



**Association  
for the Blind of WA  
Guide Dogs WA**

**PROVIDING ACCESS  
FOR  
PEOPLE WHO ARE  
BLIND OR VISION IMPAIRED**

A handbook for designers, owners and  
managers of buildings and services

**This publication is available in alternative  
formats on request**

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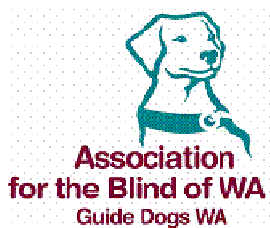
# 1. INTRODUCTION TO THE ASSOCIATION

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The Association for the Blind of WA seeks to maximise the quality of life for Western Australians with vision impairment.

For more than 94 years, the Association for the Blind of WA, has been providing a wide range of services to Western Australians who are vision impaired or blind. Our professional team offers specialist skills, training and advice to help people with vision loss to regain confidence and achieve fulfilled and independent lives. Each year, more than 3,500 people take advantage of the services provided by the Association including Orientation and Mobility instruction, occupational therapy, social work, recreation, low vision clinics, children's services, technology and training.

For further information on the services provided by the Association please access our website at [www.guidedogswa.com.au](http://www.guidedogswa.com.au) or contact us on (08) 9311 8202 to receive a copy of our Services Manual.



## 2. PURPOSE OF THIS BOOKLET

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The following document details items to consider when disseminating information and designing facilities and services that will be accessed by people who are blind or vision impaired. Many of the services your organisation provides can be made more accessible to people who are vision impaired, inexpensively and effectively.

The advice in this document is designed to assist you to meet your existing responsibilities in relation to providing equitable access to people with vision impairment.

Nationally, there are three significant regulations that govern access for people with disabilities:

- Disability Discrimination Act (1992);
- Building Code of Australia; and
- Australian Standards.

The Association strongly urges all building designers and property owners to obtain a copy of each of these documents to ensure compliance. A brief description of these regulations is provided on page 3.

The information provided in this document has been gathered from a variety of sources including: recommendations from professional staff and clients of the Association; research documents; printed reference books; and journal articles. A full bibliography is provided on page 26. The material presented is intended as a general guide and is not intended as legal advice. The Association accepts no liability for anything done or not done in reliance of any of the contents of this booklet.

The Association further recommends that reference to the Human Rights and Equal Opportunities Commission web site at <http://www.hreoc.com.au> is essential for building designers and property owners. At this site you will find information about the role of the Commission and documents promoting compliance with the *Disability Discrimination Act 1992*, including *Advisory Notes on Access to Premises* and resources on developing *Disability Action Plans*.

The Disability Services Commission also provides useful information on access for people with disabilities at their web site, <http://www.dsc.wa.gov.au/>.

DISABILITY  
DISCRIMINATION  
ACT

Disability Discrimination Act (DDA), provides provisions which make it unlawful to discriminate on the grounds of a person's disability in specific areas of public life. These areas include but are not limited to:

1. Employment
2. Education
3. Access to premises
4. Goods Services and facilities
5. Accommodation
6. Land
7. Clubs and incorporated associations
8. Sport
9. Administration of Commonwealth laws and programs
10. Requests for information.

For the purposes of this document the following areas will be considered:

- a) Goods, services and facilities; and
- b) .Access to premises.

**Goods, services and facilities**

The DDA makes it unlawful for goods, services or facilities to be inaccessible to people with a disability. Discrimination may occur by:

- refusal to provide those goods, services or facilities; or
- by the terms, conditions or manner in which the goods, services or facilities are provided.

Section Four provides readers with ideas of how an organisation can improve its service delivery function to make it more accessible to people with vision impairment.

Section Five then follows on with advice about making your printed information accessible to people who are blind or vision impaired.

**Access to premises**

The DDA makes it unlawful for public places to be inaccessible to people with a disability. Public places include: footpaths and walkways; educational institutions; shops; parks; public transport; libraries; hospitals; travel agents; lawyers' offices; and Government services. This applies to existing places as well as places under construction. Existing places must be modified and be accessible (except where this would involve "unjustifiable hardship").

BUILDING CODE  
OF AUSTRALIA

Section Six of this document will provide examples of how an organisation can improve the built environment to make it more accessible to people with vision impairment.

## AUSTRALIAN STANDARDS

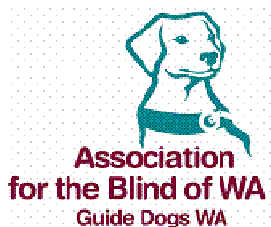
People who design, build, own, lease, operate or manage premises already have responsibilities under the DDA not to discriminate against people with disability in relation to access. They also have to comply with State and Territory building regulations which reference the Building Code of Australia (BCA).

The BCA is a set of regulations that prescribe design and construction criteria that must be met by builders of new buildings or buildings undergoing significant refurbishment or alteration.

The Australian Building Codes Board (ABCB) is currently reviewing the BCA with a view to it becoming more consistent with the DDA, however compliance with the new BCA will not automatically provide protection from a complaint.

Standards Australia was established in 1922 to establish national benchmarks for products and services so as to enhance quality of life and industry efficiency. The national benchmarks are known as Australian Standards. Committees made up of experts from industry, governments, user groups and other sectors prepare these standards. Published standards are a consensus of the views of representative interests and also take account of comments received from other sources. They reflect the latest scientific and industry experience.

Australian Standard 1428 Design for access and mobility, Parts 1 to 4, provides building designers and users with the minimum design requirements for new building work to enable access for people with disabilities. The standard may also be applied for the provision of access to existing buildings. Part 1 of the series deals with aspects of access to and within a building which are regulated by the BCA. As part of the BCA revision, this standard is also being revised.



### 3. TYPES AND CAUSES OF VISION LOSS

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It is important when designing buildings and environments, which are accessible to people with vision impairment, that designers have an understanding of the various types of vision loss (Barker et al, 1995:21).

In Australia, it is estimated that there are about 300,000 people who are blind or vision impaired. Most of this group are older than 65, when vision impairment is age related. In Western Australia, it is estimated that there are 24,900 people who are blind or vision impaired. This is approximately 1.36% of the Western Australian population (Purdy, 1999:6).

Almost two thirds of the people who are blind or vision impaired (63%) are older adults.

- Between 1998 and 2016 the number of people who are blind or vision impaired in Western Australia is expected to increase by more than 14,000 (a 57% increase). By 2006, the number is likely to have increased by approximately 5000 (a 19%) increase.
- Between 1998 and 2016, there is expected to be a 77% increase in the blind and vision impaired population who are 65 years old and over.
- Between 1998 and 2016, there will be a 25% increase in the number of people 18 to 64 years old who are blind or vision impaired, and a 12% increase in the number of children (ibid).

#### LOW VISION

Low vision refers to a vision loss that is severe enough to impede performance of vocational, recreational, social, and independent living tasks, but still allows some useful visual discrimination. Low vision cannot be corrected to normal vision by regular eyeglasses or spectacles. The majority of people who are legally blind are included within the low vision classification.

Legally blind is a term used by government to define the conditions for which a person is eligible for special benefits and services. A person who cannot see at six metres what a normally sighted person can see at 60 metres, or has a field of vision 10 degrees or less, (a normal field of vision is 180 degrees) is considered legally blind. A person who is totally blind has no vision at all.



## TYPES AND CAUSES OF BLINDNESS AND VISION IMPAIRMENT

Not everyone who is blind or vision impaired is the same. While some people who are blind have very little or no vision, most vision impaired people have some useful vision. Just because someone uses a white cane or a guide dog doesn't necessarily mean they can't see anything. The reason not all people who are blind or vision impaired have the same level of vision is because blindness and vision impairment can be caused by a number of different diseases and conditions, as well as accidents. The major categories are: inherited or congenital conditions; ageing, and conditions related to disease or infections.

## INHERITED OR CONGENITAL CONDITIONS

There are many congenital eye conditions (those present at birth) which are either inherited or caused during pregnancy or birth by other means. Some of them may cause total and irreversible blindness while others may be treatable or may leave some vision remaining. Main congenital conditions are:

Albinism is a hereditary condition in which all or part of the body lacks pigment. It may affect the skin, eyes and hair. People in which albinism has affected the pigment in the eyes typically experience severe vision impairment. There is no cure.

Retinitis Pigmentosa (RP) refers to a group of inherited diseases that cause degeneration of the retina. People with RP often have tunnel vision and poor night vision. As the disease progresses central vision is lost.

Retinopathy of Prematurity is a condition that appears soon after birth, generally in premature infants exposed to high oxygen levels. It involves the abnormal development of blood vessels in the retina and can lead to retinal detachment and blindness.

## MAJOR CAUSES OF VISION LOSS



The underlying causes of vision loss, its severity and the limitations that it imposes vary from person to person. However 80 per cent of vision impaired Australians are over the age of 55, consequently the most common causes of low vision are diseases or conditions associated with ageing. These include: Age Related Macular Degeneration, Glaucoma, Diabetic retinopathy and Cataracts.

Given the projected growth in the number of people who are blind or vision impaired will inevitably mean an increase in the demand for services and facilities to be accessible to meet their needs.

## 4. ACCESS TO SERVICES

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Services can be anything that your organisation provides to your intended consumer group. They can range from (for a local authority for example) library and information services, through to recreation and community activities, or specific services such as rubbish collection, tree pruning or local elections. People who have a vision impairment *will* make up a percentage of your consumer group. It is therefore important to keep the needs of those people in mind. A few points to consider when planning how to implement, make accessible or restructure a service:

### PLAN HOW THE SERVICE WILL WORK

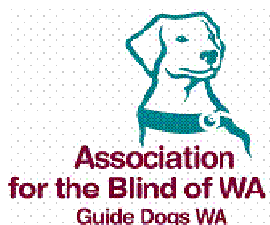
- Plan for how the service will work for people with a vision impairment at the same time that you are planning for its implementation for everyone else. If catering to the needs of people with disabilities is an afterthought, then it is likely that it will be more difficult, time consuming and costly to include at a later date than it would have been initially.

### INVOLVE PEOPLE WITH A VISION IMPAIRMENT

- Involve people with a vision impairment in the planning, implementation and review process. The most effective way to ascertain need is to ask the people for whom you are intending to provide the service. If you are forming a working party to take on the job of developing / modifying the service, make sure you have a vision impaired consumer as part of that group. Keep the group meeting after the service change has been implemented so you can review whether it is actually providing service as expected. Alternatively you may seek to consult with staff from the Association.

### TRAIN YOUR STAFF

- Train your staff prior to implementing service delivery. New policy will fail if you do not have staff committed to it's principles, and with the necessary skills and understanding of the issues involved. Make sure that service delivery staff will be able to interact appropriately with a vision impaired consumer when they need to. Providing a service that includes people who are vision impaired is a laudable aim, but if staff delivering the service discourage their participation actively or through ignorance then that service will not be accessible.



The Human Rights and Equal Opportunity Commission (1998:20) suggests the following strategies to avoid discrimination by staff:

	<ul style="list-style-type: none"> <li>a) make all relevant staff aware of the need to avoid discrimination;</li> <li>b) ensure staff have the necessary information to make services and facilities available to people with disabilities; and</li> <li>c) establish and promote accessible complaints handling procedures regarding discrimination.</li> </ul>
<p>PROMOTE YOUR SERVICE</p>	<ul style="list-style-type: none"> <li>• Consider how you will promote your service. If you are intending to inform people of its existence in print, make sure you inform people with a vision impairment in an alternative format. If you are intending to promote your service in a public forum such as the newspaper, consider how people who cannot access print will be informed. It may mean creating and maintaining a contacts database for specific individuals you wish to inform personally.</li> </ul>
<p>AUDIT THE PREMISES</p>	<ul style="list-style-type: none"> <li>• Look at the physical environment in which the service will take place. Are there barriers that will make it difficult for a person with a vision impairment to access that service? Consider the recommended design features provided in Section 6 – Access to Premises.</li> </ul>
<p>DEVELOP STRONG CUSTOMER LINKS</p>	<ul style="list-style-type: none"> <li>• Consider establishing a contact telephone number which a person with a vision impairment may call to make arrangements for accessing a particular service. If a vision impaired consumer is able to establish a link with someone beforehand who will be aware of their intention to use a service and make arrangements for that to happen, then the person is much more likely to access the service in a satisfactory manner than just “going in cold”. Your organisation would benefit from such an arrangement as well, in that you would be prepared in advance for that person and able to plan accordingly.</li> </ul>
<p>CONSIDER ALTERNATIVE FORMATS</p>	<ul style="list-style-type: none"> <li>• Consider the format of all your regular service provision information. Publications such as rates notices, dates of special rubbish collection, directories of local services, etc. should be provided in a format that your consumers can use.</li> </ul>

## 5. ACCESS TO INFORMATION

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### PRINT DISABILITY

In Australia, it is estimated that as many as 1.3 million people have a print disability, that is, people who cannot read print at all because of vision impairment, a physical, perceptual or intellectual disability, poor literacy or language problems.

Most organisations put great effort into making sure that their publications are carefully worded, well designed and appropriate for the market for which they are intended. However, many do not take into account the fact that 5% of the population cannot read their material at all.

It is not enough to assume that another person will read print material to a person with a print disability. People who have a print disability have the right to read for themselves, to read at their own convenience, to read private material for themselves, and to have access to all print material without having to feel grateful to someone else.

It is up to government agencies, business, and community groups to ensure that Australians with a print disability are not being discriminated against through non-provision of information in a suitable format. Producing publications in alternative formats gives people with a print disability the opportunity to participate more fully in the mainstream of Australian life.

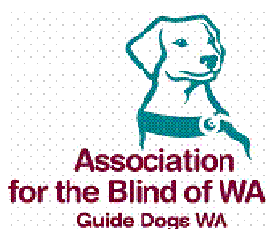
### **Alternative Formats to Standard Print**

There are several alternatives to providing information in standard size print.

### LARGE PRINT

Large Print is useful for people who have some vision but cannot read standard size print, particularly for reference material, timetables, etc. Large print is useful for many people, requires no special skills or equipment to access, and can benefit even people with slight vision impairments.

Large print can easily be produced using many word processing computer programs on the market today. Standards for Large print sizes, typefaces and conventions have been produced by the Roundtable on Reading Materials for People with Print Disabilities. Copies of this document can be purchased through the Association for the Blind of WA (Inc). *See also the Association's Print Policy Guidelines on page 12 of this document.*



AUDIO CASSETTE	<p>This is the most widely used alternative format as it is suitable for nearly all people with a print disability. It lends itself more readily, however, to certain types of material than others. For example, a recorded complex timetable or heavily pictorial publication will be much less useful than recorded minutes, agendas, pamphlets, etc.</p>
	<p>Audio cassette material may be produced using a variety of cassette recording equipment. For best results in recording a publication intended for wide distribution, material should be recorded on quality equipment, under studio conditions, and by organisations who are familiar with the particular requirements of recording print text in a useful and meaningful way for people with a print disability. Australian standards for recording material for people with a print disability have been produced by the Roundtable on Reading Materials for People with Print Disabilities. Copies of this document can be purchased through the Association for the Blind of WA (Inc).</p>
BRAILLE	<p><b>The proportion of print disabled people who can read Braille is relatively small.</b> However for those who can read it, Braille is the ideal print-alternative, especially for material that will be referred to constantly (such as cookbooks, discussion papers, etc) or which contain forms, diagrams, or other visually presented information.</p>
	<p>The most difficult alternative format to produce is braille. Braille production requires the use of specialised equipment, and a knowledge of the Braille Code. Advice as to what is involved is available from the Association for the Blind of WA (Inc).</p>
TACTUAL GRAPHICS	<p>Tactile graphics are used to convey visually presented information such as diagrams, maps, etc. The diagram is drawn in black on a master, which is copied onto paper that expands when exposed to heat. The black areas absorb more heat and are raised above the background. Alternatively, a diagram can be scanned and then through the use of appropriate computer software, produced as a tactile representation on a braille embosser.</p>



## COMPUTER DISK

Text materials on computer disk can be accessed directly by anyone whose personal computer has large screen text, voice or braille output. This is particularly useful for large reference works, such as dictionaries. In addition, if practical, you may consider placing your information on-line via the Internet, as this is now an accessible medium for some people with vision impairments using speech and large screen text feedback.. Likewise, as much material for publication in print is produced on a word processor, it is also relatively easy to provide it as a text file on computer disk. If material is not available on disk it can often be scanned to disk relatively easily. Advice as to how this can be done, and appropriate text file formats, is available from the Association for the Blind of WA (Inc).

## Putting Your Publications Into Alternative Formats

It is useful to keep in mind a couple of points when considering producing your publication in alternative formats:

## BUDGET

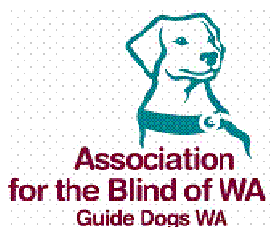
- It is essential that production in alternative formats be taken into account at the initial planning stages of a publication. The cost of producing material in alternative format will be only a small proportion of the total budget for a publication, but this must be taken into consideration when budgets are being prepared. If alternative format publications are not an afterthought, they can be advertised along with your print publication, thus minimising costs.

## PRODUCTION SCHEDULES

- It is also important that production in alternative formats be scheduled into the production process, as all versions of a publication should be available at the same time. It is not usually necessary to write a special script for an alternative format publication, as the print material will generally be transcribed directly.

## QUANTITY

- Consider carefully how many copies in an alternative format are likely to be required. Specific types of publication may require more or less copies, dependent on your intended distribution method. Likewise each alternative format may have a different number of potential consumers. It may be more efficient and cost effective to maintain a “master” in an alternative format from which additional copies can be produced on demand, rather than producing large quantities initially. Advice on factors to consider when making these decisions can be obtained from the Association for the Blind of WA (Inc).



The Association for the Blind of WA (Inc) has undertaken to assist organisations to provide material in alternative formats. All of the above alternative formats can be produced by the Association under contract, to your specifications and an agreed timeframe, at very reasonable rates. The Association's staff can also advise on which formats will be most suitable for your publications, what kind of preparation will be necessary, the number of copies you are likely to need and how to distribute them. We have the expertise to ensure that your print publications are accurately transcribed into alternative format, in a manner which will suit people with a print disability and keep faith with the original.

## Print Policy Guidelines

The following print policy guidelines have been developed by the Association to provide organisations with guidance on preparing printed materials for consumers who are vision impaired.

### ALTERNATIVE FORMATS

Printed material should indicate that information is available in alternative format by including the following statement: "This publication/information is available in alternative formats on request".

### CONTRAST

A strong contrast between type and paper is essential. Use black type on white, yellow or very pale paper. Only use tints behind type if the tint is very pale.

Black ink is preferred. However, other dark print may be used, for example greens, blues, reds or browns, if the ink is dark and the background is very pale. Do not use yellows or pale colours on coloured backgrounds, for example grey on blue.

Type may be reversed, for example white type on a black or dark coloured background, only if the type size is large and thick.

### TYPEFACE AND SIZE



The standard typefaces used by the Association are Arial or Helvetica. The standard size is 12. For large print the typeface is Arial or Helvetica and the recommended size is 18.

For some applications, like an Excel spreadsheet or posters, displays etc, different typefaces may be used, however, very thin, light, or bizarre typefaces make legibility difficult for people with vision impairment.

## DESIGN AND LAYOUT

All information, whether standard or large print, should be laid out simply and clearly:

- Leave space between paragraphs
- Don't cram the page – use a second page when needed
- Have generous margins
- Use a large margin or a vertical rule (for large print) between columns
- Use bold for headings
- Do not underline
- Use italics sparingly
- Use hyphenation sparingly



## 6. ACCESS TO PREMISES

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When designing the interior or exterior of a building, plan how access will be achieved for people with vision impairment at the same time you are planning for everyone else. To assist in this process involve people with vision impairment in the design phase. They will be able to provide you with ideas and solutions to enhance equitable access by people with vision impairment.

As a supplement to this process, the following alphabetical listing of aspects of the building and environment layout and design that may need modification is provided.

### AUDIO LOOPS

A significant number of people with vision impairment also have a hearing impairment. Audio loops are an effective way to enable people with a hearing aid to link into public address systems. The system is particularly useful for people with hearing aids in public speaking areas.

Signs or information sheets should be provided to indicate the type of hearing augmentation device available and whether or not it is turned on.

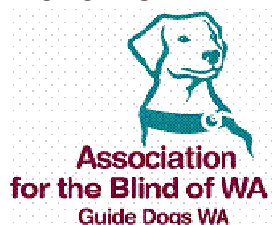
### BUILDING DESIGN

'Inclusive design' or 'universal design' has become a popular concept for architects in recent times. This approach considers the many varieties of special needs and attempts to break down unnecessary barriers and exclusions during the design process. In this way it will often achieve surprising and superior solutions in the built environment that benefit a wider range of people (Barker et al, 1995:13).

For specific standards covering building design for people with disabilities consult the Australian Standards AS1428, parts 1, 2, 3 and 4 and the Australian Building Code. Local Government Building Departments will also assist to provide further advice for planning, and inclusion requirements.

### BICYCLES

Bike racks should be placed adjacent to pathways to avoid them becoming obstacles.



## CIRCULATION AREAS

Areas of general use should be kept free of obstacles, eg Fire Hydrants should not protrude from walls, plants shouldn't intrude into the room, etc. Avoid leaving cartons, boxes and other temporary items in usually free areas. Good lighting is essential for people with low vision navigating in these areas.

Regular clear areas of at least 1.5m wide to permit wheelchair turning should be provided.

## CLOCKS

Clocks with good contrast (eg black figures on a white background or vice versa) and large numbers are available in both analogue or digital format. People with vision impairment may benefit from mounting these clocks at head height on a wall, or on a plate stand on a bench, table or desk for easier reading.

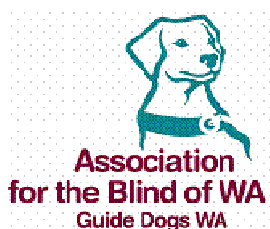
Talking clocks announce the time when a button is pushed and may have optional alarm and hourly time announcements. The synthetic voice may initially be difficult to understand until the user becomes accustomed to the sound. Clarity and volume of the voice output varies amongst the various clocks available.

Braille clocks have either no glass, or removable plastic covers, so that the tactile clock face is exposed. Knowledge of Braille is not required to use this type of clock efficiently. However, acute finger sensitivity is necessary to feel the position of the hands in relation to the numbers that are tactually marked with raised dots.

A wide selection of talking and low vision clocks and timers may be found locally at any one of the Association's offices throughout Western Australia.

## CLOSED CIRCUIT TELEVISION (CCTV)

CCTVs are a system used to magnify printed text for use by people with vision impairment. CCTV's come in all shapes and sizes, can be placed on a desk or table, and allow the user to magnify print and graphic materials to a size that they can use. CCTV's are useful pieces of equipment in areas where printed or graphic material needs to be read in situ, and it is not practical to provide it in large print (eg, community resource libraries, information offices, planning departments, etc)



## COLOUR CONTRAST

The use of suitable colours can provide a luminance contrast which allows a person with a vision impairment to more easily locate structural features in the built environment, including reception areas, notice boards, doorways, corners of buildings, and street furniture. A 30% luminance contrast is recommended by the National Centre for Ageing & Sensory Loss (Barker et al, 1995:3).

A good example of luminance contrast on buildings is where corners of buildings are painted a darker colour than the walls giving them the appearance of columns. Painting the sides of the seats a contrasting colour further improves the luminance contrast and therefore the ability of people with a vision impairment to detect their location.

A couple of questions to ask when designing the interior of a building:

- Do the major room features contrast?
- Do the skirtings contrast to the wall, the carpet to the door, furniture to furniture, furniture to walls, etc?

Remember – Colour contrasts make it much easier for people with low vision to negotiate through an environment.

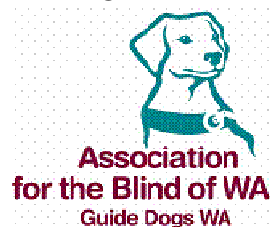
## COMPUTERS

The use of large text display programs and voice output programs make computers accessible to people who are vision impaired or blind. Specialised advice as to which system would suit particular vision impairment needs is available from the Association for the Blind of WA.

## CONFERENCE ROOMS

White boards as well as black boards should be available for colour contrast. However it is important to be aware that people who are blind or have severe vision loss will be unable to see whiteboards or blackboards. It is therefore important that the presenter is aware of the needs of his/her audience and provides for them appropriately. Colour contrasting furniture, walls etc should also be considered.

## CONTINUOUS ACCESSIBLE PATH OF TRAVEL



The following definition is provided from the AS1428:

*“An uninterrupted path of travel to or within a building providing access to all required facilities. For non-ambulatory people, this accessible path shall not incorporate any step, stairway, turnstile, revolving door, escalator or other impediment which would prevent it from being safely negotiated by people with disabilities.”*

A network of continuous accessible paths of travel should be provided to allow equitable access to all parts of the premises and all amenities within a building. This path of travel should be the most commonly used and direct path of travel (HREOC: 1998:6). For people with vision impairment a continuous accessible path of travel should be clear of all obstacles including bollards, street furniture, landscaping, sandwich billboards and overhanging branches. Use of ground surface tactile indicators should be applied according to AS1428.4.

## DOORS

To enable equitable access for people who are blind and vision impaired the following design features are suggested. Doors should:

- colour contrast to the floor and walls, or a door frame which contrasts to the door
- provide signs which are appropriately positioned, colour contrasted and tactile (See also signage)
- not be so heavy as to prevent their use by people with limited use of their hands, wrists or upper body, or who are in wheelchairs
- width suitable for wheelchair use
- never open outwards onto corridors, passages or hallways
- be kept fully closed or fully open (backed against a wall)
- provide colour contrasted handles which are logically positioned, L or D-shaped handles are preferred
- spring closures or be hung on rising butt hinges to prevent them being left half open
- useful to highlight edges of doors and windows to minimise the risk of collision if they are left in a half open position

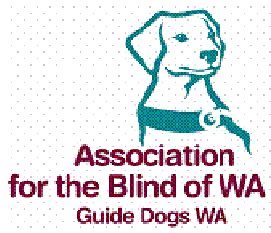
## ESCALATORS

Escalators are a popular method of access for people with vision impairment. However it should be noted that guide dogs in Western Australia are not trained to travel on escalators and although in the eastern states training guide dogs to use escalators is becoming common, there is no indication that this trend will flow on to Western Australia.

Currently most escalators have colour contrasted dots on the moving handrails to indicate the direction the escalator is travelling. These dots should be well maintained and made from a material that withstands wear and tear. Additionally, tactile ground surface indicators at the top and bottom of the escalators must be provided in accordance with Australian Standards 1428.4.



EXIT SIGNS	Exit signs should be consistent in colour and position. (See also signage)
FIRE EXTINGUISHERS	Signs indicating the location of fire extinguishers should be at eye level on a wall as well as at ceiling height. Recessing fire extinguishers into walls avoid them becoming potential hazards for people who are blind or severely vision impaired.
FLOOR COVERINGS	<p>Visual aspects of floor design are important to people with vision impairment when obtaining information for navigation (Bright et al, 1999:121). Floor coverings, such as vinyl, should have a matt finish so as not to cause reflections, and uniform patterning to avoid the potential for visual confusion. Plain, uniform floors are preferred to busy non-uniform patterns. They also need to be slip resistant to ensure safety.</p> <p>Where stairs are carpeted, use a colour contrast strip on the edge of the riser. It is also possible to use a colour contrast strip to denote the width of the stairs.</p> <p>To discriminate between where the floor ends and the wall begins carpets or the skirting boards should colour contrast with the wall.</p> <p>Particular routes to be taken by people with vision impairment can be differentiated by colour contrasting carpet or floor surface.</p>
FURNITURE	<p>Furniture, especially chairs, should colour contrast to their surroundings. The edges of counters, shelves, desks and tables should be colour contrasting and have rounded edges to prevent accidents. Contrast between the floor, wall and seats will aid mobility.</p> <p>When arranging tables be aware that a random close arrangement is difficult for people who are blind or vision impaired to manoeuvre. Careful arrangement of tables in rows with at least a one metre gap between them assists mobility (Barker et al, 1995:91).</p>
GLARE	<p>Visual confusion is caused by reflection and glare from shiny surfaces which should therefore be kept to an absolute minimum or avoided altogether (Barker et al, 1995:97).</p> <p>Be aware of glare from lighting, windows and reflective surfaces. Glare can often mean the difference between being able or unable to negotiate an environment for a person with a vision impairment.</p>



The following suggestions are provided to minimise the effect of glare:

- Use diffusers on lights
- Avoid white colours
- Provide shade in external environments
- Tint any glass
- Use non-reflective glass

## GLASS

Large panes should be marked to indicate their presence for people with a vision impairment. Large glass areas may provide additional light, but can cause glare problems. Light tinting of windows is a potential solution.

## HALLWAYS AND CORRIDORS

Hallways and corridors should be left unobstructed at all times, and well defined with skirting and carpet contrasting to the walls and doors.

Colour contrasted handrails should be provided along the walls to aid mobility. Where possible, texture changes and raised symbols incorporated into the design of handrails will provide additional information to people with vision impairment. Such as approaching stairs.

Consider providing resting places along corridors which are exceptionally long.

## HANDRAILS

Handrails are useful along corridors and hallways, on all steps and stairways and outdoor pathways. They need to be at a height convenient for use by a person in a wheelchair. Colour contrasting handrails will significantly increase their usefulness for people with vision impairment. Additionally the use of non reflective materials and raised symbols incorporated into the design will further aid mobility.

## LECTURE THEATRES, THEATRETTES, ETC



Fixed seating venues should provide a range of choices of location, level, price and sightlines for all users. A continuous accessible path of travel should be provided from seats to identified points of egress and amenities.

Exit step lights should be used if available and access to a power source for people using tape recorders or lap top computers provided.

## LETTER BOXES AND VENDING MACHINES, ETC

Letter boxes and vending machines should be accessible for all users. These facilities should be located adjacent to the continuous accessible path of travel and preferably positioned against a wall.

## LIFTS

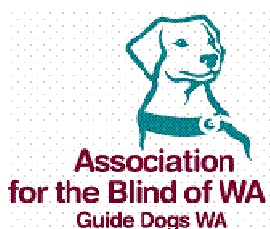
The following basic design principles for lifts are recommended when catering to the needs of people who are blind or vision impaired:

- should be located adjacent to the continuous accessible path of travel;
- allow for independent travel, except where manned;
- all handrails or grabrails within the lift should be colour contrasted;
- safety devices that return the lift to either the upper or lower level in the event of a breakdown should be incorporated into the design of the lift;
- colour contrast markings and signs to indicate the lift entrance must be provided;
- corners of lifts should be delineated with use of colour contrasting;
- strip markings on all glass panels to prevent people walking straight through the glass should be provided on the internal surface to prevent vandalism;
- all glass used on lifts should be non-reflective to reduce the effect of glare experienced by vision impaired people;
- the position of controls inside and outside the lift must be accessible to people in wheelchairs;
- control buttons should be colour contrasted with the legend on the button both visible and tactile;
- voice feedback should be provided within and external to the lift to indicate the direction of travel, ie up or down;
- directional and hazard tactile ground surface indicators should be incorporated into the design according to Australian Standards 1428.4; and
- lifts should be cleaned and serviced regularly.

## LIGHTING

People who are vision impaired generally require up to double the quantity of light needed by sighted people,

Daylight is an important source of light which many people with vision impairment find useful. To see detail, people with low vision may require local or direct illumination. This can be provided by a lamp or torch, in addition to general lighting.



## MAPS

When people who are vision impaired can move in their environment safely and autonomously, they are more likely to have a sense of security and independence (Espinosa & Ochaíta, 1998:338). Several recent studies have reported positive findings regarding the use of tactual maps and have suggested that they can serve as memory aids for people who are blind (Luxton, Banai & Kuperman, 1994:75).

Location maps should be available in a variety of formats (eg, large print, tactile). Talking touch screens are also a potential guide which may be appropriate.

Maps should show:

- parking areas for people with a disability
- access routes for people with a disability
- disabled toilets
- exit routes in the case of emergency
- main reception/information areas

## MIRRORS

Positioning of mirrors requires careful consideration – people with vision impairment may need to get very close. Light fittings should illuminate the user's face without being visible in the mirror. Units, which have a light as an integral part of the mirror, are considered unsatisfactory.

## NOISE

Wherever possible background sound levels should not impede hearing. This is especially important for people who are blind or vision impaired as high levels of sound can be disorienting.

## NOTICEBOARDS

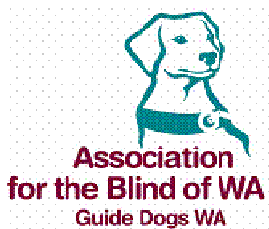
Where possible noticeboards should be at eye level, or material placed on noticeboards should at eye level initially.

## PATHWAYS

Pathways should be colour contrasting to their surrounding. The borders of a path should also contrast (eg, to lawn, to garden beds). The use of tactile colour contrasting pavers is recommended as this provides physical tactile feedback, rather than visual. Keep overhanging branches and bushes trimmed so they do not intrude on the walking area. Keep pathways clear of obstacles and obstructions such as bikes, advertising sandwich boards, bins, etc (see also continuous accessible path of travel).



PARKING BAYS	Designated parking for vehicles used by people with disabilities should be provided. Parking bays should have easy and direct access to pathways, without intercepting areas of difficult-to-traverse terrain (eg, kerbs, roads, other cars, garden, etc).
PILLARS	Pillars or columns should colour contrast with their surroundings and have no sharp edges or rough surfaces. They should be positioned adjacent to the continuous accessible path of travel.
PUBLIC TRANSPORT	Is public transport accessible from or near your building? What distance and type of terrain is involved in getting to the building from train and bus stops? What is the best way to overcome identified barriers? These are some of the questions that can be asked when designing accessible routes to your premises.
RAMPS	<p>The following basic design principles for installing ramps are recommended when taking into account the needs of people who are blind or vision impaired:</p> <ul style="list-style-type: none"> <li>• the age and mobility of users should be considered prior to installing ramps, and other methods of access should be investigated as required;</li> <li>• where ramps are external to the building, the ability for users to access shelter in adverse weather conditions should be assessed, and, where necessary, shelter should be incorporated into the design;</li> <li>• gradients and rest areas for ramps should meet the minimum requirements as determined in the Australian Standards 1428.1;</li> <li>• non-slip materials should be used on all ramp and footbridge surfaces;</li> <li>• the width of ramps should allow people in wheelchairs and with prams to pass comfortably;</li> <li>• handrails should be painted to provide an adequate colour contrast with their background, preferably yellow;</li> <li>• handrails should be provided on either side of the ramps with warning indicators incorporated into the design as necessary;</li> <li>• hazard tactile ground surface indicators should be provided in accordance with Australian Standard 1428.4;</li> <li>• kerbs on ramps should be provided in accordance with Australian Standard 1428.1.</li> </ul>



## SIGNAGE

The following basic principles for signs on should be adhered to when catering for the needs of people who are blind or vision impaired:

- signs need to be clear and concise;
- location of signs should be part of the design process taking into account the surrounding environment;
- signs should be consistent;
- signs should be placed in well lit positions;
- signs should be at eye level to enable vision impaired people to get as close to the sign as possible;
- signs should be positioned on building walls where possible;
- signs on poles or posts should be set back from the direction of travel as these can become a hazard for blind pedestrians;
- signs should display both visual and tactile formats;
- the positioning of tactile lettering on signs should be undertaken in consultation with blind commuters;
- colour contrasting of signs is essential, black on white is preferred;
- non-reflective materials should be used to lessen the effect of glare from lighting and the sun; and
- the use of audible sign posting with up to five minutes of audible information should be considered.

For further information on best practice accessible signage consult *Good Sign Practices*, *Brailliant Touch™*, *Accessible Signage*, available from the Association for the Blind of WA.

## SOFT FURNISHINGS

People with vision impairment often find it difficult to recover items lost from their pockets when seated, especially if the couch is covered in patterned fabric. Generally bold patterns for fabrics should be avoided to minimise visual confusion.

## SMOKER'S BINS

Smoker's bins should colour contrast to their surroundings, to assist people with vision impairment to detect their location. Smokers bins should be a fixture to prevent them becoming potential obstacles, they are especially obstructive when used to prop doors open.



## STAIRS

A number of consumers of the Association have reported that they prefer not to use stairs as it can be very difficult for them to judge where the steps begin and where they end. To assist in alleviating this anxiety the following basic design principles for stairs are recommended:

- stairs should be straight wherever possible;
- avoid spiral staircases as they can cause problems of disorientation;
- stairs should be well lit at all times;
- risers should be enclosed to avoid over stepping;
- non-slip materials must be used on all riser surfaces;
- the edges of risers should be highlighted by providing colour contrasted nosing;
- handrails should be provided either side of the stairs;
- warning indicators should be incorporated into the design of handrails as necessary;
- all handrails should be colour contrasted with the background, preferably yellow; and
- hazard tactile ground surface indicators should be provided in accordance with Australian Standards 1428.4.

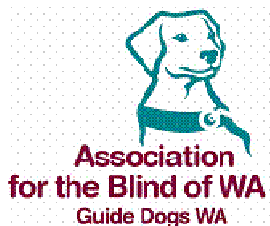
## TACTILE GROUND SURFACE INDICATORS

Colour contrasted tactile ground surface indicators are considered an extremely helpful method of assisting blind and vision impaired pedestrians find their way around buildings and surrounding areas. Tactile treatments should be provided to assist people who are blind or vision impaired access specific facilities such as vending machines, telephones, and information booths.

There is however a need to maintain consistency of tactile treatments throughout Australia, and therefore the Association recommends compliance with AS1428.4

## TELEPHONES

Installing push button phones where the central number 5 has a raised dot can serve people with vision impairment with a reference point to assist locate the surrounding numbers. A light positioned next to the phone may assist with seeing numbers and using a telephone directory. Adjustable volume control for people with a hearing impairment and phones that are wheelchair accessible will significantly improve access.



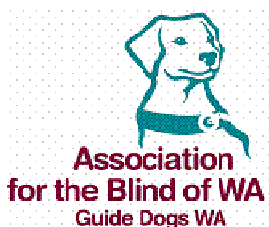
## TOILETS AND BATHROOMS

All signage should:

- identify gender;
- display tactile and large print formats;
- be colour contrasted; and
- where appropriate display the international disability symbol.

Bathroom walls should have a matt finish to reduce reflection and glare levels. Bathroom fittings such as handrails, bath, towel rails should be colour contrasted to the wall and floor finishes. Smaller items such as hand basins, toilets, toilet roll holders, soap dishes can be highlighted by tiling around them in a contrasting colour.

Taps should be different shapes and colours for people who are vision impaired. Where a basin has two taps, by buying two sets - one solid red one, one solid blue – each basin can have a red tap for hot and a blue tap for cold. Mixer type taps in disabled toilets are very useful for people with limited hand use. (See also signage)



## 7. HOW TO CONTACT US

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GERALDTON WA 6530

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### **MANDURAH**

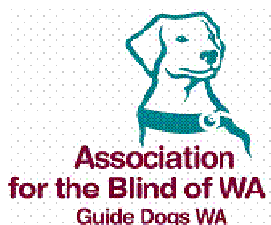
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Suite 4, 7 Anzac Place

MANDURAH WA 6210

Telephone: (08) 9586 1147

Fax: (08) 9586 1187



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AS 1428.3 *Part 3: Requirements for children and adolescents with physical disabilities*  
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