

Bathroom design guidance for someone with a visual impairment. Guidance for occupational therapists.

GUIDANCE FOR OCCUPATIONAL THERAPISTS AND OTHER HEALTHCARE PROFESSIONALS

closomat®

A visual impairment refers to a limitation of one or more functions of the eye or visual system that inhibits vision and cannot be corrected with standard glasses or contact lenses.



Table of Contents

Abstract 4–5

Why is the bathroom important? 6

Independence 7

Design principles 8–10

Design specifications 11–15

Fixtures and Fittings 16–19

Accessories 20

Additional aids 21

Summary 22

Sources 23

Closomat – who we are and how we can help 25

Our products are customisable and flexible 26

We’re a UK-based manufacturer, and on hand to help 27

Conclusion 28

ABSTRACT

In the UK there are approximately 2.3 million people living with visual impairment with around 360,000 of these people being registered as blind or partially sighted.

Every day 250 people begin to lose their sight which is the equivalent of one person every 6 minutes.[1]

Although a proportion of people are born with a visual impairment, age is a significant risk factor in the later development of conditions affecting vision, evidenced by nearly 80% of people who are registered blind or partially sighted being over 65 years old. As medical advances are creating an ageing population, there are more people living longer with multiple medical conditions and so have a higher chance of also developing a sight impairment and need to navigate life with both a physical and sensory impairment. For example, the stroke association state that approximately two thirds of people who have a stroke have ongoing associated sight loss.

ABSTRACT

This white paper considers design guidance to maximise independence and reduce risk within the bathroom, although many of the considerations are transferable across other crucial spaces within the home, such as the kitchen.



Bathrooms are one of the most occupationally demanding rooms in a home.

The room is an essential part of a household where people often start and end their day from a functional perspective. An individual will often use a bathroom for a variety of needs and complete a number of activities for both self-care and leisure.

Bathrooms are not only rooms where someone can wash themselves, they are places people may go to get dressed, a family room where someone bathes their children. Where people go to make themselves look better by grooming or applying make-up, to do their hair. A place for toileting and freshening up, a sanctuary to unwind and relax, a place to escape and hide or sometimes just somewhere with great acoustics to sing in. A bathroom is a room that has many different uses for different people and is often a room with multiple users which cannot be ignored when considering appropriate adaptations.

It is a room where someone's privacy and dignity are of the upmost importance and the majority of people express that they want to be as independent as possible in the room.

Being unable to complete these activities can have greater psychological and social effects on a person. Enforced occupational deprivation can reduce their feelings of wellbeing and sense of self if not being able to maintain their own hygiene. In turn this can result in social isolation because of a reluctance to leave their home if they don't feel clean or cause other medical issues to develop.

Additionally, if someone doesn't feel safe in their bathroom and feels they may fall – a room in their own home that they know well, it can result in further insecurities about going outside into an environment they do not know as well.

There are wider implications too. In 2021/22 £26.9 billion was spent on social care. Through providing appropriate and future proofing adaptations Occupational Therapists are able to reduce the number of carers required for personal care calls reducing the impact on the financial constraints for society as a whole.

Independence.

Even with a minor visual impairment a lot of independence can be taken away from a person because of an insufficient environment. On top of that, it can become a hazardous and dangerous environment greatly increasing the risk of slipping, falls and injuries. Given the importance of the bathroom it is imperative we try to make it as user friendly as possible.

When looking at creating an environment that promotes engagement in activities of daily living, therapists take into account a person's desires and unique needs but must also balance the complexities a visual impairment can have on occupational performance along with identified needs from other functional difficulties. To ignore one or the other will result in an equally unusable room.

Although we cannot fully eliminate all risks and difficulties for an individual, with the knowledge of areas to consider, potential solutions, some forethought and planning; recommendations can be made that will significantly improve someone's access to their bathroom, their quality of life and their safety whilst in this occupationally essential room.



Design principles.

There are five key principles when designing a bathroom with a visually impaired person:

- **Education**
- **Declutter**
- **Lighting**
- **Contrast**
- **Accessibility**

Education

The Therapist: As the therapist you need to understand about different categories of sight loss, and it is helpful to know how a condition typically affects a person and the progression pattern of the vision loss to help future proof any adaptation. However, it is important not to lose the core value of occupational therapy of being person centred and understand each person is uniquely affected by their condition because of their own priorities and desires.

The person: Do not assume that the person understands their condition and prognosis and is likely to need educating about how they can improve their environment. This is not only about adaptations but also other principles around safety. It is important that accurate information is given to the individual to make a collaborative approach to adaptations that support their usual routines. Once an individual understands what they need to do to promote their safety and independence, they can implement their own strategies throughout their life as they won't have a professional on hand to guide them all the time.

Declutter

Removing objects that could cause a trip hazard or things being knocked over is essential to promote safety. Items such as rugs on the floor should be removed to create an open space and keep clear corridors.

Having easily accessible cupboards with designated places for only essential items or fixed items will prevent the individual from needing to search around and risk falling or slipping. Items in a recessed alcove to prevent any protruding shelves causing injury can also be an option to reduce any clutter on the walls.

Lighting

Illumination is key to maximising visual acuity for someone who is partially sighted. Bright task specific lighting helps someone focus their vision on the task they are completing rather than lighting the whole room. Research suggests that halving the distance between the light and object increases visual acuity fourfold.

LED lighting should be 600-700 lumens per square metre for general lighting and 700-800 lumens per square metre for task lighting.

Contrast

Highlighting differences in flooring and surfaces by providing a contrast in colour and texture and can be a way of adapting a bathroom without changing its overall design. Contrasts can be used to provide both clear visual differences and proprioceptive feedback. However, it is strongly advised not to use reflective surfaces as this can distort images and perception of space.

Contrasting colours should have a light reflective value (LRV) difference of greater than 30 to deliver the best visual contrast.



Accessibility

Ensuring the room is accessible is crucial when completing adaptations. Keeping the room as close to the original layout as possible will promote someone's independence by allowing them to continue to follow their habitual routines, a significant change in layout can increase the risk of falls and injury.

Assistive technology can be particularly helpful with creating an accessible bathroom for someone with a visual impairment. Technological advances mean many controls can follow a voice command or with one push button. Motion sensors are also widely available which can also be utilised to control the environment. Using a mixture of these can help to personalise an adaptation and maximising someone's independence.

Design specifications.

Any changes to a bathroom for someone with a visual impairment will not impede any other users and may even be beneficial for other medical conditions but other identified physical needs should also be considered.

Whether providing an adaptation through limited statutory DFG funding or if someone has almost unlimited funds, there are a plethora of options that can be considered, investigated and recommended to make bathrooms a more useable space for someone with a visual impairment. It is important to design a bathroom in conjunction with the person with the visual impairment to explore the options that are best suited for themselves in the right place within the environment to maximise their independence.

The following is a guide for areas to take into consideration and explore with the individual. This is to ensure the bathroom environment supports and maximises their occupational flow and engagement in whatever they chose to do whilst in the bathroom.

Layout

As far as possible, retain the current layout so that the person can continue with their typical routine without interruption or frustration.

Commonly used items need to be easily found and accessible. Keeping items in designated places can help with this.

Make sure walkways in the room are free from obstacles and trip hazards such as mats, bins and pipes (box in any exposed pipework to help with this).

Fit handles in a consistent position on all doors.

Open-ended worktops increase the likelihood of items being knocked off, so where possible ensure that there is wall, cupboard or a raised worktop end cap at worktop ends.

Doors

The door to a bathroom can open outwards or inwards but can be a hazard if left open.

The direction of opening dependant on available access to the room and the preferences of each person. However, consider there is a risk that they could fall behind the door if it opens in towards the room.

Pivoted or hinged doors can allow a door to open both ways for ease of access and in case of emergency if there is a high risk of falls.

A concertina door can provide a more open access into the room if there is limited space but can be more difficult for some visually impaired people to use because of the hinge in the middle of the door.

Pocket or sliding doors are an excellent option to alleviate some risks associated with doors and access but requires a large clear wall space free of obstruction to be able to be installed.

Ventilation

If windows being used as ventilation, are they easily reachable for the individual with a clear pathway to it. Are automatic window opener and closers required if they cannot easily be reached.

If fan ventilation is fitted in the room does this require a separate control switch which can be identified as different to a light switch or can this be automatic or linked to the light switch or shower.

Flooring

A strong contrast in floor and wall colour supports proprioception and depth perception and help the person identify the boundaries of the room.

Flush access and level flooring throughout is ideal to reduce the risk of trips and falls with contrasting colours or texture to identify different areas of the room.

Using a contrasting colour to create usual pathways can be helpful to avoid bumping into fixed furniture in the bathroom.

Block colours are best, and patterns should be avoided to support ease of mobility and reduce visual confusion.

Non-reflective, matt flooring is essential to eliminate reflection or glare from lighting.

Lighting

Look at how much natural light enters the bathroom at different times of day when the person will typically be using the bathroom.

Consider if sunlight will directly beam through the window and if there are any surfaces this will reflect off. If strong sunlight is a problem at the window, fitting a blind will allow the occupant to control the light and reduce glare.

Install bright task-specific lighting that illuminates precise parts of the room, including the basin, toilet and shower areas. Under cabinet lighting can cast shadow free light across a surface to maximise task engagement.

General light should enable 200 lux on the floor and task lighting should allow 500 lux on the work surface.

Lighting controls that can be manually adjusted to support different tasks are a good idea to allow the person control over their environment and personal choice over their task order.

Consider if motion detection lighting is possible and can be positioned on the way to the bathroom as well as in the bathroom.

Avoid pull cords that can swing and are difficult for someone with a visual impairment to identify their exact position.

Consider if different coloured lights can support with task identification such as hot and cold taps.

Storage

Cupboard doors can be a hazard if left open. Consider if doors are required at all or if sliding/ folding doors, doors that open to 180 degrees or automatically closing doors might be suitable options.

All storage should ideally be easily accessible from a standing position, but this height will differ for each of the specific users depending on their own height and reach ability.

Carousels can be used for corner cupboards to prevent items being moved around and pull-down compartments are useful for higher level storage.

The colour of door handles must contrast against the doors so they can be identified easily and positioned in the same place on each door.

Rounded handles without sharp edges or open ends will prevent injuries or catching clothes on the handles. Or consider if cupboards with no handles and push to open doors would be suitable instead?

A matt finish on cupboards is typically a better option and avoid high gloss finish or glass doors that can cause significant glare.

Shelving recessed in an alcove highlighted with task orientated lighting is another option for storage which will keep the walls clear of clutter and prevent injury from walking into a shelf. If shelving is needed, ensure they have rounded corners and a raised edge to prevent items from falling.

Shelving should not be placed at head height to avoid facial injuries.

A larger shelf in the shower area or wet room is usually better to accommodate all of the persons essential items in the shower to avoid them taking them in each time.

Fixed dispensers on the wall of the shower that can be refilled is an option to reduce the number of loose items in the shower and save on storage space whilst also maintaining the exact position of each item for ease of use.



Tiling

Bathroom finishes and ties are typically shiny which can be a source of glare and reflection but specifying matt or semi-matt finishes will avoid this.

Simpler block colours work best so try to avoid patterned designs and surfaces which can confuse the eye. Ensure contrast is used to help the client identify area such as around the sink or in the shower area and use a contrast in colour to the floor and wall.

Heating

Underfloor heating is ideal as it removes pipework and radiators that can be dangerous if the person falls onto them or walks into them.

If radiators cannot be avoided, use low surface temperature models.

Talking thermostats or smart apps can help with controlling the environmental temperature without the need to touch the radiators.

Reducing the water heater to a warm temperature can prevent accidental scalding on radiators.

Fixtures and fittings.

Toilets

Position the toilet where the person is used to having it. If building a new bathroom, consider the toilets position in their existing bathroom and mimic this where possible.

A high contrast toilet seat and flush control will help the user to locate them.

If possible, make space around the toilet to support free movement and safe transfers, whilst acknowledging that it's important to understand the person's normal transfer movements so that they're not altered. If equipment such as a toilet frame is required, consider having it floor fixed to prevent it moving.

Showers and baths

Keep it simple with easy-to-use controls. Raised or illuminated push buttons for temperature and flow control can be easily fitted.

Electric showers are often good for easy use and thermostatically controlled showers limit the water temperature so gives extra protection from accidental scalding.

Using external controls or smart apps that allow you to start the shower and set the temperature can be useful to prevent scalding or getting into a cold shower. Or showers with voice control or audio feedback. These are expensive options but can enable someone to use their shower without needing a carer present.



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Shower screens

Avoid highly reflective glass or transparent shower screens. Frosted or coloured shower screens are an option but ensure any lighting is angled away from the glass to prevent reflection and glare.

Loose shower curtains are not ideal as they are not fixed and can get caught on a person when in the shower area resulting in frustration and causing a trip hazard.

Small shower areas are not recommended for people with certain conditions, such as MS, where their condition can be aggravated by steamy environments if there is not adequate ventilation therefore a wet room may be the best option.

Wash Basins

If the basin is a standard white unit, make sure the wall is decorated in a contrasting colour and aim for a light reflective value difference of at least 30.

The plug should also be a contrasting colour and consider a mesh cover over the drain to catch anything that may fall into the sink.

The back of the basin should be large enough to hold the products and equipment the individual will need when using it. If this is not possible, consider installing a shelf directly above the basin at the right height for the user for ease of access.

If a shelf is installed, ensure it is a contrasting colour and this does not protrude forwards too far over the sink that the person will hit their head on it when washing their face.

Taps

Identify the type of taps the individual is used to using and try to provide a similar style if possible.

If the adaptation is needing new taps or the person is unable to use the same type as their existing – remember the simpler the better.

If using a lever mixer tap it is possible to place a physical marker with a bumper sticker to help the person easily find their preferred temperature.

Avoid having any exposed pipes that can get hot and cause burns.

Clearly marked taps with bold colour coding for hot and cold or using tactile stickers help the individual use the taps independently.

Thermostatically controlled taps are a safe option or reducing the water temperature to reduce the risk of scald injuries.

Sockets and switches

If the person has a socket for a shaver or toothbrush charger, make sure that it is positioned close to where it is typically used and at a level to prevent overreaching and stretching. If there are multiple sockets, space these out to avoid confusion with plugging items in.

Ensure sockets and switches are not blocked by other objects and are easy to access.

A high contrast colour is needed so that sockets can be distinguished from the wall itself or a contracting band around the outside of the socket.

Avoid shiny sockets that can reflect light and cause glare.

Consider the use of tactile controls or those which click through settings to give more personalise control over their environment.

Towel rails

Low surface temperature (LST) models are the safest option.

Heated towel rails are generally best avoided, unless specifying LST models, as by their very nature they heat up and can be especially dangerous if the resident falls against them in the bathroom.

If the client specifically requests them, position them where they are most familiar with finding them, which is usually close to the shower so that the user does not need to exit the washing area to get their towel.

Accessories.

Choose accessories in colours that contrast to their surroundings to make them easier to identify – everything from toilet rolls to toothbrushes to towels.

Discuss colours the user associates with certain tasks or decide on set colours and use contrasting shades of that colour in that area.

Although visually impaired, many people will still need mirrors either for themselves or other users of the bathroom however mirrors can reflect light or cause glare. If a mirror is needed, make sure that task lighting is angled so that it does not reflect directly off the mirror into the users face and position the mirror so it will not reflect direct sunlight during the day.

Vanity mirrors with integrated lighting are now widely available which can reduce the risk of reflection from positioned task lighting.

A blind or cover in front of the mirror can conceal it when it is not needed and may help reduce glare. An alternative option is to place the mirror on the inside of a cupboard door so that it can be closed when not in use.

Make sure the things that are used frequently are always at hand and only in designated places where the client expects to find them. Ensure the bin is not in a position that can easily be knocked into the walkway.

Small changes such as using a soap on a rope, or a wall mounted dispenser, can reduce the risk of items dropping to the floor.

Different tactile stickers or bands around items can also support with the person identifying different objects or labels with large contrasting writing on can help with product identification.

Talking bathroom scales are available but consider their storage position and their colour contrast as these will be a trip hazard when on the floor.

Additional aids.

Grab rails and shower seats are only needed if the user has other mobility problems and functional needs along with their visual impairment. A person with visual impairment alone may not need any other adaptations to support their time in the bathroom.

However, if additional transfer aids are needed, they must contrast against the wall and be positioned only in the places where the client will expect to find them.

Smaller washing aids must also be a contrasting colour to enable the person to find these easily and have designated places in the bathroom so they can be easily found each time they are needed.

Summary.

While this guide provides an overview of the principles of bathroom designs for people who are visually impaired, it is not intended to be used prescriptively. The needs of the individual and how their condition(s) uniquely affects them should be kept at the heart of the design process. It should be a collaborative effort with the individual, learning about their habitual routines alongside the therapist's assessment to identify what adaptations will support them to reach their goals.

Although it is not always possible to eliminate all risks and there are other factors to consider such as technical considerations or funding constraints, it is important to also jointly work with the product specialists and installation teams to identify what is possible within the environment to maximise someone's occupational control in their bathroom.

By enabling a person to have choice over their bathroom habits and not having to conform to carer times tables, bathroom adaptations can help someone to feel more secure in their own home. This promotes not only their participation in activities of daily living but empowers them to have control over their health and wellbeing, to improve their confidence and potentially their participation in their community. Or maybe they'll just be happy to sing in the shower again without carers around to listen in.

Sources.

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We're the only specialist UK-based manufacturer of Wash and Dry Toilets.

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We understand that our products provide a much-valued level of independence, which is relied on every day. As such our in-house service team are on hand to maintain, repair and adapt your toilet for as long as your client needs it.



DESIGNED AND BUILT IN BRITAIN

We hope that you have found this white paper informative and that it has given you a good overview of what needs to be considered when you are building a specification for your clients with toileting needs.

This white paper is part of a series available at: closomat.co.uk.

In these white papers we've covered what you should keep in mind, with particular importance being given to the needs of the user.

If you require any further support, such as more detailed technical data, or help with specifications then please get in touch (details on the back page).


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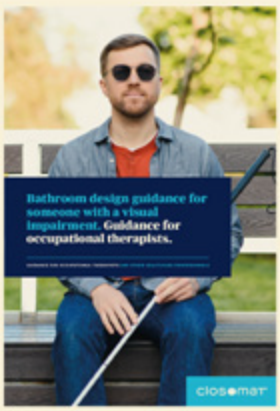

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