Update of the 2005 UNWTO General Assembly Recommendations on “Accessible Tourism for All”, taking into consideration the UN Convention on the Rights of Persons with Disabilities of 2007

“Accessibility is a central element of any responsible and sustainable tourism policy. It is both a human rights imperative, and an exceptional business opportunity. Above all, we must come to appreciate that accessible tourism does not only benefit persons with disabilities or special needs; it benefits us all.”

Taleb Rifai, UNWTO Secretary-General

I. INTRODUCTION

1. Travel and tourism has become the world’s largest and fastest growing industry, and its growth shows a consistent year to year increase. With 1 billion of international travellers in 2012, countries are increasingly developing tourism as part of their national development strategies as an effective driver of economic growth and inclusive development, creating jobs and wellbeing for communities.

2. The provision of safe, convenient and economical transport and other tourism-related infrastructure is a key factor for the success of tourism. Infrastructure that does not cater adequately for the needs of people with disabilities, including infants and the elderly, excludes many destinations from this promising market. However, due to the way our surroundings, transport systems and services are designed, people with disabilities and people experiencing problems regarding mobility or access to information are often unable to enjoy the same freedom to travel as other citizens.

3. The number of accessibility problems is legion, and visitors may be affected in every part of the route, either in terms of access to information, local transport, accommodation, visits and/or participation in cultural or sporting events, whether as spectators or participants.

4. The UNWTO has been aware of this situation ever since the 1991 General Assembly, when the first recommendations devoted to promoting Accessible Tourism were passed, which were later reviewed in 2005.

5. With the ratification of the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD, 2007), there has been an increased focus on the tourism sector’s obligations to ensure that people with disabilities can exercise their right to enjoy leisure, sport and tourism under the same conditions as other people. The States Parties to the Convention must lead the way to guide the public and private sectors to make tourism accessible to all citizens.

6. As recognized in the UNWTO’s “Declaration on the Facilitation of Tourist Travel”, adopted by its General Assembly Resolution A/RES/578 (XVIII) of 2009, facilitating tourism travel for persons with disabilities is an essential element of any policy for the development of responsible tourism. Therefore, mainstreaming disability issues as an integral part of relevant strategies of sustainable development will ensure that tourism policies and practices are inclusive of people with disabilities, giving rise to equitable and accessible tourism for all.
7. By now, the tourism industry will recognize that people with disabilities have equal rights to tourism services and opportunities: independent travel, accessible facilities, trained staff, reliable information and inclusive marketing. As the demand for accessible tourism for all is growing, it is now seen as an opportunity rather than an obligation. If the tourism industry wants to maintain and develop quality, sustainability and competitiveness, it must support and develop tourism accessible for all, because accessible tourism benefits everyone. As more individuals enjoy the opportunity to travel, the tourism industry gets more visitors, longer seasons and new incomes. Society as a whole benefits from new job opportunities, more tax revenue and an accessible environment for both inhabitants and visitors.

8. In this context, accessible tourism for all is not only about providing access to people with disabilities, but also it addresses the creation of universally designed environments that can support people that may have temporary disabilities, families with young children, the ever increasing ageing population as well as creating a safer environment for employees to work.

9. According to the World Health Organization (2011) there are approximately 1 billion persons with disabilities in the world. This equates to approximately 15% of the world population having a physical, mental or sensory disability.

10. In addition to this data, a rapid ageing of the population is under way. In 2009 there were more than 730 million people over age 60, equivalent to 10% of the population, an increase of more than 20% since 2000. By the year 2050 the number of persons over age 60 will increase to account for 20% of the world population, with one-fifth of this group being over 80 years old.

11. Due to the ageing population in industrialized countries, the rate of disability among people with the capacity to travel is increasing, adding to the demand for an accessible environment, transport and services - which adds to the market value of the accessible tourism segment. Much of the senior population has significant income and the desire to travel, both in their home countries and abroad, and their expenditure tends to be higher than that of tourists in general. Because many people with disabilities and older people are no longer active in the workforce, they have the possibility of travelling throughout the year, which helps to reduce the seasonality of demand experienced by many destinations.

Moreover, several studies carried out in Australia, the United States and the European Union have shown that tourists with disabilities are becoming an important part of the tourism market. For example, the percentage of Australian tourists with disabilities has been estimated at about 11% of the total number of tourists. The United Kingdom found in its 2009 tourism survey that 12% of all persons who engaged in domestic tourism (at least one overnight away from home) had a disability or long-term health problems. These tourists also stayed longer and spent more than the average. Similarly, studies in the United States have shown that American adults with disabilities or reduced mobility spend an average of $13.6 billion annually on travel.

12. The attention being turned to the Accessible Tourism market presents a challenge to the global travel industry in terms of improving policies and mobilizing the investment to carry out the necessary improvements across the board in the short and long term.

13. However, with the right approach, the tourism sector also has a golden opportunity to serve an important and growing market, win new customers and increase revenue at a time when other segments of the market may be weakening.
II. DEFINITIONS

14. Traditionally, disability has been considered a medical or biological condition attributed to a particular individual, a dysfunction that needed to be fixed by treatment or rehabilitation. According to this approach it is the disabled person that needs to be changed or altered.

15. Nowadays, the social aspects of disability are taken into consideration. The question may be raised of how societies create obstacles for persons with disabilities and how these barriers can be eliminated. In this context, the UN Convention on the Rights of People with Disabilities recognizes disability as a human rights issue and identifies it as a social construct rather than an inherent quality of the individual. It puts emphasis on the removal of societal barriers – whether they are architectural, legal, organizational or simple prejudice and hostility. Furthermore, the proportional increase of the ageing population is starting to blur the clear distinction between persons with or without disabilities. For the purposes of this document, existing definitions of the UN will be applied.

A) Disability

16. Disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others.¹³

17. Understanding disability as an interaction means that disability is a social construct, not an attribute of the person.

B) Persons with disabilities

18. For the purposes of this document, the term "disabled person" means any person whose full and effective participation in society on an equal basis with others in travel, accommodation and other tourism services is hindered by the barriers in the environment they are in and by attitudinal barriers.¹⁴

19. Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments. Others who may be included in this group due to problems in accessing tourism products and services are people with temporary disabilities, people with crutches during a temporary period, the elderly, people carrying luggage, small children or people who are big or small in size or stature.¹⁵

C) Accessible Tourism for All¹⁶

20. This is a form of tourism that involves a collaborative process among stakeholders that enables people with access requirements, including mobility, vision, hearing and cognitive dimensions of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services and environments.

D) Discrimination on the basis of disability¹⁷

21. “Discrimination on the basis of disability” means any distinction, exclusion or restriction on the basis of disability which has the purpose or effect of impairing or nullifying the recognition, enjoyment or exercise, on an equal basis with others, of all human rights and fundamental freedoms in the
political, economic, social, cultural, civil or any other field. It includes all forms of discrimination, including denial of reasonable accommodation.

E) Reasonable accommodation

22. "Reasonable accommodation" means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms.

F) Universal design

23. "Universal design" means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. "Universal design" shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.

24. It promotes a shift towards user-centred design by following a holistic approach and aiming to accommodate the needs of people with disabilities, regardless of any changes they might experience in the course of their lives. Consequently, Universal Design is a concept that extends beyond the issues of mere accessibility of buildings for people with disabilities and should become an integrated part of policies and planning in all aspects of society (Source: The Center for Universal Design, NC State University, Principles of Universal Design (Raleigh, NC, 1997)).

III. SCOPE OF APPLICATION. INFRASTRUCTURE AND SERVICES

25. These recommendations indicate the appropriate measures in order to ensure that persons with disabilities have access, on an equal basis with others, to the physical environment, transportation, information and communications, including computer systems and information and communications technology, and other services and facilities open to the public or for public use, in urban areas as well as rural and coastal zones.

26. Accessibility must be present throughout the tourism chain, the links between all sites, services and activities must be well planned and tested. Elements of the tourism chain include:

A. Tourism destination management
B. Tourism information and advertising (Preparation, information and booking)
C. Urban and architectural environments
D. Modes of transport and stations.
E. Accommodation, food service and conventions
F. Cultural activities (museums, theatres, cinemas, and other)
G. Other tourism activities and events

A) Tourism destination management

27. Tourism destination management bodies and administrations should carry out an accessible-tourism strategy that lays out a set of principles and reasons explaining why accessibility in tourism is necessary so as to make it possible to evaluate services and identify changes that may be needed.

28. The concept of an accessible tourism destination of a locality, region or district must have the necessary accessible facilities, infrastructure and transport in order to create an environment that is varied, stimulating and easily accessible. Efforts shall be made to avoid promoting as being
accessible those tourist attractions or accommodations in an inaccessible area without transport opportunities or connections with other tourist venues.

B) Tourism information and advertising (Preparation, information and booking)

29. (a) Tourism literature and other promotional material used in tourism should include clear indications of accessible services and facilities, preferably making use of international symbols that are easily understood. To the extent possible, information for tourists with disabilities should be included in the general tourist information.

(b) Promotional material should state, if possible, how to contact the establishment through accessible media (text telephone, fax or email), and if the information is available in alternative formats.

(c) The areas receiving tourists (tourist destinations) should make available a list of all support services for tourists with disabilities. The listing of these services should include, as a general rule, facilities for the repair and replacement of prostheses and equipment, veterinary clinics for guide dogs and suppliers and distributors of specialized medical care.

(d) Reservation systems should have clear information on the level of accessibility of facilities and services advertised for tourists with disabilities in order to properly inform them and facilitate the appropriate booking procedures.

(e) Reservation systems should be accessible so that any tourist can interact with them independently. To this end websites and other reservation systems should be designed so that they can be used by everyone, following the Web Content Accessibility Guidelines (WCAG) published on www.w3c.org.

(f) The entities responsible for receiving and handling consumer complaints should record and resolve, through a suitable procedure, all complaints relating to deficiencies in the provision of services and facilities whose accessibility was featured or advertised.

C) Urban and architectural environments

30. The following are the general requirements that tourism facilities and sites should comply with:

i. Parking areas

31. (a) There should be special parking spaces with proper identification for vehicles of persons with reduced mobility, as near as possible to the entry and exit points of buildings or tourist attractions. These parking spaces should be monitored to prevent their use by non-disabled people.

(b) There should be special loading and unloading points for travellers as close as possible to access points to buildings or tourist attractions to facilitate the arrival and departure of passengers with disabilities. These points should be monitored to ensure they are not blocked by other vehicles or objects.

(c) Individual parking spaces should be wide enough for passengers with disabilities to manoeuvre comfortably between cars and wheelchairs, and shall be located so that persons using wheelchairs, crutches or prostheses are not obliged to go around cars. Where there are access roads to the building or site, these should be safe for all pedestrians.
ii. Communication

32. The use of sign language, Braille, and augmentative and alternative ways, means and modes of communication and all other ways, means and formats of communication chosen by persons with disabilities should be accepted and facilitated.xx

33. Telephones and other public communication systems (internet, fax) shall be designed and made available for public use so that they can be used by everyone regardless of their height, their mobility problems or sensory problems. To this end the height, approach space, sound amplification, the formats in which information is provided, and so on shall be taken into account.

iii. Signage

34. (a) The information, check-in and ticket sales counters should be clearly marked and have an accessible area reserved for use by persons with reduced mobility located as close as possible to the entrance.

(b) Announcements should be both visual (characters on electronic boards or big screens) and audible (preceded by a tone).

(c) Accessible services and facilities should be clearly marked with easily understandable symbols of an appropriate size and colour which contrasts with the background.

(d) Information for the general public should be provided in a timely manner and without additional cost in accessible formats and technologies appropriate for the different types of disabilities.

(e) Fire alarms should emit both visual and acoustic signals. The marking of emergency exits must be clear and well lit; it is recommended that facilities have maps clearly showing meeting points and, if any, refuges for evacuation procedures.

iv. Horizontal movement

35. Effective measures should be taken to ensure that persons with disabilities are able to move around the venue with the greatest possible independence.

36. Main corridors and passageways should be free of physical and visual barriers and have a width to permit the passage of two wheelchairs side-by-side, such that they are not blocked in normal circulation, or otherwise provide passing points.

v. Vertical movement

Elevators

37. Multi-storey structures should have an adequate number of elevators wide enough for a person using a wheelchair to enter and move easily. They should be specially designed and equipped for easy use by such persons and for the blind (i.e., location of the control buttons, Braille signage, information in both written and audio form). They should be equipped with emergency systems accessible to the hearing impaired.
Stairs and ramps

38. Whenever possible, the built environment should be at the same level or equipped with ramps where there is a change in floor levels. Where necessary, provisions should include access ramps, elevators or platform lifts.

vi. Public hygiene facilities

39. At the same place where toilets are located, accessible toilet stalls and washbasins should also be installed. In these stalls, the dimensional aspects and the necessary technical aids needed to transfer between the wheelchair and the toilet should be taken into account. Care should also be taken with regard to the approach space to both the toilet and the sink, as well as to faucets and actuation mechanisms. A system should be provided to allow persons inside the toilet stalls to find and use emergency lighting signs and switches.

vii. Prices

40. Whenever possible, the tourism service providers must offer appropriate infrastructure and services for visitors with disabilities. The costs of implementing physical accessibility measures shall be included in the budget for maintenance or general improvement works.

41. Additional costs required to provide accessible services and facilities shall not entail an increase in rates for customers with disabilities.

D) Modes of transport

i. Modes of transport

42. (a) Passenger vehicles, including private vehicles for hire, buses and coaches, taxis, trams, funiculars (cable cars), trains, commuter ferries and cruise ships should be designed to allow safe, comfortable and equitable transport of people with disabilities or reduced mobility.

(b) The information provided to passengers before or during the journey should take into account the needs of people with sensory disabilities, and must be available in visual and acoustic formats. Information for passengers and emergency evacuation procedures should be provided in alternative formats, including sign language and writing.

ii. Stations, passenger terminals, and related facilities

43. (a) Passengers with disabilities should have easy access to all transport services to and from all terminals, stations and other related facilities.

(b) Whenever possible, terminals should be at the same level or equipped with ramps where there is a change in level. Where necessary, provisions should include access ramps, elevators or platform lifts.

(c) All information provided should take into account the needs of people with sensory impairments. Consequently, information shall be in visual and acoustic formats. Both types shall be made available to the public such that the information can be perceived in the best possible conditions, in terms of ambient noise and lighting and contrast between figure and background.
(d) Information should be available in alternative channels of communication (websites or applications for mobile devices).

(e) Pedestrian crossings should be provided with traffic lights with audible and visual signals so that people with visual or hearing impairments can cross them safely.

(f) Access to transportation should be as simple as possible and assistance should be available when required.

(g) People in wheelchairs who have to use special boarding chairs (e.g., to board an aircraft cabin) should be able to do so as close as possible to the conveyance, and wheelchairs should be handled, stored and transported such that they can be returned intact immediately upon arrival at the destination or transit point.

iii. Major thoroughfares

(a) On main thoroughfares, and toll highways in particular, rest stops should be provided at regular intervals. These should be equipped with facilities and services, including toilets and emergency phones accessible for everyone and, in particular, travellers with disabilities.

E. Accommodation, food service establishments and conference facilities

i. Accommodation facilities

44. (a) Accommodation establishments should have a reasonable number of rooms that are fully accessible without the need for assistance.

(b) Where possible, adapted rooms should be located so as to facilitate evacuation measures and routes to emergency exits.

(c) These rooms should be designed so that users can move around, locate facilities and services and communicate in a comfortable and independent manner. This applies to the bathroom as well as the terrace or adjoining outdoor space, if any.

(d) To this end, spatial requirements and technical aids needed to perform any manoeuvre safely and comfortably should be taken into account. The design of all devices and actuators should take into account the principles of Universal Design.

(e) Rooms and infrastructure of accommodation establishments should be equipped with alarm systems suitable for deaf guests and communication systems between the reception and the room adapted to these persons.

(f) Such establishments should welcome guide dogs and provide the essential items to facilitate their stay.

(g) The above recommendations should apply equally to camping facilities, especially in regard to accessible bathrooms and toilets as well as alarm systems.

ii. Food service establishments

45. An adequate number of restaurants, coffee shops, cafés and bars in the area should be provided, with accessible facilities which take into account the ease of external access, furniture designed to
be used by wheelchair users, counters at different heights, menus with easy-to-read text, in Braille or in alternative formats (web or applications for mobile computers), accessible toilets, etc.

46. Menus should include additional options for people with different types of food intolerances. (For example: diabetics, persons with gluten intolerance, etc.)

47. These facilities should be properly marked for easy location.

iii. Conference facilities

48. In addition to the above features applying to buildings used by tourists (entrances, toilets, telephones, signage, elevators, parking, etc.), conference facilities should be equipped with special seats or areas reserved for wheelchair users and special headphones and/or audio induction loop facilities for persons with hearing impairments.

49. Efforts should be made to ensure that audio-visual information is supplemented with audio description and subtitling and/or sign language, as required.

F) Cultural activities (museums, theatres, cinemas, and other)

50. Entities responsible for carrying out and promoting cultural activities in a region, destination or establishment should take all appropriate measures to ensure that people with disabilities:

(a) Have access to materials and cultural activities in accessible formats.

(b) Can participate, develop and utilize their creative, artistic and intellectual potential, not only for their own benefit but also for the enrichment of society.

i. Museums and other buildings of tourism interest

51. (a) Owners or managers of museums and other buildings of historical, cultural and religious interest, that are open for visitors should solve problems of horizontal or vertical access by providing ramps or lifts as appropriate.

(b) The information provided should take into account the needs of visitors who are deaf or blind. Therefore all information should be provided in both written and audio format.

(c) Customer service personnel shall have the necessary training required to welcome and serve visitors with disabilities. They shall also have the necessary training to communicate with deaf people.

(d) Where appropriate, for example in larger venues, there should be a service for the loan of wheelchairs or other devices for visitors with reduced mobility.

ii. Theatres and cinemas

52. In addition to the above features applying to buildings used by tourists (the ticket sales points - either with personnel or automated, toilets, telephones, signage, elevators, parking, etc.), theatre and cinema facilities should be equipped with special seats or areas reserved for wheelchair users and special headphones and/or audio induction loop facilities for persons with hearing impairments.
53. Efforts should be made to ensure that audio-visual information is supplemented with audio description and subtitling and/or sign language, as required.

G) Other tourism activities and events

54. Entities responsible for recreational, leisure and sporting activities shall take appropriate measures to enable persons with disabilities to participate on an equal basis with others.

55. It should be ensured that persons with disabilities have access to sporting, recreational and tourism facilities; in particular, for the activities listed below:

i. Excursions to surrounding areas

56. Coaches used for excursions should be outfitted to accommodate tourists with physical disabilities and to provide both auditory and visual information and other types of aids for the blind and the deaf.

57. Whenever possible, companies organising excursions should hire sign language interpreters for deaf tourists and/or provide printed descriptive material in all the places visited.

ii. Sports

58. Access for persons with disabilities to sports facilities (stadiums, race tracks, etc.), as well as their participation, as much as possible, in mainstream sporting activities at all levels should be encouraged and promoted.

59. Sports facilities should be equipped to accommodate visitors with physical disabilities and provide information both acoustically and visually, as well as other communication services for the blind and the deaf.

iii. Green spaces and natural environments

60. There should be accessible routes that traverse the site, connecting areas of interest, toilets and other services and facilities.

61. Long routes should be equipped with adapted fountains and benches, with suitable access to allow the approach of wheelchair users and those who use walking aids. Drain covers and grids around trees should be flush with the pavement and firmly fixed to the ground.

iv. Beaches

62. Beaches should be provided with accessible routes that allow access to the information points, spaces, facilities or services.

63. Beaches should have access via walkways and ramps, enclosed areas of sun and shade, adapted changing stations and services, amphibious chairs and crutches to bathe in the sea, with the assistance of a team of professionals.

64. Seaside promenades, if any, should include accessible routes.
IV. STAFF TRAINING

65. Staff in tourist venues play an important role in reducing potential deficiencies in access or in mitigating unforeseen difficulties, and training in disability awareness and customer care can minimize the barriers encountered by persons with disabilities.\textsuperscript{xxi}

i. The staff of tourism establishments and related services should be prepared to know, understand and address the needs of customers with disabilities.

ii. Under the UN Convention on the Rights of Persons with Disabilities of 2006\textsuperscript{xxii}, staff should receive appropriate training regarding disabled persons’ rights, so as to provide better assistance and services guaranteed by those rights, to monitor and provide the necessary services and explain the operation of facilities designed for customers with disabilities.

iii. The staff should include employees who know how to communicate with persons with sensory disabilities.

iv. Staff should be trained to treat people with disabilities with courtesy and efficiency, provide complete information on services and facilities available, and facilitate access to non-accessible services.

v. Staff should provide accessible information for people with disabilities about mobility aids, technical devices and assistive technologies, including new technologies and other forms of support services and facilities available at the establishment.

vi. Human and animal assistance should be offered as well as specific and appropriate information about services available in the hotel and external services including guides, readers and professional sign language interpreters in order to facilitate access to buildings and other facilities open to the public.

vii. Safety & security officers or their counterparts in tourism establishments and vehicles that respectively accommodate and transport persons with disabilities should have at all times and as a general rule, a list of the rooms or compartment numbers occupied by such persons as a precaution in case of emergency.

viii. Staff should be trained to evacuate people with disabilities, in an emergency. Emergency drills should be performed routinely according to the laws and regulations.
Annex I
of the UNWTO Recommendations on Accessible Tourism (2013)

The seven principles of Universal Design as defined by the Center for Universal Design, NC State Universityxxiii, are as follows:

**Principle 1. Equitable use**
The design is useful and marketable to people with diverse abilities.

**Principle 2. Flexibility in use**
The design accommodates a wide range of individual preferences and abilities.

**Principle 3. Simple and intuitive use**
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

**Principle 4. Perceptible Information**
The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

**Principle 5. Tolerance for error**
The design minimizes hazards and the adverse consequences of accidental or unintended actions.

**Principle 6. Low physical effort**
The design can be used efficiently and comfortably and with a minimum of fatigue.

**Principle 7. Size and space for approach and use**
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.
Reference Notes


iii UNWTO, Declaration on the facilitation of tourist travel (A/RES/578(XVIII) (Astana, Kazakhstan, 2009).

iv Lilian Müller, President of ENAT, President’s Message.

v Dimitrios Buhalis, Simon Darcy and Ivor Ambrose, eds., Best Practice in Accessible Tourism (Bristol, Channel View Publications, 2012).


xiv The Convention contains no definition of “persons with disabilities”, as such. Nevertheless, the Preamble and Article 1 state: “Persons with disabilities include those who have 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”, as per the Final Report of the Ad Hoc Committee on a Comprehensive and Integral International Convention on the Protection and Promotion of the Rights and Dignity of Persons with Disabilities to the UN General Assembly (A/61/611) in 2006.

xv The definition found in UNWTO’s 2005 recommendations on Accessible Tourism for All, adopted by UNWTO General Assembly Resolution A/RES/492(XVI)/10 in Dakar, Senegal, adopts an approach where people benefit from the provision of accessible tourism throughout their lives. These include people with permanent and temporary disabilities and the elderly.


With regard to air transport and similar facilities, the practical standards recommended by the International Civil Aviation Organization (ICAO) appear in the thirteenth edition of Annex 9 - Facilitation (2005) to the Convention on International Civil Aviation, under the title "G-Facilitated transport of passengers requiring special assistance." Specific and detailed recommendations have also been included in Chapter 9.11 of ICAO document 9184-AN902-Airport Planning Manual (second edition-1987).

"Communication" shall include languages, the display of text, Braille, tactile communication, large print, accessible multimedia devices, audio, plain-language, voice digitizers and alternative modes, means and formats of augmentative and alternative communication, including easy-access information technology and communications. "Language" refers to both spoken language and to sign language, as well as to other forms of non-verbal communication.


Principles of Universal Design (Raleigh, NC, 1997), available at http://www.ncsu.edu/project/design-projects/udi/center-for-universal-design/the-principles-of-universal-design/