobility device to another mobility device, at least one storage facility should comply with this section.

### 10.10.3 General Guidelines

No general guidance is provided for this part.

### 10.10.4 Technical Guidelines

**a. Clear Space:** Clear space for forward access should be provided in accordance with Appendix 1.

**b. Mobility Device Storage:** Storage facilities designed for mobility storage devices should be 1000mm high minimum; 850mm wide minimum and 1200mm deep minimum.

**c. Operable Parts:** Operable parts of mobility device storage facilities should comply with Appendix 6.

### 10.10.5 Illustrations

No illustration provided for this section.

## 10.11 Telescopes and Periscopes

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.11.1 Design Considerations

Telescopes and periscopes need to be designed for people of varying height, including children, people seated and those standing. Several options are available at locations where there is only one telescope or periscope, such as providing an adjustable scope, an adjustable seat, or a single base with two viewing scopes located at differing heights. Use of a swing away seat or a small step or ring platform attached to the mounting post of the instrument would be useful for persons of short stature or children.

### 10.11.2 Application Considerations

Where telescopes or periscopes are provided in an area, at least 20 percent, but no fewer than one, of the telescopes or periscopes should comply with the provisions of this part. Where only one telescope or periscope is provided, it should comply with this section and should also be usable from a standing position.

### 10.11.3 General Guidelines

No general guidance is provided for this part.

### 10.11.4 Technical Guidelines

- a. **Clear Space:** A clear space for forward and side approach should be provided at telescopes and periscopes that comply with the provisions of Appendix 1. Clear floor spaces should comply with the requirements of Appendix 2 and Appendix 3.
- b. **Operable Parts:** Operable parts should comply with the requirements of Appendix 6.
- c. **Eye Piece:** The eye piece should be usable from the seated position for viewing each point of interest.



## 10.11.5 Illustrations



Figure 86. Using telescopes at complaint heights enhances the experience of facilities and tourist service offerings. Where children are able to make usage of such devices, it can transform a tourist trip into a memorable experience.

[Source: <http://www.playlsi.com/Explore-Products/Product-Lines/Outdoor-Playsystems/Evos/More-Playground-Fun/Navigator-Periscope-Reach-Panel/Pages/Navigator-Reach-Panel.aspx>]



Figure 87. An example of a lowered telescope in use.

[Source: [http://labor.alaska.gov/ada\\_parks/region1/eagle\\_beach/Eagle%20Beach%20SRA%20accessible%20telescope.jpg](http://labor.alaska.gov/ada_parks/region1/eagle_beach/Eagle%20Beach%20SRA%20accessible%20telescope.jpg)]

## 10.12 Outdoor Rinsing Showers

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.12.1 Design Considerations

Outdoor rinsing showers are facilities that permit people to wash off sand, water, dirt or debris. They are not designed for bathing, as they generally do not offer privacy and people are usually not permitted to disrobe.

### 10.12.2 Application Considerations

Where a single rinsing shower is provided, it is required to comply with the provisions of this section.

Where two or more rinsing showers are provided at a location, at least one should comply with the provisions of this section and should have a low shower spray head, and at least one should comply with the provision of this section and have a high shower spray head.

### 10.12.3 General Guidelines

No general guidance is provided for this part.

### 10.12.4 Technical Guidelines

**a. Clear Space:** A clear space of 1500mm diameter minimum should be provided at outdoor rinsing showers and should be located so that the water from the shower head is directed toward the center of the clear space. The clear space should have a firm and stable surface, and should have a 1:50 maximum slope in all directions, and comply, as far as possible, with the requirements of Appendix 2.

**b. Grab Bars:** A vertical grab-bar and a horizontal grab-bar should be provided that comply with the requirements set out in this section.

**c. Vertical Grab-Bar:** Where the shower-head is mounted on a post, the vertical grab-bar should be provided under the shower head and should start 800mm maximum above the floor and extend to within at least 75mm of the shower head.



**d. Horizontal Grab-Bar:** A horizontal grab-bar that extends 450mm minimum in both directions from the centerline of the shower head should be provided under the shower head. The grab-bar should be provided with its lowest edge 850mm minimum to 900mm maximum above the floor.

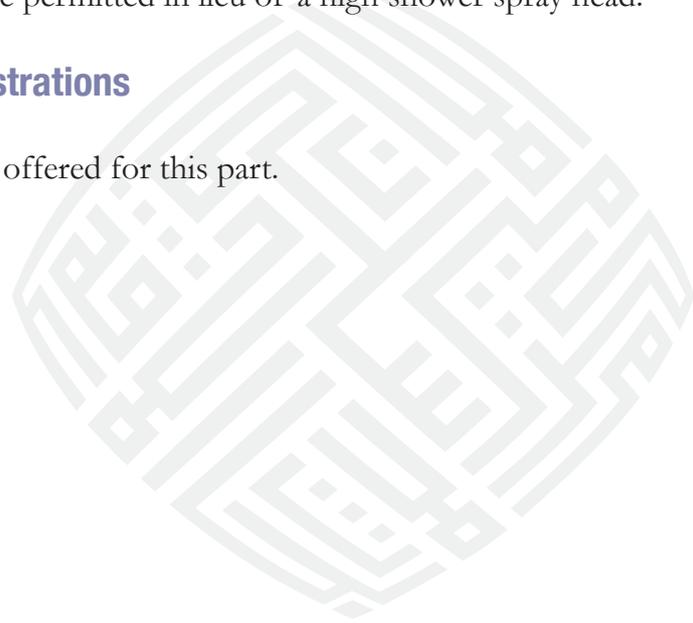
**e. Controls:** Controls should comply with Appendix 6. If self-closing controls are used, the controls should remain open for at least 10 seconds.

**f. Low Shower Spray Head:** A fixed shower spray head should be provided and located 1200mm minimum to 1400mm maximum above the ground or floor. A hand-held shower spray unit will be permitted in lieu of a low shower spray head.

**g. High Shower Spray Head:** A fixed shower spray head should be provided and should be located 1800mm minimum above the ground or floor. A hand-held shower spray unit will be permitted in lieu of a high shower spray head.

### 10.12.5 Illustrations

No illustrations offered for this part.



## 10.13 Trash and Recycling Containers

[Largely extracted from Architectural and Transportation Barriers Compliance Board. Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Federal Register, 36 CFR Part 1195: 2007.]

### 10.13.1 Design Considerations

Trash and recycling containers intended for use in park and rural settings typically have specific animal-proofing measures that are intended to prevent animals (e.g. birds, monkeys etc.) from gaining access to these containers.

### 10.13.2 Application Considerations

Where trash and recycling containers are provided, each trash or recycling container should comply with the provisions of this section.

### 10.13.3 General Guidelines

No general guidance is provided for this part.

### 10.13.4 Technical Guidelines

**a. Clear Space:** A clear space that complies with Appendix 1 should be provided at trash and recycling containers. Provision may be made for parallel or forward reach access to usable portions.

**b. Operable Parts:** Operable parts should comply with the requirements of Appendix 6.

### 10.13.5 Illustrations

No illustration provided for this section.



## Corniche and Waterfront Areas







## 11.1 Boardwalks

### 11.1.1 Design Considerations

Boardwalks at cornice and waterfront areas provide an integrated experience allowing users to move close to bodies of water. Boardwalks may take the form of slatted wood supported structures, concreted structures, steel-structures etc.

### 11.1.2 Application Considerations

All boardwalk areas should conform to the requirements of this section.

### 11.1.3 General Guidelines

No general guidance is provided for this part.

### 11.1.4 Technical Guidelines

- a. **Minimum Width:** Boardwalks should have a minimum width of 2000mm.
- b. **Floor Surface:** Boardwalks should incorporate surfaces constructed of firm, non-slip materials. Where wooden planks are used, they should be laid perpendicular to the path of travel and have joints no greater than 6mm.
- c. **Edging:** Boardwalks should incorporate a continuous curbed edge where the grade drop-off on any side of the boardwalk is greater than 200mm. The curbed edge should be at least 75mm high and of a contrasting color to the surrounding terrain.
- d. **Handrails:** Handrails, guards or other suitable barriers should be used where the grade drop-off is greater than 450mm.
- e. **Access:** Access points to boardwalks should allow easy wheelchair access.
- f. **Furniture:** Benches, garbage cans, drinking fountains etc. where provided, should be located adjacent to the boardwalk on firm, level surfaces at the same elevation as the boardwalk.



## 11.1.5 Illustrations



*Figure 88. Using clear and level surfaces, moving equipment out of circulation routes and providing protection at beach edges are all important elements of achieving universal access.*

[Source: <http://www.morganswonderland.com/Morgans-Wonderland-Special-Needs-Park-Images/Park-Attractions/Walk-and-Roll-Path.jpg>]



*Figure 89. Using color to demarcate spaces, as well as differences in floor surfaces to indicate different usages, contribute to the usability of environments. This is also a good example of how bollards can be employed to stop vehicular traffic, yet still retain the sufficient width to allow assistive mobility devices to gain access.*

[Source: IDC Consultants]

## Marinas and Boating Facilities







## 12.1 Gangways

[Largely extracted from United States Access Board. Accessible Fishing Piers and Platforms. 2003.; United States Access Board. Accessible Boating Facilities. 2003.; Architectural and Transportation Barriers Compliance Board. Accessibility Guidelines for Buildings and Facilities: Recreation Facilities. Federal Register, 36 CFR Part 1191: 2002.]

### 12.1.1 Design Considerations

A gangway is a variable-sloped pedestrian walkway linking a fixed structure or land with a floating structure.

Gangways designed for the least possible slope will provide more independent access for persons with disabilities.

### 12.1.2 Application Considerations

Where new gangways are constructed or alterations to primary function areas of gangways, such as boat slips or boat docks, gangways should conform to the requirements set out in this section.

### 12.1.3 General Guidelines

No general guidance is provided for this part.

### 12.1.4 Technical Guidelines

**a. Gangway Slopes and Rise Exceptions – Fixed Piers:** Gangways must be designed to provide for a maximum 1:15 slope and should not exceed a length of 25 meters.

**b. Gangway Slopes and Rise Exceptions – Floating Piers:** Gangways must be designed to provide a slope not less than 1:20 when the floating pier is still and not less than 1:12 in a storm condition. The maximum length of the gangway should not exceed a length of 25 meters.

**c. Transition Plates:** Transition plates are sloping pedestrian walking surfaces located at the end of a gangway. Gangways are not required to have landings at the end, if transition plates are provided. If the slope of the transition plate is greater than 1:20, the transition plate must have a landing at the non-gangway end of the transition plate.



**d. Handrail Extensions:** Handrail extensions are not required where gangways and transition plates connect and both are provided with handrails.

**e. Cross Slopes:** The cross slopes of gangways, transition plates and floating piers that are part of an accessible route must be designed and constructed not to exceed a maximum of 1:50. Gangways and piers. Once plated in the water, measurements, absent live loads, are to be made from a static condition (i.e. absence of movement that results from wind, waves, etc.). Where floating piers are grounded out due to low water conditions, slope requirements would not apply.

**f. Elevators and Platform Lifts:** In addition to regular elevators, limited use/ limited application or platform lifts may be used instead of gangways as part of an accessible route connecting floating piers.

### 12.1.5 Illustrations



*Figure 90. This illustration indicates some of the features that may contribute to creating access: almost level through-surfaces, ramped access across different heights, railings to designate ends of platforms and flexible junctions.*

[Source: <http://westseattleblog.com/blog/wp-content/uploads/2010/03/gangwaysouther.jpg>]



*Figure 91. An example of an environmental feature providing access to a boat; in this case this has been achieved through the main point of access negating the need for specialized equipment.*

[Source: <http://westseattleblog.com/blog/wp-content/uploads/2010/03/gangwaysouth.jpg>]



## 12.2 Boat Slips

[Largely extracted from United States Access Board. Accessible Fishing Piers and Platforms. 2003.; United States Access Board. Accessible Boating Facilities. 2003.; Architectural and Transportation Barriers Compliance Board. Accessibility Guidelines for Buildings and Facilities: Recreation Facilities. Federal Register, 36 CFR Part 1191: 2002.]

### 12.2.1 Design Considerations

A boat-slip is the portion of a pier, main pier, finger pier or float where a boat is berthed or moored, or used for embarking or disembarking.

For the purposes of this guidance, boarding piers that are part of boat launch ramps are also classified as boat slips.

Accessible boat slips do not need to be marked and are not reserved in the same way as accessible vehicle parking spaces.

### 12.2.2 Application Considerations

Where boat slips are provided, the number of boat slips that are required to be accessible must comply with the table below:

Total Slips in Facility	Minimum Accessible Slips
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12 plus 1 for each 100 or fraction thereof

In determining the total number of boat slips, piers not typically thought of as providing boat slips where boats can be moored, such as a fuel pier, are also included in determining the total number of slips at the facility.

If boat slips at a facility are not identified or demarcated by length, each 10 meters of boat slip edge along the perimeter of a pier will be counted as one boat slip.

### 12.2.3 General Guidelines

No general guidance is provided for this part.

### 12.2.4 Technical Guidelines

a) **Accessible Route:** Accessible routes, including gangways that are part of accessible routes, should comply with Appendix 4.

#### **Exception:**

Where an existing gangway or series of gangways is replaced or altered, an increase in the length of the gangway is not required to comply with these provisions.

Where the total length of the gangway or series of gangways serving as part of a required accessible route is at least 25m the maximum slopes required as part of Appendix 4. and Section L will not apply to gangways.

Where gangways are connected to transition plates, landings will not be required. Where gangways and transition plates connect and are required to have handrails, handrail extensions will not be required. Where handrail extensions are provided on gangways or transition plates, such extensions are not required to be parallel with the ground or floor surface.

The cross slope of gangways, transition plates, and floating piers that are part of an accessible route should be 1:50 maximum when measured in the static position. Limited-use/ limited-application elevators or platform lifts will be permitted in lieu of gangways on accessible routes.

**b. Dispersion:** Accessible boat slips should be dispersed throughout the various types of slips provided. Note that this provision does not require an increase in the minimum number of boat slips required to be accessible.

**c. Boarding Piers at Boat Launch Ramps:** Where boarding piers are provided at boat launch ramps, at least 10%, but no less than one of each of the boarding piers should comply with Section L and Appendix 4, and is expected to be served by an accessible route that complies with Appendix 4.



### **Exceptions:**

Where the total length of the gangway or series of gangways exceeds serving as part of an accessible route exceeds 10m, the maximum slope specified in Section L will not apply to gangways.

Where an accessible route serving a floating boarding pier or skid pier is located within a boat launch ramp, the portion of the accessible route located within the boat launch ramp is not excepted to comply with Section L.

**d. Accessible Boat Slips:** Accessible boat slips are expected to comply with the provisions set out here.

**Clearances:** Accessible boat slips should be served by a clear space 1650mm wide minimum and at least as long as the accessible boat slip. Every 3m maximum of linear pier edge serving the accessible boat slips shall contain at least one continuous clear opening 1650mm minimum in width.

### **Exceptions:**

Edge protection 100mm high maximum and 50mm deep maximum shall be permitted at continuous clear openings.

In alterations to existing facilities, clear pier space shall be permitted to be located perpendicular to the boat slip, where the facility has at least one boat slip that complies with this section, and further compliance with the section would result in a reduction in the number of boat slips available or result in a reduction of the widths of existing slips.

**e. Cleats and Other Boat Securement Devices:** Cleats and other boat securement devices are not expected to comply with Appendix 6.

## 12.2.5 Illustrations

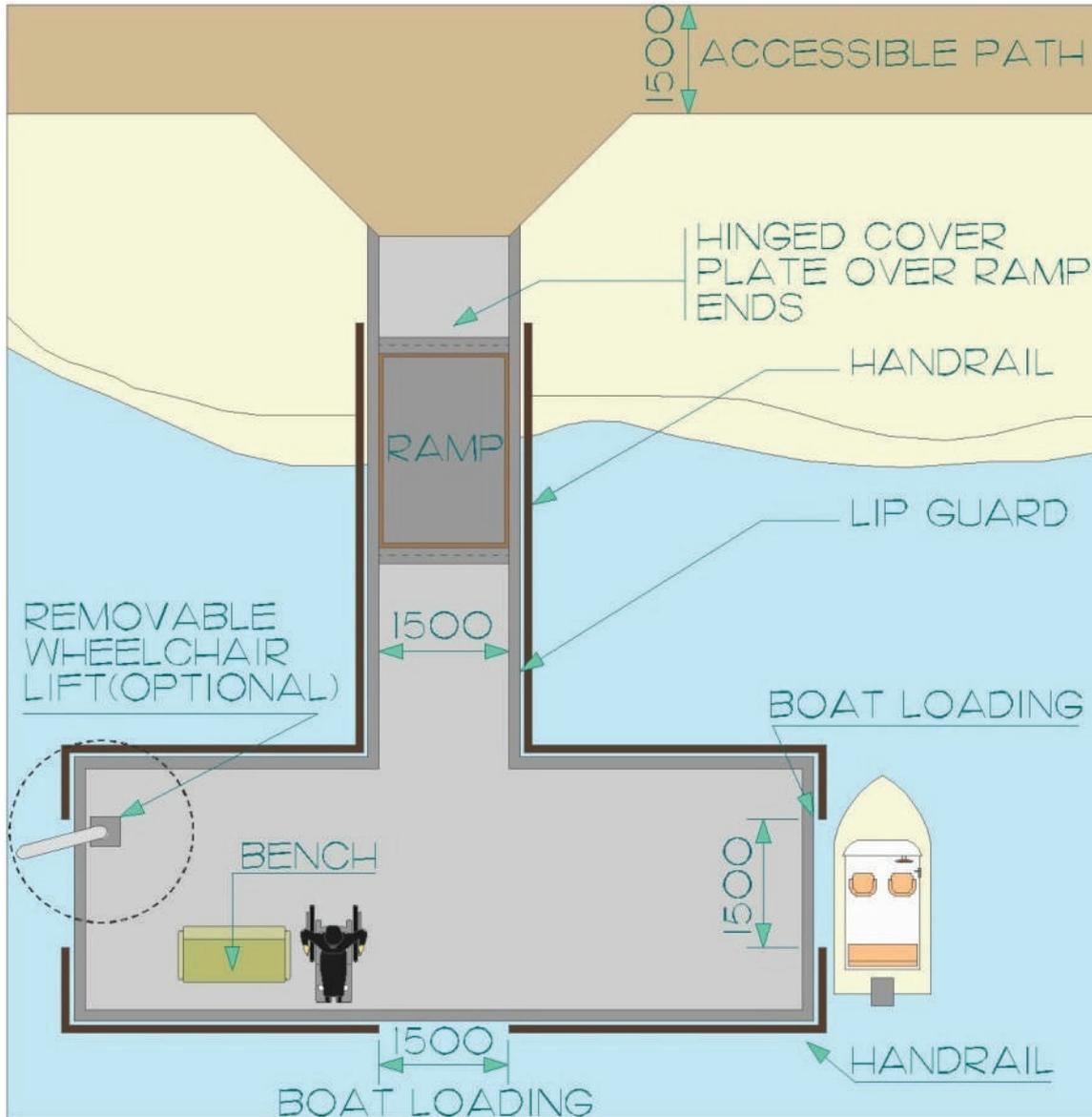


Figure 92: Accessible Dock  
[Source: UDA & Associates].



## 12.3

## Boarding Piers at Launch Ramps

[Largely extracted from United States Access Board. Accessible Fishing Piers and Platforms. 2003.; United States Access Board. Accessible Boating Facilities. 2003.; Architectural and Transportation Barriers Compliance Board. Accessibility Guidelines for Buildings and Facilities: Recreation Facilities. Federal Register, 36 CFR Part 1191: 2002.]

### 12.3.1 Design Considerations

A boarding pier (sometimes called a courtesy pier or a launch dock) is a part of a pier where a boat is temporarily moored for embarking and disembarking. A boat launch ramp is a sloped surface designed for launching and retrieving trailered boats and other watercraft to and from a body of water. The provisions for boarding piers cover only those that are not associated with boat launch ramps.

### 12.3.2 Application Considerations

If boarding piers at boat launch ramps are provided, at least 10 percent, but not less than one, must comply with these guidelines and be served by an accessible route that complies with Appendix 4.

In addition, gangways connecting floating boarding piers may exceed the maximum slopes provided for in Section L, if the total length of the gangway is less than 10 meters.

### 12.3.3 General Guidelines

No general guidance is provided for this part.

### 12.3.4 Technical Guidelines

**a. Boarding Pier Clearances:** The entire length of accessible boarding piers must comply with the same technical provisions that apply to boat slips (Section X.۳,۴. above).

**b. Minimum Pier Length:** There is no minimum length required for piers; however, an accessible boarding pier should be at least as long as other piers provided at the facility. If no other boarding pier is provided, it should be at least as long as what would have been provided if no access requirements applied.

**c. Launch Ramps Without Boarding Piers:** There are no specific provisions that address access to launch ramps without boarding piers. It is recommended that an accessible route serve at least one launch ramps. The portion of the accessible route located within the launch ramp is not required to comply with the slope requirements for ramps or accessible routes.

## 12.3.5 Illustrations



*Figure 93. An example of specialized telescopic ramp providing access for a wheeled-user. Where environmental constraints are in place, the usage of specialized equipment is necessary; this underscores the need for the design of such facilities to incorporate principles of universal access from their initiation.*

[Source: <http://www.nauticexpo.com/prod/yacht-boarding-systems/custom-made-boat-gangway-26683-163450.html>]



## 12.4 Fishing Piers and Platforms

[Largely extracted from United States Access Board. Accessible Fishing Piers and Platforms. 2003.; United States Access Board. Accessible Boating Facilities. 2003.; Architectural and Transportation Barriers Compliance Board. Accessibility Guidelines for Buildings and Facilities: Recreation Facilities. Federal Register, 36 CFR Part 1191: 2002.]

### 12.4.1 Design Considerations

The guidance provided here is aimed at assisting designers and operators in creating minimal levels of accessibility in fishing piers and platforms, and does not constitute a collection of designs of fishing piers, but rather the minimal requirements to ensure accessibility to the various elements within the fishing pier/ platform environment.

### 12.4.2 Application Considerations

This section applies to all newly designed and constructed fishing piers and platforms. Where fishing piers and platforms are modified and altered, those parts modified, altered or that form additions should comply with the provisions of this section.

### 12.4.3 General Guidelines

No general guidance is provided for this part.

### 12.4.4 Technical Guidelines

- a. Railings:** Where railings are provided at fishing piers and platforms as required by the Saudi Building Code, at least 25% of rails must be 900mm or less in height above the ground or deck so that a person using a wheelchair or other mobility device has the opportunity to fish.
- b. Dispersion of Dropped Rail Points:** Anglers who can stand are able to fish from any part of a pier or platform and change locations. To provide anglers with disabilities similar opportunities, the accessible 900mm high maximum railing should be located in a variety of places on the pier or platform to offer a variety of locations to fish from. Differing fishing locations may provide different water depths, shade or sun, vegetation, and proximity to the shoreline or bank.
- c. Edge Protection:** Where railings, guards or handrails are provided, edge protection must be provided and extend a minimum of 5mm above the ground or deck surface. Edge protection is not required where a railing, guardrail, or handrail is provided, if the deck surface extends a minimum of 350mm beyond the inside face of the railing. Sufficient toe space should be provided under railings in accordance with Appendix 1.

**d. Clear Floor or Ground Space:** At least one clear floor or ground space complying with the provisions of Appendix 1 must be provided at each location that has a railing height of 900mm high maximum. If there are no railings, at least one clear space must be provided on a pier or platform.

**e. Turning Space:** Piers and platforms must have at least one turning area, complying with Appendix 1, to allow a person using a mobility device or wheelchair to make a 180-degree turn. The space may overlap the accessible route and clear floor or ground space.

## 12.4.5 Illustrations



*Figure 94. An example of a lowered portion of platform fencing for access by shorter users, children and seated users to fish.*

[Source: [http://www.gocolumbiamo.com/ParksandRec/Parks\\_and\\_Facilities/images/slp\\_ada\\_fishingrail1.jpg](http://www.gocolumbiamo.com/ParksandRec/Parks_and_Facilities/images/slp_ada_fishingrail1.jpg)]



*Figure 95. An example of the manner in which lowering the entire portion of balustrading and edge-protection over water enables all users to be able to both view water-scapes, as well as to enjoy potential fishing experiences.*

[Source: [http://www.indiana.edu/~nca/monographs/monograph\\_images/fishing.jpg](http://www.indiana.edu/~nca/monographs/monograph_images/fishing.jpg)]









## 13.1 Circulation Routes and Public Amenities

### 13.1.1 Design Considerations

In sporting facilities and complexes it is important to make buildings or attractions easy to find. Sport and recreation facilities often support multiple simultaneous activities. Public amenities should be reachable and usable by all participants.

### 13.1.2 Application Considerations

Facilities must provide an accessible route connecting all accessible elements and spaces within areas of indoor or outdoor sports activities. If not all elements need to be accessible, only those that are accessible must be connected by an accessible route.

The requirements here apply only to fixed elements and facilities. Equipment such as wrestling mats or badminton nets may be portable and moved regularly.

Where sports courts are provided, an accessible route must connect each court. Such accessible routes should directly connect both sides of a court. Players must not be required to traverse through another court to get to the other side of their court. This is especially the case with sports like tennis, where changing sides of the court is a part of the game.

### 13.1.3 General Guidelines

- a. Indoor amenities such as restrooms, drinking fountains, and telephones can be grouped together to function as landmarks inside the building;
- b. Locker rooms and showers should be located where they can be easily identified and reached by all users of a facility;
- c. A clear path of travel that is usable by anyone should connect all public and common-use areas such as locker rooms, playing fields, dugouts, swimming pools and warm-up areas;
- d. If training rooms are provided, they should be usable by everyone. All participants should be able to easily reach it so that it can function as a first aid station for emergencies during events;
- e. Public restrooms should be near spectator, waiting and queuing areas and along a clear path of travel that is easily usable by everyone;



- f. Rubbish receptacles that can be used with one hand should be provided throughout the facility;
- g. Seating should be provided for spectators and pedestrians who want to rest;
- h. Adequate illumination should be provided for activities that occur after dark. Lighting should also be located along pedestrian pathways for security. Lighting on pathways should reflect downward onto the path and should not create hot spots or glare;
- i. A number of public restrooms, including portable units, appropriate to the size of the facility and usable by everyone should be available;
- j. Public telephones usable by everyone should be placed where crowd noise would least disturb someone placing a phone call;
- k. Drinking fountains should be located close to venues for participant events and should be usable by all participants whether they are standing or sitting;

#### 13.1.4 Technical Guidelines

Consult Section K for Technical Guidance with regard to accessways and passageways.

#### 13.1.5 Illustrations



*Figure 96: This picture, taken in South Africa, prior to the 2010 World Cup, illustrates an example, in practice, of clear circulation space, located behind seating.*

**[Source: IDC Consultants]**

## 13.2 Swimming Pools, Wading Pools and Spas

Implemented in accordance with Universal Accessibility Built Environment Guideline for Kingdom of Saudi Arabia

### 13.3 Dressing/ Changing Rooms

#### 13.3.1 Design Considerations

All dressing areas should be designed so that a person with any degree of functional limitation may use them. This does not imply the installation of expensive design features, but rather attention to detail and layout. All sports facilities should provide individual unisex accessible dressing rooms equipped with an accessible shower and toilet. This enables assistance to be given by someone of the opposite sex.

Accessible common use gender specific dressing rooms are useful. This is valuable in a scenario where an attendant or a parent is assisting a child or a person with a disability. Sufficient space should be allowed for two people and a wheelchair, along with benches and accessories to be located in the space.

The provision of handrails / grab bars in a dressing room and along circulation routes from dressing rooms to pool, gymnasium and other activity areas, will be of benefit to many facility users.

#### 13.3.2 Application Considerations

Where dressing rooms are provided for use by the general public, patients, customers, or employees, they should comply with this section. In a retrofit situation where it is technically infeasible to have all dressing rooms comply with this section, 10% of dressing rooms, but never less than one, for each type of use in each cluster of dressing rooms should be accessible and comply with this section. It is preferable to have all dressing facilities / change rooms accessible.

At least one private accessible dressing room should be provided within accessible change rooms at pools and gymnasiums.

#### 13.3.3 General Guidelines

The following guidance refers to all dressing rooms, not simply designated unisex accessible dressing rooms.



- a. Sufficient space should be provided for maneuvering wheelchairs;
- b. Allowance should be made for someone using a wheelchair or mobility aid to change without obstructing other users;
- c. Direct access should be provided to the shower area from the dressing room;
- d. Toilet provision is in very close proximity to the changing area;
- e. Some users may prefer the privacy of an individual cubicle, and, wherever possible, these should be provided;
- f. Where significant use of wheelchairs is anticipated, e.g. where wheelchair team sports could be played, the layout and design of the dressing area must reflect this. This might include provisions such as including individual accessible dressing cubicle or cubicles within the main 'team' dressing area, which can double up as family dressing to allow personal privacy within the team context. Where appropriate individual accessible cubicles could be fitted with support facilities such as hoists and additional rails;
- g. All benches should conform to the requirements set out elsewhere in this document;
- h. Additional non-toxic foam matting would be necessary to lay over benching as extra protection for people with sensitive skin. This matting should be kept readily available in a convenient store;
- i. Where wheelchair competitions are likely, but infrequent events, consider making some moveable benching available to provide temporary additional maneuvering space for extra wheelchair users;
- j. Many sports facilities incorporate 'buffer' changing spaces to accommodate peak demand on changing provision. When not required, and if designed correctly, these spaces can provide additional private changing for users with functional limitations;
- k. Chairs for use in wet areas should be readily available.

**The following general requirements refer to unisex accessible dressing rooms only:**

- l. Dedicated accessible dressing areas allow a helper from the opposite sex to provide assistance in privacy;
- m. Each room should contain a tip-up seat, shower, W.C. and washbasin;
- n. Unisex accessible dressing rooms should be clearly signposted;
- o. The design and quality of the changing area should be similar to the other changing facilities.

### 13.3.4 Technical Guidelines

- a. Location:** Accessible dressing rooms, and accessible elements within accessible dressing rooms, should be located on an accessible route complying with Appendix 4.
- b. Doors:** All doors to accessible dressing rooms should be in compliance with Appendix 8. Outward swinging doors should not constitute a hazard to persons using adjacent circulation routes.
- c. Clear Floor Space:** Private accessible dressing rooms should incorporate a clear floor space allowing a person using a wheelchair or scooter to make at least a 180-degree turn, accessed through either a hinged or sliding door. No door should swing into any part of the required turning space within the private accessible dressing room. Turning space is not required within a private accessible dressing room accessed through a curtained opening of at least 950 mm wide, if clear floor space complying with Appendix 1 renders the dressing room usable by a person in a wheelchair or scooter.
- d. Bench:** Accessible dressing rooms should have at least one 750 mm deep by 1800 mm wide bench fixed to the wall along the longer dimension. The bench should be mounted 450-500 mm above the finished floor; have clear floor space provided alongside the bench to allow a person using a wheelchair or scooter to make a parallel transfer onto the bench, and be designed to carry a minimum load of 1.33 kN.
- e. Coat Hooks:** Where coat hooks are provided, they should be a collapsible-style projecting not more than 50 mm from the wall. At least two collapsible coat hooks should be mounted no higher than 1200 mm above the floor and immediately adjacent to the accessible bench. Note: Coat hooks should NOT be located over the accessible bench or in areas that may cause a hazard.
- f. Mirrors:** Where mirrors, or other reflective surfaces, are provided in dressing rooms of the same use, accessible dressing rooms should incorporate a full-length mirror or another reflective surface measuring at least 450 mm wide by 1400 mm high and should be mounted in a position affording a view to a person on the bench, as well as to a person in a standing position.
- g. Illumination:** Dressing rooms should incorporate even illumination throughout of at least 200 lux.
- h. Showers, Pools, and Saunas:** Where dressing rooms are provided in conjunction with showers, swimming pools, or other wet locations, they should be designed with a slip-resistant floor surface that prevents the accumulation of standing water and have a bench with a slip-resistant seat surface installed to prevent the accumulation of water.



**i. Handrails:** Handrails which comply with the requirements of Section Appendix 5 should be provided from the dressing room area to the activity area.

**j. Grab Bars:** A Grab bar that complies with the requirements of Section R.4 should be provided in the dressing room on a wall beside the bench. The grab bar should be “L” shaped, with each horizontal and vertical leg being at least 750 mm long, located 630-690 mm above the floor, and at least 150 mm in front of the bench.

### 13.3.5 Illustrations

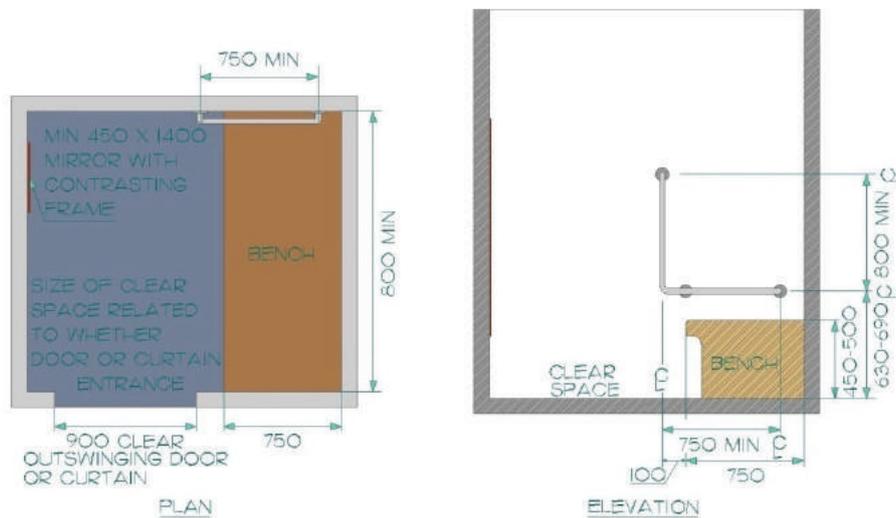


Figure 97: Private accessible dressing room. Dimensions in millimeters.

## 13.4 Facility Washrooms/ Showers

Implemented in accordance with Universal Accessibility Built Environment Guideline for Kingdom of Saudia Arabia

## 13.5 Lockers & Baggage Storage

Implemented in accordance with Universal Accessibility Built Environment Guideline for Kingdom of Saudia Arabia

## 13.6 Social Areas

### 13.6.1 Design Considerations

Recreational and participant sports facilities offer larger opportunities for users to engage with and interact with each other. As individuals often use sporting facilities, gyms and the like as opportunities for socializations, lack of access to social areas within facilities, restricts opportunities for persons with disabilities.

### 13.6.2 Application Considerations

The applications of this section should apply equal to all areas intended for social interaction within sporting facilities.

### 13.3.3 General Guidelines - LAYOUT

- a. Gangways in areas between tables should adhere to the minimum requirements for accessible routes;
- b. Tables and chairs should be placed in a regular layout rather than at random, difficult-to-understand arrangement;

### 13.6.4 General Guidelines - FURNITURE

- a. Furniture should be stable but movable to allow maximum access within social areas;
- b. Tables should have clear knee and toe space to allow persons making use of wheelchairs and scooters to access them;



### 13.6.5 General Guidelines - SEATING

- a. Seating must be provided wherever people might need to wait;
- b. Where provided, seating should be stable and easy to rise from;
- c. Seats should be upholstered in absorbent material;
- d. Seating should incorporate fittings with and without armrests;
- e. Seating should be arranged to allow people in wheelchairs, scooters and other mobility aids, to sit alongside others without obstructing the general circulation routes;
- f. Seating must contrast in color and luminance with the surrounding surfaces;
- g. Seating areas should be acoustically 'quiet' to allow easy conversation;

### 13.6.6 General Guidance - SERVERY

- a. Bars and self-service counters must be accessible;
- b. A lowered section with knee clearance and toe space should be provided;
- c. Induction loops should be fitted at counters in large facilities such as sports halls and swimming pools;
- d. Poor lighting should be avoided as it reduce the ability of people to lip-read;
- e. Where tray-slides are used, they should be continuous to the till.

### 13.6.7 Technical Guidelines - Layout

**a. General:** Operators/ owners of sports facilities should ensure that accessways and passageways comply with the provisions of Section K, in addition to the requirements set out in this section.

**b. Area/ Room Circulation Routes:** Access and circulation routes should conform to the requirements of Appendix 4 regarding accessible routes, paths and corridors, the requirements of Appendix 3 regarding protruding and overhead objects and Appendix 2 regarding the nature of ground and floor surfaces. This may take the form of access aisles of at least 1200mm in width that should be provided up to and around all accessible fixed tables. The access aisle should be measured between parallel edges of tables or between a wall and the table edges.

**c. Doors:** All doors leading into or out of rooms and spaces required to be accessible under this part, shall comply with the requirements of Section Appendix 8.

**d. Space between Fittings and Furniture:** Owners, operators and managers shall ensure that there is sufficient space, that complies with the space requirements of Appendix 1, for users of mobility aids in no less than 25% of their restaurant, bar etc. Preferably this should extend to all furniture and fittings within a lounge, bar etc. Such tables should be located on an accessible route that complies with Appendix 4.

### 13.6.8. Technical Guidelines - Servery

**a. Access to Tables:** Owners, operators and managers must ensure that at least 50% of all tables comply with the requirements for space under Appendix 1 for seated users; all of the tables that are required to have accessible space above should have sufficient space requirements that allow seated access and use of the table. The knee and toe space may overlap the required clear floor space by a maximum of 480mm. The height of accessible tables should be located 710 – 865mm above the finished floor or ground.

**b. Lowered Section of Bar/ Buffet/ Servery Counter:** Accessible portions of counters for these elements should be located on an accessible route complying with Section A 4. Seating spaces or spaces at such counters should incorporate clear floor space of not less than 800 x 1400mm. Where forward approach is used to access such an accessible portion, there should be clear knee and toe space that complies with Appendix 1. The knee and toe space may overlap the required clear floor space by a maximum of 480mm. The top of such counters should be located 710 – 865mm above finished floor level and extend for a minimum of 1500 mm. Service may also be made available at accessible tables within the same area.

**c. Food Service Lines:** Food service lines should have a minimum clear width of 1200mm. tray slides should be mounted no higher than 865mm above the floor. If self-service shelves are provided, at least 50% of the self-service shelves should be within the reach ranges as specified in Appendix 1. It is preferable to have all self-service shelves accessible.

**d. Self-Service Shelves and Dispensing Devices:** Self-service shelves and dispensing devices for tableware, dishware, condiments, food, and beverages shall be installed to comply with Appendix 1.

**e. Cashier Location:** Cashier locations should feature at least one accessible aisle, which is a minimum of 1200mm wide. It is preferable to have all aisles accessible.

**f. Identification of Elements:** Strategies which clearly identify the location of the various elements in these areas (e.g. buffet, cash register etc.) to person with visual impairments should be explored for implementation (Examples include: music, auditory cues, tactile pathways, etc.).

**g. Assistance to Patrons:** Patrons using mobility devices may not be able to retrieve food items or hold a tray while supporting themselves on canes or while maneuvering a wheelchair or scooter. Staff should be trained to assist, where required, any person who may have problems retrieving food items, holding a tray, or carrying a tray to a table.



**h. Seating:** At least 10%, but no less than one, of seats where provided, should be accessible. Accessible seating is located adjacent to an accessible route that complies with Appendix 1. Accessible seating should be 510 – 610mm deep, with a seat height of 450 – 500mm. Armrests may be provided at a number of different heights. A back support should be provided which extends the full length of the seating, begins a maximum of 50mm above the seat, and extends upwards a minimum of 455mm. All seating should be color contrasted against the background.

### 13.6.9. Technical Guidelines - Seating

**a. Location:** Benches or seating should be located adjacent to an accessible route that complies with Appendix 4. For very large reception, waiting/ queuing and lobbies areas in places of accommodation, benches should be located so that no bench is further than 30 meters from any other bench that complies with these requirements.

**b. Clear Floor or Ground Space:** Seating should have an adjacent, level, stable and firm ground surface at least 900 x 1500mm in size.

**c. Bench Seating:** Benches and other fixed seating should have seats that are a minimum of 1065mm, 510 – 610mm deep, with a seat height of 450 – 500mm. Arm rests on both sides of the bench and back support should be provided: the back support should extend the full length of the bench, begin a maximum 50mm above the seat, and extend upwards a minimum of 455mm.

**d. Stability:** Benches and other fixed seating should be stable and well anchored to grade.

**e. Color Contrast:** Benches and other fixed seating should be of contrasting color to their background and environment.

### 13.6.10. Technical Guidelines – Vending Machines

Vending machines should comply with the provisions laid out in the UABE Manual.

### 13.6.11 Illustrations

No illustrations provided for this part.

## 13.7 Spectator/ Viewing Position

Implemented in accordance with Universal Accessibility Built Environment Guideline for Kingdom of Saudia Arabia

## 13.8 Golf

[Extracted from U.S. Access Board. Accessible Golf Courses. 2002].

### 13.8.1 Design Considerations

The guidance provided here is intended to provide guidance to create a general level of usability for persons with disabilities, and does not present a collection of golf course designs. Emphasis has been placed on ensuring access to elements within the golf course environment.

### 13.8.2 Application Considerations

Newly designed or newly constructed and altered golf courses, driving ranges, practice putting greens and practice teeing grounds will need to comply with these requirements.

### 13.8.3 General Guidelines

No general guidance is offered for this part.

### 13.8.4 Technical Guidelines

**a. Accessible Route – Golf Course:** An accessible route that complies with Appendix 4 should connect accessible elements and spaces within the boundary of the golf course. Furthermore, an accessible route should connect the golf car rental area, bag drop areas, practice putting greens, accessible practice teeing grounds, course toilet rooms and course weather shelters. Such accessible route should comply with Appendix 4.

**b. Accessible Route – Driving Ranges:** An accessible route should connect accessible teeing stations at driving ranges with accessible parking spaces. This accessible route should comply with the provisions of Appendix 4.

**c. Teeing Grounds:** Teeing grounds should require with the requirements provided in this part.

**d. Number Required:** Where one or two teeing grounds are provided for a hole, at least one teeing ground serving the hole should comply with the provisions laid out here. Where three or more teeing grounds are provided for a hole, at least two teeing grounds should comply with the provisions laid out here.



- e. **Forward Teeing Ground:** The forward teeing ground should be accessible. Where compliance, during alterations, is not feasible due to terrain, the forward teeing ground should not be required to be accessible.
- f. **Teeing Grounds:** Teeing grounds required to be accessible should be designed and constructed so that a golf car can enter and exit the teeing ground.
- g. **Teeing Stations at Driving Ranges and Practice Teeing Grounds:** Where teeing stations or practice teeing are provided, at least 10%, but no fewer than one of each teeing station at driving ranges and practice teeing grounds should comply with the requirements set out in this part.
- h. **Weather Shelters:** Where weather shelters are provided on a golf course, each weather shelter should provide sufficient floor space to execute a 180 degree turn in a wheelchair, as indicated in Appendix 1. Weather shelters should be constructed so that golf cars may enter and exit them.
- i. **Golf Car Passage:** Where curbs or other constructed barriers are provided along a golf car passage to prohibit golf cars from entering a fairway, openings of a width at least 1800mm should be provided at intervals that are no greater than 50m.
- j. **Putting Greens:** Each putting green should be designed and constructed so that a golf car can enter and exit the putting green.

### 13.8.5 Illustrations



*Figure 99: Accessing the golfing experience.*

[Source: <http://phoenix.gov/PRL/adrecsvc.html>]

## 13.9 Exercise Equipment and Machines

### 13.9.1 Design Considerations

Previously it was the exception for exercise equipment and machines in gyms to be usable by persons with disabilities. In many cases, equipment was located in a 'special' room way from the main fitness and/ or staff were not adequately trained to supervise use by a person with a disability. It is now a generally accepted practice that exercise equipment, machines and the spaces that house them should be accessible to everyone and that equipment and its layout should reflect this inclusive approach.

### 13.9.2 Application Considerations

Newly designed or newly constructed and altered exercise equipment and machines should comply with this section.

### 13.9.3 General Guidelines

- a. Equipment must be easy to use. Wherever practicable it must be accessible – without major adjustments – from a wheelchair, and able to be safely operated by people with a visual impairment and people with learning disabilities;
- b. The layout of equipment must allow adequate space for the fitness activity and for safe circulation between pieces of equipment;
- c. Equipment plinths must not be used unless properly designed ramped access is provided;

### 13.9.4 Technical Guidelines

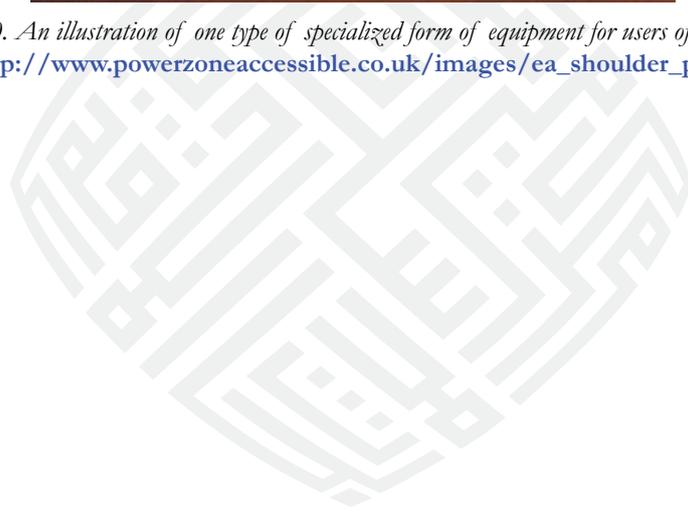
**General:** At least one of each type of equipment that and machines indicated application considerations above will be expected to be provided with clear floor or ground space that complies with Appendix 1 and should be served by an accessible route that complies with Appendix 4. Clear floor or ground space should be positioned for transfer for use by an individual seated in a wheelchair. Clear floor or ground spaces for more than one piece of equipment should be permitted to overlap.



## 13.9.5 Illustrations



*Figure 100. An illustration of one type of specialized form of equipment for users of wheelchairs.*  
[Source: [http://www.powerzoneaccessible.co.uk/images/ea\\_shoulder\\_position1.jpg](http://www.powerzoneaccessible.co.uk/images/ea_shoulder_position1.jpg)]



## 13.10 Management Issues

### 13.10.1 Design Considerations

Design and construction measures can only improve the accessibility of facilities only if they are managed efficiently and effectively. There is a considerable body of literature that has indicated that the management of a facility has a significant impact on accessibility, e.g. the use of mobility accessible toilets as a store.

### 13.9.2 Application Considerations

This guidance applies equally to all sports facilities.

### 13.10.3 General Guidelines

- a. Pathways, ramps, steps, corridors, lobbies must not be obstructed by bicycles, discarded boxes, loose bricks, new deliveries etc.
- b. All walking surfaces, especially ramps and steps, must be maintained to ensure slip-resistant surfaces;
- c. Ensure that doors are maintained to open and close with the minimum possible force;
- d. Ensure that slip-resistant floors are not made dangerous by use of cleaning fluid or polish;
- e. Signs and maps, both audible and visible, should be checked regularly to make sure routes are clearly indicated, especially escape routes. The accidental removal or obliteration of one or two signs can create great confusion, as can the addition of temporary signs by staff who have not considered the clarity of the whole route;
- f. Lifts and hoists must checked and maintained regularly, for example to ensure that the lift stops exactly at each floor;
- g. Induction loops and other electrical aids should be regularly checked – deterioration and failure are not always obvious;
- h. Ensure that dedicated accessible car parking bays are monitored;
- i. When carrying out maintenance and redecoration ensure that existing accessible provision is not compromised, e.g. by using inappropriate fittings.



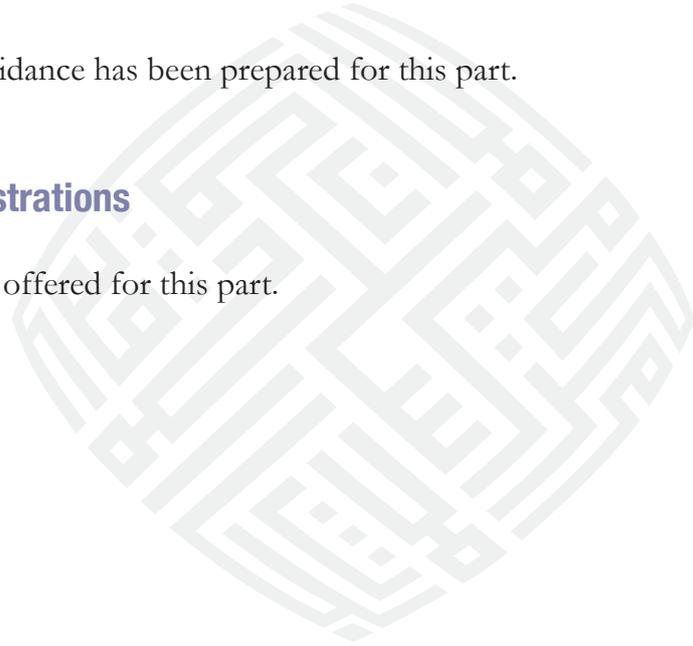
- j. All staff should be given disability-awareness training and the delivery of service to persons with functional limitations;
- k. Information should be provided in multiple formats. This does not necessarily mean that such materials should be immediately to hand, but this does mean that mechanisms are in place for providing different formats and getting them to customers quickly;
- l. Information should be provided in tape, Braille, large print or web-based formats;
- m. Emergency procedures for dealing with people with various disabilities should be adopted and maintained for the facility.

#### **13.9.4 Technical Guidelines**

No technical guidance has been prepared for this part.

#### **13.10.5 Illustrations**

No illustrations offered for this part.



## Cultural and Religious Facilities







## 14.1 Exhibits and Collections

### 14.1.1 Design Considerations

The resources provided in a cultural facility are the primary attraction. This includes collections, exhibits and lectures. As such, these resources should be made available to the broadest population.

The provision of information intended for usage in exhibitions should be clearly understandable and accessible in content. This is an important consideration in the general legibility of the exhibition, as well as making exhibitions accessible to individuals with low levels of functional cognitive limitations, e.g. persons with functional learning limitations, children. It is important that the content of exhibitions is accessible and legible at multiple intellectual levels and present in more than one sensory channel. A secondary consideration is that thought should be given to the representation of people with disabilities in the presentation of exhibitions and their content.

Exhibition items in certain museum types form the primary backbone of the exhibition and the museum offering. This is especially the case with the type of artifacts, graphics and props that museums and interpretative centers offer to the museum visitor. It is critical that where exhibition items are used that there is multiplicity of access i.e. that the visitor or patron is able to access information about the exhibition items, and where possible, to access the items themselves in different formats.

Audiovisual and interactive exhibitions pose a particular problem for persons with functional visual, auditory and cognitive limitations. The provision of alternative means of communicating information is important (e.g. by making use of sub-captioning on audio-visual programs, soundtracks etc.), simple, legible instruction and physical access to audiovisual and interactive elements are the most critical elements.

### 14.1.2 Application Considerations

The provisions here should apply to all exhibits and collections equally.

### 14.1.3 General Guidelines

- a. Provide alternate media for wayfinding information, exhibits, presentations and background material using Braille, audio, text and captions. Audio presentation controls should be well-marked and easy for anyone to activate;
- b. Alternate language descriptive material should be provided for all major exhibits and presentations;



- c.** Information desks should have materials available in alternate media and languages. This may include audio-guided tours, tactile maps, Braille information and text scripts of audio presentations;
- d.** Design exhibits to enable all people to experience them. Where exhibits are interactive, access should be provided at different heights and with knee clearance if approached from the front;
- e.** Hands-on access to objects in each exhibit area should be considered, where appropriate. Controls and devices in such exhibits should be easy to grasp and not require fine motor control unless absolutely necessary for educational reasons;
- f.** The paths through exhibits should be spaced to accommodate wider patterns of use;
- g.** Deep shadows in exhibits that blocks access to content should be avoided. The placement of lighting and design of exhibit enclosures are both critical;
- h.** Resting places should be provided within exhibit areas;
- i.** Offer a programmatic path for traveling through the exhibition;
- j.** Present information to all the senses;
- k.** Include people with disabilities in exhibition topics, photographs and presentations of perspectives;
- l.** Include people with disabilities appropriately i.e. not as victims etc.;
- m)** Exhibition labels must use appropriate language when discussing issues related to people with disabilities;
- n.** Items in exhibits (e.g. artifacts, graphics, props) should be visually accessible to people;
- o.** Create color contrast between the items and the background, particularly when the items are displayed in lower light levels;
- p.** Place small items in the front portion of a case, with larger items behind;
- q.** Avoid shadows falling directly on items;
- r.** Items essential to the exhibition's main theme must be accessible to people by tactile examination (e.g. touching artifacts, reproduction, models) and/ or comprehensive audio-description;
- s.** Items must not be placed in locations such that they create a hazard to visitors;
- t.** Essential information in exhibition label text must be accessible to people who have difficulty reading Arabic and/ or English;

- u.** Provide a short overview paragraph at the beginning of introductory and thematic label panels;
- v.** Provide line drawings, silhouettes and photographs that complement label text to aid comprehension for those with reading difficulties;
- w.** Label design must present main exhibition copy legibly for all visitors. Such exhibition label information must be available within the galleries in alternative formats (e.g. Braille, audio) for people who cannot read print;
- x.** Provide alternative forms of labels (e.g. Braille, audio, large prints) within the exhibition space;
- y.** A type size appropriate to the viewing distance should be adopted;
- z.** Glare should be diminished on all label surfaces;
- aa.** Mount labels so that visitors can get very close to read them;
- bb.** Locate labels in consistent locations throughout an exhibition.
- cc.** All exhibition interactives, audio-only programs (e.g. music with lyrics and texts of speeches), and audiovisuals with soundtracks must be either open or closed captioned;
- dd.** Interactives and audiovisuals that do not have soundtracks must carry labels stating that fact to assure deaf and hard-of-hearing people that they are not missing information;
- ee.** Audiovisual programs and computer interactives that present information with images and print must be audiodescribed;
- ff.** Instructions for the proper use of interactives must be accessible to all visitors;
- gg.** Instructions should be presented in both an audio and printed format;
- hh.** Controls for and operation of all interactives must be accessible and usable by all visitors;
- ii.** Provide tactile characters and Braille on or directly below the controls to indicate the function of the controls;
- jj.** Provide touch-sensitive areas in predictable locations, e.g. on all of the four corners of the screen;
- kk.** For activities that require speaking into a specific area, provide that equipment that is adjustable for height;
- ll.** For activities that require listening at a specific area, provide equipment that is adjustable for height;



**mm.** Prevent sound from overlapping between interactive areas;

**nn.** Use of interactives must be from a location accessible to people making use of wheelchairs or other assistive devices and should not be blocked by furniture or other obstacles;

#### 14.1.4 Technical Guidelines

**a. Maximum Mounting Height:** Mount small items (to center line) at no higher than 900mm above the floor.

**b. Simple Backdrops:** Objects mounted against complex backgrounds (e.g. a vessel mounted against an enlarged photograph of an archaeological dig) are difficult to see for people with low functional visual ability and for those with figure-ground perceptual problems. Multiple objects staggered from the front to the back of the case may also cause visual clutter and foreground-background discrimination problems for some people.

**c. Maximum Case Height:** Construct the top of a case at a maximum of 1200 mm above the finished floor for items that are mounted flat on a pedestal or deck. For larger items, maintain the minimum case height possible.

**d. Height of Exhibition Railings:** Construct exhibition barriers (e.g. railings) at a maximum height of 900mm.

**e. Illumination:** Provide at least 100 lux of light on an exhibition object. If displaying sensitive materials that require a maximum of 50 lux then position the items to allow the visitor to approach them as closely as possible and light the environment with even light. Also consider providing high contrasting backgrounds to make objects 'stand out'.

**f. Protruding Objects:** Mount objects so that they do not protrude more than that required by Appendix 3 from a surface and do not present head-clearance objects.

**g. Mounting Objects:** Mount objects so that they are not tripping hazard.

**h. Ensure that platforms for objects are not tripping hazards:** Platforms should have colors that are of high contrast to the floors and walls, should not have sharp corners, and should not project unpredictably into the path of travel.

**i. Colloquial and Complex Language:** Avoid the use of colloquial and complex Arabic and/ or English, and technical language in text panels unless such language is explained within the text or in supplementary handouts;

**j. Active Voice:** Use the active voice in text panels; limit sentence and label length. Sentence length should be no more than 25 words and label length should be a maximum of 75 to 100 words;

**k. Line Length:** Use a line length for text that facilitates reading. Text that contains too many characters is confusing to read, and 55 characters (on average) per line should be regarded as the maximum;

**l. Mounting of Wall Labels:** Mount wall labels at a height that is comfortable for both those seated and standing.

**m. Lighting for Labels:** Sufficient lighting should be provided to read labels. For text to be readable, lighting on the label must be between 100 lux and 300 lux;

**n. Interactives:** Interactives must be within reach range of people who are short or those who use wheelchairs as well as of those who are standing. Controls should be within one of the reach ranges specified in Appendix 1 for either forward or parallel approach. Interactive elements must conform to the requirements of Appendix 6. Interactives should be located on an accessible route that complies with the provisions of Appendix 4 and that provides sufficient space for approach and use that complies with Appendix 1. Space at interactives should, furthermore, comply with the knee clearance and toe space requirements outlined in Appendix 1.

### 14.1.5 Illustrations

No illustrations offered for this part.



## 14.2

## Seating

### 14.2.1 Design Considerations

Benches provide convenient resting places for all individuals and are especially important for those who may have difficulty with standing or walking for extended periods. Benches should be placed adjacent to pedestrian walkways to provide convenient rest places without becoming potential obstructions. Appropriate seat heights can facilitate sitting and rising for individuals such as senior citizens or persons with strength problems. Armrests may also provide assistance in sitting and rising. A person with a visual impairment may find it easier to locate benches if they are located adjacent to a landmark within the reception area.

### 14.2.2 Application Considerations

All benches or waiting seating provided in museums and other cultural facilities and intended for use by staff and/ or patrons should comply with these requirements.

### 14.2.3 General Guidelines

No general guidance is offered for this part.

### 14.2.4 Technical Guidelines

- a. **Location:** Benches or seating should be located adjacent to an accessible route that complies with Appendix 4. For very large reception, waiting/ queuing and lobbies areas in places of accommodation, benches should be located so that no bench is further than 30 meters from any other bench that complies with these requirements.
- b. **Clear Floor or Ground Space:** Seating should have an adjacent, level, stable and firm ground surface at least 900 x 1500mm in size.
- c. **Bench Seating:** Benches and other fixed seating should have seats that are a minimum of 1065mm, 510 – 610mm deep, with a seat height of 450 – 500mm. Arm rests on both sides of the bench and back support should be provided: the back support should extend the full length of the bench, begin a maximum 50mm above the seat, and extend upwards a minimum of 455mm.
- d. **Stability:** Benches and other fixed seating should be stable and well anchored to grade.
- e. **Color Contrast:** Benches and other fixed seating should be of contrasting color to their background and environment.

### 14.2.5 Illustrations

No illustrations offered for this part.

## 14.3

## Cases

### 14.3.1 Design Considerations

Cases and vitrines should provide viewing access to all patrons and visitors. This is particularly relevant in the case of people who are short or seated as well as those who are standing. Cases and vitrines, furthermore, should not present a safety hazard to any visitor.

### 14.3.2 Application Considerations

The provisions in this part should apply to all cases and vitrines in museums and other cultural facilities.

### 14.3.3 General Guidelines

- a. All cases and pedestals so they display objects within viewing distance of people who are short, seated or standing;
- b. Cases and vitrines should not present a safety hazard to any visitors;
- c. Maintain a predictable border on both sides of circulation routes;
- d. Design cases so that they are distinguishable from wall openings;
- e. Design vitrines and plexiglass barriers so they are easily detectable;
- f. Seating must be provided in each exhibition and single-gallery exhibitions should have seating nearby, in a corridor or in an adjacent gallery space;

### 14.3.4 Technical Guidelines

- a. **Wall-Mounted Cases:** Design wall-mounted cases so that their lower edges conform to the requirements of Appendix 3;
- b. **Horizontal Cases with Legs:** Long, horizontal cases that have legs only at the four corners should be designed so that they conform to the requirements of Appendix 3 and that allow seated users to view their contents i.e. they should conform to the knee and toe clearances required by Appendix 1.

### 14.3.5 Illustrations

No illustrations offered for this part.



## 14.4 Public Programming Spaces

### 14.4.1 Design Considerations

Designated viewing / seating areas are required for individuals unable to use typical seating arrangements. Viewing areas need to provide adequate space to manoeuvre a mobility device as large as a scooter and should not be limited to one location. Designated adjacent companion seating should also be provided. Guards placed around a viewing area should not interfere with the line of sight of someone sitting in a wheelchair or scooter. A choice of locations and ticket price ranges should be available. In addition, aisle seats should be available for persons using wheelchairs or scooters who may wish to transfer to an aisle seat.

### 14.4.2 Application Considerations

In places with fixed seating, accessible wheelchair/scooter locations should comply with this section and should be provided in numbers as indicated by the Table below:

Table - Accessible Viewing Spaces

Number of Fixed Seats in Seating Area	Number of Accessible Viewing Spaces Required
2 – 100	2
101 – 200	3
201 – 300	4
301 – 400	5
401 – 500	6
501 – 900	7
901 – 1300	8
1301 – 1700	9
Each increment of up to 400 seats in excess of 1700	One additional space

Companion seating should be provided for each accessible viewing space, arranged so that at least one companion fixed seat is provided next to each accessible viewing space. Note: Companion seating should be calculated in addition to the required accessible seating spaces identified in the table above.

In addition, 1%, but not less than one, of all fixed seats should be aisle seats with no armrests on the aisle side, or should have removable or folding armrests on the aisle side. A sign or marker should identify each of the seats. Signage notifying patrons of the availability of such seats should be posted at the ticket office.

### 14.4.3 General Guidelines

**No General Guidance is offered for this part.**

### 14.4.4 Technical Guidelines

**a. Location:** Accessible viewing spaces should adjoin an accessible route complying with Appendix 4, without infringing on egress from any row of seating or any aisle requirement. Where the seating capacity exceeds 100, accessible viewing spaces should be provided in more than one location.

**b. Floor or Ground Surface:** The floor or ground surface at accessible viewing spaces should be clear and level, or level with removable seats, complying with Appendix 2. Where the general floor area has a height difference from the back of an assembly area or viewing area to the front of the area, the accessible viewing spaces should be located on a level floor area. If the aisle is sloped from the back to the front of the room, the transition between the level floor seating area to the sloped aisle, should be of a smooth transition to avoid a tripping hazard (See Appendix 2)

**c. Width and Length:** Where wheelchairs/scooters enter the accessible viewing spaces from a side approach, the spaces should be not less than 900 mm wide and 1500 mm long. If wheelchairs/scooters enter from a front or rear approach, the spaces should be not less than 900 mm wide and 1400 mm long and arranged so that at least two designated wheelchair/scooter locations are side by side.

**d. Sight Lines Over Seated Spectators:** Where spectators are provided lines of sight over the shoulders and between the heads of spectators seated in the first row in front of the accessible viewing spaces, spectators seated in the accessible viewing spaces should be afforded lines of sight over the shoulders and between the heads of seated spectators in the first row in front of the accessible viewing spaces.

**e. Sight Lines Over Standing Spectators:** Where spectators are expected to stand during events, spectators in accessible viewing spaces should be afforded lines of sight such that where spectators are provided lines of sight over the shoulders and between the heads of spectators standing in the first row in front of their seats,



**f. Companion Seats:** In row seating, companion seats should be located to provide shoulder alignment with adjacent wheelchair spaces, have the floor surface of the companion seat at the same elevation as the floor surface of the wheelchair space, be equivalent in size, quality, comfort, and amenities to the seating in the immediate area, and be permitted to be movable.

**g. Designated Aisle Seats:** Where armrests are provided on the seating in the immediate area, folding or retractable armrests should be provided on the aisle side of the seat. There should be space available to park a wheelchair, adjacent to such seating. Signage complying with Appendix 19 indicating the availability of such seating should be located at ticket offices and at the main entrance(s) to the seating area.

**h. Seat Identification:** Each seat should be identified by a sign or marker which provides visual and tactile identification of the seat designation. Signs or markers should contrast (light-on-dark, dark-on-light) and be photo luminescent. Seats intended for use by persons with disabilities should be clearly identified with the International Symbol of Access. See Appendix 19.

**i. Seating Selection:** Accessible seating should be available in different areas throughout a facility, and at a variety of price points.

**j. Seating Sizes:** A variety of seating sizes should be available to accommodate the additional size and weight capacity of persons of large stature.

**k. Handrails:** In assembly areas where seating is available and access to the various seating arrangements is accessed by a ramp or a sloped surface, there should be handrails on the outside walls where no seats are located complying with Appendix 5. Where fixed seating is located on an aisle handrails are not required.

#### 14.4.5 Illustrations

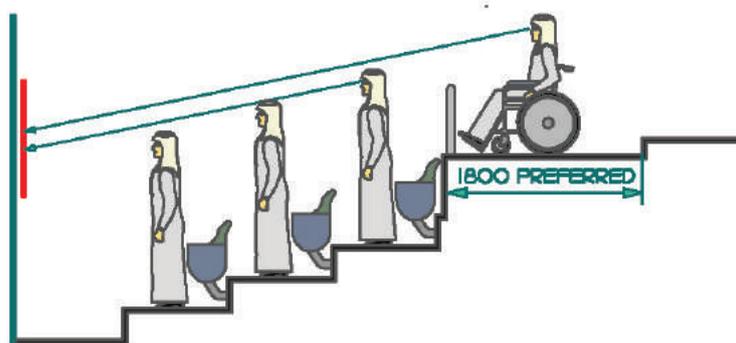


Figure 103. Sight-Lines at Wheelchair Locations. Dimensions in Millimeters.

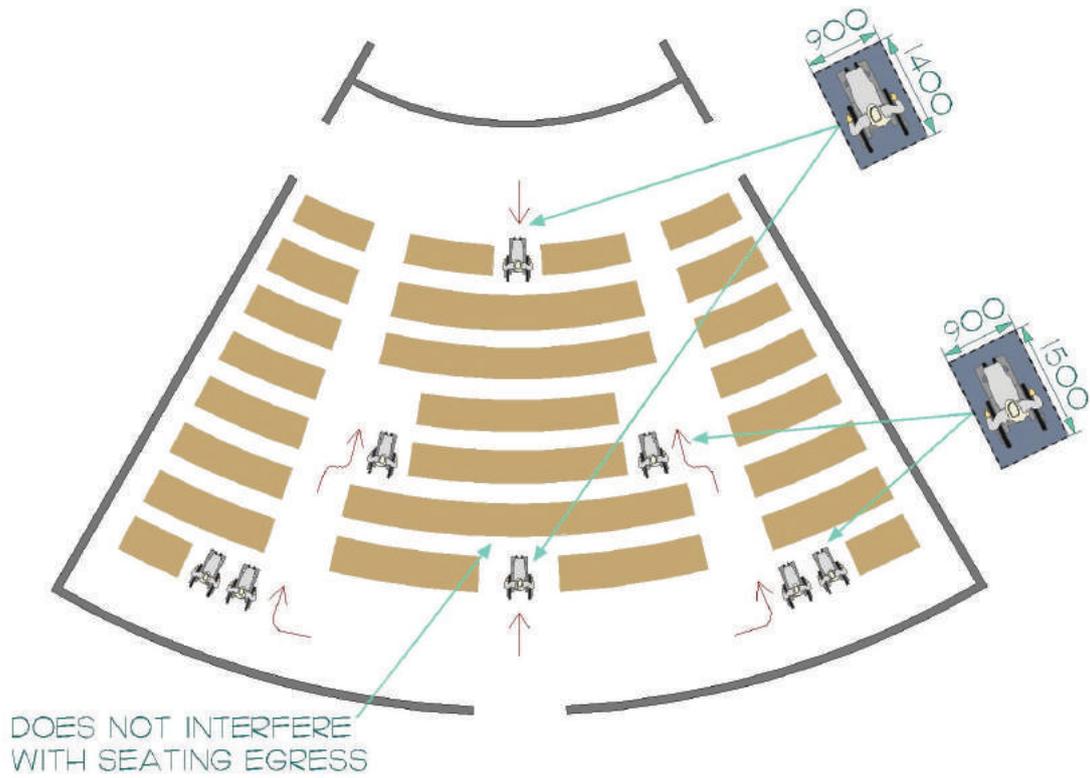


Figure 104. Distribution of Accessible Viewing Spaces. Dimensions in Millimeters.



**Areas of Significant Historical and / or  
Archaeological Heritage**







## 15.1 Site Management

An executive plan should be prepared to manage the tourism site, considering visitors diversity and ages and the site nature with trained staff who can deal and direct persons with disabilities and old people inside the site.

## 15.2 Pre-Visit Information

### 15.2.1 Design Considerations

A range of considerations must be factored into the design and publication of information regarding heritage sites; this is particularly the case for persons who may experience problems or issues accessing portions of such sites. Content should be current and kept up-to-date.

### 15.2.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.2.3 General Guidelines

- a. Management and operators of heritage sites should undertake comprehensive assessments of their areas of operations to identify points of breakage in the journey-sequence, and ensure that such information is readily and widely available prior to visitors arriving on-site;
- b. Action plans to address accessibility issues should be developed, and clearly displayed;
- c. Pre-visit information should be available for all heritage sites and should conform to practices laid out in this playbook;

### 15.2.4 Technical Guidelines

No technical guidance is offered for this part.





## 15.2.5 Illustrations

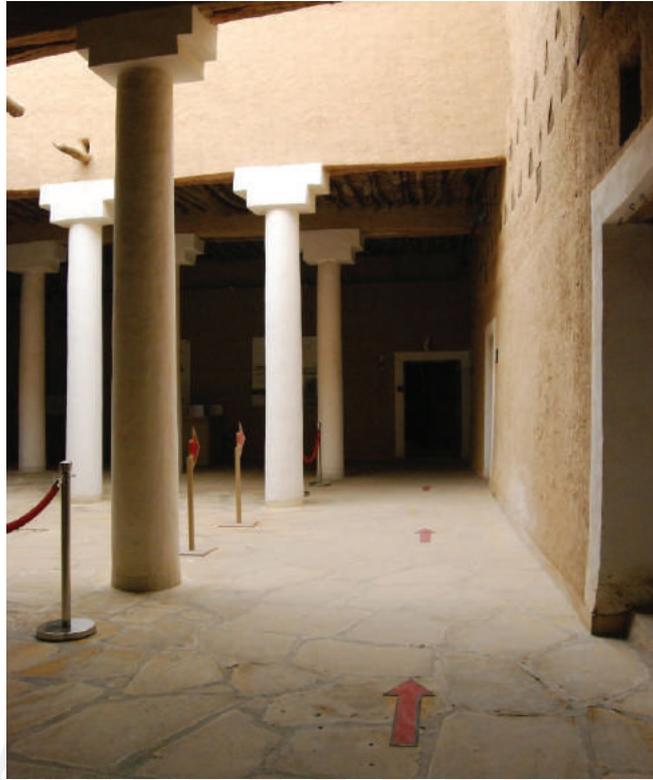


Figure 105. An image taken from within the Al-Musmak, demonstrating an attempt at creating a clear sense of direction. Although not perfect, it does represent a positive step in the conveying of directional information.

[Source: IDC Consultants]



Figure 106. Certain forms of heritage, especially environmental heritage, lend themselves more easily to being made physically accessible.

[Source: <http://www.jnf.org/work-we-do/our-projects/tourism-recreation/inclusive-parks.html>]

## 15.3 Approach & Entry

### 15.3.1 Design Considerations

The usability of heritage sites should be considered in terms of a journey sequence, with access to a heritage site as the first step in such a sequence. Creating accessible points of entry to heritage sites does not simply constitute cognizance of principal points of entry, but should also take note of other means and points of entry e.g. a national park may have various points of entry beyond an 'official' or 'designated' entry, and consideration should be given to the provision of some level of accessibility at such entry-points.

### 15.3.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.3.3 General Guidelines

- a. Provision of accessible passenger loading zones, parking bays and the ilk must be given priority at entry-points;

### 15.3.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.3.5 Illustrations

No illustrations offered for this part.



## 15.4 Orientation & Wayfinding

### 15.4.1 Design Considerations

Wayfinding and orientation provide visitors with information to move through and navigate heritage sites, and should be designed to account for the variety and diversity of user experiences. Clear signage and wayfinding is an important element in ensuring ease of movement and access through heritage sites, and is crucially important for egress and emergency evacuation purposes.

### 15.4.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.4.3 General Guidelines

- a. Wayfinding and orientation mechanisms and systems should be designed and developed to employ multiple means and modes of information articulation and expression;
- b. Simple language should be employed throughout, and pictograms and other essential signage information used as far as possible;
- c. Lighting and acoustics should be carefully considered for its effect on visitor perceptions and experiences of heritage sites;
- d. A site map and directory sign should be available to guide visitors;
- e. Staff should be trained to assist users in orientation and wayfinding, and such training make take the form of so-called ‘disability-awareness’ training, sign-language reading and interpretation etc.

### 15.4.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.4.5 Illustrations

No illustrations offered for this part.

## 15.5 External Landscape & Circulation

### 15.5.1 Design Considerations

External areas and circulation often constitute an important component of historical and heritage sites, especially those of archaeological significance.

### 15.5.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.5.3 General Guidelines

- a. External paths and routes should be smooth, level and free of obstacles and protruding/ hazardous objects;
- b. Provision should be made for accessible rest areas, at suitable junctions to provide relief for users experiencing difficulty. Where appropriate, shelters should be provided that are contextually appropriate;
- c. Managerial and operational procedures should be in place to ensure that paths and routes are maintained and periodically upgraded to ensure better levels of access;
- d. Access to rougher landscapes can be provided over short-distances with different forms of boardwalks;

### 15.5.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.5.5 Illustrations

No illustrations offered for this part.



## **15.6 Internal Circulation**

### **15.6.1 Design Considerations**

The requirements for access in terms of internal circulation should be applied as thoroughly and rigorously as possible for heritage sites, and includes elements such as navigability, horizontal and vertical access, surfaces, lighting, coloring etc.

### **15.6.2 Application Considerations**

This part applies to all heritage/ conservation areas.

### **15.6.3 General Guidelines**

- a. Where access is not possible to an element of the heritage offering, an alternative mechanism of delivery should be employed to convey the essential significance and experience of the element;
- b. On-site availability of mobility devices is an essential operational feature, and includes the provision of wheelchairs, scooters, walking aids etc. for use by visitors;

### **15.6.4 Technical Guidelines**

No technical guidance is offered for this part.

### **15.6.5 Illustrations**

No illustrations offered for this part.

## 15.7 Interpretative Information

### 15.7.1 Design Considerations

Interpretative information forms the essential linkage between the physical form and/or context of the heritage offering itself, and the ability of visitors to experience and understand such an offering, and its significance. Interpretative information typically includes paneling, audio and multi-media presentation, tactile items and surfaces.

### 15.7.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.7.3 General Guidelines

- a. Alternative and multiple modes of information expression should be explored and designed for visitors who may experience difficulties following conventional narrative mechanisms;
- b. Interpretative information should provide multiple modes of engagement and/or representation, specifically allowing the user the opportunity of choosing which sense to employ;
- c. Interpretative panels and physical information should be presented in a suitably accessible format, and legible to shorter persons, children and seated persons;
- d. Staff members should be trained in the different mechanisms of information delivery, and should be able to provide impromptu information to visitors, whether through e.g. written mechanisms, or sign language;

### 15.7.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.7.5 Illustrations

No illustrations offered for this part.



## 15.8 Programmes & Events

### 15.8.1 Design Considerations

Education components orientated within heritage sites, such as programmes, tours and events often constitute a core element of the visitor experience, and are critical for the appreciation and understanding of heritage. Alternative and multiple formats for programmes, tours and events should be included, and may constitute virtual, touch etc. elements, or presentations in multiple languages.

### 15.8.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.8.3 General Guidelines

- a. Where programmes are an element of heritage sites, these must be clearly evident to all users prior to engagement on-site, or upon arrival at a heritage site. This should include, though will not be limited to, the determination of any special requirements for programmes, tours and events.
- b. Educational talks, programmes etc. should be offered, as far as possible, in accessible areas of heritage sites;
- c. Alternative and multiple means of presentation should be explored to present all users with the same information;
- d. Where a programme cannot be made accessible, then an alternative means of delivery should be considered; e.g. the usage of outreach programmes is a viable and tenable option in such scenarios;
- e. If a site is used for public and/ or private ceremonies on a regular basis then provision for the accessibility of such ceremonies must be integrated into the management of heritage sites.

### 15.8.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.8.5 Illustrations

No illustrations offered for this part.

## 15.9 Facilities

### 15.9.1 Design Considerations

Facilities include areas such as ablutions, restaurants, education and visitor centers, and other amenities. These facilities are a crucial component of the visitor experience, with new or adapted facilities complying fully with the various requirements set out in this playbook for various facility elements.

### 15.9.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.9.3 General Guidelines

- a. Facilities should comply with the requirements set out in these guidelines for the relevant facility.
- b. Where possible, seating should be designed so as to incorporate maximum flexibility in usage.
- c. Additional ablution facilities may be required, dependent on the configuration and layout of heritage sites;
- d. Multiple means of information expression should be explored for facilities, including, for example, large-print and Braille menus, staff-assistance and the usage of temporary aids or facilities.

### 15.9.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.9.5 Illustrations

No illustrations offered for this part.



## 15.10 Emergency Egress

### 15.10.1 Design Considerations

All visitors to heritage sites must be able to exit such areas swiftly and safely in an emergency. Responsibility for ensuring emergency egress must be clearly determined, and steps taken to maximize such. As always, fundamentally good environmental design is a key contributing factor to ensuring equitable egress.

### 15.10.2 Application Considerations

This part applies to all heritage/ conservation areas.

### 15.10.3 General Guidelines

- a. Evacuation strategies must be formulated with the specific requirements of all users in mind;
- b. Particular site and location-specific variables that may influence egress should be identified and provision made for such;
- c. Training is a fundamental component of evacuation and egress mechanisms, and all heritage sites should have adequately focused and trained staff who are able to assist visitors in emergencies;
- d. There should be multiple means of providing emergency warning, for example, the usage of directional sound systems, paging systems, visual alarms etc.
- e. Effective smoke-detection technology should be deployed, for example, the usage of aspirating detectors should be considered for inclusion where possible;

### 15.10.4 Technical Guidelines

No technical guidance is offered for this part.

### 15.10.5 Illustrations

No illustrations offered for this part.

## Appendices







## APPENDIX A: Space and Reach Requirements

### Design Considerations

The dimensions and maneuvering characteristics of persons using wheelchairs, scooters, other mobility devices, luggage, and prams or strollers are as varied as the people who use them. Traditionally, accessibility standards have taken a conservative approach to wheelchair maneuverability, reflecting the needs of a physically strong individual using a manual wheelchair. Such an approach excludes the many users without such a degree of strength, those using a larger mobility device, or for other items used in the built environment. This standard more accurately reflects the vast array of equipment that is used by persons to access and use facilities, as well as, the diverse range of user ability. This standard incorporates more generous space requirements, particularly related to the dynamic movement of people using wheelchairs, scooters, or other assistive devices.

### Application Considerations

Space and reach provisions for persons who use wheelchairs, scooters, and other mobility devices should comply with this section.

### General Guidelines

- a. **General:** All pedestrian access routes and areas should provide sufficient space to accommodate all people.
- b. **Clear Floor Space:** Minimum clear floor space or ground space should be provided shown in the Table above.

Type of User	Clear Floor Space Requirements
Person with a pram or stroller	Clear floor area at least 1650 mm long and 660 mm wide
Person with luggage	Clear floor area at least 1550 mm long and 660 mm wide
Person using crutches	Clear floor area 810-920 mm wide
Person using a walker	Clear floor area at least 710 mm wide
Person using a long cane	Clear floor area 900-1500 mm wide
Person using a manual wheelchair	Clear floor area at least 1300 mm long and 800 mm wide
Person using a power wheelchair	Clear floor area at least 1360 mm long and 800 mm wide
Person using a scooter	Clear floor area at least 1400 mm long and 800 mm wide



The minimum clear floor space or ground space for wheelchairs or scooters may be positioned for forward or parallel approach to an object. Clear floor space or ground space for wheelchairs may incorporate part of the knee space required under some objects. One full, unobstructed side of the clear floor space or ground space for a wheelchair or scooter should adjoin or may overlap an accessible route or may adjoin another wheelchair clear floor space. If a clear floor space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances should be provided as shown in the figures.

**c. 360 and 180 Degree Turn:** The clear floor space required for a wheelchair or scooter to make a 360-degree turn is 2100 mm in diameter or for a 180-degree turn, as shown in the figures below.

**d. Floor/ Ground Surface:** The surface of clear floor or ground spaces for wheelchairs and scooters should comply with Appendix 2.

**e. Side Reach:** If the clear floor space allows parallel approach to an object, the maximum high side reach should be 1370 mm, and the low side reach should be no lower than 230 mm above the floor. If the side reach is over an obstruction, the reach and clearances should be as shown in the Figures below.

**f. Forward Reach:** If the clear floor space only allows forward approach to an object, the maximum high forward reach should be 1200 mm, and the low forward reach should be no lower than 450 mm above the floor. If the forward reach is over an obstruction, reach and clearances should be as shown in the Figures below.

**g. Knee Space and Toe Clearance for Seated Persons:** A clear knee space at least 685 mm high and 280 mm deep should be provided, as well as a further clear toe space at least 300 mm high and 250 mm deep.

## Illustrations

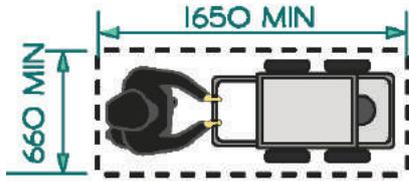


Figure 108. Clear Floor Space for a Person with a Pram/Stroller

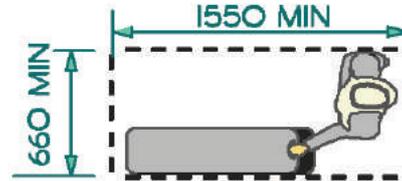


Figure 109. Clear Floor Space for a Person with Luggage

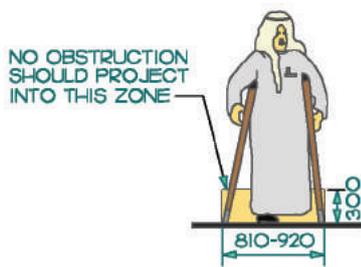


Figure 110. Clear Floor Space for a Person using Crutches



Figure 111. Clear Floor Space for a Person using a Walker

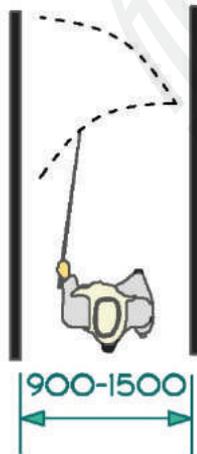


Figure 112. Clear Floor Space for a Person using a Long White Cane

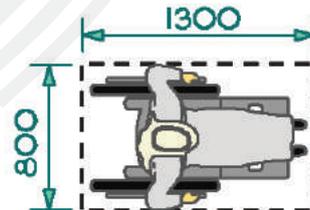


Figure 113. Clear Floor Space for a Person using a Manual Wheelchair

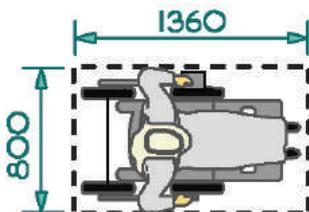


Figure 114. Clear Floor Space for a Person using a Power Wheelchair

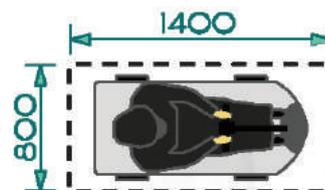


Figure 115. Clear Floor Space for a Person using a Scooter

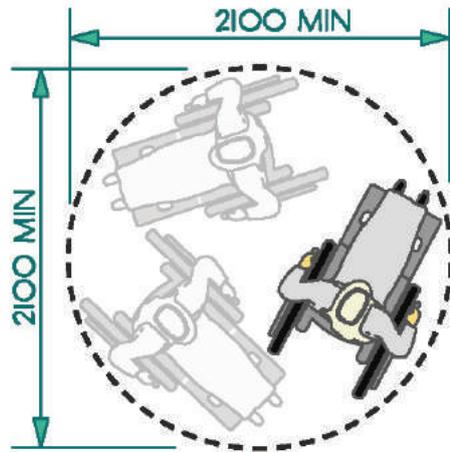


Figure 116. 360° Turning Space for Wheelchair or Scooter

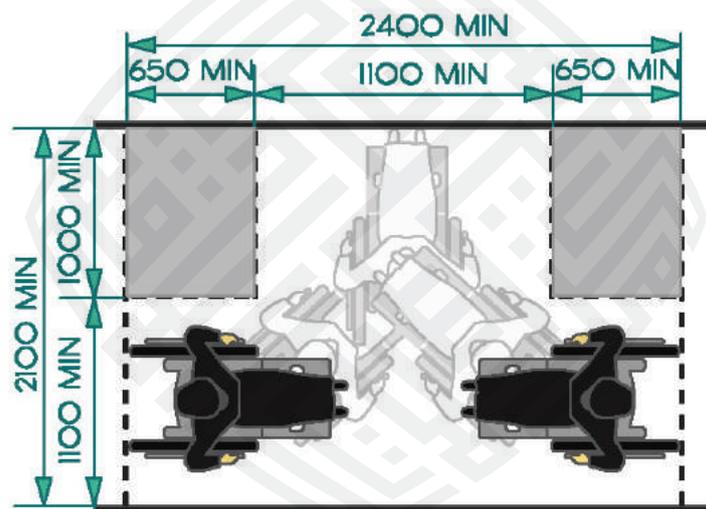
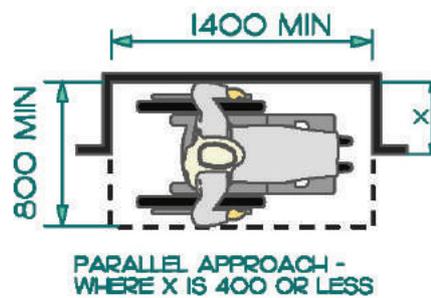


Figure 117. 180° Turning Space for Wheelchair or Scooter



PARALLEL APPROACH -  
WHERE X IS 400 OR LESS

Figure 118. Clearances at Alcove

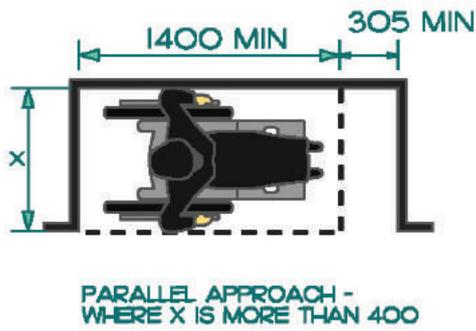


Figure 119. Clearances at Alcove

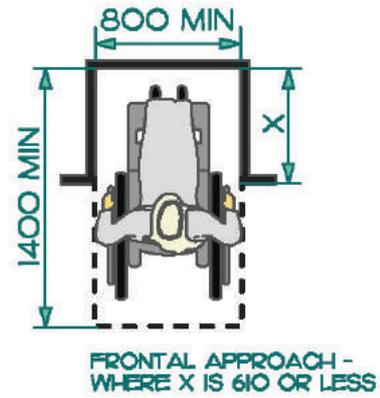


Figure 120. Clearances at Alcove

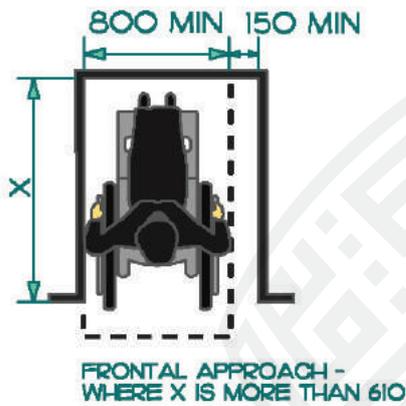


Figure 121. Clearances at Alcove

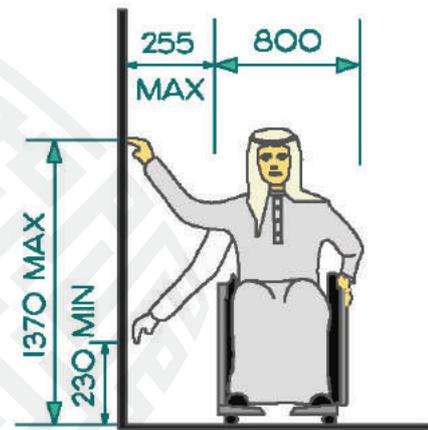


Figure 122. Side Reach

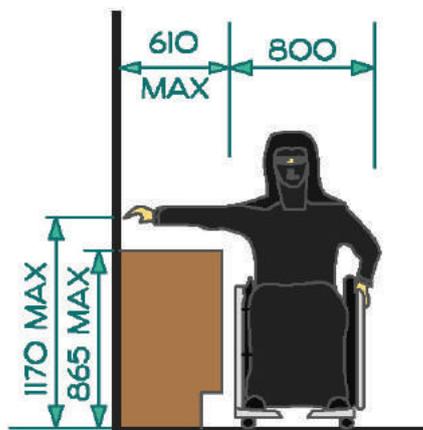


Figure 123.- Side Reach over an Obstruction

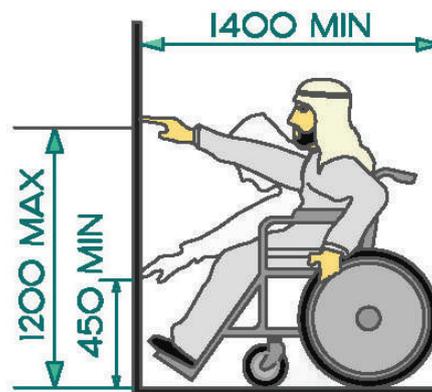


Figure 124. Forward Reach

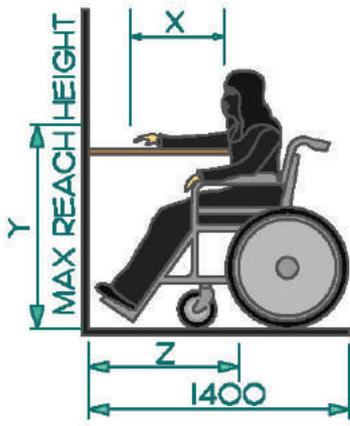


Figure 125. Forward Reach over an Obstruction

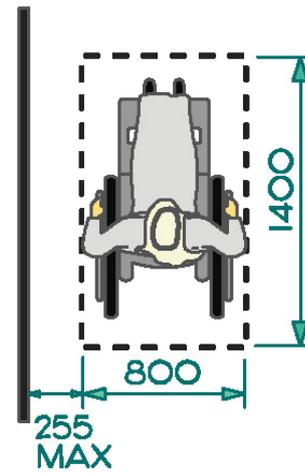


Figure 126. Side Reach - Maximum Distance to Wheelchair

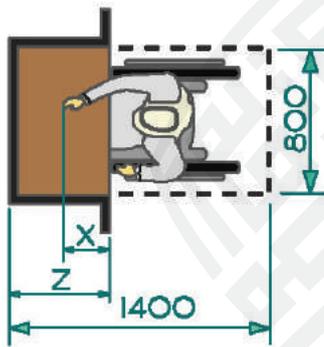


Figure 127. Forward Reach over an Obstruction

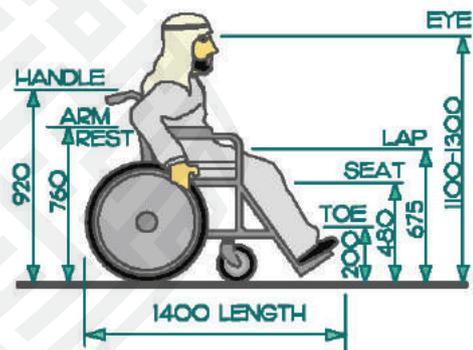


Figure 128. Typical Dimensions of an Adult Manual Wheelchair

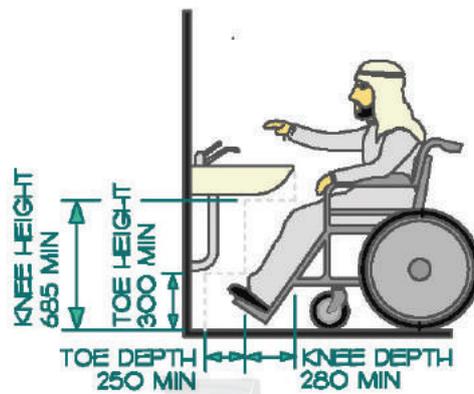


Figure 129. Knee and Toe Clearances

## APPENDIX B: Ground and Floor Surfaces

### Design Considerations

Design decisions related to ground and floor surfaces will influence every person who enters the building. Irregular surfaces, such as cobblestones, pea-gravel walkways, or pea-gravel finished concrete, are difficult for both walking on and pushing a wheelchair. Slippery surfaces are hazardous to all individuals and especially hazardous for seniors and others who may not be sure-footed.

Glare from polished floor surfaces can be uncomfortable for all users and can be a particular obstacle to persons with a visual impairment by obscuring important orientation and safety features. Pronounced colour contrast between walls, base boards, and floor finishes may be helpful for persons with a visual impairment, as are changes in colour/texture where a change in level or function occurs.

Patterned floors should be avoided, as they can create visual confusion.

Thick pile carpeting makes pushing a wheelchair very difficult. Small and uneven changes in floor level represent a further barrier to using a wheelchair and also present a tripping hazard to ambulatory persons.

Openings in any ground or floor surface such as grates or grilles can catch canes or wheelchair wheels and should be avoided for safety wherever possible.

### Application Considerations

Ground and floor surfaces along all routes generally used by staff and public, and within all areas generally used by staff and public should comply with this section.

### Technical Guidelines

- a. **Ground and Floor Surfaces:** Ground and floor surfaces should be stable, firm, slip-resistant, and glare-free. Ground and floor surfaces should not be heavily patterned.
- b. **Changes in Level:** Except for elevators and other elevating devices, changes in level should conform to the Table below:



Table – Changes in Level

Vertical Rise	Edge Treatment
0 to 6 mm	May be vertical
7 to 13 mm	Bevelled, but not steeper than the ratio of 1:2 (50%)
Over 13 mm	Not steeper than the ratio of 1:16 (6.25%) and treated as a sloped floor, ramp or curb ramp

**c. Carpets:** Carpets or carpet tile should be securely fixed; have a firm cushion, pad or backing, where used. Carpets should have a level loop, textured loop, level cut pile, or level cut/uncut pile texture with a maximum pad and pile height of 13 mm and have exposed edges fastened to floor surfaces with trim conforming to the Table above.

**d. Gratings:** Gratings located in walking surfaces should have spaces not greater than 13 mm wide in one direction and be placed so that the long dimension is across the dominant direction of travel.

**e. Pavers:** Pavers should have a joint spacing of not more than 6 mm. Exception: Pavers with bevelled edges should have a maximum spacing of 13 mm between the edges of the bevel on the top surface of the pavers.

**f. Catch Basins or Drainage Inlets:** Catch basins or drainage inlets should not be located in the accessible route and should be relocated if already existing in an accessible route. If relocation of an existing catch basin or drainage inlet is technically infeasible, the basin and inlet cover's should have spaces not greater than 13 mm wide in one direction and be placed so that the long dimension is across the dominant direction of travel.

## Illustrations

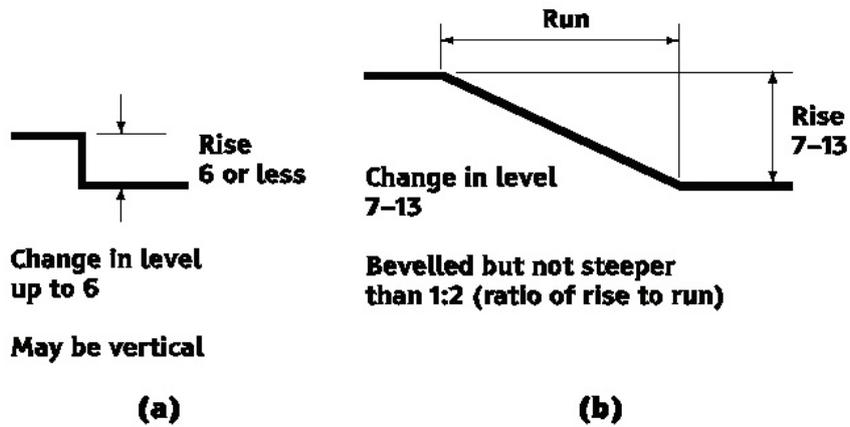


Figure 130. Changes in Level up to 6

Figure 131. Changes in Level between 7 and 13

Unless otherwise noted, all dimensions are in millimetres.

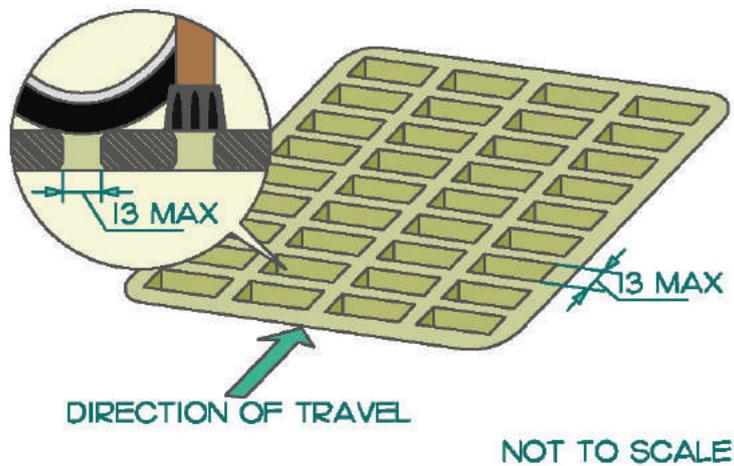


Figure 133. Grills and Gratings

Unless otherwise noted, all dimensions are in millimetres.



## APPENDIX C: Protruding and Overhead Objects

### Design Considerations

The creation of pathways free from protruding objects or freestanding obstacles is important to all facility users. An object protruding from a wall above the detection range of a long white cane is dangerous for persons with a visual impairment or a pedestrian distracted by a conversation. The underside of stairways is a common overhead hazard. Temporary construction barriers can also be hazardous if their lower edge is too high to be detected by a person using a long white cane for mobility. Detectable warning surfaces around freestanding obstacles, such as light standards, are advantageous to anyone using a pathway.

### Application Considerations

Protruding objects from a wall, ceiling, or other location should comply with this section.

### Technical Guidelines

- a. Protruding Objects:** Objects protruding from walls with their leading edges between 680 mm and 2100 mm from the floor should protrude not more than 100 mm into pedestrian areas, such as walkways, halls, corridors, passageways or aisles. Objects attached to a wall with their leading edges at or below 680 mm from the floor may protrude any amount.
- b. Freestanding Objects:** Freestanding objects should not have any overhang of more than 300 mm between 680 mm and 2100 mm from the ground or floor. The maximum height of the bottom edge of freestanding objects with a space of more than 300 mm between supports should be 680 mm from the ground or floor.
- c. Width Maintenance:** Protruding objects should not reduce the clear width required for an accessible route or manoeuvring space.
- d. Headroom:** The minimum clear headroom in pedestrian areas, such as walkways, halls, corridors, passageways, or aisles, should be 2100 mm. A doorway clear height of 2100 mm is preferred; however a clear height of 1980 mm at the door is acceptable.
- e. Overhead Hazard:** A detectable guard, guardrail or other barrier having its leading edge at or below 680 mm from the floor should be provided where the headroom of an area adjoining an accessible route is reduced to less than 2100 mm. The guard should be firmly fixed and colour contrasted with either solid or horizontal railings.

**f. Detectable Ground Surface:** A tactile and colour contrasting warning surface of at least 300 mm in depth and surrounding the full protruding or overhanging object should be located at grade to enhance its detectability. The tactile and colour contrasting warning surface should be installed flush with the walkway surface.

**g. Color Contrast:** The leading edge of a protruding or overhanging object should be colour contrasted to its background and surroundings to enhance the visibility of the protruding and overhanging object.

**h. Walkway Widths for Persons Using Crutches:** Typical floor width dimension for a person using crutches is 810-920 mm wide. No obstruction should project into this floor width below 300 mm above the floor as shown in the Figures below.

**i. Detection Space for Persons Using a Long White Cane:** Persons who use a long white cane to help them manoeuvre can detect an obstruction within a height range of up to 680 mm from the floor. Depending on the person, the forward detection range can vary from 915-1500 mm.

**j. Detection Space for Persons Using a Walker:** Typical floor width dimensions for a person using a walker are 710 mm.

## Illustrations

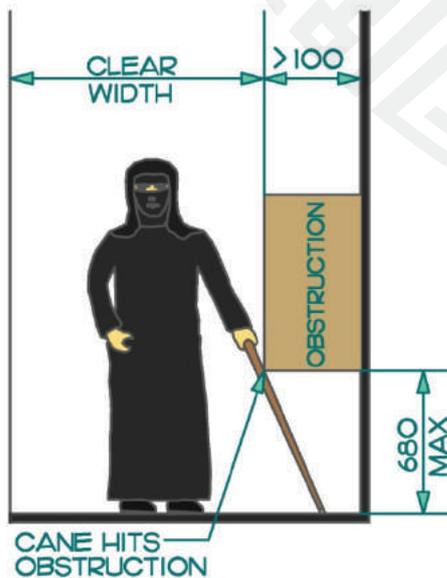


Figure 134. Limits of Protruding Objects

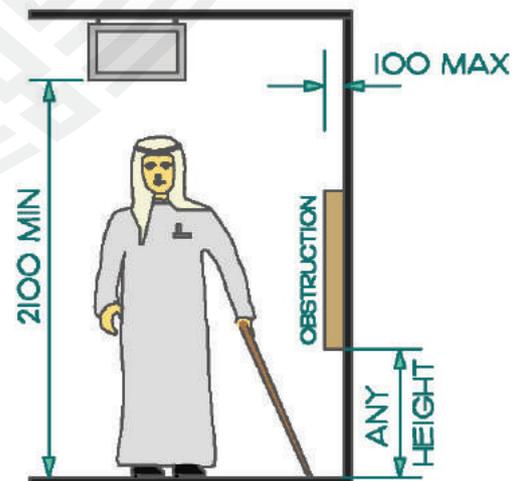


Figure 135. Limits of Protruding and Overhanging Objects

Unless otherwise noted, all dimensions are in millimetres.

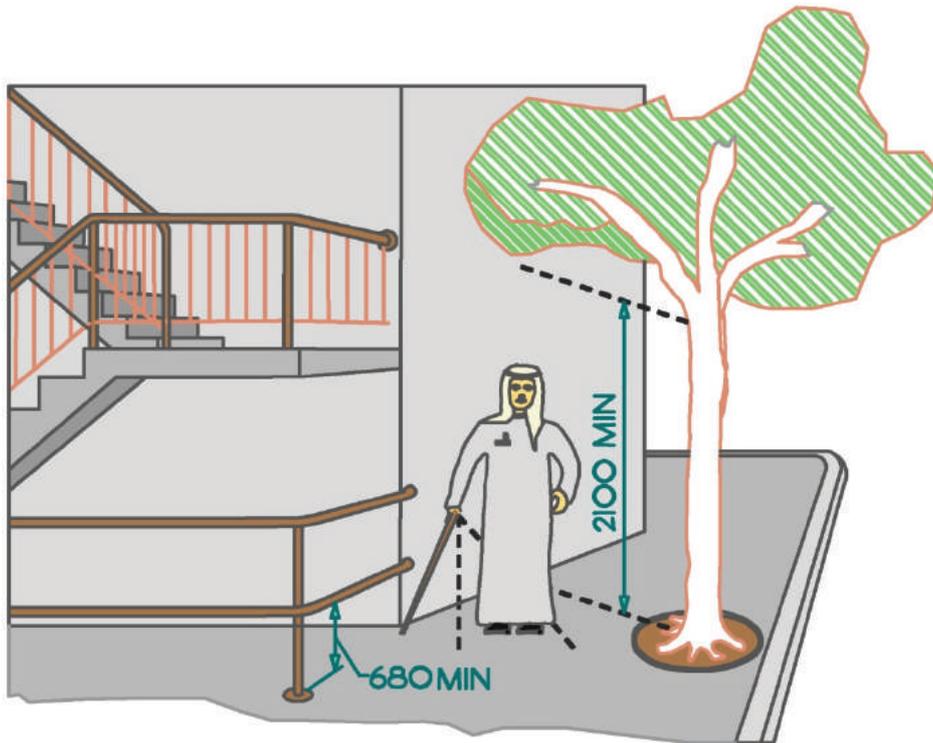


Figure 136. Overhead Obstructions

*Unless otherwise noted, all dimensions are in millimetres.*

## APPENDIX D: Accessible Routes, Paths and Corridors

### Design Considerations

Routes of travel through or to a facility should address the full range of individuals that may use them. They must provide the clear width necessary for persons using wheelchairs, scooters, those pushing strollers, or those traveling in pairs. Consideration should be given not just to the width of items, such as wheelchairs and scooters, but also to their manoeuvrability. While a corridor may be wide enough for a person to drive a scooter in a straight line, it may not be possible to make a turn around a corner. The preferred minimum width for accessible routes is 1800 mm.

Strong colour contrasts and/or tactile pathways set into floors may be used to assist individuals with a visual impairment to negotiate an environment. Edge protection that guards a change in level is an important safety feature for all users.

### Application Considerations

All routes, paths or corridors should comply with this section.

Exceptions: The provision of an accessible route does not apply:

- to service rooms
- to elevator machine rooms
- to janitor rooms
- to service spaces
- to crawl spaces
- to attic or roof spaces
- to high-hazard industrial occupancies within portions of a floor area with fixed seats in an assembly occupancy where these portions are not part of an accessible route to spaces designated for wheelchair use; or

Accessible routes are permitted to include ramps, curb ramps, stairs, elevators or other elevating devices where a difference in elevation exists.

### Technical Guidelines

**a. Clear Width:** The minimum clear width of accessible routes should be 1200 mm except: at doors. Refer to Section 3-16 for additional manoeuvring space requirements at doorways. Where space is required for two wheelchairs to pass, an accessible route should be a minimum of 1800 mm wide. At secondary circulation routes within open office areas, where systems-furniture work station clusters are used, accessible routes should be a minimum of 900 mm.



**b. Accessible Routes:** Accessible routes should have a running slope not steeper than 1:25 (4%), have a cross slope not steeper than 1:50 (2%), and where the accessible route incorporates a curb ramp, the curb ramp portion of the accessible route should comply with the Section on Pedestrian Access (see above). Every accessible route less than 1800 mm wide should be provided with unobstructed passing spaces of not less than 1800 mm in width and 1800 mm in length, located not more than 30 meters apart.

**c. Edges:** Except at stairs and at elevated platforms such as performance areas or loading docks, where the edge(s) of an accessible route, path or corridor is not level with the adjacent surface, the edge(s) should be protected by a colour contrasting curb or other material of at least 75 mm high where the change in level is between 200 mm and 600 mm and by a guard which meets the requirements of the Kingdom of Saudi Arabia Building Code where the change in level is greater than 600 mm.

**d. Change of Direction Signage:** Where there is a change in direction along an accessible route and the intended destination of the route is not evident, directional signage should be provided.

**e. Illumination:** All portions of an accessible route should be equipped to provide a minimum level of illumination of 50 lux on interior accessible routes and 30 lux on exterior accessible routes that is uniform along the route. Exception: In outdoor park settings where routes are not normally illuminated, additional illumination is not required. Consideration should be given to the use lighting along ceilings to help orientate and direct persons along walkways. Illumination should otherwise comply with the requirements of Appendix 11.

**f. Slope:** Accessible routes, paths or corridors having a slope steeper than 1:25 (4%) should be designed as ramps.

**g. Rest Areas:** Accessible routes should incorporate level rest areas spaced no more than 30 metres apart.

**h. Surfaces:** Wall surfaces along accessible routes should be non-abrasive. Highly reflective wall surfaces or high-glare wall and floor surfaces should be avoided. Floor surface should not be heavily patterned.

**i. Color Contrast:** There should be contrasting colour luminance at base boards, walls and doors to assist everyone in delineating the access route. Walls at the end of corridors should be contrasted in colour or brightness from other walls and floor.

**j. Landscaping:** Landscaping along accessible routes should be in compliance with the section on landscaping above. b) Freestanding Objects: Freestanding objects should not have any overhang of more than 300 mm between 680 mm and 2100 mm from the ground or floor. The maximum height of the bottom edge of freestanding

objects with a space of more than 300 mm between supports should be 680 mm from the ground or floor.

**c. Width Maintenance:** Protruding objects should not reduce the clear width required for an accessible route or manoeuvring space.

**d. Headroom:** The minimum clear headroom in pedestrian areas, such as walkways, halls, corridors, passageways, or aisles, should be 2100 mm. A doorway clear height of 2100 mm is preferred; however a clear height of 1980 mm at the door is acceptable.

**e. Overhead Hazard:** A detectable guard, guardrail or other barrier having its leading edge at or below 680 mm from the floor should be provided where the headroom of an area adjoining an accessible route is reduced to less than 2100 mm. The guard should be firmly fixed and colour contrasted with either solid or horizontal railings.

## Illustrations



Figure 137: Edge Protection

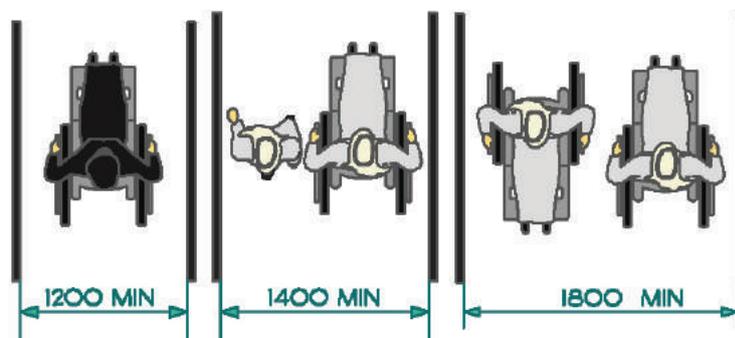


Figure 140: Access Widths

*Unless otherwise noted, all dimensions are in millimetres.*



## APPENDIX E: Handrails

### Design Considerations

In the design of handrails, consideration must be given to the range of hand sizes that will grasp them. A handrail profile should be graspable for an adult's hand, as well as, a child's, or persons with arthritis. The same is true for the heights of handrails where handrails of two different heights should be available to be grasped by a tall or a person short in stature.

Extensions of the handrails parallel to the floor at the top and bottom of stairs, along with the use of a contrasting colour to their surroundings, provide important cues for a person with a visual impairment. A handrail's extension at the top or bottom of a set of stairs provides support to ensure a safe and stable gait before ascending or descending the stairs. A continuous handrail with no interruptions ensures that a handhold of a person will not be broken.

The clear space between the wall and handrail is also essential, as it must provide a clear area for the hand and knuckles to pass, but must not offer too much space into which an arm may slip during a fall or stumble on a set of stairs or a ramp.

### Application Considerations

All handrails should comply with this section.

### Technical Guidelines

**a. Mounting Height:** Handrails should be provided at two heights. Upper handrails on a set of stairs, a ramp, or other installation should be mounted between 865-920 mm, measured vertically from a line drawn through the outer edges of the stair nosing, from the surface of a ramp, or the floor to the top of the handrail. An additional handrail should be located 600-750 mm above the stair nosing, ramp surface, or floor to the top of the handrail to accommodate children or persons small in stature.

**b. Grip:** Handrails should have a circular section 30-40 mm in diameter. Non-circular handrail shapes do not allow the thumb and fingers to lock and therefore are not as effective for grasping and are not recommended. All handrails should be slip resistant and have continuous gripping surfaces, without interruption by newel posts, other construction elements, or obstructions that can break a handhold and should be free of any sharp or abrasive elements. Handrails should have a clear space between the handrail and the wall of at least 50 mm for a smooth wall or at least 60 mm where the wall has a rough surface. A handrail may be recessed with a clear space above the top of the handrail of at least 450 mm, 35-45 mm below the bottom of the handrail.

**c. Termination:** Handrails and their extensions on stairs, ramps, or along hallways should return to the wall, floor or a newel (post) to avoid catching clothes or being an obstruction. Where a handrail is not continued, a tactile indicator in the form of a domed button should be provided on the top of the handrail 140-160 mm from the end of the handrail.

**d. Load Values:** Handrails and their supports should be designed and constructed to withstand the loading force of at least 1.3 kN applied in any direction to the handrail.

**e. Color Contrast:** Handrails should incorporate a pronounced colour contrast, to differentiate them from the surrounding environment.

**f. Hazardous Areas:** Any handrail that leads to a hazardous area should be equipped with detectable cues. A roughened handrail surface will alert people with visual impairments. The warning surface should be a minimum of 1200 mm long and be located immediately before the potential hazard.

**g. Emergency Exiting:** There should be a colour contrasting tactile strip applied to the top and bottom edges of the handrail where the handrail is located along any emergency exit routes on stairs, ramps, or other installations.

## Illustrations

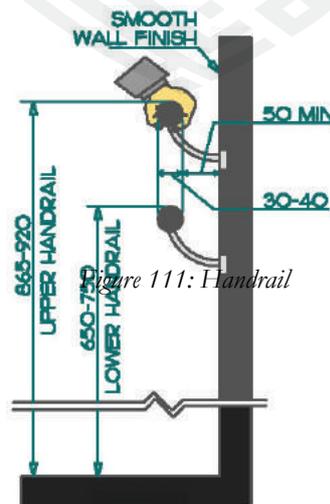


Figure 111: Handrail

Figure 111. Handrail

*Unless otherwise noted, all dimensions are in millimetres.*

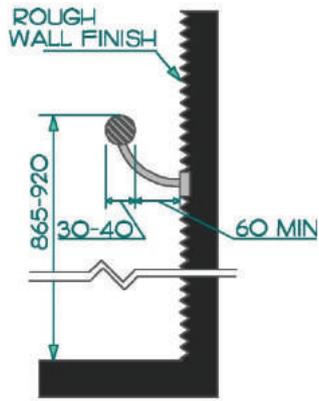


Figure 142. Handrail at Rough Wall

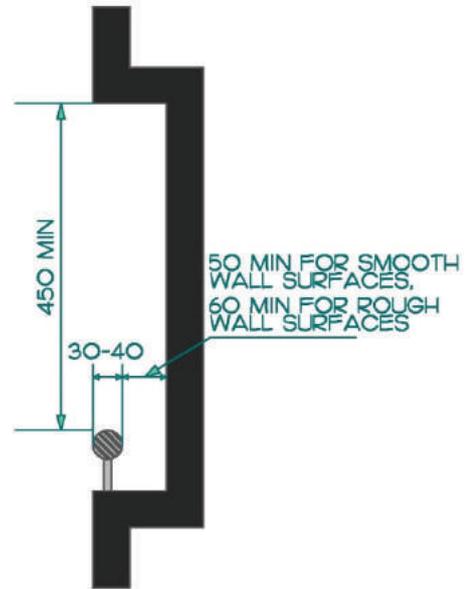


Figure 143. Handrail in Recess

Unless otherwise noted, all dimensions are in millimetres.

## APPENDIX F: Control and Operating Mechanisms

### Design Considerations

Operating mechanisms that require a high degree of dexterity or strength will be difficult for many people to use. They can also be obstacles for children, individuals with arthritis, or even someone wearing gloves. Controls that require two hands to operate can also be difficult for some people, particularly those with reach or balance limitations, or those who must use their hands to hold canes or crutches.

The placement of controls is integral to their accessibility. For the individual using a wheelchair, the height of the controls and the space to position the wheelchair in front of the controls are important. Controls placed high on a wall are also difficult for children or persons of short stature to reach.

Individuals with a visual impairment may have difficulty with flush-mounted buttons, touch screens, or controls without tactile markings. Controls that contrast in colour from their background, including colour-contrasted raised letters, may be easier to find by an individual with a visual impairment. Persons with cognitive challenges may find counterintuitive controls or graphics difficult.

### Application Considerations

Controls and operating mechanisms generally used by staff or public (e.g., light switches and dispenser controls) should comply with this section.

Exception: Restricted-access controls.

### Technical Guidelines

**a. Clear Floor or Ground Surface:** A clear, level floor area at least 800x1400 mm should be provided at controls and operating mechanisms, such as dispensers and receptacles, for a forward approach. A clear, level floor area of 1400x1400 mm can accommodate both a forward and parallel side approach

**b. Operable Portions of Controls and Mechanisms:** The operable portions of controls and operating mechanisms such as electrical switches, thermostats, and intercom switches, should be located 900-1200 mm from the floor. They should be useable by persons who are standing or seated. (Height exceptions: Elevators and power door operator control). Lever, rocker, push-bar, or automatic controls should not be heat sensitive.



**c. Electrical Outlets and Similar Devices:** Electrical outlets and other types of devices should be located no lower than 450 mm to their centreline above the floor. Exception: Where electrical outlets are provided as components of systems furniture, these devices need not comply with this section provided they are installed in addition to electrical outlets required by the Authority having Jurisdiction.

**d. Faucets and Other Controls:** Faucets and other controls should be hand-operated or electronically controlled. Hand-operated controls and mechanisms should be operable with one hand, without tight grasping, pinching, or twisting of the wrist; and with a force of less than 22N.

**e. Illumination:** Controls and operating mechanisms should be capable of being illuminated to at least a level of 100 lux. Where reading is required, illumination of at least 200 lux is recommended.

**f. Color Contrast:** Controls and operating mechanisms should incorporate a pronounced colour contrast, to differentiate them from the surrounding environment

**g. Buttons:** Controls with buttons should have the buttons raised above their surroundings, be tactile, and include auditory information indicating function and position of controls.

**h. Information on or Bedside Controls:** Information on or beside controls should be in large print and easy to read.

**i. Intuitive Use:** Controls and operating mechanisms should be of simple and intuitive to use.

## Illustrations

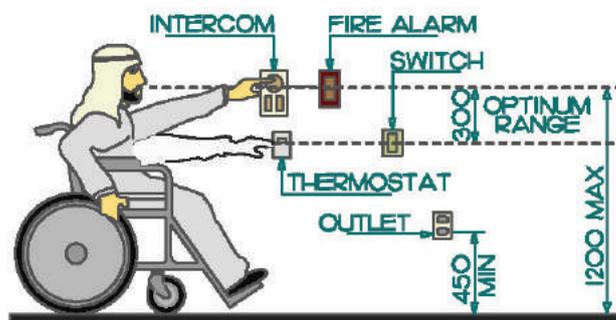


Figure 144. Reach Range for Accessible Controls

Unless otherwise noted, all dimensions are in millimetres.

## APPENDIX G: Definitions

1. **Access** – approach, entry or exit
2. **Accessible** – a site, building or facility or portion thereof that complies with this part. The Draft Access Code for Buildings (Australia) defines ‘accessible’; with respect to buildings or parts of buildings, means that people, regardless of disability, age or gender are able to gain access. Accessibility is evaluated in terms of the safe, comfortable and convenient use of a site, building or facilities by people with disabilities.
3. **Accessible means of egress** – a continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge, a horizontal exit, or a public way.
4. **Accessway** – means a continuous accessible path of travel to, into or within a building
5. **Addition** – an expansion, extension, or increase in the gross are of a building or facility
6. **Alteration** – any change to a building or facility that affects or could affect the usability of the building or facility or portion thereof. Alterations include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, historic restoration, resurfacing of circulation paths or vehicular ways, changes or rearrangement of the structural parts or elements, or changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, reroofing, painting or wallpapering, or changes to mechanical and electrical systems are not alterations unless they affect the usability of the building or facility.
7. **Amusement attraction** – any facility, or portion of facility, located within an amusement park or theme park which provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats.
8. **Amusement ride** – a system that moves persons through a fixed course within a defined area for the purpose of amusement.
9. **Amusement ride seat** – a seat that is built-in or mechanically fastened to an amusement ride intended to occupy one or more passengers
10. **Area of sport activity** – that portion of a room or space where the play or practice of a sport occurs
11. **Assembly area** – a building or facility, or portion thereof, used for the purposes of entertainment, educational or civic gatherings, or similar purposes. For the purpose of the requirements,, assembly areas include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers.



12. **Assistive Listening System (ALS)** – an amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment.
13. **Boarding pier** – a portion of a pier where a boat is temporarily secured for the purposes of embarking or disembarking.
14. **Building** – any structure used or intended for supporting or sheltering any use or occupancy.
15. **Characters** – letters, numbers, punctuation marks and typographic symbols
16. **Children’s use** – describes spaces and elements specifically designed for use primarily by people 12 years old and younger.
17. **Circulation path** – an exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, hallways, courtyards, elevators, platform lifts, ramps, stairways and landings.
18. **Circulation space** – unobstructed area for a minimum height of 2m above finished floor level, which is that space surrounding buildings, elements, fixtures and fittings required for movement into and within buildings.
19. **Clear opening width** – clear open space of an open door through which the user of a building passes. Clear opening width is not the same as door width, as it also accounts for the thickness of the door, and any obstructions caused by door furniture on the door, or obstructions such as door stops fixed to floor or walls.
20. **Closed-Circuit telephone** – a telephone with a dedicated line such as a house phone, courtesy phone or phone that must be used to gain entry to a facility.
21. **Common-use** – interior or exterior circulation paths, rooms, spaces, or elements that are not for public use and are made available for the shared use of two or more people.
22. **Cross slope / Camber** – the slope that is perpendicular to the direction of travel. Cross slope is measured the same way as slope is measured, i.e. the rise over the run.
23. **Curb ramp** – a short ramp cutting through a curb or built into it.
24. **Deemed-to-satisfy** – non-mandatory requirement, the compliance with which ensures compliance with a functional regulation.
25. **Detectable warning** – a standardized surface feature built in or applied to walking surfaces or other elements to warn of hazards on a circulation path.
26. **Easy-to-use** – descriptive of a fixture or fitting that has been designed and fitted in such a way that people with disabilities are able to use it safely, effectively, comfortably and conveniently, both in terms of the mechanism used for its operation and the force required to operate it.
27. **Element** – an architectural or mechanical component of a building, facility, space or site.
28. **Employee work area** – all or any portion of a space used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas.

29. **Entrance** – any access point to a building or portion of a building or facility used for the purposes of entering. An entrance includes the approach walk, the vertical access leading to the entrance platform, the entrance platform itself, vestibule if provided, the entry door or gate, and the hardware of the entry door or gate.
30. **Facility** – all or any portion of buildings, structures, site improvements, elements and pedestrian routes or vehicular ways located on a site.
31. **Fire-isolated ramp** – means a ramp within a fire-resisting enclosure which provides egress from a storey.
32. **Fire-isolated stairway** – means a stairway within a fire-resisting shaft and includes the floor or roof or top enclosing structure.
33. **Floor area** – means
34. **in relation to a building** – the total area of all storeys
35. **in relation to a storey** – the area of all floors of that storey measured over the enclosing walls, and includes
36. **the area of a mezzanine within the storey, measured within the finished surfaces of any external walls; and**
37. **the area occupied by any internal walls or partition, any cupboard, or other built-in furniture, fixture or fitting; and**
38. **if there is no enclosing wall;** an area which has a use that either contributes to the fire load or impacts on the health, safety or amenity of the occupants
39. **in relation to a room** – the area of the room measured within the finished surfaces of the walls, and includes the area occupied by any cupboard or other built-in furniture or fitting
40. **in relation to a fire compartment** – the total area of all floors within the fire compartment measured within the finished surfaces of the bounding construction, and if there is no bounding construction, includes an area which has a use which contributes to the fire load, and
41. **in relation to an atrium** – the total area of all floors within the atrium measured within the finished surfaces of the bounding construction and if no bounding construction, within the external walls
42. **Flush finish** – finishing of two adjacent surfaces in such a way that they provide no vertical or horizontal gap, gradient or camber that affects the safe, comfortable and convenient passage of people with disabilities.
43. **Functional regulation** – regulation that sets out in qualitative terms what is required of a building or building element or building component in respect of a particular characteristic without specifying the method of construction, dimensions or materials to be used.
44. **Gangway** – a variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. Gangways that are connected to vessels are not contemplated in these requirements.
45. **Handrail** – rail used in circulation areas, such as corridors, passageways, ramps or stairways to assist continuous and safe movement.
46. **Health-care building** – means a building whose occupants or patients



undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes a public or private hospital; a nursing home or similar facility for sick or disabled persons needing full-time nursing care; or a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

47. **Kerb cut** – link between a road traffic surface and an elevated or lowered pedestrian pavement.
48. **Landing** – platform or part of a floor structure at the end of a flight of stairs or a ramp.
49. **Level** – with respect to the surfaces of a level approach, access routes and landings associated with steps, stairs and ramps means level.
50. **Luminance-contrast** – means the amount of light reflected from one surface or component, compared to the amount of light reflected from the background or surrounding surfaces.
51. **Main entrance** – entrance that leads directly to:
52. **a reception area or point that provides information about the buildings or services within it; or**
53. **the primary staircase or lift foyer**
54. **Marked crossing** – a crosswalk or other identified path intended for pedestrian use in crossing a vehicular way.
55. **Means of access** – means of entering a building, site of buildings or building complex, and safe egress from the building, site of buildings, or building complex, including the use of all facilities within and around the building, site of buildings or building complex. The means of access relates to the safety, comfortable and convenient use of both the building, site of buildings or building complex, and the facilities within it for people with disabilities.
56. **Mezzanine** – an intermediate level or levels between the floor and ceiling of any storey with an aggregate floor area of not more than one-third of the area of the room or space in which the level or levels are located. Mezzanines have sufficient elevation that space for human occupancy can be provided on the floor below.
57. **Obstruction** – any of the following:
58. **anything impeding** or preventing passage or progress in relation to a building or facility, which denies or removes from people with disabilities, any supporting or enabling facility for their functioning within the building or facility; or
59. **obstacles that unfairly limit or restrict people with disabilities from enjoying the opportunities provided within a building or facility on equal terms;**
60. **the failure to take steps to reasonably accommodate the needs of people with disabilities within the building or facility can also be seen as a type of obstruction.**
61. **Occupant load** – the number of persons for which the means of egress of a building or portion of a building is designed.

- 62. Operable part** – a component of an element used to insert or withdraw objects, or to activate, deactivate or adjust the element.
- 63. Path of travel** – circulation route or circulation space normally used by people using the site, building or facility including all external and internal routes and spaces in common usage, and the entrances and exits within these routes and spaces.
- 64. Pictogram** – a pictorial symbol that represents activities, facilities or concepts.
- 65. Public entrance** – an entrance that is not a service entrance or a restricted entrance.
- 66. Public use** – exterior or interior rooms, spaces or elements that are made available to the public.
- 67. Public way** – any street, alley, or other parcel of land open to the outside air leading to a public street, which has been deeded, dedicated or otherwise appropriated to the public use and which has a clear width and height of not less than 3050mm.
- 68. Ramp** – a walking surface that has a running slope.<sup>1</sup>
- 69. Restricted entrance** – an entrance that is made available for common use on a controlled basis but not public use and is not a service entrance.
- 70. Running slope** – the slope that is parallel to the direction of travel.
- 71. Sanitary fixture** – receptacle to which water is permanently supplied, and from which waste water or soil water is discharged.
- 72. Self-service storage** – building or facility designed and used for the purpose of renting or leasing individual storage spaces to customers for the purpose of storing and removing personal property on a self-service basis.
- 73. Service entrance** – an entrance intended primarily for delivery of goods and/or services.
- 74. Site** – a parcel of land bounded by a property line or a designated portion of a public right-of-way.
- 75. Space** – a definable area, such as a room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard, or lobby.
- 76. Storey** – that portion of a building or facility designed for human occupancy including between the upper surface of a floor and upper surface of the floor or roof next above. A storey containing one or more mezzanines has more than one floor level.
- 77. Structural frame** – the columns and girders, beams and trusses having direct connections to the columns and all other members that are essential to the stability of the building or facility as a whole.
- 78. Suitable** – with respect to means of access and facilities, means that they are designed for use by people regardless of their disability, age or gender, but subject to the usual gender-related conventions regarding sanitary accommodation.
- 79. Tactile** – an object that can be perceived using the sense of touch.
- 80. Technically infeasible** – with respect to an alteration of a building or a facility, something that has little likelihood of being accomplished because existing

<sup>1</sup> The A.D.A.A.G 106.5. defines a ramp as "...a walking surface that has a running surface steeper than 1:20" (P. 15).



structural conditions would require removing or altering a load-bearing member that is an essential part of the structural frame; or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements.

81. **Transfer device** – equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an amusement ride seat.
82. **Transfer space** – space required by a wheelchair user to transfer or from a vehicle, toilet or seat.
83. **Transient lodging** – a building or facility containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature. Transient lodging does not include residential dwelling units intended to be used as a residence, inpatient medical care facilities, licensed long-term care facilities, detention or correctional facilities, or private buildings or facilities that contain not more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.
84. **Transition plate** – a sloping pedestrian walking surface located at the end(s) of a gangway.
85. **TTY** – an abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across a telephone network. TTY's may include, for example, devices known as TTD's (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTY's are also called text telephones.
86. **Usable** – with respect to buildings or parts of buildings, means that they are convenient for independent use.
87. **Vehicular way** – a route provided for vehicular traffic, such as in a street, driveway, or parking facility.
88. **Walk** – an exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts.
89. **Wheelchair spaces** – space for a single wheelchair and its occupant.
90. **Work area equipment** – any machine, instrument, engine, motor, pump, conveyancer, or other apparatus used to perform work. As used in this document, this term shall apply only to equipment that is permanently installed or built-in employee work areas. Work area equipment does not include passenger elevators and other accessible means of vertical transportation. , which has been deeded, dedicated or otherwise appropriated to the public use and which has a clear width and height of not less than 3050mm.

## APPENDIX H: United Nations Convention on the Rights of Persons With Disabilities

The United Nations Convention on the Rights of Persons with Disabilities (UN-CRPD) was held in 2001 to address the issues faced by disabled people worldwide. The mandate of the convention was to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity.

The convention reiterated the commitment towards the 'social model' of recognizing 'disability' by stating that people with disabilities include those with long term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.

The resolutions adopted in the convention were proposed in 2001 and they came into effect in 2006.

The Convention entered force on May 3rd, thirty days after it was ratified by the 20th country, Ecuador. As of the time of writing there are 126 signatories to the Convention and 71 signatories to the Optional Protocol.

The Convention in summary sets out a code of implementation of inclusive strategies for Persons with Disabilities (PwD's). Countries joining the Convention have agreed to set out to develop laws, policies and guidelines to secure rights outlined in the Convention and to abolish laws, customs and practices that discriminate. The 50 articles of the Convention set out to challenge stereotypes, promote awareness, equality and liberty to PwD's. Whilst all articles of the UN-CRPD have an impact on Universal accessibility it is the following ones that should be studied in more detail and are therefore quoted verbatim below:

**Article 9: Accessibility** - *These resolutions were framed to enable persons with disabilities to live independently and participate fully in all aspects of life.*

*1. To enable persons with disabilities to live independently and participate fully in all aspects of life. States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas. These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:*



*a. Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces;*

*b. Information, communications and other services, including electronic services and emergency services.*

*2. States Parties shall also take appropriate measures to:*

*a. Develop, promulgate and monitor the implementation of minimum standards and guidelines for the accessibility of facilities and services open or provided to the public;*

*b. Ensure that private entities that offer facilities and services which are open or provided to the public take into account all aspects of accessibility for persons with disabilities;*

*c. Provide training for stakeholders on accessibility issues facing persons with disabilities;*

*d. Provide in buildings and other facilities open to the public signage in Braille and in easy to read and understand forms;*

*e. Provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public;*

*f. Promote other appropriate forms of assistance and support to persons with disabilities to ensure their access to information;*

*g. Promote access for persons with disabilities to new information and communications technologies and systems, including the Internet;*

*h. Promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost.*

**Article 19: Living independently and being included in the community** – *In order to eradicate the notion of segregating disabled people into institutions like asylums and sanatoriums and to emphasize their rightful place in society, the Convention arrived at the following statement of right of disabled people.*

*States Parties to this Convention recognize the equal right of all persons with disabilities to live in the community, with choices equal to others, and shall take effective and appropriate measures to facilitate full enjoyment by persons with disabilities of this right and their full inclusion and participation in the community, including by ensuring that:*

*a. Persons with disabilities have the opportunity to choose their place of residence and where and with whom they live on an equal basis with others and are not obliged to live in a particular living arrangement;*

*b. Persons with disabilities have access to a range of in-home, residential and other community support services, including personal assistance necessary to support living and inclusion in the community, and to prevent isolation or segregation from the community;*

*c. Community services and facilities for the general population are available on an equal basis to persons with disabilities and are responsive to their needs.*

*The UN convention seeks to recognize the equal right of all persons with disabilities to live in the community, with choices equal to others,*

**Article 20: Personal mobility** - *To ensure personal mobility with the greatest possible independence for persons with disabilities the following issues were highlighted:*

*States Parties shall take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, including by:*

*Facilitating the personal mobility of persons with disabilities in the manner and at the time of their choice, and at affordable cost;*

*a. Facilitating access by persons with disabilities to quality mobility aids, devices, assistive technologies and forms of live assistance and intermediaries, including by making them available at affordable cost;*

*b. Providing training in mobility skills to persons with disabilities and to specialist staff working with persons with disabilities;*

*c. Encouraging entities that produce mobility aids, devices and assistive technologies to take into account all aspects of mobility for persons with disabilities.*

**Article 27: Work and employment** – *These guidelines were laid down to recognize the right of persons with disabilities to work, on an equal basis with others.*

*1. States Parties recognize the right of persons with disabilities to work, on an equal basis with others; this includes the right to the opportunity to gain a living by work freely chosen or accepted in a labor market and work environment that is open, inclusive and accessible to persons with disabilities. States Parties shall safeguard and promote the realization of the right to work, including for those who acquire a disability during the course of employment, by taking appropriate steps, including through legislation, to, inter alia:*

*a. Prohibit discrimination on the basis of disability with regard to all matters concerning all forms of employment, including conditions of recruitment, hiring and employment, continuance of employment, career advancement and safe and healthy working conditions;*

*b. Protect the rights of persons with disabilities, on an equal basis with others, to just and favourable conditions of work, including equal opportunities and equal remuneration for work of equal value, safe and healthy working conditions, including protection from harassment, and the redress of grievances;*



- c. Ensure that persons with disabilities are able to exercise their labor and trade union rights on an equal basis with others;*
  - d. Enable persons with disabilities to have effective access to general technical and vocational guidance programmes, placement services and vocational and continuing training;*
  - e. Promote employment opportunities and career advancement for persons with disabilities in the labour market, as well as assistance in finding, obtaining, maintaining and returning to employment;*
  - f. Promote opportunities for self-employment, entrepreneurship, the development of cooperatives and starting one's own business;*
  - g. Employ persons with disabilities in the public sector;*
  - h. Promote the employment of persons with disabilities in the private sector through appropriate policies and measures, which may include affirmative action programmes, incentives and other measures;*
  - i. Ensure that reasonable accommodation is provided to persons with disabilities in the workplace;*
  - j. Promote the acquisition by persons with disabilities of work experience in the open labour market;*
  - k. Promote vocational and professional rehabilitation, job retention and return-to-work programmes for persons with disabilities.*
- 2. States Parties shall ensure that persons with disabilities are not held in slavery or in servitude, and are protected, on an equal basis with others, from forced or compulsory labour.*

**Article 30: Participation in cultural life, recreation, leisure and sport –** *With a view to recognize the right of persons with disabilities to take part on an equal basis with others in cultural life, the convention stated the following guidelines:*

- 1. States Parties recognize the right of persons with disabilities to take part on an equal basis with others in cultural life, and shall take all appropriate measures to ensure that persons with disabilities:*
  - a. Enjoy access to cultural materials in accessible formats;*
  - b. Enjoy access to television programmes, films, theatre and other cultural activities, in accessible formats;*
  - c. Enjoy access to places for cultural performances or services, such as theatres, museums, cinemas, libraries and tourism services, and, as far as possible, enjoy access to monuments and sites of national cultural importance.*

2. States Parties shall take appropriate measures to enable persons with disabilities to have the opportunity to develop and utilize their creative, artistic and intellectual potential, not only for their own benefit, but also for the enrichment of society.

3. States Parties shall take all appropriate steps, in accordance with international law, to ensure that laws protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials.

4. Persons with disabilities shall be entitled, on an equal basis with others, to recognition and support of their specific cultural and linguistic identity, including sign languages and deaf culture.

5. With a view to enabling persons with disabilities to participate on an equal basis with others in recreational, leisure and sporting activities, States Parties shall take appropriate measures:

a. To encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels;

b. To ensure that persons with disabilities have an opportunity to organize, develop and participate in disability-specific sporting and recreational activities and, to this end, encourage the provision, on an equal basis with others, of appropriate instruction, training and resources;

c. To ensure that persons with disabilities have access to sporting, recreational and tourism venues;

d. To ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure and sporting activities, including those activities in the school system;

e. To ensure that persons with disabilities have access to services from those involved in the organization of recreational, tourism, leisure and sporting activities.

Source: <http://www.un.org/esa/socdev/enable/rights/convtexte.htm>

The UN Convention therefore has addressed the concerns of people with disabilities on a global platform and has formally recognized the need for a world-wide initiative to solve the problems faced by them. Nations that ratify the UN convention agree to undertake measures to implement the articles. These nations will have to develop or adopt protocols and guidelines and then tailor them specifically for local cultural, social and economic differences.

“The Convention establishes two implementation mechanisms: the Committee on the Rights of Persons with Disabilities, established to monitor implementation, and the Conference of States Parties, established to consider matters regarding implementation”. For other nations, the Convention should be viewed as an international standard that should be reviewed accordingly.



## APPENDIX I: The Bali Declaration on Barrier-Free Tourism for Persons With Disabilities

### Recommendations

#### A. Issues

People with disabilities and older persons are growing groups and consumers of tourism services. Families with young children are beginning to travel more. These three groups have similar needs for accessible tourism. However, the majority of tourism service providers in the ESCAP region do not, as yet, understand the economic and social significance of early action to create barrier-free tourism.

The built environment (buildings, streets, parks, public transportation and communication infrastructure) has a major impact on the quality of tourism experience, especially concerning its safety, convenience, efficiency and enjoyment aspects. There is insufficient integration of the planning and development of the built environment and tourism development, both within and across countries.

To create tourism that caters to the full range of consumer needs, there is a need to improve the useability of transportation, accommodation, tourism sites and services, and tour programmes.

#### B. Promotion of tourism for all

**1. Guiding principles:** Persons with disabilities have equal right of access to all tourism infrastructure, products and services, including employment opportunities and benefits that the tourism industry can provide. The tourism industry should provide the same choices for all consumers to ensure the full participation of persons with disabilities, and protection of the individual's right to travel with dignity.

Tourism master plans, policies and programmes should incorporate the principle of universal access to tourism infrastructure, products and services. Furthermore, access improvement in tourism benefits many other groups, including older persons and families with young children. The inclusion of universal design in tourism development can create environments, products and services that are useable by a wide spectrum of consumers, irrespective of their experience, knowledge, skills, age, gender, as well as their physical, sensory, communication and cognitive abilities. Thus the spirit of barrier-free tourism means the reduction of all physical and non-physical barriers and dangers so that they do not adversely affect tourism experiences and activities.

With regard to tourism access improvement, it is important for all concerned to take into consideration the rights and needs of diverse user groups, including single disability groups, persons with multiple disabilities, and women and girls with disabilities.

## 2. Strategic actions

### a. People with disabilities and disabled persons' organizations should:

1. *Develop empowerment programmes focusing on skills for advocacy and negotiation with the tourism industry;*
2. *Acquire skills in appraising tourism facilities, programmes and services, and in recommending action to raise their quality, as appropriate;*
3. *Learn to conduct access surveys;*
4. *Document and share information on the quality of tourism components and user experiences (accommodation, transportation, tourism sites and services, tour programmes, and information and communications systems);*
5. *Create local access guides and maps for in-country and foreign visitors;*
6. *Serve as resource persons or advisors to training institutions and policy-making bodies concerned with tourism services;*
7. *Communicate rights and needs in an effective manner to people encountered in the course of travel, especially those who are unaware and inexperienced concerning disabled persons or discriminatory in their behaviour;*
8. *Strengthen craft production and marketing skills among persons with disabilities as an economically viable interface with the tourism industry;*
9. *Support disabled persons in acquiring training and employment in the tourism industry.*

### b. Government authorities should:

1. *Train immigration officers and ministry of foreign affairs staff concerned with visa applications on disabled person-friendly procedures to be observed in a systematic manner;*
2. *Work towards uniform disabled person-friendly immigration procedures at the subregional level;*
3. *Improve the accessibility of immigration offices to facilitate travel document application by all tourists, including tourists with disabilities;*



4. *Exempt from customs duty all assistive devices required by disabled persons for supporting their activities of daily living, including computers required by blind persons;*
5. *Update annually a list of items that should be exempted from customs duty;*
6. *Simplify customs clearance procedures for all assistive devices required by disabled persons for supporting their activities of daily living, including computers required by blind persons;*
7. *Train customs officers on ways of communicating with disabled persons, especially with deaf and hard of hearing persons.*

**c. Tourism service providers should:**

1. *Develop in-house programmes to raise awareness, sensitivity and skill levels to provide more appropriate services for persons with disabilities;*
2. *Communicate more with disabled persons and their organizations to exchange accurate and reliable information for strengthening tourism services to better meet diverse consumer needs;*
3. *Encourage tourism service providers to make their websites accessible for disabled persons, especially blind persons;*
4. *Involve disabled persons with the requisite experience and skills in conducting access surveys of premises and to serve as resource persons and advisors in improving tourism services;*
5. *Introduce barrier-free tourism into the agendas of their regular meetings;*
6. *Introduce accessibility as a criterion in the ranking of hotels and restaurants.*

**d. Tourism training institutions should:**

1. *Include in training curricula (for all levels) the following contents concerning a client focus that respects the rights and needs of diverse consumer groups, including persons with disabilities: attitude, knowledge and skills development, as well as cross-cultural understanding and appreciation;*
2. *Develop and use training modules for sensitizing front-line service staff to relate, in an appropriate manner, with disabled travellers.*

**e. Inter-governmental organizations should:**

1. *Foster inter-country exchange and networking concerning experiences and practices on endeavours towards barrier-free tourism;*

2. *Identify, inter-regionally and within the ESCAP region, best practices in the promotion of barrier-free tourism for wider reference and possible adaptation in the ESCAP region;*
3. *Facilitate, in cooperation with subregional organizations, inter-country discussion towards the adoption of uniform disabled person-friendly immigration procedures;*
4. *Work towards the lifting of discriminatory and restrictive conditions, such as the requirements of an accompanying person and medical certification, that are imposed on travellers with disabilities;*
5. *Explore possible means of granting accreditation to tourism industry establishments that are accessible by disabled persons;*
6. *Develop an outline of core contents for training tourism personnel;*
7. *Develop training content and capability to strengthen passenger services at transport interchanges (bus, railway, ferry, ship and airplane terminals);*
8. *Promote the application of universal design principles to improve the accessibility of tourism sites, especially cultural, heritage and pilgrimage sites.*



## **APPENDIX J: Regional Initiatives**

### **Asia/ Pacific/ Arab/ Africa Decade for People with Disabilities**

#### **Appendix J-1**

#### **Asia Pacific Decade of Disabled Persons 1993 – 2002**

The representation of the grievances of people with disabilities on a global platform in the form of UN conventions also has helped to champion the same issues in other countries other than in Europe and the US. Since a large section of the world's population resides in the Asia and Pacific regions the overall number of PwDs is also considerably large.

The economic conditions and disparities of these regions very often mean that the concerns of these people are largely ignored and their rights not fully exercised.

The governments of the countries of the region declared the period 1993-2002 the 'Asian and Pacific Decade of Disabled Persons'. This declaration has highlighted the major issues in a move to improve the quality of life of these people. The goal is 'full participation and equality of people with disabilities'.

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) has supported the goals of the Decade, developing approaches, best practices as well as serving as an advisory role for the implementation of the 'Agenda for Action for the Asian and Pacific Decade of Disabled Persons'. Many governments and NGOs in the region implemented best practices and other initiatives.

These examples have provided a basis for motivation of further initiatives in other regions and countries. Examples of successful programs include:

- The Disability Action Council of Cambodia
- Integrated Education in Gujarat
- Eliminating Discrimination Through Legislation in Hong Kong, China
- Let's Make the World Accessible: Barrier-Free Tourism in India

There are many other examples published in *Pathfinders: Towards Full Participation and Equality of Person with Disabilities in the ESCAP Region* (Social Policy Paper No. 2).

The second Asian and Pacific Decade of Disabled Persons has been proclaimed for the period 2003-2012 to capitalize on knowledge and momentum gained during the previous Decade.

(from <http://www.unescap.org/esid/psis/disability/decade/bestprac.asp>)

## Appendix J-2 Arab Decade of Disabled Persons 2003 - 2012

In west Asia, the initiative towards addressing the problems of PwDs came in the form of recognizing the period between 2003-2012 as the Decade of Disabled Persons. This conference was organized by the League of Arab States, the Arab Organization of Disabled People, the Economic and Social Commission of West Asia (ESCWA), and the Ministry of Social Affairs of Lebanon along with regional and international bodies concerned with disability. The result of the convention was the declaration that the period 2003-2012 was the ‘Arab Decade of Disabled Persons’. The goal established was to develop a framework to promote cooperation and action to ‘ensure that Arab persons with disabilities would be more fully integrated into society’.

There are three operational objectives for the decade:

1. Strategic assessment of issues and trends related to strategies, policies and programs related to rights-based approaches to development and promotion of sustainable livelihoods of persons with disabilities in the mainstream;
2. Formulation of a strategic framework on building national capacities to promote and protect the rights of persons with disabilities in line with the goals and objectives being proposed for the Arab Decade of Disabled Persons (2003-2012);
3. Identification of actions appropriate to elaboration of a new international instrument to promote and protect the rights of persons with disabilities in the context of development.

(<http://www.worldenable.net/beirut2003/overview.htm>)

## Appendix J-3 African Decade of Persons with Disabilities 2000 – 2009

In the light of the minimal successes of the United Nations Global decade for persons with disabilities (1983-1992), the African Decade was proposed as a follow up with specific focus on African populations.

The Organization of African Unity (OAU) Labor and social affairs commission recommended in 1999 (in Windhoek, Namibia) that the period 1999-2009 be proclaimed the African Decade of Persons with Disabilities. The recommendation was adopted and endorsed by the OAU Council of Ministers and 36th Assembly of Heads of State and Government respectively, in Lome, Togo in July 2000. Decision CM/Dec. 535(LXXII) Rev.1.

An African Decade Continental Action Plan was developed to assist both governments and NGOs in implementation measures. The Action Plan is administered by the ‘Secretariat of the African Decade of Persons with Disabilities’ with the recognition



of the following factors affecting the African continent:

- Every day in Africa people are being disabled due to malnutrition and disease, environmental hazards, natural disasters, traffic and industrial accidents, civil conflict and war.
- As a concomitant of improvements in child survival, the numbers of children surviving with disabilities are increasing.
- As more people survive to older age, the numbers of elderly people with disabilities are rising.
- The living conditions of large numbers of people with disabilities, especially those in rural areas, need to be further improved.

[from-<http://www.africandecade.org/african-decade/declaration-of-the-african-decade>]

The declaration recognizes the fact that PwDs in African nations are not able to receive appropriate care and support. The emergence of a section of the population as PwDs has been recognized in this declaration along with the need to bring about inclusive strategies for PwDs when designing environments as well as social services. These resolutions are an important step forward especially for nations in the continent who are struggling to achieve higher levels of economic development. The focus of the Decade is on regional cooperation and the development of standards in line with those outlined by the UN convention on Rights of Persons with Disabilities, enhancing community efforts and the promotion of positive attitudes.

#### **Appendix J-4** **Impact of the UN Convention and Regional Decades of Persons with Disabilities**

As the Kingdom of Saudi Arabia recently signed the UN Convention (UN-CRPD) in June 2008, it will eventually need to abide by the resolutions and comply with the articles as stated in the Convention. The experiences of the African Decade and the Arab Decade, being Muslim related or of the same region will be invaluable as references towards implementing the Convention for the Kingdom.









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