

Design for the mind – Neurodiversity and the built environment – Guide



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Contents

Foreword	iii
0 Introduction	vi
1 Scope.....	1
2 Normative references	2
3 Terms, definitions and abbreviated terms	3
4 Developing the brief.....	9
5 Site and building layout.....	14
6 Wayfinding.....	23
7 External spaces and access.....	33
8 Internal layouts.....	42
9 Mechanical, electrical, plumbing (MEP).....	47
10 Acoustics and noise management.....	51
11 Light, lighting and reflection	58
12 Surface finishes	69
13 Fixtures, fittings and furniture	83
14 Safety, recovery and quiet spaces	87
15 Environment types.....	99
Annexes	
Annex A (normative)	
Management and maintenance.....	106
Annex B (informative)	
Checklist for achieving flexibility in quiet and restorative spaces	115
Annex C (informative)	
Symbols for wayfinding	120
Bibliography	125

List of figures

Figure 1 – Interpersonal distances.....	15
Figure 2 – Example of curved surfaces and recesses in corridors	19
Figure 3 – Example of a space connected with the natural environment.....	37
Figure 4 – Separate kitchenette area without noisy appliances	52
Figure 5 – Example of a semi-enclosed quiet zone	57
Figure 6 – Example of matt or low sheen surfaces	70
Figure 7 – Colour wheel.....	71
Figure 8 – Bevel strip example.....	77
Figure 9 – Matching trims example.....	77
Figure 10 – Floor tile configurations.....	80
Figure 11 – Acoustic floor build-up example.....	81
Figure 12 – Example of traditional looking taps that operate like a lever	83
Figure 13 – Designing in space for someone to pace	89
Figure 14 – Sensory mapping example: Museum of London	104

List of tables

Table 1 – RIBA Plan of Work	10
Table 2 – Recommended room acoustic values	54
Table B.1 – Checklist of considerations for quiet and restorative spaces	115
Table B.2 – Summary of design considerations for sensory sensitivity	116
Table C.1 – Symbols for wayfinding	120

Foreword

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It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

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The guidance in this PAS is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

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0 Introduction

0.1 What is neurodiversity?

Neurodiversity is the term used to describe the variation in neurocognitive profiles across the whole population¹⁾ and the guidance in this PAS is about us all. It is not about one condition, difficulty or difference. The term recognizes the variety in the way we speak, think, move, act and communicate; that human brains are diverse and vary. Each one of us has a unique set of different connections with our billions of nerve cells. As a consequence, the way we interact with our environment can vary from person to person. It is dynamic and might change over time, for example, due to an incident such as brain injury, trauma, disease, stroke, an age-related condition or a change in mental wellness.

Neurological profiles can sometimes be collectively grouped as:

- a) neurotypical (someone fitting a majority neurological profile and is not neurodivergent);
- b) neurodivergent (someone who fits outside majority neurological profile and is commonly associated with autism, attention deficit hyperactivity disorder, dyslexia, dyspraxia, dyscalculia, dysgraphia and Tourette's syndrome – there is no definitive list of conditions associated with neurodivergence); and
- c) neurodegenerative (whereby sensory processing differences develop over time through brain diseases, such as different forms of dementia or Parkinson's).

However, many people have not had their neurological profile formally assessed, or do not fall tidily into one group, such as sensory processing sensitivity (SPS) trait or highly sensitive person (HSP), learning disability and mental health difficulties and there is a very wide spectrum of how each individual is affected by the built environment. Neurotypical people can be affected by some elements of the built environment for reasons seemingly unconnected to neurology. For example, where sensory stimulation such as audible or visual noise causes dizziness or triggers headaches, or some other form of discomfort or anxiety is experienced. These effects are not yet fully researched and understood and there are always new medical conditions and effects emerging. For example, the severe alterations in smell perception experienced in many cases of long Covid. For this reason, "sensory and/or information processing difference" is a term frequently used throughout this PAS.

¹⁾ This clarification is made in acknowledgement that the term Neurodiversity has been strongly associated with particular neurodivergent conditions, such as autism spectrum condition (ASC).

Sensory processing is how information is perceived, processed and organized when received through the senses, i.e. hearing, sight, smell, touch, taste and movement. To have a sensory and/or information processing difference, is to react through the senses in a different way to the majority. Someone might experience atypically high response to a sensory stimulus (hypersensitive) or atypically low response (hyposensitive). This can sometimes result in stimulation being actively sought out, also known as “sensory seeking”. Sensitivity might vary so an individual may be hyposensitive to light but not noise, for example, or might be highly sensitive to a wide range of stimuli. However, it should be noted that all of our senses work together rather than in isolation, so it’s important to consider the multisensory impact and balance of how they combine when designing and managing the built environment.

In some cases, a design intervention to improve the environment for one type of sensory difference might be to the detriment of another – where this might be the case, choice of provision, such as alternative spaces or the ability to adjust the environment is necessary. It is very important, where possible, to engage with stakeholders representing a range of neuro profiles to confirm all needs can be reasonably met.

Diagnosed conditions and labels are generally avoided within this PAS, as it is impossible to provide an exhaustive list. The focus of this PAS is to provide design and management guidance which can reduce negative sensory experiences. A few examples are cited for better awareness, where a particular feature is known to adversely affect one specific group. However, this is not to be interpreted as having an effect on everyone within that group, or that it would only be people identifying with these neurological profiles that might be affected.

The majority of features that are generally associated with physical and mental wellbeing can also be beneficial to people who experience sensory differences. In particular, connection with nature through all the senses, biophilic design principles, applying the golden ratio to replicate in design the proportions commonly found in nature, or use of fractal patterns; such measures should reduce visual noise.

Designs that offer visual legibility, clarity and simplicity, can be calming and reassuring for people who experience differences with visual, proprioceptive (from muscles and joints) and vestibular (from inner ear) integration.

NOTE Designing environments without due regard for neurodiversity are likely to contribute to poor mental health and impaired wellbeing for people with sensory processing differences.

Whilst the impact of the environment can vary significantly from one individual to another, there are numerous elements of the built environment that have potential to contribute to sensory overload or “sensory shut down”, including:

- a) sounds, of various types, including intermittent or continuous, from loud to very quiet and particularly when unexpected;
- b) visual “noise” which may be caused by light, glare, shadows, colours, patterns, movement, proximity, technology or clutter;
- c) spatial and layout considerations; and

d) unwanted or extreme sensory feedback through smell, touch, taste or temperature.

Further reading on sensory and multisensory processing is recommended for a greater insight and understanding of the guidance set out in this PAS.

0.2 Purpose of PAS 6463

This PAS is believed to be the first standard that has been developed by a national standards body that provides built environment guidance for multiple sensory processing differences and conditions. It aims to help with the design, creation or management of intuitive environments which readily accommodates the neurological variations in the way people perceive, process and organize sensory information received through hearing, sight, touch, smell, taste or movement.

The content of this PAS is aimed at buildings, external spaces and environments for public and commercial use, as well as residential accommodation for independent or supported living. The content of this PAS is equally applicable to any organization anywhere in the world, irrespective of location, size, type, or sector.

The guidance is, however, unlikely to cover all of the complex and deeper requirements that might arise in care settings or many schools or facilities designed specifically for Special Educational Needs and Disability (SEND) in England and Northern Ireland, Additional Learning Needs (Wales) and Additional Support Learning (Scotland).

Rooms to provide sensory stimulation have not been included but quiet rooms and restorative spaces are covered comprehensively and their careful design and provision is encouraged in all building types.

A significant number of people find certain aspects of the built environment uncomfortable, distressing or a barrier to their use. This includes but is not limited to, use and display of information in accordance with information processing, working memory and interpretation. Stress and anxiety, often referred to as “sensory overload” results from what feels like a bombardment of sensory stimuli experienced without the ability to filter, or from spatial perception difficulties due to proprioception differences. There is variation in the amount of space that people feel they need to have between themselves and others (the proxemics), due to cultural and/or neurological differences. The increased demand on an individual of the associated increased cognitive load unsurprisingly leads to increased anxiety, fatigue and, in some cases, potential behavioural changes and/or poor mental health. Examples include trying to filter out unwanted environmental distractors or noise, maintain focus, trying to control impulsive urges to fidget or stop the mind wandering, or to contain internal restlessness.

However, with awareness of these variations in need, many of the potential negative impacts can be eliminated, reduced, or adjusted. Thoughtful design and management can create places where everyone can flourish equally, and people are provided with an equal opportunity to work, live, and socialize comfortably.

Good sensory inclusive environments provide a range of environmental, economic and social advantages, for example:

- a) attraction of new customers or tenants;
- b) enhanced employee and customer retention;
- c) reduced absence due to mental ill health;
- d) improved wayfinding and learning;
- e) enhanced wellbeing – reduction in fatigue, stress (including post-traumatic stress disorder triggers) and anxiety;
- f) improved performance of many occupants – increased focus, creativity, productivity;
- g) enable people to socialize comfortably and safely, with positive communication; and
- h) create a more enjoyable environment where people can feel empowered and in control.

0.3 Application

For new buildings, it is beneficial to consider all elements of the guidance from concept stage, with organizations applying recommendations that reflect their circumstances and user needs. For existing buildings, a large proportion of the guidance is practicable when refurbishing, redecorating or renewing.

It can be noted that the impact of the environment on the senses is cumulative and might be compounded by multiple causes so a holistic approach that considers a combination of interventions across the different components of design and management are likely to be more successful than improving one factor in isolation. However, every strand potentially contributes to the sensory load and even individual components can make a difference to some people.

The content of this PAS can be reviewed alongside established relevant guidance for the design of an accessible and inclusive built environment, such as the BS 8300 series.

Whilst this PAS covers topics that address common features in mainstream buildings and their surroundings open to the public, similar principles might be applicable to housing and home modifications/adaptations.

0.4 Management

Whilst there are many measures that can be taken during design development to improve places for people with sensory and/or information processing differences, to achieve an inclusive, sensory-friendly environment, management in both the day to day running of the building and interventions around specific activities, roles or practices for staff and visitors has equal significance.

For many new buildings, the management team are not able to contribute and inform the design process, either because they have not yet been appointed, or because their views are overlooked. The facilities management team should be represented and have input into the building design.

Many recommendations in this PAS also relate to arrangements that might require long-term monitoring and maintenance; the management of facilities is not to be underestimated in meeting the needs of users.

Throughout this PAS, design and management measures are often inseparable and are grouped together in the text. Additional management considerations are provided in Annex A.

A primary aim of this guidance is therefore to influence design and management to:

- reduce the potential for sensory or cognitive overload or distress from features within the built environment;
- to provide flexibility, choice and control to meet a spectrum of requirements; and
- to offer places for recovery and respite when needed.

Until recently, design standards for the built environment have been developed to accommodate our diversity in form, size and physical ability, alongside variations in motor skills, vision and hearing. However, there remains a profound need to also meet our neurological diversity to prevent exclusion or discomfort to a significant section of the population. It is hoped that this PAS can be widely evaluated in use by designers, planners, specifiers, facilities/workplace management professionals (also known as estates management or asset consulting) and decision-makers. Over time case studies and research can build upon this initial guidance and give opportunities to engage with and design for people with a wide range of cognitive, social, communication and sensory requirements.

0.5 Legal

Whilst this PAS does not include references to any specific law or regulation, organizations can find that following the guidance is relevant to legal and social obligations, such as:

- the fulfilment of duties under the Equality Act 2010 [1] relating to disability;
- the preparation of Autism Strategies (which are a requirement for some public bodies under the Autism Act 2009 [2]);
- SEND and Ofsted requirements; and
- the adoption of practices to meet dementia-friendly initiatives (such as the Greater London Authority's Dementia Friendly Venues Charter [3]).

Attention is also drawn to Article 9 in the UN Convention on the Rights of Persons with Disabilities [4], which states that appropriate measures can be taken to confirm that disabled people have access on an equal basis with others to the physical environment, transportation, information and communications, and to enable them to live independently and participate fully in all aspects of life.

NOTE Where a sensory difference has a substantial impact on day-to-day basis, it is very likely that the individual meets the definition of Disability as defined under the Equality Act 2010 [1].

1 Scope

This PAS gives guidance on the design of the built environment to include the needs of people who experience sensory/neurological processing differences.

NOTE This includes neurodivergent, neurodegenerative, hypersensitive and other neurological differences which can affect sensory processing and mental wellbeing.

The PAS gives guidance on buildings and external spaces for public and commercial use, and residential accommodation for independent or supported living. The PAS covers:

- lighting;
- acoustics;
- décor;
- flooring;
- layout;
- wayfinding;
- familiarity;
- clarity;
- safety;
- thermal comfort;
- odour;
- preview of an environment; and
- other sensory design considerations.

This PAS does not cover:

- user requirements for special education environments, dementia, or complex care settings; and
- detailed guidance on sensory room design.

This PAS is for use by designers, planners, specifiers, facilities managers and decision-makers on design and management considerations to make places more inclusive for everyone, by reducing the potential for sensory overload, anxiety or distress.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this PAS²⁾. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 5266-1, *Emergency lighting – Part 1: Code of practice for the emergency escape lighting of premises*

BS 8300-1, *Design of an accessible and inclusive built environment – Part 1: External environment – Code of practice*

BS 8300-2, *Design of an accessible and inclusive built environment – Part 2: Buildings – Code of practice*

²⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this PAS, the following terms and definitions apply.

3.1.1 access audit

assessment of accessibility on an existing building, to provide a status report and identify adjustments to improve access

3.1.2 assistive listening system

technology that enables sound signals to be transmitted to people with hearing loss, without interference from background noise or excessive reverberation

NOTE Also called hearing enhancement system. Common types include induction loop, infrared, or radio transmission. Sound field systems are also used, especially in educational settings.

3.1.3 assistive technology

electrical and electronic equipment which helps people

NOTE Such as screen readers, braille displays and screen magnifiers.

3.1.4 attentional bias

tendency to selectively attend to a certain category(ies) of stimuli in the environment whilst overlooking, ignoring or disregarding others

3.1.5 biophilia

love of life or living things

NOTE 1 Originates from the Greek word, “philia” meaning “love of”.

NOTE 2 Biophilic design introduces nature into the built environment through the use of natural materials, plants and/or by views, images and connections to nature.

3.1.6 braille

tactile system of writing and printing for people with profound vision loss

3.1.7 clerestory window

large window or series of small windows along the top of a structure's wall, usually at or near the roof line

3.1.8 cognitive

of, relating to, or involving conscious mental activities

NOTE This includes thinking, understanding, learning and remembering.

3.1.9 colour vision deficiency

inability or difficulty in identifying or distinguishing between certain colours

NOTE This is sometimes referred to as colour blindness.

3.1.10 deterrent paving

high surface profile that acts specifically as a physical and visual deterrent for pedestrians, bicycles or vehicle over-run to a particular area

3.1.11 disability

physical or mental impairment which has a substantial and long-term adverse effect on a person's ability to carry out normal day to day activities

{SOURCE: Equality Act 2010 [1]}

3.1.12 glare

discomfort or disability of vision due to the presence of obtrusive light, artificial or natural daylight, and direct or reflected

NOTE Discomfort glare results in an instinctive desire to look away from a bright light source or difficulty in seeing a task. Disability glare impairs the view of objects without necessarily causing discomfort.

3.1.13 golden ratio

mathematical ratio of a larger to a smaller quantity, commonly found in nature and a theory in design, it fosters natural-looking compositions that are aesthetically pleasing to the eye

NOTE For example, when a line is divided into two parts and the longer part (a) divided by the smaller part (b) is equal to the sum of (a) + (b) divided by (a), which both equal 1.618.

3.1.14 hypersensitivity

heightened response to physical (via sound, sight, touch, or smell) and/or emotional stimuli and the tendency to be easily overwhelmed

NOTE Hypersensitivity is also known as “high sensitivity”, “highly sensitive person” (HSP) or sensory processing sensitivity (SPS).

3.1.15 hyposensitivity

reduced response to environmental stimuli

NOTE This can result in sensory seeking activity, for example, a need to touch things excessively, turning the volume very loud, etc.

3.1.16 light reflectance value (LRV)

measure of visible and usable light reflected from a surface when illuminated by a light source

3.1.17 multisensory

involving or using more than one of the senses

3.1.18 multisensory room

artificial environment specifically for activities or experiences of a sensory nature to take place, in a controlled way

3.1.19 muted colour

subtle colours that are not vivid or have been subdued, dulled or greyed

NOTE 1 The opposite of a muted colour is a bright, vivid, saturated colour.

NOTE 2 Also known as subdued colours.

3.1.20 neurodivergent (ND)

brain cognitive profile that functions in ways that diverge significantly from the dominant societal standards (i.e. neurotypical)

NOTE This can also be referred to as atypical sensory processing or neurominority. Neurodiverse is incorrectly used by some people.

3.1.21 neurodiversity

all types of ways humans think, move, process and act

NOTE Therefore collectively includes all groups termed as neurotypical, neurodivergent or neurodegenerative.

3.1.22 neurotypical

dominant types of neurocognitive function

3.1.23 node

well-known points between travel or routes

3.1.24 personal emergency evacuation plan (PEEP)

developed to document facilitation, support or assistance arrangements for an individual or anticipated condition in an emergency evacuation

3.1.25 post traumatic stress disorder (PTSD)

mental health condition that develops following a traumatic event characterized by intrusive thoughts about the incident, recurrent distress/anxiety, flashback and avoidance of similar situations

3.1.26 proprioception

sense of self-movement and body position

NOTE It is sometimes described as the “sixth sense” and also referred to as kinaesthesia.

3.1.27 proxemics

human use of space and the effects that population density has on behaviour, communication and social interaction

NOTE Proxemics is one among several subcategories in the study of non-verbal communication, including haptics (touch), kinesics (body movement), vocalics (paralanguage) and chronemics (structure of time).

3.1.28 reasonable adjustment

adjustments to remove barriers that prevent disabled persons from integrating fully

NOTE This can include adjustments to tasks, hours of working, accessible formats, assistive technology, or changes to the building itself. People with significant sensory and/or information processing differences are likely to meet the definition of a disabled person, under the Equality Act [1].

3.1.29 sensory mapping

map showing the rich tapestry of sensory experiences a space has to offer

NOTE It can be used to show areas of high sensory stimulation such as noisy, busy or visually bright or patterned areas.

3.1.30 sensory shut down

experience a person has when they are so overwhelmed by sensory information that they stop responding

3.1.31 shared space

urban design approach that minimizes the segregation between modes of road use by removing features

NOTE Such as kerbs, road surface markings, traffic signs and traffic lights.

3.1.32 shared use

areas that allow cyclists on footways in segregated and unsegregated arrangements

3.1.33 tryphobia

intense and disproportionate fear towards irregular patterns, bumps, protrusions or clustered holes and, in general, images that present high-contrast energy at low and midrange spatial frequencies

NOTE This condition is thought to be an evolutionary, unconscious reflex reaction.

3.1.34 vestibular

parts of the inner ear and brain that process the sensory information involved with controlling balance and eye movements

3.1.35 visual contrast

perception of a difference visually between one surface or element of a building and another by reference to their light reflectance values (LRVs)

NOTE See BS 8300-1, Annex B and BS 8300-2, Annex B for further detail on LRVs.

3.1.36 visual stress

visual perceptual disorder which affects a person's ability to read

NOTE Sometimes called Meares-Irlen syndrome or scotopic sensitivity syndrome.

3.1.37 working memory

short-term memory concerned with immediate conscious perceptual and linguistic processing

NOTE Measured by the ability to keep information in mind in the face of distraction.

3.2 Abbreviated terms

For the purposes of this PAS, the following abbreviated terms apply.

CRI colour rendering index

LRV light reflectance value

ND neurodivergent (not neurodiverse)

PIR passive infrared sensor

PEEP personal emergency evacuation plan

SAD seasonal affective disorder

SVOC semi-volatile compounds

UGR unified glare ratio

VOC volatile organic compound

4 Developing the brief

4.1 General

Developers, funders, commissioners, client bodies and those designing, specifying or modifying the built environment should commit to good practice standards in any development agreements and strategy documents and adopt inclusive design principles from concept stage. This should include design considerations for neurodiversity.

NOTE An inclusive environment recognizes and accommodates differences in the way people use the built environment. It facilitates dignified, equal and intuitive use by everyone. It does not physically or socially separate, discriminate or isolate. It readily accommodates human diversity from childhood to adulthood through to old age, across all neurological profiles, abilities, impairments, and embraces every background, gender, sexual orientation, race, religion or belief (i.e., protected characteristics as defined in the Equality Act 2010 [1]). It helps people to live independently and participate fully in all aspects of life.

4.2 Inclusive design strategy

The initial master planning/outline planning permission stage should provide an opportunity to assess the context of the site, its topography and whether the buildings and their approaches are arranged in such a way as to maximize the accessibility of the development.

NOTE Refer to BS 8300-2, 4.1 for further guidance on design strategy.

4.3 Stakeholder engagement

Consultation and engagement with strategic user representatives should be initiated at an early stage and should continue throughout the lifecycle of the design process.

NOTE 1 Designing for neurodiversity is an emerging specialism. Designers and access/inclusive design consultants with an expertise in neurodiversity and other relevant experience (this might include built environment professionals, accredited members of the National Register of Access Consultants and licensed occupational therapists) may have suitable awareness and experience but the level of competency can be assessed on an individual basis.

NOTE 2 For additional guidance, see Sport England Accessible and Inclusive Sports Facilities.³⁾

³⁾ Currently under development.

Accessibility and inclusive design specialists⁴⁾ should be appointed to support organizations throughout the lifecycle of the project. Appointed consultants should offer good awareness and understanding of the features in the environment that could either positively or negatively impact people and be able to support organizations with inclusive consultation and engagement from an early stage. This should be followed by a stage-by-stage review of designs together with their associated future management arrangements. Organizations should designate someone within the business to champion neurodiversity and sensory-friendly buildings, in addition to taking a holistic approach that draws in all members of the organization. Established frameworks, such as the RIBA plan of work, should assist by providing a framework of considerations. Activities relevant to this PAS should be followed as referenced in Table 1 for each stage, alongside guidance in the BS 8300 series.

Table 1 – RIBA Plan of Work

Stage of project	Design for the mind activities
Strategic Definition (RIBA Stage 0)	• Establish and document commitment to delivering an accessible, sensory-friendly and inclusive environment. • Identify someone on the management team to champion neurodiversity and inclusion. • Provide awareness to the design team about sensory and/or information processing differences and the principal areas of interest. • Confirm design team has understanding and knowledge of neurodiversity and disability.
Preparation and Brief (RIBA Stage 1)	• Integrate the principles of Accessibility and Inclusive Design in the project brief. • Clearly state the requirement to follow this PAS as applicable to the environment. • Check access and inclusive design technical expertise secured with understanding of neurodiversity and sensory and/or information processing differences. • Establish user/consultation group(s) for early engagement to include people with lived experience of sensory differences. • For existing buildings, consider a sensory audit to identify what currently works well or needs adjustment.

⁴⁾ Specialists can be found via the National Register of Access Consultants (<https://www.nrac.org.uk/>).

Table 1 – RIBA Plan of Work (*continued*)

Stage of project	Design for the mind activities
Concept Design (RIBA Stage 2)	- Design review of proposals against this PAS – where details are not yet available, confirm that the design team are aware of the range of areas where input is important. - Review issues of the existing site if being retained.
Developed Design (RIBA Stage 3)	- Design review of updated proposals against the PAS and other good practice depending upon sector and location. - Develop access section of the Design and Access Statement for planning and start to develop Access Strategy for Building Control approvals (where applicable) to this PAS. - Liaise as appropriate with Local Authority for access, conservation and planning.
Technical Design (RIBA Stage 4)	- Review/update maintenance, operation and handover strategies aligned to inclusive design and accessibility principles, to include neurodiversity. - Prepare schedule for Building Control access strategy submission, alongside any other submissions requiring consent. - Update and finalize Access Strategy.
Construction (RIBA Stage 5)	- Conduct access reviews during the build phase to verify the implementation of good practice for inclusive sensory design is being carried through correctly. - Review materials and finishes samples and provide recommendations.
Handover and Close Out (RIBA Stage 6)	- Final inspection on completion and occupation to include an access audit to pick up and rectify any outstanding accessibility issues and identify any additional management requirements. This inspection should review installed lighting, fittings and finishes to confirm they are sensory-friendly or adjustable. - Produce access management plan if required.

Table 1 – RIBA Plan of Work (*continued*)

Stage of project	Design for the mind activities
Use (RIBA Stage 7)	• Post occupancy audit to evaluate any issues arising through the design or management of the building once in use. Verify the methodology for feedback allowing for different formats – monitor sources of feedback to check representative feedback is received and no one is omitted. • Continuation of handover actions and ongoing evaluation of the building in use. • Update and amend access-related policies in response to feedback and monitoring. • Disability and neurodiversity groups should continue to be consulted periodically during occupation and use.

NOTE RIBA Plan of Work, modified [5].

NOTE 1 Many issues in the built environment which adversely affect people with sensory and/or information processing differences only emerge through successful engagement. Consulting early with users identifies adjustments that can be designed and implemented at concept stage rather than applied retrospectively.

NOTE 2 Retrospective adjustments can be more costly, disruptive, and often less successful.

Extra attention should be given to including people with sensory processing differences when consulting users and stakeholder groups.

Attention should be given to ensuring everyone has a voice and their specific requirements are met for successful engagement.

Consultation and engagement processes should be designed to include participants with a wide range of cognitive, social, communication and sensory requirements so that they are fully represented. This should include choices about how engagements are conducted in-person and virtually to support active and equitable participation.

NOTE 3 Refer to the Built Environment Communications Group “Neurodiversity in planning: Engagement toolkit” [6] and its seven principles which promote good practice around engaging with the public and stakeholders.

The following should particularly be taken into account during stakeholder engagement:

- a) Providing preview information (see 6.2) for preparing people with sensory and/or information processing differences for the environment and the way in which the consultation meetings are run.

- b) The selected venue has the necessary lighting, acoustics, step-free access, and an assistive listening system.

NOTE 4 For example, a local community hall might be the best location for user consultation on a particular scheme, but if the hall is highly reverberant, it might not be suitable for some stakeholders. In this case other venues or perhaps a smaller side room with better acoustics can be used for additional or simultaneous sessions.

- c) Options for how to engage. Some people find face to face meetings difficult and prefer another means to provide their input, such as a phone call, SMS or virtual meetings.
- d) Volunteers external to the organization to be reimbursed, within reason, for their time and expenses.

NOTE 5 Some people with neurodivergent differences might require larger car parking space to facilitate movement out of and into vehicles. For details of car parking, including design of enlarged and accessible spaces, see BS 8300-1.

5 Site and building layout

5.1 Site planning and position of buildings and other features

Considerations on the location of a site that are relevant to people with sensory and/or information processing differences should be:

- the density of the population;
- proximity to high traffic and other noisy areas;
- legibility and coherence, including noise, lighting and clarity of routes;
- spatial considerations; and
- proximity and connectivity.

NOTE Refer to BS 8300-2, Clause 5 for more information on strategic site and building layout.

5.2 Legibility and coherence

5.2.1 General

COMMENTARY ON 5.2.1

The qualities of the wider built environment are an important factor when navigating public spaces and streets, with noise, lighting, clarity of routes and availability of green space all having varying degrees of influence on people and how they can interact with the environment. It is increasingly recognized that town planning [7] decisions are critical to the design of places to enhance mental health, eliminating features that can cause difficulties for people who experience heightened sensory sensitivity.

People might find public spaces and buildings overwhelming if they are too colourful, brightly lit or confusing in appearance or layout.

When designing spaces/sites the diversity of society and the wide range of needs should be taken into account by incorporating ease of navigation and spaces for respite or play. The inclusion of green space, with wider pavements and walkways, should allow people to distance themselves from traffic and other people with more space to accommodate busy times.

Where possible, designers should plan pathways to offer a choice of routes between significant locations; both direct, logical straight lines and also more flowing, curved lines that feel more natural and unobtrusive.

NOTE For additional guidance on designing for external spaces, refer to 7.1, RTPI Dementia and town planning [8], and RTPI Child friendly planning in the UK [9].

5.2.2 Spatial considerations

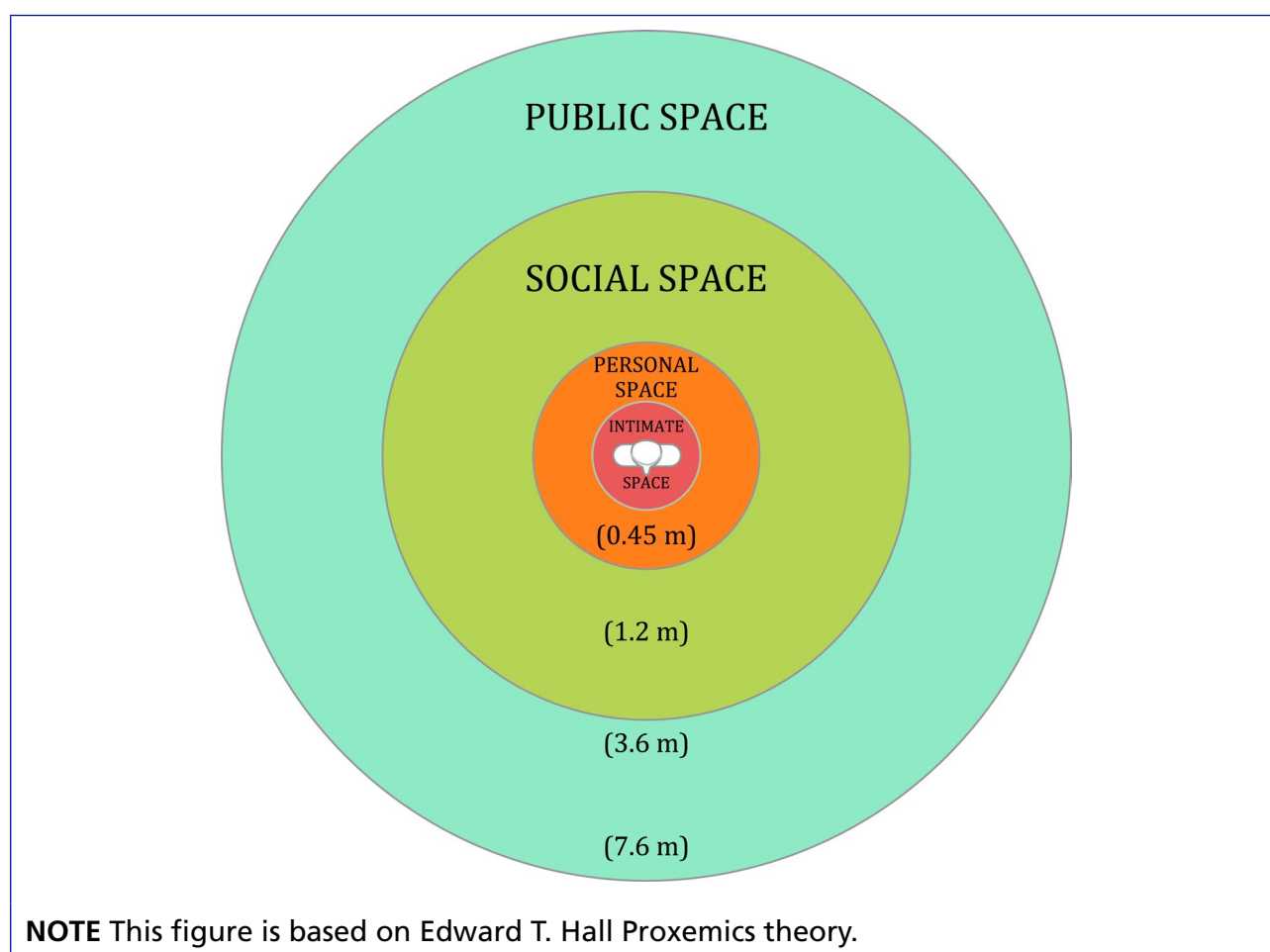
When planning busy public places, e.g. large environments like major rail hubs, airports and stadia, the larger personal boundary requirements by some individuals to avoid anxiety should be incorporated into the design. By providing readily available access and egress routes within busy spaces, this should enable people to have some control over avoiding the most crowded routes.

NOTE 1 People can have very different requirements for personal and social space (proxemics), which might be for culture/ethnicity/neurological reasons. Lack of space can cause anxiety or tension in certain situations for everyone, but some people may experience a much higher level of anxiety, such as people with misophonia, dyspraxia and/or autism. Where a larger personal space is required, this can be challenging in crowded spaces, potentially resulting in anxiety and poor wellbeing, distress or overload.

As referred to in Figure 1, proxemics can be defined as portions of space:

- intimate space, close to the body;
- personal space, within 0.45 m;
- social space, within 1.2 m; and
- public space, within 3.6 m and 7.6 m.

Figure 1 – Interpersonal distances



If crowds are inevitable at predictable times, these timings should be publicized so that people avoid these, alongside the provision of well signposted quiet/restorative spaces (see 14.1).

NOTE 2 Further research can be helpful to understand the extent of difference in proximity comfort ranges for people who are not neurotypical [10].

NOTE 3 See also Clause 7 for more information about external spaces.

5.2.3 Proximity and connectivity

The proximity of a site and its connectivity for pedestrians and uses of public transport should be taken into account, alongside the ability to have nearby parking.

NOTE 1 Many people with sensory and/or information processing differences find travelling on a busy transport network challenging or impossible; this might influence where they choose to work or to visit on a regular basis. Locations that are easy to access by a variety of transport modes, such as cycle and vehicle parking, taxi drop off, provide options for people based on their preferences.

Places to pause or break a journey should be taken into account as they allow someone to reset and recharge before continuing.

NOTE 2 Refer to 7.2 for clarity and familiarity of the space, and 15.1 for transport environments.

5.3 Facade

5.3.1 General

COMMENTARY ON 5.3.1

The design of a building's facade can play a crucial role in heat and light exchange and its technical performance can positively affect the comfort and productivity of occupants as well as energy use and running costs.

The external design should provide a positive impact on people within the vicinity of the building in the following ways:

- ease of navigation and orientation through positioning and optimum use of building contours;
- ease of access through prominent and legible points of entry; and
- avoidance of features that cause sensory overload.

NOTE Refer to 12.4 for guidance on visual discomfort and use of patterns.

As a principal element of the design process, a sun shading strategy should be taken into account at concept stage. The sun shading strategy should include glare and distraction design considerations such as, where appropriate, inclusion of solar fins and panels, buffer spaces and appropriate material choices.

5.3.2 Reflective materials

Large areas of reflective materials, such as some metals or glazing, should be avoided as these cause discomfort or disability glare.

NOTE 1 This can particularly affect people with greater sensitivity to light, creating a situation where it can be difficult to see or causing distress and sensory overload.

Where reflective materials are used, to mitigate glare at street level, the designs should include:

- a facade on a tall building that slopes forward (above head height only);
- the selection of diffusing materials;
- the use of low reflectance film or fritting (fused or partially fused materials used in making glass); and
- application of interventions such as external louvres.

A glare analysis should be undertaken when using large amounts of reflective materials on a facade.

NOTE 2 Sunlight and solar glare are often controlled by local planning policy, for example, the City of London Guidelines and best practice for assessing solar glare [11].

NOTE 3 Physical features that can become hot to touch pose a burn risk to skin and body parts for all users, but particularly for people with sensory and/or information processing differences that might have reduced sensation, poor grip and grasp, and might not be able to move quickly enough.

Where there are a likelihood of cladding at lower levels reaching high temperatures in an area where people are more vulnerable to burning (such as older people), the risk of heat-related burning to skin or body parts should be mitigated by:

- a) minimizing the use of reflective cladding panels below head height;
- b) the selection of an alternative cladding material (entirely or below head height); and
- c) the introduction of a feature that would prevent the surface being easily touched.

NOTE For example, flowerbed/planter, railing, seat, or deterrent paving.

Where strong sunlight causes metal handles and handrails to become extremely hot, designers should mitigate the risk of heat-related burning to skin or body parts by measures such as:

- 1) selection of lighter coloured metals (darker colours absorb more heat);
- 2) applying a ceramic/powder coating to the metal;
- 3) using a different material, such as wood; and
- 4) introducing shade, e.g. an entrance canopy or trees.

NOTE 4 A maximum recommended surface temperature of 43°C is established as a safety measure for internal radiators to prevent burning, particularly in older people who often lose sensitivity through peripheral neuropathy and might therefore not remove their hand quickly enough before burning occurs.

NOTE 5 Stone cladding and pavers can also become very hot but are low conductivity materials, so the speed of heat transfer is slower which allows more time for the individual to react before burning occurs.

NOTE 6 Further attention might be necessary where facades are in close proximity to open air swimming pools and other areas where exposure of sensitive bare skin and bare feet in contact with surfaces is more likely.

5.3.3 Sight lines

COMMENTARY ON 5.3.3

Building facades that incorporate angular details and corners at eye level can sometimes obstruct sight lines for people in the vicinity. Rounded or chamfered corners can give improved sight lines and soften the building's appearance.

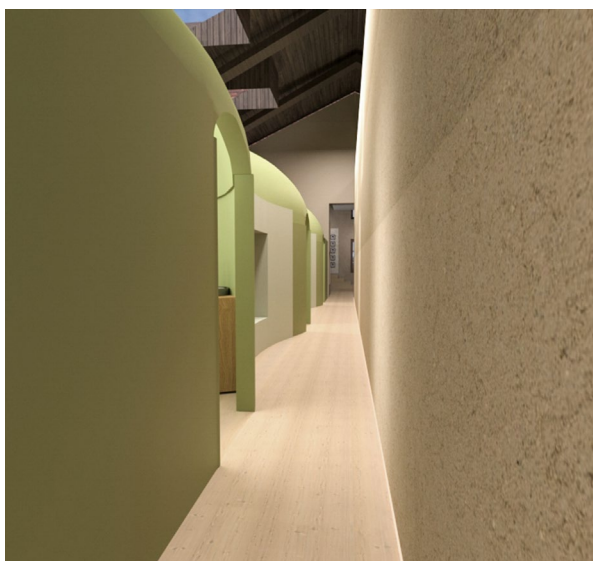
The incorporation of some curved walls should be taken into account for many people with sensory and/or information processing differences and are generally considered to be calming, with a more natural shape and pleasing appearance.

NOTE 1 For people with proprioceptive sensory deficits as experienced by autistic people or with Parkinson's, a curved wall can be used to allow them to move close to the wall or a dado/handrail can be provided for support.

The flowing form helps people to transition from one space to another, and the improved sightlines should be beneficial to remove some of the anxiety when entering an unfamiliar place by allowing more of a preview of the approaching area (refer to Figure 2).

NOTE 2 Curved surfaces are reassuring and recesses in corridors provide pause places to allow easier transition between spaces.

Figure 2 – Example of curved surfaces and recesses in corridors



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To assist with reducing sound pollution from external sources, exterior green facades or living walls and roofs should be taken into account. Any green facades or living walls should be well maintained to prevent protruding onto or over pathways. Plants with low level scents should be selected to aid people who have hypersensitive sense of smell.

NOTE 3 A green wall is a vertical built structure intentionally covered by vegetation. The sound insulation values can vary, depending on the type and proximity of planting and whether joints are sealed.

NOTE 4 Avoiding abrupt route transitions is also helpful in an emergency situation where occupants are asked to leave an area quickly. Refer to **8.1** and **14.3** for further guidance.

5.4 Entrances and exits

The design impact of entrances and exits should be reviewed to reduce a sense of crowding and imposing on personal space. Where practicable, alternative entrances and exits with clear signage should be provided.

Clear sight lines and/or ease of identifying the locations of entrances and exits should be provided to reduce the potential for sensory overload and to ease orientation and movement to, from and within the building.

NOTE 1 Glazing can be helpful in providing an opportunity to preview the space beyond, which can help reduce anxiety and aid orientation and wayfinding, but can also create potential for incurring additional sensory load and visual clutter/noise (refer to 5.5.1, 5.5.3, 6.2 and A.4.3).

Where practicable, any entrance canopy should have sufficient space for people to avoid the direct flow of people using the entrance doors. A seat within a large entrance canopy should be used to allow someone to pause and re-set before entering or as they are leaving.

When designing entrance canopies, where possible, materials should not be used which accentuate the sound of rain.

NOTE 2 Entrance canopies, which are welcomed for their potential to provide shelter, can be a clear indicator on the outside of the building of where the entrance is, particularly on large buildings.

In buildings that are multi-tenanted, clear signage should be easily visible from outside detailing the organizations that occupy that building.

Directional signage should be sited to be visible from all directions of approach, where practicable and repeated at each decision and reassurance point.

NOTE 3 For more information on navigation, orientation, and wayfinding, refer to 6.6.2 and the BS 8300 series, 5.2.

NOTE 4 Refer to 14.5 for emergency evacuation arrangements.

In areas of bright lighting, entrance mats with a light toned aluminium scraper bar and dark wiper strip should be avoided, as it sometimes creates a strobe effect. Less contrasting combinations should be used.

5.5 Windows

COMMENTARY ON 5.5

Windows can provide a welcomed view to nature, natural daylight and also a preview into a space. The presence of natural daylight enables less reliance on artificial lighting which can create challenges for people with sensory differences (see 11.2).

Double or triple glazed windows and acoustic glazing should be installed where outside noise penetrates the inside space, even with windows in the closed position.

Temperature loss or gain through glazing should also be taken into account.

5.5.1 Window treatments

The potential for glare and distraction should be controlled by the provision of blinds or curtains, the application of a solar control film, or the planting of trees and shrubs in strategic locations.

NOTE 1 Glazing can be used to allow transparent views on the corner of a building, which allows pedestrians to “preview” the approaching area.

NOTE 2 Windows can cause sensory overload in some circumstances, for example, where there is visible activity or distraction outside which significantly affects concentration.

In some situations, other window styles, such as high level (clerestory) windows, should be taken into account.

Depending on the angle of the sun and the buildings orientation, sun through windows above head height (including clerestory) creates shafts of light, so the need for window coverings at certain times of day should be assessed.

NOTE 3 Reducing glare in swimming pools is an important safety consideration, especially for good sight lines to the bottom of the pool for lifeguard supervision purposes.

NOTE 4 Windows can be designed to avoid offering a view over an undesirable and distracting exterior.

Blinds or curtains to windows or internal areas of glazing should be used in certain circumstances to allow visual privacy and flexibility to block out strong sunlight.

NOTE 5 Some venetian blinds with opaque slats can create a striped pattern associated with pattern glare and visual discomfort, particularly in bright or sunny conditions. Blinds that allow slivers of bright daylight to enter a room in the closed position can be distracting, particularly where open windows or air drafts create movement of the slats. Roller blinds, particularly blackout quality, can be a very effective alternative where this is an issue. Venetian and roller blinds set into a reveal can have added perimeter strips to prevent light seeping in around the edges. Refer to **11.3.3** for guidance on shadows and **14.4** for pull cord safety risks.

NOTE 6 Refer to guidance Designing for disabled children and children with special educational needs [12].

5.5.2 Glare

Methods to reduce glare should be used whilst permitting daylight to enter, such as brise soleil, translucent semi-transparent blinds, frosted manifestation or voile curtains.

NOTE 1 Multiple windows can create shafts of bright sunlight or views which are distracting. Higher level or clerestory windows can allow daylight to enter the space without introducing significant glare or a need for window coverings to eliminate distracting views.

The building orientation and the positioning of glazing should be taken into account during the design of swimming pools and other internal water features.

NOTE 2 Glare in swimming pool facilities can reflect off the water, contributing to visual disturbance in an often noisy and reverberant environment, especially for people with sensory sensitivity. Additionally, it can compromise the safety of users as pool side supervisors might be prevented from seeing the bottom of the pool. Furthermore, the use of bold, contrasting colours on wall finishes can be distracting when daylight is reflected against the water, affecting visibility. Refer to the Design guidance note swimming pools [13] on swimming pools and glare.

5.5.3 Vestibular conditions

Where full-height glazing are proposed on upper floors, the impact should be assessed. The application of non-transparent manifestation or non-reflective film to a lower proportion of the glazing should be taken into account as a helpful intervention, without affecting views out.

NOTE Full-height glazing can cause difficulties for some people with vestibular conditions, such as Meniere's, particularly at upper levels where they can feel unsteady or dizzy. See 11.3.2 and BS 8300-2 for further guidance on the application of manifestation.

6 Wayfinding

COMMENTARY ON CLAUSE 6

Wayfinding is often a multisensory activity, often supported by mental images based on sensation and memory. Wayfinding may be affected by any of the following:

- ability to see, hear or feel through touch;
- sense of direction and proprioception;
- language or communication barriers; and
- sensory and/or information processing differences, including short term/working memory.

Many people have some sensory differences affecting, for example, sight acuity, hearing, balance or proprioception so wayfinding systems that rely on only a single sense, such as visual signage, might not meet the needs of some users (refer to BS 8300-2, Clause 12).

Some people have traits relating to information, sequential processes, number and word identification and might rely more on visual cues, symbols and colours when wayfinding.

A decline in the ability of wayfinding can be an early symptom of dementia, in part attributed to a loss in object and space perception, reduction in memory, reduction in problem solving abilities and disorientation.

Conditions that affect the vestibular and proprioceptive system can present challenges in moving and navigating through the built environment. Hypersensitivity can affect the vestibular system, disorienting some people and presenting difficulty in navigating different ground or floor surfaces.

Additionally, language is a wayfinding clue and not everyone is familiar with English. Some settings need to cater for more than English and may need a consistent graphic hierarchy of first, second and other languages. Consistency in the graphic charter for signage between the use of different languages, alphabets and scripts can be helpful for all (e.g. Hindi, Arabic, Cyrillic, Chinese).

6.1 General

Clearly defined and visually contrasting wall boundaries should be used, as well as the ability to touch features such as walls, to provide reassurance and familiarity. For features intended for touch, maintenance, cleaning and hygiene should be taken into account.

NOTE 1 The provision of a strong, identifiable shape, for example a H or T shaped building, might enable some people to visualize and acclimatize more easily.

NOTE 2 For visual contrast information, refer to BS 8300-2.

Designs should not introduce different tonal and textural ground surface or floor finishes where possible as they are a challenge for some people and contribute to the likelihood of tripping.

NOTE 3 A notable exception is the visually contrasting gradients and tactile warning paving surfaces which are important safety features for blind or partially sighted people. See **12.4** for additional guidance on floor finishes and transitioning.

NOTE 4 People can have impressive long-term memories but can also sometimes experience challenges with working memory capacity, affecting the holding and handling of information whilst processing. Working memory, attention and executive function is used for:

- problem solving and planning;
- multi-tasking;
- making connections; and
- forming a conclusion.

Information and wayfinding should be provided based on the principle of at least two senses, with information interpreted via multiple senses, including visual, audible, or tactile methods.

NOTE 5 As no single format can communicate information to everyone, some duplication of information in different formats is essential and can be helpful/reassuring for people with low auditory or visual working memory.

The establishment of clearly identifiable wayfinding nodes, (well-known points between travel or routes) where people might naturally converge and make decisions, or seek reassurance, should be taken into account. This should be coupled with a clear hierarchy for signage and the use, as appropriate, of tactile, visual, and audible wayfinding information.

When designing wayfinding, the following should be reviewed:

- opportunity to preview (easing anxiety which makes the process harder);
- sensory load, i.e. avoiding overload through unnecessary visual and audible “noise”;
- use of appropriate lighting to aid navigation;
- layouts that are logical, with clear sightlines to assist self-orientation; and
- familiarity – signage and tactile fit in an already understood model.

Other helpful wayfinding aids should be provided, for example, colour coding to floors or amenities, different types of floor surface to distinguish circulation routes from destinations, and consistent use of symbols across the portfolio (taking care to balance the need for information and choices without becoming overwhelming).

NOTE 6 See BS 8300-2, 5.2 for further information on inclusive and accessible wayfinding systems.

NOTE 7 Where a building has a reception or visitor information point, a distinctive change of colour or contrast can make that area noticeable and visible to reduce any confusion at the entry to a building. However, a visual contrast can compromise access for some groups, such as people with dementia or Parkinson’s, who can experience “freeze” when encountering a colour change in flooring as it is perceived as a barrier or level change. (see **12.6**).

6.2 Preview and advance information

The opportunity to accurately anticipate and experience an environment virtually or through audio or visual description should be used to reduce anxiety. This information should provide support for planning and preparing for a visit. Preview information should be provided, for example, in one or more of the following ways:

- websites with virtual flythrough videos;
- audio description for people unable to fully experience the visual footage;
- routinely including in all documents, including appointment letters and invitations, a link to information about the environments that are clear, consistent, and up to date; and
- displaying a simple plan of the interior at the entrance to a building.

Information regarding any temporary changes for special circumstances (such as building works) which affects arrival and reception points, should also be included as far practicable.

Pre-visit information should include information about the environment and what to expect during a visit, as well as links to journey information, such as travel options. The quality of information should be reviewed annually or sooner if changes are made to allow someone to plan and prepare for their visit, and reduce the risk of anxiety.

NOTE 1 Verifying that key information is repeated or linked in all communications is helpful.

Even with the provision of the pre-visit information, information should be available on arrival, such as colour and shape or shading coded maps with visual cues to facilities and locations. Easy Read and Plain English versions should be taken into account.

NOTE 2 For some people, technology can be helpful, such as using QR codes around the building to confirm your location, or a wayfinding app providing indoor mapping and positioning with navigational instructions.

NOTE 3 For very large and complicated buildings, such as hospitals and some museums, it is helpful to provide a means to access assistance at regular places on routes, for example, a two-way communication device for people to seek assistance.

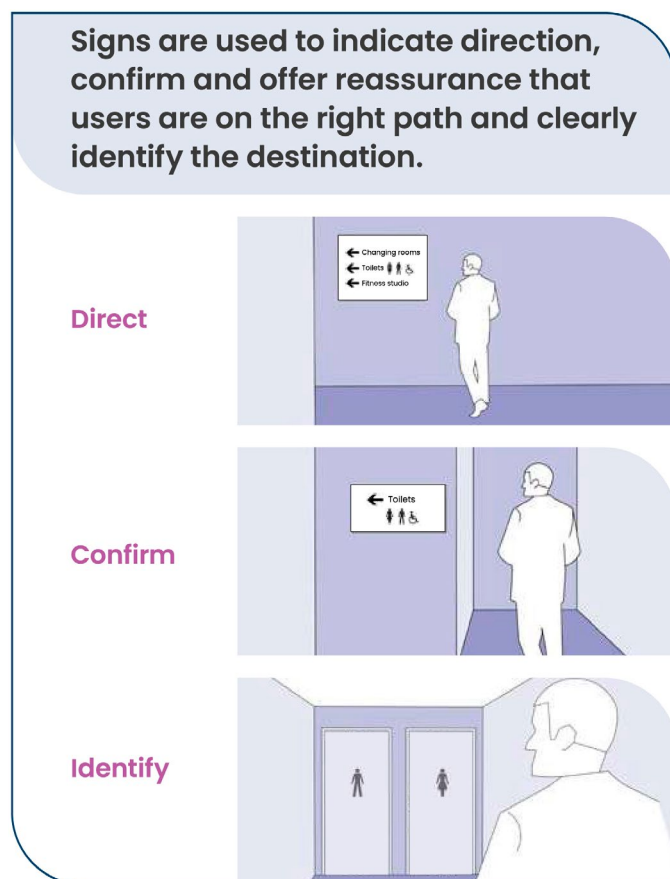
In situations where queues or waiting are expected, the opportunity should be taken to display information about the environment to be entered. The form of display should take into account the potential for sensory overload if highly repetitive or stimulating.

6.3 Orientation and clarity

6.3.1 General

The amount of information provided within a wayfinding system should be carefully balanced.

NOTE 1 If minimal information is provided, people can lose their way, but too much information can be overwhelming.



Examples of wayfinding systems.

A wayfinding system should be designed that has a clear and inclusive wayfinding and signage hierarchy, together with multisensory supportive measures, taking into account environmental, visual and sensory cues. This should apply to all potential routes.

NOTE 2 Environments that have clear, simple layouts are easy to navigate and minimize the need for additional signage.

6.3.2 Attentional bias

Consistency in the design of signage or wayfinding cues should be provided from the point of arrival and continue throughout the environment. Introducing a new colour, or style of sign or other wayfinding cues at a later point in the building should be avoided to prevent potential for attentional bias.

Signs should be separated from other notices and pictures to avoid a cluster of competing information.

NOTE 1 People subconsciously apply mental resources to a selected criteria ignoring other features. An example is someone identifying a style of sign when they enter a building and searching only for that type of sign for the whole journey, missing other sign components that differ in style or colour which are not perceived to be part of the system. Attentional bias is more likely when someone experiences anxiety when wayfinding.

NOTE 2 Visual distractions around wayfinding features can also limit the ability to process information.

6.4 Wayfinding nodes and landmarks

Unique and highly visible features should be positioned in strategic locations to assist in wayfinding, helping people to stay on the right route or creating a meeting place in a crowded situation. Such features should be included on maps and wayfinding instructions, and in advance information.

A centrally or strategically sited visible feature should be installed in a large space (e.g. transport hub, shopping centre or stadium) with good sight lines to other areas, such as platforms, lifts and stairs, to assist with orientation/wayfinding. The addition of another sensory aspect to a visual landmark feature, such as tactile, audible (e.g. sound of water), or olfactory, should be taken into account.

NOTE 1 Incorporating landmarks can help people to orientate themselves correctly; a sculpture or fountain in a public place being a common example.

In addition, nodes should be designed and installed with distinctive features to assist people with sensory differences which affect sequential processing.

NOTE 2 Examples include a memorable wall feature or piece of art, or anything unique such as an escalator (if the only one).

Entrances should be shown on plans and, where only specific entrances are fully accessible, these should be clearly indicated.

Reception or information and assistance counters, where they exist, should be used as a starting point. If reception counters are not located at the starting point, it should be clear from the entrance how to reach reception to minimize stress and confusion.

Once within the building, directional signs back to reception and primary exits should be included to assist navigation. In complex visitor destinations, help points at key intervals should be taken into account alongside “You are Here” maps. The presence of trained staff or volunteers to guide people should also be taken into account, where possible.

6.5 Use of colour and contrast

6.5.1 Colour coding

Signs which have many different colours should not be used because they risk overloading the senses, or items being missed due to attentional bias (refer to 6.3.2). The use of colour coding should therefore be used with consistency and take into account the potential to overwhelm. Where included, colour coding should not be used in isolation of other wayfinding elements.

NOTE 1 Sensory overload can easily occur when too many competing features are provided at once. The use of too many colours, signs or indicators in close proximity can divide attention and lead to some signs being missed altogether or trigger a feeling of anxiety through not knowing which piece of information to look at first. Changing the overall colour of the background to a sign, e.g. to indicate different floors or zones, can result in multi-coloured directory signs which might be too busy to digest easily. This can also cause people to miss signs; many people subconsciously ignore signs and features that do not match the model they are seeking through attentional bias (established at the outset of a visit).

NOTE 2 Where colour coding is seen as a helpful indicator, designers can create a symbol on the sign rather than change the sign background colour in isolation. Combining colours with shapes can also enable people who have colour vision deficiencies to distinguish signs using the shape.

If different coloured floor surfaces are to be used, transition zones from one colour to another should be taken into account to avoid a distinct line being perceived as a barrier or level change (see 12.6).

Consistency of colour and visual contrast across each sign type should also be taken into account.

To avoid creating a highly colourful, overstimulating environment, vivid colours should be kept to a minimum, e.g. by using muted colours on walls and large surfaces, and using a vivid colour to create a distinctive feature or landmark.

In general, vivid colours and patterns should be avoided or used sparingly, e.g. on feature walls or areas that can be easily avoided (see 12.1 and 12.3).

NOTE 3 Inappropriate use of colours can also result in insufficient visual contrast between sign content and the background they are seen against. Refer to BS 8300-2, Clause 12 and Annex B for guidance on visual contrast and LRVs.

6.5.2 Visual contrast

NOTE 1 Visual clarity reduces the cognitive load for everyone but is particularly beneficial for people with sensory and/or information processing differences, sight or hearing loss for easier navigation of spaces.

Appropriate visual contrast, measured in light reflectance values (LRVs) should be assessed between the edges of surface finishes of adjacent building elements, such as floors, walls, doors and smaller features such as signs and fixtures. These assessments should be completed to assist visually impaired people for navigation and wayfinding.

NOTE 2 Refer to 12.3 for further information on visual contrast.

6.6 Signage

COMMENTARY ON 6.6

Signs form part of an integrated communication scheme that gives clear directions, information, and instructions for the use of a building, supporting a wayfinding strategy that takes into account a wide variety of user needs, and the complexity of the building layout. A user who is unable to understand an unfamiliar environment can be assisted by a clear signage system; however, signage alone might not be able to fully compensate for a building with complex, illogical layouts, and poor sight lines. For example, people with dyslexia and/or visual stress might struggle to read some signs unless accessible principles are followed, such as avoiding block capitals and italics, appropriate positioning and style of directional arrows, visual contrast, and size of sign content. Refer to BS 8300-2, Clause 12, and Sign design guide [14].

6.6.1 Signage content

The content of signs should have the following features:

- be easy to interpret and concise;
- have symbols and words; and
- be in contrast from the mounted surface.

The text on the sign should be as brief as possible to communicate the required information.

NOTE 1 The use of clear language, avoiding clinical or technical terminology, is important in public buildings. For example, “eye clinic” rather than “Ophthalmology”.

All documents, website content, flythrough videos and images should use the same terminology as the signage and information within the environment to avoid confusion.

NOTE 2 Clear readable signage is particularly important for people who find wayfinding difficult, such as people with neurodegenerative conditions such as dementia.

Except for universally accepted or mandatory safety symbols or pictograms, symbols or images on signs should also have supplementary text. Widely accepted symbols used for WCs should not be varied significantly as this causes confusion, inconvenience and anxiety to many building users. New symbols should always be user tested for clarity. Symbols that resemble the actual features in the building should be helpful.

NOTE 3 For this reason, a green sign might be appropriate outside in an urban environment but is likely to conflict with mandatory fire signage inside a building.

Temporary signage, especially for safety purposes, should incorporate accepted conventions, e.g. for spilt liquids and diversions.

NOTE 4 Attention is drawn to HSE’s guidance on safety signs and signals [15].

NOTE 5 Refer to Annex C for examples of widely accepted and recognized symbols.

NOTE 6 In buildings where people with dementia are likely to be significant users, additional symbols for toilets can be helpful, such as a symbol indicating a toilet pan. Similarly, a black and white clear photograph of a typical toilet shape might be easier to interpret than a symbol.

Super graphics are enlarged symbols that should be used in larger environments, such as airports, where they are viewed from a long distance away. They should be supplemented at a comfortable viewing height on approach and the balance between size and viewing distance should be taken into account.

6.6.2 Sign locations

To assist in navigation, consistency in positioning of signage within a building or environment should be planned and incorporated into the design.

Fixed-location visual and tactile maps should be oriented to align with the direction that the user faces when they look at the map (also known as “heads up” orientation).

The signage strategy should commit to clear indicators to main entry and exit points, amenities such as reception, toilets and cafes.

NOTE 1 It is important to differentiate clearly and significantly, between signs for drivers of vehicles, general signage for pedestrians or building occupants, and mandatory signage such as evacuation signs.

Once readily recognizable and understandable signage has been established, the style should not be changed significantly to reduce the risk of attentional bias.

Good sight lines – including those through glazing, and around curved or chamfered corners, should be taken into account to support a consistent signage system.

Viewing heights for signs should be in accordance with BS 8300-2. Signs should be positioned so that they do not obstruct or compete for attention with other features or mandatory signs, e.g. they should not be in close proximity to fire exit signs, wall art or noticeboards where possible.

Overhead signage should always be supplemented with signs that are at comfortable viewing heights and distances when approached.

NOTE 2 Comfortable viewing heights are 1 400 mm to 1 700 mm standing and 750 mm to 1 350 mm seated.

NOTE 3 In addition to children and people viewing from seated height (including wheelchair users), some people with vestibular or neurodivergent differences find looking upwards to signs above head height difficult and balance can be affected.

The distance between repeat confirmatory signs where routes are long should be influenced by the complexity of the route. The confirmatory signs should be sited frequently enough to reassure people who find wayfinding and navigation difficult, but not so often that they cause unnecessary clutter within the visual field.

NOTE 4 Confirmatory signs are also particularly helpful where a change of level happens even if there is no decision at that point, such as a staircase in a corridor, as people may need reassurance before committing to the cognitive and physical effort of changing level.

NOTE 5 This is an area for further research but people with sensory and/or information processing differences affecting navigation generally require more frequent affirmations that the direction of movement is correct.

NOTE 6 Anxiety can increase if signage cannot be seen regularly or at a distance for some facilities, such as signs indicating WCs, quiet rooms, the way out or reception. Once beyond the entry point, many buildings do not have directional signs for the way out or back to reception, so people might try to follow the fire exit signs which often lead to a very different route. Further research on the proximity distances from other signs to reduce overload might be beneficial.

A signage strategy should always include locational signs to confirm arrival at the destination.

6.6.3 Exit signs

Signage for main exits should be consistent to avoid attentional bias and be easy to identify from fire exit routes.

NOTE 1 Directional signage for exits are important, particularly for people who are unable to mentally reverse the route or retrace their steps. Providing “Way Out” signs rather than “Exit” might be helpful in addition to statutory fire exit signs.

NOTE 2 See 6.5 for guidance on use of colour. Also refer to BS 8300-2, 5.2 for guidance on inclusive and accessible wayfinding.

The use of temporary one-way systems for special events or circumstances should be reinforced with other wayfinding cues (refer to Annex C for recognized symbols).

6.7 Tactile information

Information should be presented in formats that are interpreted by more than one sense, i.e. visual, tactile, auditory. Sensory clues, whether through touch, smell, or sound, should be used to assist people with navigation and wayfinding, in particular people who are blind or partially sighted.

NOTE Some people who experience sensory and/or information processing differences have higher sensitivity to tactile information. Tactile signs in the form of Braille and/or embossed text might not cause any sensory overload unless someone has both a visual impairment and a sensory and/or information processing difference, in which case they can choose not to touch the sign.

Some extensive tactiles for wayfinding for the benefit of people with sight loss should only be introduced after user and relevant stakeholder engagement, i.e. to include people with lived experience of sight loss as well as people who are hypersensitive to tactile features.

Some people with hypersensitivity experience discomfort when walking on tactile paving surfaces, therefore its use should be carefully reviewed and assessed in accordance with the BS 8300 series.

6.8 Technology for wayfinding

Talking signs and other devices such as PA systems assist blind or partially sighted people but are intrusive or overwhelming for people with heightened sensitivity or hypersensitivity to sound, so the location and volume should be taken into account. Users should also be consulted before the features are introduced.

NOTE 1 Technology that works with an individual's personal SMART device is one way of providing audio information without imposing additional unwanted sound on others. There are already a wide variety of developing solutions, mostly through apps on the user's own SMART mobile phone technology and utilizing satellite GPS technology for external environments. This might be developed in the future to be used more in internal environments, which might be helpful to many people to successfully navigate places.

Alternative means of providing the same information should be made available, in event of people not being able to access the technology.

NOTE 2 This can be either through lack of familiarity with such technology, whether someone has a compatible device, or through lack or failure of wi-fi service, battery life, power or product failure.

When proposing the use of technology, designers should not require users to download an app or set up an individual login to a website where possible. Consultation should take place with users who regularly experience significant difficulties in wayfinding in order to provide for a wide spectrum of different user needs. Volume control, transcription and alternative formats including apps to support audiences and inclusive practice should be taken into account.

NOTE 3 It is important for the user to be able to tailor the appearance and feedback to their own preferences, for example, colours, contrast and changing audio to haptic information.

Adopting established models gives familiarity which should allow the technology to be used by a wider group of people, for example, people with dementia, to obtain information.

NOTE 4 Digital wayfinding solutions can provide more flexibility to adjust content in reaction to dynamic situations, such as crowd control or travel delays, in comparison to fixed signage.

Socio-economic factors should be taken into account for the cost of wi-fi, availability of wi-fi to support wayfinding and age of the technology device. Therefore, other alternative formats (such as maps) should be taken into account in addition to technological solutions.

7 External spaces and access

7.1 Access to greenspace and biophilia

Outdoor spaces should be designed, where practicable, to provide areas for activity and areas for retreat and calmness, as well as clear connection with buildings and other spaces as appropriate.

Large open spaces are overwhelming at busy times and the design of the space should be enhanced by creating smaller pockets of greenspace for contemplation and focus.

Access to shelter from strong sunshine or inclement weather should be taken into account for greenspaces that are distant from buildings.

Perceived safety and the provision of good sightlines should be taken into account.

NOTE 1 Examples of external spaces include streets, parks, courtyards, and terraces.

NOTE 2 Green spaces offer opportunities for physical activity which can be helpful to expend energy, particularly for people who experience hyperactivity.

Provision should be considered for assistance dogs and emotional support animals.

Natural features such as plants and trees are helpful wayfinding cues. However, care should be taken not to formally use these in preview information where the appearances are likely to change on a seasonal basis unless, seasonal images and description are included.

NOTE 3 Refer to Clause 6 for wayfinding guidance.

7.2 Access to nature

Access to nature and outdoor amenity spaces should not be overlooked in assisting both physical and mental wellbeing. These spaces should provide opportunities to escape from overwhelming spaces or crowded buildings to a place where personal spaces are provided.

NOTE 1 Connecting with nature can have a restorative effect on people, improving psychological wellbeing and reducing physiological stress. It can also improve the capacity to remain attentive.

A lack of connection to nature can have a negative effect on people and can lead to increased incidence of anxiety, depression and promote hyperactivity or attention deficit behaviour.

Green spaces such as gardens and parks should be taken into account for relaxation and recovery from sensory overload. Independent, free access to nature should be provided, where possible, to people with sensory and/or information processing differences to recover from overwhelming busy places, for example, a roof top garden area at high level or a small pocket of greenspace (sometimes called a “pocket park”) at ground level.