



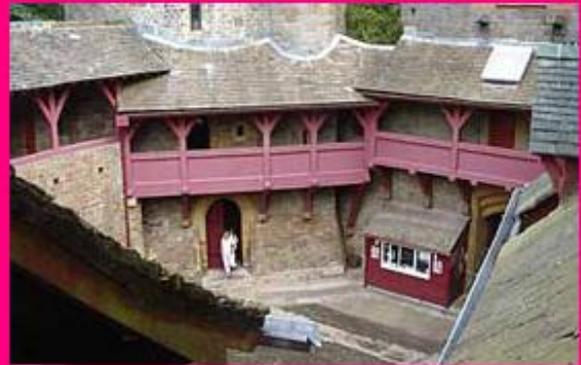
National Waterfront Museum Swansea Wales

# Inclusive Museums and similar venues

A guide to making venues and exhibitions  
accessible to everyone.



Big Pit Blaenavon



Castell Coch, Cardiff



Access, Evacuation, Health & Safety

David Croft  
January 2006



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## Access Guides for Museums

Access guides can be as elaborate as a four-colour brochure, or as simple as a folded page. Access guides may vary in size and format, they are similar in content. Most will include general information about the museum and the services and programs offered for visitors.

The following information, tips for developing an Access Guide, for science museums, art museums, historic sites, a zoo, an aquarium, a theatre and similar venues.

The way a society refers to persons with disabilities shapes its beliefs and ideas about them. Using appropriate terms can foster positive attitudes about persons with disabilities. One of the major improvements in communicating with and about people with disabilities is "people-first" language. People-first language emphasises the person, not the disability. By placing the person first, the disability is no longer the primary, defining characteristic of an individual but one of several aspects of the whole person. For example, it is preferred to say, "People with disabilities" instead of "the disabled." In the same way refer to older people as older people or elderly people, not "the pensioner", "the aged", "the elderly".

### 1 Guide Preparation

#### 1.1 Directions

An Access Guide must provide directions for finding the museum. Visitors may arrive as part of a guided tour, in a private car, by bus or train or on foot. Provide a map with directions from the motorway junction, the bus station and rail station. Walk the route from the bus and rail station and find the most accessible route, the one with the least slopes and obstructions. Foot routes should provide street seating (if possible on longer routes). Consider signing foot routes from the bus and rail station and from the motorway junction. Consider including the name of the railway station, suggested bus route numbers and stop name, taxi rank locations and telephone numbers, location and contact details for Shopmobility.

Check the car park, make sure there are accessible (Blue badge) parking bays with sufficient time allowance for a visit to your centre. Check the route to your premises making sure it is accessible to everyone. (See the Route Assessment Checklist in Appendix A.)

The location of public toilets and their accessibility can be an important piece of information for many people (7 million in UK have continence problems). Knowledge of good facilities could mean the difference between attending your venue and going elsewhere.

See also our guide 'Producing and Using Transport Access Guides'

## 1.2 Exhibits and Features

Access encompasses all areas of the museum. Start by talking with staff from all departments to find out about their current programs and services. Based on this informal survey, identify a small working group to plan the guide. Project members might include staff from facilities management, visitor services, exhibits, programs, marketing, and administration. To ensure that visitors' perspectives are not overlooked, identify and talk informally with people, children, people with disabilities, older people. Make sure that staff know about your guide and ready to provide copies or information. Review the contents regularly to ensure that new features of your centre and special exhibitions are covered.

## 1.3 Accuracy

Accuracy is essential: There is no such thing as an "almost accessible" Toilet or Lift. Do not guess what is accessible and never make statements which are untrue. Giving wrong or incorrect data will cause people to avoid returning and word will pass giving you bad publicity. It is recommended that you have an access audit made of your centre made by using an access consultant. If finance is short make an assessment using a checklist bringing the museum staff and groups representing potential users together to identify what is 'accessible' and what's not. While there is some overlap in 'accessible' features people of different age groups or with different physical, sensory or cognitive impairments will have different needs. Some of these are mutually exclusive it is often impossible to make every exhibit accessible to everyone. See Appendix E for some example statements.

A best possible solution should be devised for each feature of your venue. (See our guide 'Inclusive Museums').

## 1.4 Available Formats

Always give information about the availability and how to obtain alternate formats at the beginning of any document, tape, video or website.

Printed materials can be a significant barrier for people who have vision, learning and cognitive disabilities.

An access guide must be easy to read and available in alternate formats.

Select type faces, sizes, and colours with care. For more information, see Appendix C

Consider having audio and video presentations available. This could be of your Access Guide only or you may wish to have detailed commentaries to describe individual exhibits. (See Appendix D.)



There should always be Easy Read information at events for disabled people. The organisers should not wait for people to ask for this. It should be on paper and also on tape or CD. See the DRC Easy Read Guide.

The design and layout of text, visual and audio components of your documentation will need thought and a different approach is needed for the intended user.

- People with low vision or who are blind may need drawings and photographs described in words. Simplified tactile pictures can be used on fixed exhibits and maps for touch reading.
- People with low hearing or who are deaf need a text description of sound effects in video.
- People with learning difficulties need less complex syntax and vocabulary or explanation of the meaning of words and phrases. Action pictures help explain more complex words and concepts.
- People with manipulative impairments need things which are easy to pick up or manipulate, e.g. large click boxes on websites, documents which open easily and lay flat.

It is not easy to gain the right balance, where resources are available consider re-presenting the guide so that each need is fulfilled without degrading the experience for others.

Downloadable text, audio and video could also be placed on your website. See W3C accessible website design guidance <http://www.w3.org/WAI>.

### The Braille Question

There is general agreement among blind advisors that if you are going to provide a single print alternative, then audio is preferable to Braille, because only a small proportion (<10%) of blind people read Braille, and because audio benefits more than visually impaired people (an Inclusive Design consideration).

However, having said that, those people who do read Braille really find it useful and would like to have it as an option on exhibit components. They make the point that as a low cost auxiliary accommodation, Braille helps them greatly and Braille labels make an important statement to sighted visitors, about the Museum's commitment to inclusion.

The question of whether to supply guides in Braille format is often a question of available finance especially when the museum exhibitions are ever changing. (The following is the foregoing sentence written in Braille.)

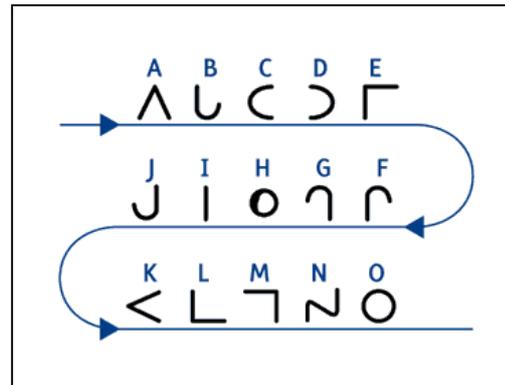
The question of whether to supply guides in Braille format is often a question of available finance especially when the museum exhibitions are ever changing.

The example is shown in 36 point and this is as small as possible for touch reading. Therefore it is easy to see that a Braille document will need many more pages to provide the same information as standard text.

Using Braille on signs and control buttons can be done at minor cost and is recommended for more common signs. When used on signs and notices a small notch should be cut into the edge of the sign to indicate where the Braille can be found. Some suppliers are listed in the Appendix.

## Moon

Similarly there is the question of whether to produce documents using Moon, there are 1500-2000 people in UK who use this method of reading. This font requires even more space on a page than Braille. The cost: benefit equation must again be considered along with your available resources.



Moon (a method of reading by touch using raised shapes based on the alphabet. This is far less common than Braille)

## 1.5 Wayfinding

Many people with visual or mobility impairments will need to plan their tour with care, especially in larger centres. For example a zoo may cover many hectares or a museum a number of floors. Inform people of route gradients, accessible features such as lifts and toilets. Provide warnings of possible difficult areas. Warn of stroboscopic effects (strobe lights, fast moving video or film projections). If you have large areas painted red provide a note in your guide as people with autism are likely to avoid that area. Routes can be shown on a map and described in text.

Maps are often difficult for people with low vision and are not always suitable for blind people. Simplified tactile maps can be used. (see Sheffield University <http://www.shef.ac.uk/psychology/research/tmrg> for further information.

Interactive audio/video touch screens are a good way to provide information and maps. These allow a range of visual formats and languages to be provided at relatively low cost.

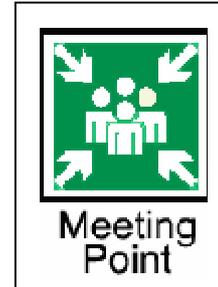
Handheld tape recorders can be queued by signals at points around your exhibits or transmitters can provide signals at certain points. These are not covered in this guide as this is principally concerned with basic access guides.

Whatever symbols you use on your premises signage and in your documentation should remain consistent and meaningful. Consistency in style, colour and location is essential. If you place a tactile sign on the way just above the door handle height (the correct height and place) in one location you must follow this standard for all signage. Signs/symbols used in documents should be the same as those used for building signs e.g. on maps and guides.

Where international standard symbols for features and services are available use them. If non standard symbols are used for specific items or features, be sure to explain them. (See Appendix B.)

Avoid using complex or unusual names, i.e. use toilet or WC not restroom, or, fracture clinic not orthopaedics.

Have a recognisable 'meet point' on each floor where people who have become separated can wait for others. This can be important for people with learning difficulties or impaired cognisance who can become panicked when lost and confused. Use the standard sign and in larger buildings consider a few direction signs to the meet point. Show these meeting points on your floor maps and in your guide text. Place the meeting points near identifiable features such as a tall statue or staircase. Identifiable sounds in the area help people with low vision to identify arrival at the meet point.



## 1.6 Services

**Describe what services are available**

Services may include a long list of offerings, including sign language interpretation, scripts, audio tours, library, internet connection, café, manual wheelchairs, a tactile map, accessible telephone etc. Include information about where to find the services, booking information (where necessary) and the cost.

**Describe added value services**

Provide information about specific services for children people with disabilities, older persons. Include Programs offered for specific audiences (e.g., people who are blind or have visual impairments,) include sensory seminars, easy listening tours for people with learning difficulties, special events, and early and late openings, etc.

## 1.7 Emergencies

Provide information about what action will be taken by staff and visitors in an emergency.

For schools and other group organisers, consider providing a more detailed guide so that organisers can be prepared and where necessary inform their party members. This should indicate routes and assembly points in text and map form, especially where people with disabilities, older people or young children will form the party.

## 1.8 Availability

Make the guide available plan where you are going to have copies readily available and in sight, it is no good sitting behind the concierge's desk. Have a rack near the entrance with information in

large print on how to obtain alternate formats if these are not in the rack. Make sure that people who are tall and cannot bend, small people and children and people in wheelchairs can reach the guides. Make sure that libraries, tourist information offices, tourist venues, have copies and consider placing copies at rail and bus stations.

## 2 Useful Resources

### 2.1 Documents and Web

TechDis aims to be the leading educational advisory service, working across the UK, in the fields of accessibility and inclusion. TechDis aims to enhance provision for disabled students and staff in higher, further and specialist education and adult and community learning, through the use of technology. TechDis is a JISC-funded service (Joint Information Systems Committee) their website <http://www.techdis.ac.uk>.

### 2.2 Physical Environment

The Access Built - Code of Practice amplifies and explains the access regulations and good practice mainly in relation to the Built Environment. This code was originally compiled and produced by Merseytravel and the five Merseyside Metropolitan Councils of Knowsley, Liverpool, St. Helens, Sefton and Wirral in February 1999. It was updated in 2001 and 2002 to take account of changes in legislation and good practice documentation.

Be aware that it does not cover emergencies and related construction and emergency management.

It has been made available on the web by SURFACE (Salford University Research Focus on Accessible Environments).

<http://www.accesscode.info>

### 2.3 Physical and Sensory Guidance

A wide range of guides on access and disability matters are available ranging from basic design of formal areas and structures through less formal country designs, website design, assistive technology, emergency planning.

## Appendix A – Route Assessment Checklist

Access is for everyone while a route may be suitable for a person in a manual wheelchair it does not make the route suited to people with other disabilities or infirmities.

### Rating & Measure of Barriers

The basic rating of a street is based on the following; these are factors which need to be considered when rating the accessibility of a foot route. This is a full assessment guide for general purposes be aware and apply the criteria sensibly: -

#### Routes –

- Surface Type (no gravel, sand, mud or cobbles)
- Surface Quality (5 mm max. up-stands or dips between pavers etc., no water accumulation)
- Supervised crossings (trained personnel and audio/visual signalling)
- Controlled crossings (audio visual enunciators)
- Steps (design, maintenance, sufficient)
- Deep gutters (none)
- Raised manhole covers (5 mm max. up-stands or dips)
- Cambers (across walkway 1:40 to 1:50)
- Cambers on road crossings. (cross and road longitudinal)
- Badly repaired walkway or crossing excavations (ruts and lumps)
- Street furniture that obstructs
- Dropped flush kerbs (OK aligned both sides of crossing)
- Dropped flush kerbs (missing or badly constructed or misaligned)
- Level pedestrian crossing (speed hump)
- Raised kerbs (at bus stops)
- Ramps (inclines above 1:20 to 1:12)
- Slopes (inclines between 1:60 to 1:21)
- Steep slopes (inclines above 1:12)
- Bad or no steps on level changes
- Hand & Guard rails (all steps and ramps or steep slopes)
- Guidance paths and contrasting kerbs or edges.
- Incidence of rest places (street seating)
- Tactile pavers (missing or wrongly placed)

### Flush dropped Kerbs –

- Height if not flush (should be max  $\pm 5$  mm up-stand but water accumulation in dropped section may require higher) A surface water drain grating on uphill side of the dropped kerb helps control water accumulation.
- Surface (finish & condition)
- Slope (on sides max 1:12) often wrong on inclined crossings.
- Camber (of drop ramp)
- Camber (included road & ramp)
- Width
- Depth to turn wheelchair or mobility vehicle while not on roadway and not obstructing other walkway users.
- Orientation in relation to walkway route
- Alignment with opposing flush kerb.
- Curvature
- With Bullnose
- With Brick pavers
- Other impediments

### Wayfinding & Signage –

#### Landmarks & Navigation Aids -

- Statues and similar street decorations may have gone out of popularity but they serve a necessary component to finding your way about a place or being given directions to follow.

#### Signage -

- Signage is a major part of wayfinding, providing both you are here information and pointing routes to attractions and locations.
- Height for distance viewing and for tactile reading.

#### Tactile & Colour Contrasts –

- Pavers, footway edgings, obstruction warnings, information tiles

#### Sensory -

- Use of fountains giving sound clues
- Planting giving scent clues.
- Or similar

#### Maps –

- Street maps (visual and tactile)

- Bus/transport maps
- Audio description

### Notices –

- Legible bus time tables (text size & font, clear contrasts, height, position)
- Lighted
- Large Print, Tactile or Braille

### Street Furnishings -

- Lamp & sign posts (position, colour contrasts to background, 1000 and 1400 height 50 mm bands)
- Waste bins
- Seating (set out of walkway including space for feet, with & without arm rests, contrasted to background, space for mobility vehicle or companion dog)
- Bollards (1000 mm height, colour contrast banding, contrast to background, tactile warning, 1200 mm wide passing space minimum)
- Planters (1000 mm high, contrasted to background)
- Cycle racks, chicanes etc. too low, not contrasted or not out of circulation routes
- Cycle tracks sharing walkway
- Dog toilet for companion dogs (signed, drained, regularly cleaned, waste bin provided)

Note: the sighting of street furnishings can be problematic  
Highways design calls for posts and other obstructions to be set back from the kerb by 400 mm (minimum) to prevent vehicle impact.  
Accessibility design calls for street furnishings not to intrude into the walkway space.

### Lighting –

- Good even street lighting, no dark or shadowed areas
- Increased light levels on steps and ramps
- Sufficient light to read signs
- Road crossing points well lighted
- Seating, bus stops etc. well lighted

Note: bright street lighting (shows a 20%+ decrease in crime with increased light levels in streets) has proven to be a far better crime deterrent than CCTV surveillance (which shows a 5-7% decrease in crime for a short period following installation) and lighting costs far less to operate and maintain than CCTV.



**Buildings** – (shops, offices, pubs, restaurants etc.)

- Building numbers shown on all/most buildings
- Street Name Signage both for those with good and limited vision (at 1200 mm height)
- Thresholds level
- Alternate ramped and stepped routes
- Alternative to powered (or good timings) and rotating doors or turnstiles

**Public Toilets** –

- Accessible designs - wheelchair unisex and ambulatory single sex
- Toilets available suitable for people with ambulatory and visual impairments. These are standard units with minimal provisions
- Reasonable distances – 50-100 metres dependent on inclines)
- Suitable for children
- Opening hours 24/7 or at least an hour before to an hour after your opening times

**Cleaning & maintenance** –

- Streets regularly cleaned (rubbish, fallen leaves etc.)
- Street excavations properly reconstituted
- Are scaffolds safely erected and guarded
- Are well constructed diversions available where footways are obstructed by work
- Are streets free of clutter e.g. advertising A-frames, street café and shop display build outs, vehicles parked on footways
- Does the town management enforce safety and control of temporary structures or diversions

## Appendix B – Access Symbols

Symbols may be black on white or white on blue. Use of other colour schemes should be avoided as use of non-standard colours can mean a loss of meaning for people with low vision or learning difficulties.

### Access Low Vision

Access (other than print or Braille) for individuals who are blind or have poor vision. This symbol may be used to indicate access for people who are blind or have low vision, including: a guided tour, a path to a nature trail or a scent garden in a park; and a tactile tour or a museum exhibition that may be touched.



### Symbol for Accessibility

The wheelchair symbol should only be used to indicate access for individuals with limited mobility including wheelchair users. For example, the symbol is used to indicate an accessible entrance, toilet, bathroom or that a phone is lowered for wheelchair users.



Old Style



New Style

Remember that a ramped entrance is not completely accessible if there are no dropped kerbs, and a lift is not accessible if it can only be reached via steps.

### Audio Description

A service for persons who are blind or have low vision that makes the performing arts, visual arts, television, video, and film more accessible.

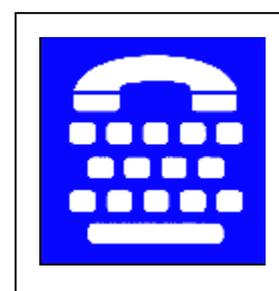
Description of visual elements is provided by a trained Audio Describer through the Secondary Audio Program (SAP) of televisions and monitors equipped with stereo sound. For live Audio Description, a trained Audio Describer offers live commentary or narration (via headphones and a small transmitter) consisting of concise, objective descriptions of visual elements: i.e., a theatre performance or a visual arts exhibition.



Audio Description for TV, Video and Film

### Telephone Typewriter (TTY)

This device is also known as a text telephone (TT), or telecommunications device for the deaf (TDD).



TTY indicates a device used with the telephone for communication with and between deaf, hard of hearing, speech impaired and/or hearing persons.

### Volume Control Telephone

This symbol indicates the location of telephones that have handsets with amplified sound and/or adjustable volume controls.



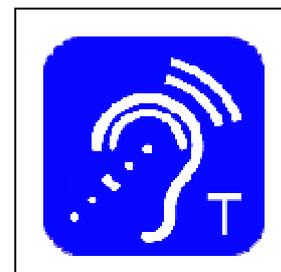
### Assistive Listening Systems

These systems transmit amplified sound via hearing aids, headsets or other devices. They include infrared, loop and FM systems. Portable systems may be available from the same audio-visual equipment suppliers that service conferences and meetings.



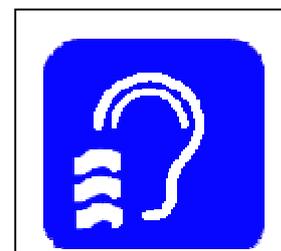
### T Switch

Equipment to enhance microphone sound for people whose hearing aid is fitted with a "T" switch



### Infrared Systems

A separate symbol is available for infrared systems which are usually only available with the use of special headphones.



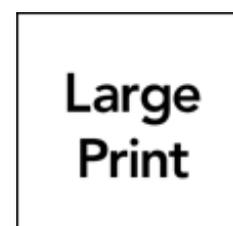
### Sign Language Interpretation

The symbol indicates that Sign Language Interpretation is provided for a lecture, tour, film, performance, conference or other program.



### Accessible Print (18 pt. or Larger)

The symbol for large print is "Large Print" printed in 18 pt. or larger text. In addition to indicating that large print versions of books, pamphlets, museum guides and theatre programs are



available, you may use the symbol on conference or membership forms to indicate that print materials may be provided in large print. Sans serif or modified serif print with good contrast is important, and special attention should be paid to letter and word spacing.

Clear print is when a document is printed in a minimum of 12 point (RNIB suggests 14 point) this is the standard that correspondence and standard in which advertising and guides should be written.

## The Information Symbol

The most valuable commodity of today's society is information; to a person with a disability it is essential. For example, the symbol may be used on signage or on a floor plan to indicate the location of the information or security desk, where there is more specific information or materials concerning access accommodations and services such as "LARGE PRINT" materials, audio cassette recordings of materials, or sign interpreted tours.



## Captioning

Captioning is the transcription and display of dialogue and other auditory information, such as on- and off-screen sound effects, music, and laughter. In museums, captioning is used in videos and films, live performances and demonstrations, planetarium shows, lectures, web sites.

Captioning benefits more than people who are deaf or hard of hearing, in loud or crowded exhibition halls, captioned videos allow sighted visitors to read what they cannot hear. Captions also benefit new readers and people who are learning English as a second language.

Subtitling is similar and normally used for alternate language transcription. This is usually limited to dialogue translation.

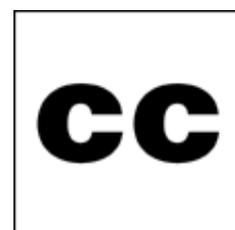
Captioning transmitted live is called real-time or online captioning.

Captioning that is recorded and then shown at other times is called offline captioning.

Open captions appear on-screen, whereas closed captions only appear when an electronic device called a decoder is activated by the user. Most televisions available now have this capability.

## Closed Captioning (CC)

This symbol indicates a choice for whether or not to display captions for a television program or videotape. TV sets that have a built-in or a separate decoder are equipped to display dialogue for



programs that are captioned when selected by the viewer. Also, videos that are part of exhibitions may be closed captioned using the symbol with instruction to press a button for captioning.

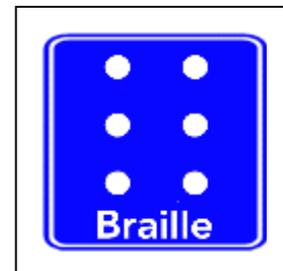
### Opened Captioning (OC)

This symbol indicates that captions, which translate dialogue and other sounds in print, are always displayed on the videotape, movie or television program. Open Captioning is preferred by many including deaf and hard-of-hearing individuals, and people whose second language is English. In addition, it is helpful in teaching children how to read and in keeping sound levels to a minimum in museums and restaurants.



### Braille Symbol

This symbol indicates that printed material is available in Braille, including exhibition labelling, publications and signage.



Some other common access symbols

 Accessible Shower	 Facilities for the blind	 Guide dogs welcome
 Baby Wash and Changing	 Adult Wash and Changing	

Examples of other standard symbols: colour schemes are either black on white or white on brown.

<p>Agricultural Museum</p>	<p>Air Museum</p>	<p>Bus Museum</p>
<p>Aquarium or Oceanarium</p>	<p>Birds of Prey Centre</p>	<p>Theatre Concert Hall</p>

In some cases there are variations between countries with similar symbols having similar but different meanings, e.g. the museum symbol for England and the museum symbol for Wales. In such cases the meaning should be explained with the addition of text to a sign or in a glossary or key in documents.

<p>Wales Art Gallery or Museum</p>	<p>England Museum</p>

Where there are standard signs with specific meaning or are corporate logos these can be used. However, they should be the same colour scheme in all cases. In a trial people with a range of disabilities and ages were shown the standard railway symbol in its normal red and with the red replaced by yellow, the yellow sign was missed by many people especially people with learning difficulties and visual impairments.

Standard Tourist Attraction signs

<p>Wales</p>	<p>Northern Ireland</p>	<p>Scotland</p>	<p>England</p>

## Appendix C - Making Text Information Accessible

Information for the blind and partially sighted can be made available in a number of forms.

The right to receive information in specific formats is a legal right and your company can be prosecuted for not complying.

Companies should hold a list of those who require information supplied in these special formats.

Most of the following items are the same for any text whether on paper, video or overhead projection.

- Clear print design - this benefits everyone (minimum 12 point although 14 is recommended by the RNIB)
- Computer disk
- Audio tape
- Large print versions of documents (16 to 22 point print)
- Braille (a method of reading by touch using raised dots)
- Moon (a method of reading by touch using raised shapes based on the alphabet. This is less common than Braille)
- Email
- Well-designed sign language
- Telephone services - Mintel, Mincom, Texttype.
- Audio description/transcription services
- Assistance with guiding - for example how to find a particular item in a shop.
- Spoken or verbal announcements
- Large print or tactile maps.
- Use bullets to mark the start of sentences and phrases in lists.
- Where symbols are used these should comply with the international signs where ever possible.

Audio tape and disk versions may take longer to be made than normal printed versions so companies should plan ahead.

There are programs available which will automatically translate text into the spoken word, translate into other languages produce Braille (using modified dot matrix printers). These are often available from your local RNIB office or can be purchased from Software stockists.

### Legal Position

It is also worth noting that the Copyright (Visually Impaired Persons Act (2002) enables libraries/museums to produce alternative format copies in full for use by particular visually impaired individuals. It also enables the making of alternative format copies for more general use



by visually impaired people, provided no commercially produced copy already exists, e.g. a commercially published literary, dramatic, musical or artistic work.

See the Act for full details -

Copyright (Visually Impaired Persons) Act 2002 HMSO, 2002

Website:

<http://www.legislation.hmsso.gov.uk/acts/acts2002/20020033.htm>

### Other needs

For those with learning difficulties or low literacy graphics, sketches and photographs can help with understanding.

### Choosing a type face

Blind and partially sighted people read print in different ways. For many partially sighted people well designed clear print will be enough.

For other people Braille, audio tape or computer standard format may be needed. See below.

### Type size

For general use 12 point print is suitable for most people but some would benefit by use of 14 point. (Clear Print)

For those with greater difficulties 16 to 22 point print might be needed. (Large Print)

### Type weight

Type faces are normally available in light, normal (roman), semi-bold (medium) and bold. The light options should be avoided since they do not produce sufficient contrast for clear seeing.

### Serif & sans serif fonts

These are broad type of fonts which have little "feet" (serifs) at the ends of the letters. Both types are suitable but sans serif type faces are better for large quantities of text because their character shapes are easier to identify. Ariel, Tahoma and Verdana are examples of good font styles.

### Ornamental fonts

These should be stringently avoided, highly stylised fonts are confusing and tend to blur for many readers.



These are some examples of bad print faces.

### Type style

The human eye works by recognising the shape of the word. Text set in italics or all in capitals and condensed are usually more difficult to read because the words shapes are less distinct or blur in to each other. The use of underlining should be held to a minimum's this makes it less easy to recognise the shapes of the words.

The three most commonly used fonts 'Times New Roman' and 'Courier' 'Comic Sans' are non-accessible fonts and their used is not recommended for Access Guides or other documents.

### Hyphenation

Where ever possible avoid the use of hyphenated words as this disrupts the flow.

### Numbers

The digit figures three (3), five (5) and eight (8) and the zero (0) and six (6) characters are confusing to many people. Choose a typeface with a clear distinction between the numerals. For some people you may need to provide the numbers written as words.

### Line spacing

Lines should be spaced at one point five (1.5) to two (2) time the space between words in a line.

### Line length

Line should ideally be between 60 and 70 characters, except when using columns.

Lines which are too long or to short tire the eyes. The same strictures apply to paragraph and sentence length.

## Alignment

The use of justified text should be avoided entirely as the difference in line length of left aligned text helps to identify the start and finish of the line which is being read.

Stretching or condensing words to balance line length leads to greatly reduced legibility.

Make sure that the central margin between pages is wide enough to avoid confusing the end of one line with the start of the next. (See also columns below).

## Lists

Be consistent when you enter lists, e.g. a list of addresses, always list them in alphabetical order. This applies to all users not just those with disabilities.

## Layout

For someone with a sight problem, a user-friendly design is one which is uncluttered and simple. The different elements of a page, headings, pictures, illustrations, text and captions should be clearly separated rather than competing with each other.

## Contrast

Contrast between text and the background on which it is printed is very important. Research shows that a high proportion of those who are partially sighted also have difficulty with colour perception. For example for those with unaffected sight red and green are strongly contrasting colours, for someone with partial sight (or colour blindness) they are indistinguishable.

Contrast is affected by several factors, including, paper (background) colour, printing inks (not just the colour but also the type), lighting, size & weight of the type face.

The relation between colours is more important than the colours themselves, as a general rule contrast dark against light.

When white type is used on a black background, the text size needs to be increased and/or bolded as **white on black print** looks smaller than, black on white. Switching back and forwards between these contrasts should be avoided as it tires and confuses the eye.

Using the automatic colour reversal utility available in many applications is not recommended, as although it may be a true colour reversal (in absolute light terms,) the reversed colours may not have high relative contrasts.

## Navigation consistency

Headings, pages numbers and other recurring features should always be in the same place on the page. People with sight difficulties read more slowly and placing the recurring items in the same place each time helps speed up assimilation of the page. A vertical line 5 mm from the left hand side of the text can help people identify the start of a line.

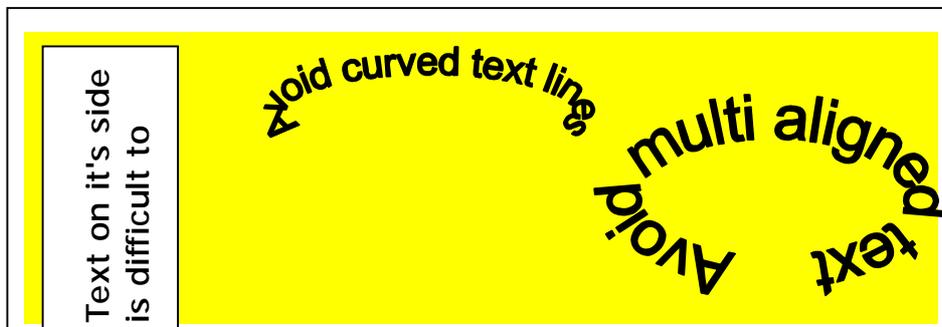
Headings should be clearly identifiable with well structured page content helps find your way about and read what is supplied.

Any document longer than 10 pages should have an index at the beginning. Make sure that you use the Bookmark and Thumbnail capability of Adobe Acrobat when you produce PDF format documents.

Text should never be closely wrapped about a picture as this produces a ragged left hand edge making identification of the start of a line more difficult.

If pictures are to be included they should always be placed on the right hand side of the page so that they do not disrupt the beginning of the text.

Fancy print styles (see Microsoft Word - Word Art) should never be used in the body of a document and sinuous text and vertically aligned forms should never be used.



## Form design

When designing a form which has to be completed with hand writing make, the spaces available for completion large. Most people with partial sight tend to write in larger letters than those with standard vision. This also applies to those with problems with manual dexterity, e.g. arthritis.

## Use of Columns

When a page is broken into columns make sure there is sufficient space (gutter) between the right hand edge of the fist column and with the left hand edge of the second column of text or illustration, e.g. 30 mm from paper edge to the edge of the text.

Use of a vertical dividing line can clarify this division between columns.

Never include pictures which span two (or more) columns with the text being continuous above and below the picture.

Scattering pictures within a column or body of text can make it difficult to identify the start and finish of sentences.

Note: columns will have to be removed when the document is made ready for text to speech readers. Therefore, do not use hard columns or tables to define the columns as it is more work to reformat the document.

### Illustrations/graphics

Illustrations should have hard clear lines to delimit the characters and shapes included. Water colours tend to merge and make edges indistinct. Highly stylised pictures are also confusing where many curves and embellishments are added.

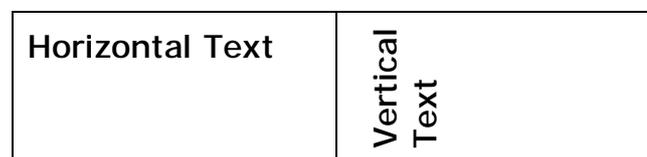
Photographs should not be too grainy or contain a lot of detailed information. The important part of the picture should stand out clearly.

Graphics and photographs should never overlay each other.

Text should never, ever overlay a graphic/photograph as the multiple colours will tend to lose definition and confuse the contrast between the text and the background.

As a general policy graphics should be high contrast, uncluttered and with clean background, use of half tones should be avoided as these tend to blend into each other.

Technical drawings i.e. those with dimensions, should follow British Standards for layout. The convention means that text and horizontal dimensions should be readable from the lower edge of the drawing with vertical dimensions readable by turning the drawing in a clockwise direction.



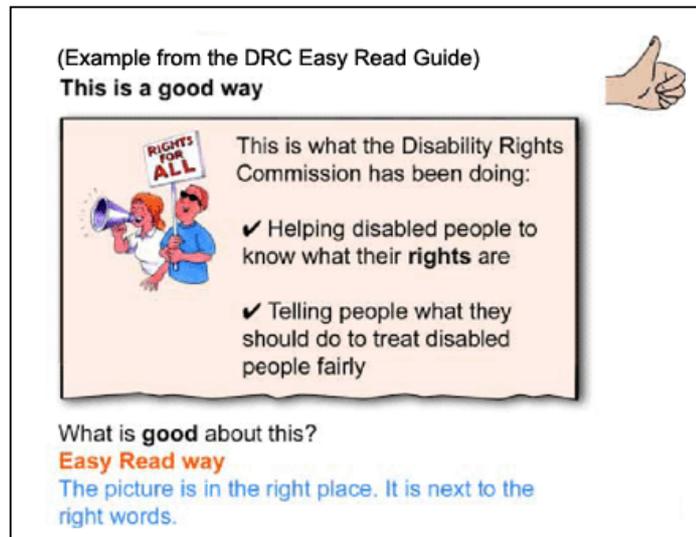
Text and pictures should never be continuous over the spine (shared between two pages) as this tends to break continuity of the picture or sentence/phrase.

## Position of Picture on page

The needs of people with learning difficulties and those of people with visual impairments are different.

For people with learning difficulties the picture is placed to the left of the text or placed within the body of the text for emphasis.

When writing for people with visual impairments the picture should always be placed to the right of the text, or above or below the text in a column arrangement. This allows the lines of text to start vertically below each other and end before interruption by a picture, as done in this guide.



## Paper selection

Glossy finish paper should be avoided as the light reflection will tend to obscure the picture due to glare.

Text from the reverse page should never be visible through the paper (80 to 90 gsm weight paper should be the minimum,) so that the print on the reverse side does not show through the paper.

## Clear Print checklist

For people with visual impairment:

- The best contrast with the least glare is bold or double-strike type on light yellow paper. White paper produces too much glare. Do not use red paper.
- If white paper needs to be used, use an off-white paper that will still give good contrast while producing less glare than white.
- The paper should not be larger than standard A4
- The gutter margins (the adjoining inner margins of two facing pages in a book, magazine, etc.) Should be a minimum of 22 mm, and the outside margin should be smaller but not less than 13 mm.
- Is the typeface at least 12 points or above
- Does the text contrast clearly with the background?
- If the type is reversed, does it contrast sufficiently with its background? Is it big enough?
- Is there enough space between each line of type?



- Is the typeface either sans serif, semi bold or bold?
- Are whole sentences written in capital letters? (This should be avoided; mixed case text should always be used.)
- Are the numerals clear?
- Are any words split between two lines? (There shouldn't be.)
- Is text unjustified, aligned to the left margin?
- Are there any uneven gaps between words or letters?
- Is any text centred? (Avoid central alignment except for titles.)
- Are there 60-70 mm characters per line? (Unless you are using columns.) Anything longer than 150 mm will not track well for people who use magnifiers.
- The font should have normal white spaces between characters. Compressed fonts and italics are difficult to read.
- Numbers and units should remain together on the same line i.e. 57 mm not broken between two lines.
- There should be enough space between columns?
- Does text follow easily from column to column?
- Is the page layout clear and unfussy?
- Is there a contents list?
- Are page numbers and headings consistent and in the same place on each page?
- Is there a space between paragraphs?
- Is text set horizontally?
- Have you set text around illustrations? (This can be confusing.)
- If the reader needs to write on the page, is there enough space?
- If there are images, are they clearly defined and easy to read?
- Are images clearly separated from the text?
- Use the paper matt? (Avoid very glossy paper.)
- Is the page a size which is easy to handle?
- Do folds obscure the text or pictures?
- Photographs need to have a wide range of gray-scale variation.
- Can the document be flattened, so it can be placed under a scanner or screen magnifier Ring

Producing large-print documents does not have to be cost prohibitive, and documents created on the computer can be converted to large print relatively easily. The following will affect the printing cost:

- Setup;
- Number of copies;



- Required turnaround time;
- Type size—the larger the type, the more paper is needed; and
- Type of paper; house-stock paper is less expensive.

### Recommendations for people with learning difficulties

- Do not use long sentences
- Include one main point, and one or two clauses in a sentence.
- Write in the active rather than the passive voice.
- Avoid abstract concepts.
- Use simple words without being patronising.
- Repeat difficult or unfamiliar words
- Do not use jargon
- Avoid abbreviations and acronyms.
- Avoid using the third person, addressing the reader as 'you' is more user friendly
- Keep the line length short
- Align text left with a ragged right edge.
- Allow a good space between columns of text
- Avoid all capitals printing
- Avoid stretching or condensing print, italics and justification
- Use illustrations, cartoons, photographs to supplement the written words.
- Use MAKATON a symbol language system. (These symbols can be very expensive to buy for smaller and voluntary organisations.)
- Audio visual presentations are good
- Use digits rather than write the word, i.e. 7 not seven (this is opposite to those with visual impairment).

## Language

### Using plain English

The following are the recommendations of the RNIB for the production of clear plain language documents.

Using clear and simple text (known as plain English) with short sentences, simple punctuation and no jargon will help get your message across more effectively. Plain English, like Clear Print,

benefits everyone but is essential for anyone with a learning disability. Here are some pointers:

- One sentence should express one idea.
- Use short paragraphs, grouping ideas on one theme in each paragraph.
- Never use a long word when a short one will do. For example consider using "home" rather than "accommodation", or "help" rather than "assistance".
- Eliminate unnecessary words; for example, use "now" instead of "at the present moment in time". Ask yourself whether phrases such as "it has to be said that" add anything to your document.
- Limit the use of jargon and technical terms unless you are certain that every reader understands them. If you have to use them, explain them.
- Try not to use abbreviations. Where you do use them, spell them out the first time, or if you haven't used them for a few pages.
- Punctuation should be simple but accurate. A well punctuated document is easy to understand.
- Think carefully about your tone of voice. For example, when you find yourself writing about "persons" instead of "people" you can be sure your writing is becoming distant from your audience.
- Be direct. For example, address the reader as "you" and refer to yourself as "I" or "we". Readers respond much more positively to this direct style of writing.
- Write in an active rather than a passive voice. For example, write "We will hold meetings.." rather than "Meetings will be held...".
- Avoid negatives as they tend to confuse people. For example, "You will limit your choice of course dates if you do not respond by..." is better expressed positively as "You will have more choice of course dates if you respond by...".

## The Welsh language

According to the 1991 Census, 508,098 people speak Welsh. This is 18.7 per cent of the population of Wales. Welsh is also spoken in certain parts of England notably along the Welsh border areas.

A National Opinion Poll (NOP) research exercise undertaken on behalf of the Welsh Language Board; found that 75 per cent of respondents felt that the; Welsh and English languages should have equal status.

It is important to be responsive to your visitors who may want information in Welsh, including Braille; and tape versions. Public organisations already have a legal obligation under the Welsh Language Act 1993 (England & Wales), to produce information in



both English and Welsh. Welsh speakers may request a Welsh language version of your company's documentation.

## Other languages

There are a further (in addition to Welsh) 2.6 million people in the UK who have languages other than English as their primary tongue.

The proportions of these groups who have disabilities which affect their use of printed information remains' the same as for the general UK population.

Consider whether the number of overseas visitors warrants the cost of providing written and audio/video information in other languages.

## Sign Language

There are programs available for producing sign language on screen. One is Vcomm3D's Signing Avatar this application translates words and sentences into sign language using animated characters. For further details see [www.signingavatar.com](http://www.signingavatar.com) or <http://www.vcom3d.com> this uses USA/Canadian ASL sign language.

## References

Central Office of Information (COI) - government office responsible for ensuring accurate public sector information.

Development of services for people with learning difficulties 1991 - HMSO

The informability manual - by Wendy Gregory Published HMSO

MAKATON Vocabulary Development Project, 32, Firwood Drive, Camberley, Surrey. GQ15 1QD Tel. 01276 613390

## Glossary

**Braille** - a type of printing using a set raised dots to represent characters

**British Sign Language (BSL)** - a mixture of facial expressions and hand movements used by the Deaf. There are different dialects used in other countries so if your museum caters for large numbers of visitors from overseas research the differences and consider providing signed videos if these are produced in other languages.

**Finger spelling** - different countries use differing forms but either one or both hands and all the fingers are used to spell out a word.

**MAKATON** a symbol (glyph/cartoon) and text language used to illustrate meanings graphically.

**Moon** - a type of printing using raised portions of the paper forming symbols based (loosely) on the standard print characters. Not in common use.



**Sign Supported English (SSE)** - incorporates BSL, English with supplemental finger spelling.

**Sub Titling** - using text at the bottom of a TV or film screen to summarise or print the spoken words of the film.



## Mencap minimum Writing Standards for written materials

### By audience

People without learning disability	Mixed audience including some people with learning disability	Mixed audience -(key issues/more people with learning disabilities)	Mainly people with a learning disability	All people with a learning disability
<p>Plain English</p> <p>Minimum 10 point text</p>	<p>Plain English</p> <p>At least 10 point.</p> <p>Most important things in 12 point or larger</p> <p>Use Bullets and/or put text into boxes</p> <p>Show clear path through the text.</p> <p>Make clear which part of text should be read next</p>	<p>Plain English</p> <p>At least 12 point text</p> <p>most important things in 14 point or larger</p> <p>Use Bullets and/or put text into boxes</p> <p>Show clear path through the text.</p> <p>Make clear which part of text should be read next</p> <p>Consider colour coding</p> <p>If using colour make sure there is contrast</p>	<p>Plain English</p> <p>At least 14 point text</p> <p>Use Bullets and/or put text into boxes</p> <p>Show clear path through the text.</p> <p>Consider colour coding</p> <p>If using colour make sure there is contrast</p>	<p>Depends on the need of specific audience</p> <p>Research the needs and design materials to meet them.</p> <p>Eg text/picture boards; video</p> <p>Respond in kind. Eg if sent a letter on tape reply on tape.</p> <p>Work with support worker who know their clients needs.</p>



People without learning disability	Mixed audience including some people with learning disability	Mixed audience -(key issues/more people with learning disabilities)	Mainly people with a learning disability	All people with a learning disability
	Consider audio tape for important information	All important information audio on tape Use images(drawings, photos and symbols to support and prompt text	All important information audio on tape Use images(drawings, photos and symbols to support and prompt text Use abstract symbols only if readers are familiar with them Consider other aids. eg large boards with key words/photos overheads, video	

Mencap Minimum Writing Standards for Written Materials

Following the above guidance will help make documents more readable for people with Learning Difficulties or Dyslexia.

## Appendix D – Electronic Formats

### Computer Disk

ASCII - American Standard Code for Information Interchange the world standard adopted for electronic communications.

Providing computer disks/ASCII translation may be the most cost effective means of providing alternative media. A growing number of people with low vision or blindness prefer to receive materials on computer disk that they can listen to by utilising voice output or read with print-enlarging hardware and software on their personal computers.

Whenever possible, the material should be saved in several formats that can be made available to visitors. These would include commonly used word-processing software packages, such as Word and WordPerfect, and in ASCII. In Windows, the NotePad Accessory and on the Macintosh, "Simple Text" are two applications that will insure you have a "text"-formatted document.

Where large amounts of data or numerous files are being provided on one disk consider placing it in HTML format which gives the appearance and utility of a website.

Some factors that will affect the cost of the electronic formatting are:

- Scanning or re-keying the document:
  - Scanning makes a photo type picture of the page, if processing stops at this stage the page can be placed in a document format or as a separate picture, this can be blown up on screen by users but is not fully accessible;
  - Scanning into black and white picture can be followed by use of an Optical Character Recognition (OCR) program which scans the picture and produces a text document of the words it has scanned and recognised. This produces a fairly good interpretation of the page. However, poor quality scans and small or fancy fonts can cause many words or letters to be miss identified. A typist must then go through the document and make appropriate corrections. This is still cheaper than re-keying a large document but more expensive than pure scanning. A text version of the document is then available:
  - Re-keying or re-typing s the most expensive option but produces a usable text document.
  - To make the document fully accessible and pictures and drawings will need to be described in word form in the final document, alternatively simplified tactile sketches can be produced. (see Vision and Museums for details)

- Converting features such as special characters, graphics, tables, sidebars; illustrations, special symbols, columns and boxes to text; columns and tables confuse most text to speech readers as these read pages from the left to right of the page. Loosing the sense of the text by mixing paragraphs. 'Columns' is a simple matter if an electronic document is available, the document is simply reformatted without columns;
  - Tables need complete rewriting and labelling to make them understandable and usable by text to speech reader.
- Labelling with large print or Braille labels, which can be expensive for small and voluntary organisations.
- Cost-saving tip: When having material transcribed into printed Braille, also ask the vendor to format the document on disk for access by adaptive technologies. They will usually do so at a minimal charge.
- Where word processed documents are available conversion to web style pages is cheap and easy. Web style pages are of growing popularity for people who use special browsers for reading. These can be supplied either on the museum's website or a web style CD/DVD.
- If you provide data in Adobe Acrobat or other standard document format provide information on how to obtain a copy of the reader software. Note: some older text to speech readers have problems reading Acrobat format documents.
- Consider providing any photographs included in the text as individual picture files (in GIF or JPEG formats) to allow users to enlarge them to suit their vision. (See also tactile readable pictures in 'Vision and Museums').

## Audio Tape & Files

Contrary to popular belief, most people with serious sight loss have never been taught Braille, so it is necessary to offer an alternative which is easily accessible without special training. Voice tape recording or a "podcast" (mp3 file available to be copied onto an mp3 player or CD,) is one option.

All print materials—brochures, newsletters, training manuals, resource books, etc.—can be made available on audio tape. In the print materials, be sure to indicate that the same information is available on audio cassette. Even people without vision loss frequently use audio cassettes to "read" while they drive, do chores or other activities.

The audio cassette should be tone indexed for easy choice of starting and stopping points for listening. For tone indexing, you will want to beep each section of a short document. For longer documents with several chapters, double beep the beginning of each chapter before you say the title. Single beep each page so that the reader can find his or her place in

the document. Beeps or tones are audible when the playback machine is in the fast forward or rewind mode.

Make sure the audio cassette version presents clear, high-quality sound.

It is best to use professional readers for quality tapes. For referrals on readers, contact the local radio reading service (contact them through your area's public radio station), community service organisations or associations, and agencies and centres that serve people with low vision and blindness. Amateur Theatre groups are another potential source of skilled readers.

It is suggested that a male or a female contralto voice is used as high pitched women's and young people's voices can be difficult to understand.

If you cannot obtain an experienced reader, the following are some guidelines for reading materials onto tape.

- A. Always leave 30 seconds of empty brown tape after the leader tape runs through. At the very beginning of the book or document, say, "This document contains \_\_\_ cassettes on \_\_\_ sides." Narrators usually say, "Read by (name)" at the beginning and end of the entire document or book. Also read: "Copyright (year)."
- B. At the beginning of each side, including the first side of the first cassette, announce the cassette number, if you have more than one cassette. Always announce the side number of the cassette. For example, "Cassette # \_\_\_ Side # \_\_\_ title by author, beginning on page # \_\_\_ section \_\_\_" or "Continuing with section \_\_\_."
- C. At the end of each side announce "End of side (#) on page (#)." Then say, "This book/publication is continued on the next cassette," or "To continue, turn the cassette over." If you are using 4-track cassettes, say, "End of side 2. Change side selector switch, and turn the cassette over" before you get to side 3. This may sound tedious, but it helps the reader locate materials more easily when using a reference guide.
- D. Announce the following at the beginning of a section: page number, chapter number and name, number of print pages included in the section.
- E. Announce page numbers at the beginning of each page.
- F. Designate "heading" or "subheading" when appropriate. Numbered headings and subheadings help divide a long document and help produce an index or table of contents, numbering sections makes it easier to identify which way the user needs to wind to find their place.
- G. The first time a name appears in the material, read, then spell out the name. Also spell all foreign or unfamiliar names.
- H. Italicised words, single words and short phrases within quotation marks or parentheses may be indicated by the inflection of your voice. For longer quotations, read as "quote"... "end quote." For longer parenthetical statements, read as "parenthesis"... "end parenthesis."

- I. Read footnotes immediately following the end of the sentence in which the footnote number occurs. Announce as "Note (number)." After reading the footnote, say, "End of note. Return to text on page # \_\_\_\_."
- J. Describe any graphics or pictures from left to right horizontally and then vertically (for charts or figures). Describe pictures or cartoons used as illustrations of the text as they appear.

Be sure to label all tapes on side 1 with a large number. Also, label the cassette with Braille and print labels that give a brief title and the tape and side number. In the tape case or box, you can have a Braille and print description of the contents of each tape.

Avery makes a range of self-adhesive labels cut to fit on tapes, available from many office suppliers. You can use a special label template (Avery standard 5198,) included in Microsoft Word to print these out. Use the largest type that will fit a short version of the title. If there is a recording on side 1 of your tape only, leave side 2 without a label.

You can make your own labels with a tape writer (Dymo Gun) if you have someone who can check the Braille to make sure that the words aren't put on upside down. There may be a group of volunteer Braille transcribers in the community who could help with labelling. You do not need to be able to read Braille to produce Braille labels using a Dymo Gun. Select the required letter from the print alphabet dial, squeeze the gun and a Braille character of that letter will be embossed on to the Dymo tape. Continue to select letters to produce words in Braille. Please note that the gun produces grade one Braille only. The alphabet dial also has Braille markings for use by those who read Braille.

In UK audio tapes and CDs for people who are blind or have print related disabilities, can be sent by Royal Mail free of charge. Royal Mail have, for a number of years, operated a scheme, Articles for the Blind (AFB), that allows blind and partially sighted people to send certain items of post free of charge. The latest legislation covering the provision of this service is the Postal Services Act 2000. Royal Mail has extended the scope of the scheme to include carriage of large print materials from Monday 22 August 2005. Only items that have been specially produced or adapted for blind and partially sighted people may be sent using the service. All mail posted using AFB must have 'Articles for the Blind' on the front cover, either on a label or in writing. It must also show an external return address.

There are several factors which can impact recording costs. These include:

- Quality of the narrator—Professional readers will cost more but can make a noticeable difference. Regional accents can be difficult for people outside the locality and using someone who is unfamiliar with the pronunciation of other language names and words can make understanding difficult. Regional accents may be appropriate for the

job in hand, but they need to ensure that that the words remain clear for visitors from all areas

- Recording studio—Commercial recording studios use high-quality equipment and professional recording technicians which can be expensive. This is recommended for documents which have to be provided in high quality or large numbers.
- Converting the audio tape format to mp3 format allows it to be used on websites, downloads and on CD/DVD. Braking these files so that each chapter is a separate file makes it less time consuming to resume reading or cross referencing. They can also be listened to on almost all standard CD and DVD players.
- Types of cassette—Chrome tapes are of better quality but more expensive.
- Packaging—Soft, plastic tape boxes are more expensive than hard plastic but are more durable, especially for postal despatch.
- Labelling—Large print labels overprinted with Braille are recommended, though this can be expensive.
- Duplication—Recording studios will usually duplicate large quantities, but subcontracting for duplication services saves costs.
- Rush orders—Rush orders can increase costs significantly.
- For single copy and small quantity production files held on tape or CD can be duplicated using standard equipment.

If recording costs are problematic, you might try working with a local university journalism department or college radio station. Students who are advanced in radio or TV reporting may be able to use campus recording studios.

### Other audio

Hearing-impaired people may be completely deaf, or may have partial loss of hearing. For example, some hearing-impaired users cannot distinguish between sounds in the "foreground" and sounds in the "distance". These people may have trouble distinguishing the sounds coming from a computer kiosk and the sounds created by museum visitors walking past. Hearing-impaired individuals are best accommodated by providing graphical or textual alternatives to sound tracks. Mainstream visitors will benefit as well. Text tracks in on-line video can be searched, providing all users with a means to access specific information without having to listen to the entire feature.

Consider the use of electronic speech machines rather than tape.

The mini-mp3 type devices are inexpensive and much more user friendly than tape. The data density of an mp3 recording is far higher than the audio tape standard allowing many times the data on the same size recording media.

These could be issued on loan by the centre for visitors use during a visit. Consider a deposit to encourage return at the end of a visit.

## Sound pollution

Depending on the space, audio labels, audible "attract" screens and content-based sound can make for a noisy environment.

To contain sound in Messages, you could use dome speakers and headphones. Sometimes, however, you may need to use small speakers mounted on exhibit units. Each approach has its advantages and disadvantages.

- Dome speakers are the most expensive. They cut down on, but do not eliminate spill over noise. On the other hand, they require little maintenance.
- Mounted speakers are inexpensive and also low maintenance, but they contribute greatly to noise pollution unless carefully designed and located. It is possible to have semi-enclosed areas which allow different speakers to be heard clearly by the person within the area, but will not distract outside of the sound field.
- Headphones are relatively inexpensive, but require a lot of maintenance. Moreover, devices that have to be held to the ear are not useful in activities which require a visitor to use both hands.

## Captioning

Captioning (sometimes called subtitling) is the process of translating the audio portion of video programming into text captions (subtitles) onto a screen so people who are deaf or hard of hearing can read what they cannot hear. The most common use of captioning is with television programming. In 1993, television manufacturers were required by to include closed captioning capability. Captioning is not limited to television. You should consider using it for videotaped training and promotional materials.

All video programs should be captioned for visitors with hearing impairments and anyone else who prefers text over an audio presentation. In a noisy space, that can be a lot of people.

## Video

Following are some recommendations for making videos more accessible for people with disabilities. Remember that, in general, videos are the most inaccessible form of information for people with vision loss and deafness.

- Limit the length of the video, preferably to 5-10 minutes, 20 minutes is generally the maximum time suited to technical matters any longer and listeners are losing concentration.

- Make sure the video has a primary focus or theme with about three to four main points.
- Use a commentator/main speaker with a good voice (women's soprano voices are not suitable for most people with hearing loss as the higher pitches tend to be lost first).  
Avoid whispering this does not provide positive sound differentiation.  
Ensure that names and words are correctly pronounced,  
Avoid using someone with a strong local accent.
- Use a balanced mix of visual and written information.
- Provide closed captioning and closed signing.
- Be sure to have good narration to describe written information flashed up on the screen.
- Make sure TV and VCR equipment are "user friendly" and accessible for all people with disabilities.
- Provide audio descriptions if scenery, actions, facial expressions, or gestures are important to the video.
- Avoid swooping and fast flashing pictures these suit neither people with visual impairments or people subject to epilepsy.
- A closed circuit television can be used to enlarge text and graphics from a printed page. It allows people with low vision to access printed materials by displaying the enlarged image on a monitor. Through the use of a camera it magnifies the page up to 64x. The item to be enlarged is placed on a reading table. The user must be able to slide the table to track the material. The user should also be able to make adjustments from the control panel.

## Presentations - Personal Computer, Overheads and Slides

The guidelines for preparing personal computer presentations, overheads and slides are much the same, whether you are presenting to a group of people with disabilities or not.

The key word for all visual presentations is **simplicity**.

The following are suggestions for creating effective visual presentations.

- Have a title and introductory page.
- Keep the format the same throughout the presentation.
- Present only one idea per visual. It is better to use several simple visuals that are easier to understand than one complex visual.
- Simplify the information. Wording should be brief and concise.
- Limit the number of words on a visual to no more than 15 where possible.

- Use just key words, not complete sentences. You may wish to provide more detailed explanations separately as handouts or additional files on disk.
- Consider using pictographs or symbols which emphasise your point.
- Don't use all capital letters. Initial caps followed by lower case are more legible. Enlarge the font if necessary.
- Use at least 20- or 24-point type for overheads and slides.
- Simple, bold, block-type print is the most effective. Good sans-serif type styles e.g. Univers, Helvetica, Ariel, Verdana, Tahoma.
- Saturated colours project best. Pastels do not provide sufficient contrast for readable type.
- Limit the use of colours. Don't make each letter or word in a phrase a different colour.
- Test project your slides on the viewing surface prior to the presentation. Colour contrasts that appear to be okay on the computer monitor are frequently difficult to visualise when projected on a large surface.
- Keep graphics simple. Avoid large and/or complicated tables.
- Describe the graphics for those who have a hard time reading the slides.
- Avoid "busy" backgrounds and text over pictures.
- For automated PC and slide presentations, allow ample time for people to read each visual. Preferably allow key press page changes rather than set times.  
Have a key to activate and audio elements which may be included. These should also be provided in written form and audio description.
- Active displays such as computers allow ready display in a multiple languages and could have the option of displaying large print text/zoom on to pictures
- Provide the audio and visuals on hard copy and offer other alternative formats where the presentation is not available on CD.

## Websites & Pages

In a 2004 survey in UK it was found that

- Currently only c.30% of websites are accessible to blind people
- As many blind people use speech-reading software to access website content is important not to have too much textual information or too many hyperlinks on each page to ease navigation
- Blind and partially-sighted people tend to navigate in 'top-down', sequential fashion, using tab and navigation keys on a keyboard, so it

is advisable to check that websites can be navigated easily without using a mouse

- Websites that are graphically pleasing to sighted users can often be very difficult to translate into different formats
- It is important to tag all graphic images and online documents with readable and recognisable filenames and/or alternative text tags so that blind and partially sighted people using text-reading software can easily interpret them.

See W3C accessible website design guidance <http://www.w3.org/WAI> guidance

In addition to the points made in the Electronic Formats section, the following are examples of what makes a website easy or difficult to use.

### Quick Checklist for Accessibility

- Accessibility should always be the first thought in the web design process, not the last
- Organisations wishing to develop a web site should consult widely and pilot the site with diverse user groups, including people with sensory impairments
- If informational content on a website is dependent on visual cues, always provide an alternative means of accessing it
- By separating content from presentation web users are more able to define how they wish to access the information
- Web designers need to be sensitive to users' needs: e.g. by avoiding placing specific technological demands on web users (e.g. 3<sup>rd</sup>-party plug-ins) and avoiding putting obstacles in the way of adaptive technologies
- Edit the web site for spelling and grammatical errors.
- Have others inspect the site for clarity and navigation.
- Inspect the Web site with a variety of older and newer graphical browsers.
- Check the Web site with an HTML, XML or CSS validator.
- Inspect the site using alternative browsers that are text or sound based
- Consider providing an alternate set of pages without graphics.
- Do not use words as click points, Printing [click here](#) is not accessible. These are too small for many people with manipulative and visual impairments. Provide buttons or graphics to click on.

- Avoid using moving graphics such as flash. These cause problems for specialist browsers used by people with disabilities and can affect people subject to fits.
- Do not open a new page when navigating through the site. People with low vision become lost with multiple pages open.
- Consider having a button to activate an audio description of the page.
- Always use ALT text to name any graphics and navigation buttons. This helps people with visual impairment and aids people in general to use the site.
- Include short and simple descriptive alternative text (ALT) attributes for all images.
- If the image needs a longer description, provide a link to a detailed description of the image. Do this by either using the LONGDESC attribute or place a "D" linked to the longer description, next to the image.
- Avoid image maps. If a graphical interface is desired, consider "chopping" the main graphic into separate units and provide one link from each unit. This avoids problems with backward compatibility and eases problems for the visually-impaired. When image maps are used, always provide text alternatives.
- Make text links descriptive so they make sense when read out of context.
- Keep links to one per line or separate each link with a non-link character or a graphic image.
- If using graphical links, consider providing alternative text links as well.
- When using frames, provide alternative non-frame pages as well. This is easily done using the NONFRAMES tag within the page that specifies multiple pages. Framed pages are often pulled up out of context during searches, so be sure to provide basic navigation and titles on each page in the frame set.
- Provide transcripts of audio presentations.
- Provide text equivalents for video clips, either captions that synchronise with the video, or as links to separate pages for transcripts.
- If video images are crucial for understanding the content, provide descriptive video.
- Avoid using tables and columns. Use relative sizes (%) for tables rather than fixed sizes.
- Use HTML or ASCII for file distribution. If you use PDFs for distribution of formatted materials, provide a link to

access.adobe.com and check that the PDF converts well to HTML or ASCII before posting on the web site.

- Outline page content as much as possible. Use appropriate HTML based headers (e.g. H3) and lists, both ordered and unordered.

People with cognitive disabilities may have trouble reading. To better serve this population, web designers should avoid lengthy, text only pages. Navigation of pages should be clear and simple. This is the opposite of pages for people with visual impairments.

Some people suffer from decreased mobility. This can range from stiffness of fingers due to arthritis to complete paralysis below the neck. Many people with disabilities use adaptive technology, software or hardware that is designed to provide easier access to electronic resources.

Designing web sites for such a wide range of people is difficult; however, if web site designers adhere to the basic principles of Accessible Design then the developers of adaptive technologies will create tools to assist this population.

## Appendix E – Example Statements

### Ticket Policy

Tickets for patrons with visual impairments benefiting from this service and one guest are available at discounted rate. Additional tickets are available at the single ticket or group rate. Tickets for patrons who are deaf benefiting from this service and one guest are available at a discounted rate. Additional tickets are available at the single ticket or group discount. To order tickets for our audio-described and sign-interpreted performances, call \_\_\_\_\_. — Dylan Thomas Theatre

### Telephones

Sited near the accessible toilets on the first floor of the southeast pavilion, there is a public Text Phone, and one public telephone which has amplification.

### Water Fountains

Accessible fountains are located throughout the Museum

### Floor Plans

Floor Plans and Today's Programs, a daily schedule of events, are available at the Information Desk in the Main Lobby Atrium near the main entrance to the museum.

### Toilets & Changing

Accessible toilets are available on each floor, an accessible wash and changing room for adults is available on the first floor near the Accessible WC all male and female toilets blocks have at least one cubicle designed for the use of ambulant people.

### Wheelchairs

The museum makes every effort to have enough wheelchairs available. Although it is not possible to reserve a wheelchair for a given time, you will find wheelchairs stored in the West Wing lobby. Use of Museum wheelchairs is a free service.

### Alternative Formats

A variety of free pre-printed materials are available, including the Museum Welcome brochure ... The English and Welsh version is available in large print, or audiocassette, and in Braille. The brochure Museum Access Guide is also available in large print, audiocassette, and Braille.

## Appendix F – Tactile Sign and Label Suppliers

Inclusion in this list is not a recommendation.

### Signs and Labels

Douglas Bruce House

Corrie Way

Bredbury Industrial Park

Stockport

Cheshire

(also produce tactile maps)

SK6 2RR

Freephone 0800 132323

Free Fax 0800 3895311

Email [sales@signsandlabels.co.uk](mailto:sales@signsandlabels.co.uk)

Internet <http://www.safetyshop.co.uk>

### Setton Ltd

Dept YPO Box 77

Banbury

Oxon

OX16 7LS

Tel 01295 269955

Free Fax 0800 526861

### Smith Brewer

Unit 5 Sunnyside Road North

Weston Super Mare Also Tactile maps

BS23 SPZ

Tel 01934 642642 Fax 01934 642646

E Mail [ssmith@smithbrewer.co.uk](mailto:ssmith@smithbrewer.co.uk)

net [www.smithbrewer.co.uk](http://www.smithbrewer.co.uk)

### Tactyle Ltd

Mallard House

Old Station

Little Bealings

Woodbridge

IP13 6LT

Tel 01473 620100

Fax 01473 620122

