Neurodiversity

Design and management guide for Higher Education environments

AUDE
Together, for excellent university estates & facilities

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Contents

1. Introduction

1.1. Executive summary

This toolkit guide has been produced for the Association of University Directors of Estates (AUDE) for use by AUDE member universities to support the improvement of new and existing estates for staff, students, contractors and visitors who experience sensory processing differences associated with neurodivergent profiles, in particular information and sensory processing differences. To find out more about neurodiversity and how the built environment can impact individuals, please see section 2.

This toolkit guide is intended to achieve better understanding and appropriate design and management interventions by:

- Educating and raising awareness amongst AUDE members of common challenges in the built environment;
- Providing recommendations on how to improve the estate; and
- Signposting to other guidance available.

The project information is accessible to AUDE members via the AUDE website. It is intended that this toolkit guide sits alongside the existing AUDE website Professional Development and Knowledge Hub tools and a licensed and freely downloadable copy of the BSI's PAS6463 2022 "Design for the Mind – Neurodiversity and the Built Environment" guidance which is signposted throughout this document for deeper reading. It is not the intention for this guide to conflict with the PAS6463 guidance.

The principles set out in this toolkit are likely to be relevant and helpful to both UK home nations and non-UK Universities.

All recommendations and guidance are intended to align with and complement the following national documents and not intended to substitute or contradict them:

a. BS 8300:2018-1 Design of an Accessible and Inclusive Built Environment: External Environments;
b. BS 8300:2018-2 Design of an Accessible and Inclusive Built Environment: Internal Environment;
c. Building Regulations Approved documents or equivalent for the devolved nations.

AUDE members outside the UK may also find these national documents of relevance but should be mindful that they may potentially differ with national accessibility requirements in their country.

All elements of this toolkit guide are intended to be read by the client team when setting the brief and scope of a project and by the design team at the feasibility design stage to inform concept design to get things right from inception; they are also intended to be read by Contractor(s), sub-contractors and suppliers prior to tendering for the supply of goods or services.

1.2. Toolkit components and contents

The toolkit guide has three components:

1. **An educational webinar** hosted on the AUDE website, explaining neurodiversity, with an introduction to designing for neurodiversity. The webinar is accessible from the **website**. The webinar should be watched before reading the guides as it lays the groundwork for the content in the other toolkit components.
2. **A design guide** which provides an overview of consideration and signposts to existing national guidance;
3. **A Work Stage checklist** which aligns with the RIBA 2020 plan of work inclusive design overlay. **Inclusive Design Overlay to the RIBA Plan of Work (architecture.com)** and PAS6463 table 1 contains specific considerations for neurodiversity against each RIBA work stage. The Work Stage checklist is comprised of two checklists, one for the project management team and one for the design team, detailing the responsibilities of both parties at each RIBA Work Stage.

1.3. Limitations

As design guidance principles for information and sensory processing differences are fairly new, there are very limited examples of completed HE projects that will incorporate these principles. This toolkit guide does not:

- contain specifications for products or suggest products, as this falls outside the scope of its remit;.
- note or reference every potential statutory or regulatory requirement but may include some that are considered relevant to HE and neurodiversity.
- include standard information relating to the design of spaces for wider inclusion, such as accessibility for disabilities, or considerations for faith or gender.

1.4. Inclusive design

BS8300 defines inclusive design is an approach to the design of the environment, including buildings and their surrounding spaces, and managed and natural landscapes, to ensure that they can be accessed and used by everyone.

The RIBA Plan of Work Inclusive Design Overlay states:

"Inclusive design seeks to create buildings and environments that welcome everyone, regardless of their characteristics or identity, such as: age, disability, gender, neurodiversity, sex, health conditions, race, ethnicity, religion or belief, pregnancy, maternity or paternity status, carer status, and more. Inclusive design aims to remove the barriers that create effort and separation, and enables everyone to participate equally, confidently, and independently in everyday activities".

Inclusive Design Overlay to the RIBA Plan of Work (architecture.com)

1.5. Professional advice on access and inclusion

Many built environment professionals actively practice and apply inclusive design principles to a degree, but some people choose to go further and specialise in this area. Such individuals may apply to be accredited through the National Register of Access Consultants which is the UK's peer accreditation scheme which evaluates applicants for membership against set criteria. **The National Register of Access Consultants | NRAC**

When procuring the services of someone specialising in this area, AUDE members are advised to seek not only evidence of accreditation, qualifications and/or experience in inclusive design and accessibility but also evidence of understanding of designing for neurodiversity and applying guidance such as PAS6463.

1.6. Legislation, regulations and guidance

Adopting the principles in this AUDE guide will help universities to meet some of their duties under the Equality Act relating to adjustments for disabled people and provide more comfortable environments for people with sensory processing differences.

Considerations for designing for people with sensory processing differences are not currently cited in the Approved Documents to the Building Regulations. Parts M, K and T contain some accessibility requirements, but these represent only basic levels and are not enough for an HE environment. The Approved documents cite the BS8300 Code of practice as demonstrating good practice and some planning regimes expect BS8300 to be the baseline for good provision. The 2018 issue includes some reference to people's neurological requirements alongside more detailed recommendations for a wide range of physical and mobility impairments, and sight and hearing loss conditions and is just beginning its five-year review and update period.

The British Standards Institute published PAS6463 Design for the Mind – Neurodiversity and the Built Environment in October 2022, following a two-year development period with a steering group of experts and comprehensive public consultation and the recommendations of this guidance have been accepted as best practice at the current time.

The content is neither overly prescriptive or mandatory, but it provides comprehensive guidance for consideration in all mainstream buildings and some residential applications and so is applicable to both education environments and halls of residence. The primary purpose of PAS6463 is to reduce sensory overload and discomfort on people who experience sensory processing differences and/or hypersensitivity, which are often associated with neurodivergent conditions or traits (but not exclusively so). The guidance does not contradict the BS8300 Codes of Practice and other good practice recommendations and should benefit the whole population, despite its primary focus on people achieving sensory overload and discomfort and distress on a day-to-day basis.

1.7. Using this guide

Section 2 provides an overview of the neurological and sensory differences covered by this guide. The remaining parts set out the design considerations at strategic and detailed levels, signposting to existing guidance where this exists elsewhere. **It is recommended that parts 1 and 2 are always read first to give sufficient understanding of the impacts of design and why alternative designs and interventions are being recommended.**

This toolkit guide should not conflict with Building Regulations Approved Documents or standards. It is designed to be read in conjunction with these documents as this toolkit is not a substitute for these. The content is applicable to both new build and existing premises, ideally from concept stage on any projects, including when a building is being modified, refurbished or retro fitted. Whilst the application of the recommendations to each project are likely to vary, it is intended that the toolkit will assist AUDE members when designing and specifying to achieve more neuro-inclusive, sensory-friendly environments.

You can refer to "Neurodiversity in planning: Engagement toolkit" for the seven principles of promoting good practice around engaging with neurodivergent members of the public and stakeholders. PAS6463 4.3 also contains guidance on stakeholder engagement with neurodivergent groups or individuals.

Members should share this toolkit guide with their appointed inclusive design and accessibility consultant to make sure designing for neurodiversity and sensory difference is considered from the outset and throughout your project.

2. Understanding neurodiversity & sensory difference

2.1. Non-visible disabilities

Estimates vary, but a significant proportion (>70%) of disabled people have one or more impairments that are not readily apparent, often referred to as a non-visible disability. In addition, many older people with acquired impairments, D/deaf people and many neurodivergent people do not readily consider themselves to be disabled despite the definition under the Equality Act being met.

Having a non-visible disability such as a sensory difference often means that the person's impairment goes unnoticed and there may not be enough attention given to ensuring that person has a comfortable experience. For example, someone with profound hearing loss or partially sighted may not be noticed unless there is some indication such as the presence of hearing aids, or a white cane or guide dog.

Disabilities can also be dynamic, meaning that one day a person's disability may affect them a lot more than others. Some sensory conditions, such as Meniere's (which is an inner ear vestibular condition causing hearing loss and balance attacks), are intermittent but with no obvious cause, so there can be periods where someone is not affected at all and other times when the impact is very severe. Other conditions, such as hypersensitivity due to a neurodivergent trait, may predictably be affected by circumstances (such as large, busy places), or by certain fixed features in the environment (such as bright patterned walls), but can also be unpredictable due to tiredness or unexpected events, such as a fire alarm sounding.

The numbers of people within a university setting with sensory processing differences will vary each year but certain subjects and careers appear to have a higher number of people with neurodivergent traits. For example, the prevalence of neurological and sensory processing conditions such as autism and ADHD is believed to be greater in higher education, particular in STEM subjects.[1]

Also, research findings confirm that one of the most important places for an environment to be suitable for neurodivergent people is a place where learning and education happens, this is because an unsuitable environment significantly impairs the ability to take in and memorise new information and perform new tasks.[2]

2.2. Physical disabilities

The combination of having a neurodivergent trait and other disabilities or circumstances should also be considered. The BS8300 Code of Practice is the primary source for mainstream buildings including higher education and should be followed to ensure the facilities meet the spatial requirements for a variety of disabilities. For example, this could include spatial and reach considerations for wheelchair users or someone with an ambulant disability. There are many accessibility and inclusive design standards for the built environment that will need to be considered for HE related buildings, including classrooms, amenity space, libraries, laboratories, and halls of residence.

2.3. Neurodiversity

Neurodiversity is an umbrella term to describe the very wide variation in neurocognitive profiles across the whole population. The profiles are often grouped and can be broadly expressed under three headings, which are set out below, as described in the introduction to PAS6463:

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).

[1] Reaching and Teaching Neurodivergent Learners in STEM, with Dr. Jodi Asbell-Clarke- AVID Open Access
Funded through NSF grant, NAU researcher strives to increase participation of neurodiverse students in STEM fields – The NAU Review
[2] Supporting neurodiversity in education | Teaching & Learning - UCL – University College London

To have a **sensory processing difference** is to react through the senses in a different way to the majority – the reaction may be hypersensitive where the neurological reaction is high or overwhelming, or hyposensitive where the reaction is very low or underwhelming. Sensitivity might vary so an individual may be hyposensitive to light but not noise, for example, or highly sensitive to a wide range of stimuli. Sensory sensitivities can even vary on a daily basis (e.g. a person may be hypersensitive to touch/sound on some days and not on others depending on context). Sensory sensitivities can additionally vary within shorter time periods, depending on the external factors such as too much overstimulation. For example, a person may normally be unbothered by the feeling of their jumper on their skin but with the external factor of being in a crowded or noisy place, this may become intolerable.

Many who are diagnosed as neurodivergent or neurodegenerative experience, amongst other symptoms, information and sensory processing differences including hypersensitivity through all or some of the senses. Many people who may be undiagnosed or consider themselves to be neurotypical may also have some elements of hypersensitivity to certain features or at certain times for example, people with vestibular conditions, long COVID, or during peri-menopause or pregnancy. Stimulus may come from a variety of sources such as flicker, glare, busy patterns, bright colours, certain sounds, touching particular materials or even scents or odours in the environment around us. Through thoughtful, informed design and management strategies, it becomes possible to mitigate potential challenges and create spaces where everyone has the opportunity to thrive and flourish.

Historically, building design has been based on neurotypical cognitive profiles with no consideration of information and sensory processing differences experienced by a significant minority. To address this, intentional design and interventions need to be considered and, when made, the whole of society benefits as the adjustments suggested to reduce the impact from sensory overload are helpful to everyone. Conversely, designing environments without due regard for neurocognitive differences is likely to contribute to discomfort and anxiety and over time this impacts on general mental and physical wellbeing.

2.4. Information and sensory processing differences

Information and sensory processing is how information is perceived, processed and organised when received through any of the senses i.e., hearing, sight, smell, touch, taste and movement, interoception and proprioception and vestibular senses as well as connecting to emotional sense and regulation.

Interoception is the perception of sensations from inside the body and includes the perception of physical sensations related to internal organ function such as knowing when you are hungry or full, knowing when you feel tired, knowing when you need to go to the toilet and being aware of your breathing and heartbeat.

Proprioception is the sense that lets you perceive the location, movement and action of parts of the body including awareness of joint position and how you move your body, hand-eye coordination and sensing how much muscle force, tension and effort you are using.

The **vestibular** sense is the sense of balance and posture, registering where you are in relation to the space around you, sensing if you are moving up, down, sideways or spinning and sensing how fast or slow you are moving.

2.5. Sensory overload

Sensory overload is when too much sensory stimulation becomes overwhelming and when sensory overload increases to the point of extreme distress. This is often called a meltdown or shut down in which a person may experience increased anxiety, fatigue or behavioural changes, this may trigger their fight, flight or freeze response, or may become completely unresponsive or may no longer be able to do simple tasks like holding objects, walking or breathing normally. In times of sensory overload or emotional dysregulation, people with sensory processing differences may try self-soothing techniques known as stimming and may seek sensory avoidant spaces.

A **meltdown** is an outward reaction to sensory, emotional or information overload, e.g. screaming or moving the body, whereas a **shutdown** is an internal response, e.g. becoming temporarily non-verbal, becoming more unresponsive than normal.

Quiet/restorative spaces are small, calm, neutral spaces with low sensory stimulation. They can be small quiet rooms in a building or outdoor spaces with natural sounds of the wind and birds, both with some privacy.

For people who have **hyposensitivity, i.e. they are sensory seeking**, it is helpful to provide items that will stimulate the senses. Examples include seating that can rock or spin, different textures to touch, music, a weighted blanket or other methods of applying pressure to the body. Both sensory seeking and sensory avoidant techniques are used to help regulate emotion and control sensory input, so having some of these items within a cupboard in a quiet room will allow people to access them if desired. (See 4.16 Quiet Rooms)

Stimming is normally a repetitive action that can help someone process information and emotions. There are a variety of ways in which stimming can be achieved, from a chair that has a gentle rocking action, pacing where space allows, to the wearing of fidget jewellery, or use of small handheld stimming devices.

Masking is another common term associated with neurodiversity. Masking is figuratively “putting on a mask” and trying to hide some or all of your natural behaviours and responses in an effort to gain greater social acceptance where you may be judged for being your authentic self. Anyone can mask but neurodivergent people tend to mask more to fit in with the neurotypical population to avoid ridicule. This can be extremely taxing emotionally and physically. An example is forcing eye contact where it is not natural for you to do so, resulting in a reduced ability to concentrate on the conversation because the focus is thinking about how much time to look at each eye and remembering to swap focus and look around occasionally to make it seem more natural. If a neurodivergent person unmasked in this scenario and looked away from the speaker so that they can listen properly, they would likely be judged as rude or not paying attention.

2.6. Assistance dogs

There are many types of assistance animals including guide dogs for people with sight loss, hearing dogs for people who are profoundly D/deaf, seizure alert dogs for people with epilepsy and low blood sugar alert dogs for diabetic people. Assistance dogs are classified in the same way as medical equipment, so provision should be made. In many cases larger toilets such as wheelchair accessible WCs will be used so that an owner can be accompanied by their assistance dog. Designated areas for dog spend should also be identified or provided (see 4.18 Assistance dogs).

It is recommended that Estates establish a policy on assistance dogs to cover expectations by the university in respect to the dog’s behaviour. Assistance dogs should remain on the lead, and owners should be made aware that some people have a fear and anxiety being in the vicinity of dogs, and/or allergies or religious beliefs that make it difficult. It is also important to ensure that fire evacuation arrangements have considered how dogs will safely leave the building with their owners.

2.7. Sunflower lanyards

Sunflower lanyards are a registration scheme which serve as an indicator for individuals with non-visible disabilities, which are worn voluntarily to communicate a potential requirement for support or understanding. The lanyards are green with a sunflower pattern

The wearing of a lanyard raises awareness amongst others of the possible need for assistance or adjustments. For university estates teams, it is essential to be aware of the significance of the sunflower lanyard. Some people may choose to wear their lanyard even in an environment where there is no registration scheme, but many universities will have such a scheme running and issue lanyards to staff, students and visitors who need them. Training staff to understand the purpose of sunflower lanyards and providing guidelines on how to assist wearers sensitively and effectively can greatly enhance inclusivity on campus. This may involve offering alternative routes or quieter study areas, guiding during emergencies or crowded events, and fostering a supportive environment where individuals feel comfortable disclosing their needs. Additionally, raising awareness about sunflower lanyards within the university community can promote empathy and understanding among students, faculty, and staff, ultimately contributing to a more inclusive and accessible campus environment.

Not everyone will be willing to wear a sunflower lanyard so staff should be aware that the absence of a lanyard does not mean the absence of any support requirements.

Note: The sunflower lanyard screen is described as being for hidden disabilities, non-visible is however the preferred term by many disabled people.

What is the Hidden Disabilities Sunflower? (hdsunflower.com)

3. Design principles

3.1. Introduction

This section contains an overview of the key principles that should be applied to all buildings and external spaces to eliminate or reduce sensory overload, assist with ease of processing and perception and create a welcoming, calming environment through connecting with nature and natural materials.

Design criteria for neurodiversity can be described as falling under one of three umbrellas:

- **Clarity** – providing a space that feels logical and familiar and is navigable.
- **Control** – giving some control of the environment back to the user, either through adjustments the individual can make or the opportunity for choices, such as choosing to sit in a different area for individual study or to collaborate and socialise.
- **Calm** – that there will always be places of calm, such as quiet rooms or external retreats for people to go to when it all becomes too much.

3.2. Reduction of sensory stimulation

For people with hypersensitivity to one or more of the senses, there are a wide range of features in the built environment that have potential to over stimulate some people, for example:

a. Sounds, either continuous and/or repetitive sounds like extract fans, beeping noises, sound effects from mobile phones and machinery noises, or short intermittent sounds, particularly when unexpected, such as sirens, alarms and objects being dropped.
b. Light and lighting that creates visual “noise” which may be caused by bright light, variation in the intensity of light (including flicker), glare, harsh shadows, or bright colours, patterns with strong contrast, movement, technology or clutter.
c. Buildings that are difficult to navigate and wayfind,
d. Cluttered environments that are not visually balanced;
e. Extreme sensory feedback through smell, touch, taste or temperature such as strong cooking or chemical smells, and unexpected tactile feedback.

The combined effect of lighting, noise and visual stimulation through surface finishes or pictures should be considered as they can cause a bombardment on the senses and consequential distress and overload. Generally, one of the best ways to make an environment better is to reduce unnecessary contributors to sensory overload, particularly over stimulation received visually or aurally. (See section 4)

The availability of quieter spaces, including enclosed quiet rooms and semi-enclosed quieter zones, should be provided as an option to escape if a noisy over-stimulating environment becomes intolerable.

3.3. Time and space to process

Navigating the built environment can be particularly challenging with sensory hypersensitivities, and/or sensory processing differences. Finding the intended space within a building can be difficult without clear indicators and wayfinding cues. Many people with diagnosed divergent conditions experience difficulties in wayfinding and orientation. Sensory overload from busy or cluttered corridors with bright or complex finishes can add to anxiety levels.

Taking the wrong route can be exhausting with wayfinding difficulties so signage and clarity of routes is very important (See section 4.6).

Opportunities to sit or lean along a route are welcome opportunities to pause and rest if needed and this is particularly important for people with anxiety, allowing dwell time to prepare for the destination ahead.

Transitioning between spaces, such as entering a classroom or lecture hall, can also pose challenges without sufficient familiarity or the opportunity to preview the space (on-line or through a window). Moving from a quiet route into a busy, noisy environment can be a shock, and allowing space for preparation and sufficient warning can avoid or reduce the potential for sensory overload. This allows individuals to mentally and emotionally adjust, or prepare for new environments and/or activities.

Designated small quiet/restorative rooms and spaces throughout a building or campus will help people to self-manage the breaks they need. Designing in a variety of different environments that can potentially be used to escape from noisy, busy spaces is helpful. See 4.15 Quiet Rooms.

3.4. Perception

The visual environment has an impact on human comfort and the ability to function within a space. For people with visual hypersensitivity strong patterns and bright lighting can contribute to, fatigue, eyestrain, headaches, nausea, fainting, unsteadiness, and other physiological responses.

Designers should consider the more common phobias listed below that could be triggered by designs within the built environment. When triggered, symptoms may include nausea, increased heart and breathing rate, or a feeling of choking, sweating or agitation/panic attacks can be experienced. Common examples include fear of enclosed spaces (claustrophobia), fear of heights (acrophobia), and a lesser-known fear or reflex action to some irregular patterns (trypophobia) which can be triggered by common finishes such as perforated materials and textures. See PAS6463 for further information.

See sections 4.10 to 4.13

3.5. Logical, predictable spaces

Another key concept for designing spaces within the built environment is logic and the ability to intuitively use spaces. People should be able to enter a building they’ve never been to and be able to work out how to get around intuitively and find the way out again. Familiarity is key here as most buildings have a reception area where it is visible from the entrance, toilet facilities in the same place on every floor, and multiple methods of circulation in a central core.

The location of different types of space and activity within the building at briefing and concept stages should be considered, so that different types of facilities are readily identified early.

An example is how a student’s memory may store the wayfinding information to their room, such as it’s the one with their music poster displayed on the door, situated on the floor level that has a yellow wall, located within the wing that has dark brown hardwood flooring, and within the hall that is at the north of campus) . In this example, their door is the most personalised and their hall is the least. This design strategy allows for better wayfinding and navigation, regardless of a student’s communication or sensory processing ability, allows for easier directions, gives a person the ability to pre-plan their route and improves a student’s ability to get to their room safely even during sensory overload/overwhelm.

A stepped hierarchy of privacy and personalisation allows a person to intuitively begin to process the next space as the difference between spaces is incremental and logical. This is where spaces become smaller and more personalised the further on the journey you go, or alternately, begin smaller and more intimate and gradually progress to a more dramatic spectacle - as often used in theatres or arenas. For example, a journey through a library may begin with a large social atrium with a lot of activity. Continuing on the journey, the spaces become quieter with small breakout areas and group rooms, then lastly, the more intimate individual learning spaces where the user has more control of their environment.

When hierarchies are not planned or achieved, often in the case of buildings where reducing gross internal floor area has taken priority over the logical placement of spaces, it can cause confusion, anxiety and distress. Some people may not be able to understand the placement and can have constant, intrusive thoughts trying to work out *why* something is the way that it is. Hierarchies can be used in combination with unique cues and recognition of place to create a multi-sensory wayfinding and orientation system, ideal in larger buildings that can be organised in clusters such as residential halls or buildings with multiple departments.

Transition spaces and the ability to preview are also interlinked with a stepped hierarchical organisation. Transition spaces include features that help people choose and transition from one space to another. They can include interior design that slowly introduces the first space in increments until reaching the second space and these are ideally planned where there is a significant change of atmosphere.

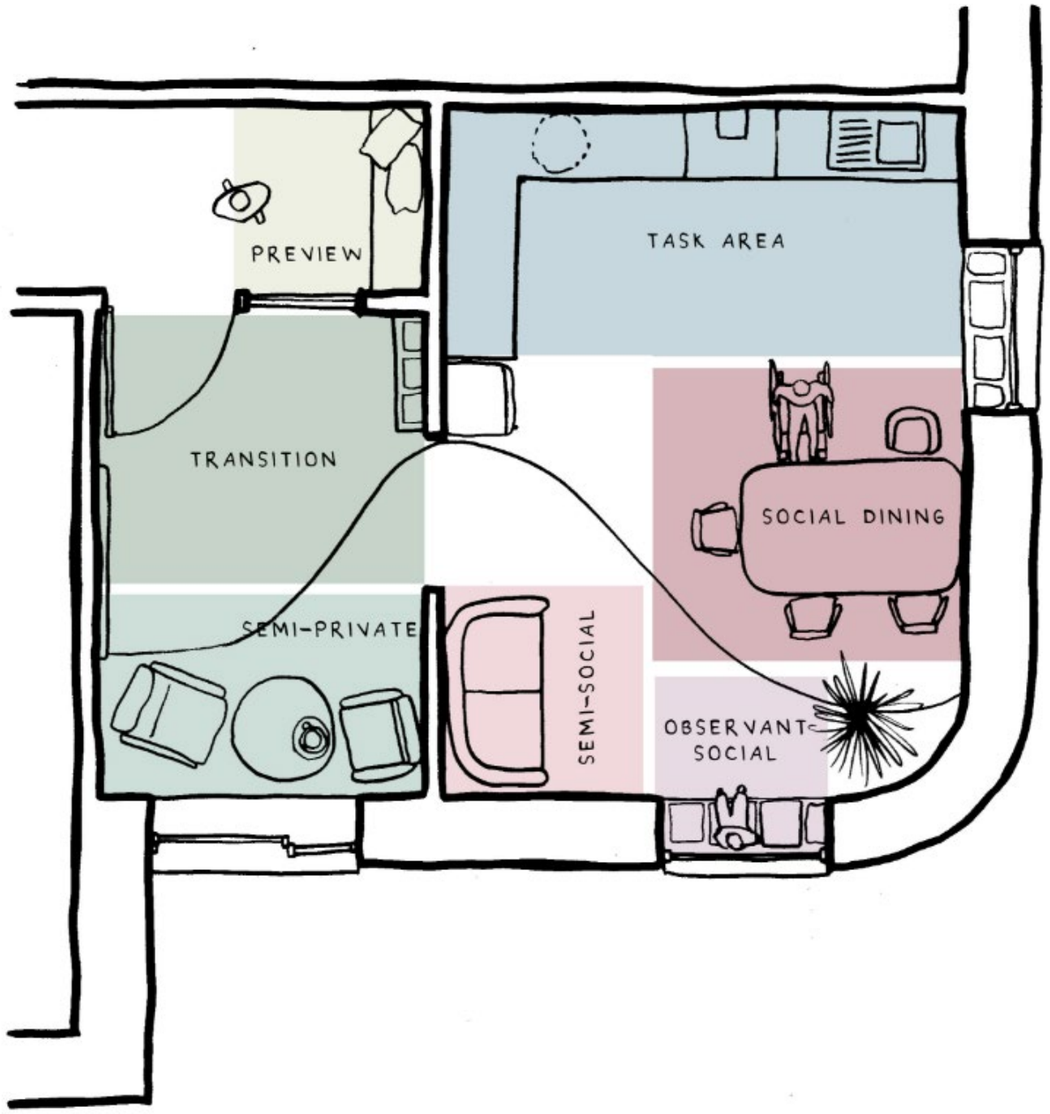
Transition spaces may also contain elements of preview, allowing a person to see into a space before moving into it so they are better prepared and can take a moment to collect themself before moving. Examples include glazed screens, recesses where a corridor meets another space, a quieter place to sit near a busy space with a view of the activity (visual stimulus) without the auditory stimulus or vice versa etc. (See PAS 6463 6.2 for more information on preview).

Many people with neurodivergent traits have anxiety conditions which may be the result or triggered by regular challenges they experience. Where these have been considered and designed out or mitigating interventions made, anxiety can be reduced and wellbeing improved.

3.6. Choice and control

The best way to accommodate the widest range of users is to provide choice. Some people may be hypersensitive where the neurological reaction is high or overwhelming, or hyposensitive where the reaction is very low or underwhelming.

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. Sensitivity may also vary by day, time or activity for the same person.



For this reason, it is helpful for people to have a choice of environment wherever possible, such as where to sit. Most people prefer a familiar place and position within a room, with many people choosing the same seat or desk every time they visit. Some people might choose the same location time after time; this can be habitual but sometimes it is associated with a reduced ability to accommodate change, or there might be a particular feature or orientation of that position which has importance.

For some people, not securing the same position can become very stressful. This can be because the chosen space has a good view of the room and people approaching, or because it is impacted less by glare and/or feels a quieter, less busy position. Layouts that change, such as multi-function spaces, can cause anxiety as the space might not be as remembered (or previewed) and this can be disconcerting.

Provide similar spaces with varying environmental choices. Environment choices can be influenced by many factors, including noise, lighting, glare, density of use, smells, décor, perceived temperature, passage of air and surrounding activity/movement. For example, provide more personal study/ workstations both in areas of light and areas that are darker, provide stations with a view to social activity and also in locations without distractions.

Provide a familiar space with a set layout for most teaching environments, where practicable.

3.7. Connecting with nature

Free independent access to nature and outdoor spaces provides opportunities to escape from overwhelming or busy places and reset. Further details can be found in PAS6463 s 7.2.

Incorporating biophilic design principles inside a building is helpful alongside views of the surrounding environment, nature and culture.

3.8. Patterns, shapes and finishes

Patterns that occur in nature are less intrusive and require less effort to filter out. Avoiding stripes and chequered patterns is helpful, as well as reducing the visual contrast between a pattern and its background. Using natural, flowing forms generally reduces the risk of sensory overload although patterns that might trigger trypophobia should be avoided. (See PAS6463 7.4.).

3.9. Human scale, massing and volumes

When a building is particularly massive or institutional in character, especially compared to the surrounding context, some people need to use more cognitive energy to process and understand what they are seeing, contributing to sensory overload. This can also apply to single elements within a building such as a significantly oversized door.

Buildings should be designed with common scales, to meet expectation and feel familiar.

Where a building is much larger than nearby buildings, designing a human-scale entrance can make the building less daunting.

4. Detailed design considerations

4.1. Site planning and positioning

The arrangement of buildings within a site should be considered to optimise connectivity with amenities and routes and afford good sight lines, avoid glare through large amounts of glazing and offer intuitive wayfinding between and within buildings.

A well-chosen location will offer travel options to users so that preferences can be met. Safety and risk should be strongly considered – how can the building position and orientation best support people who find noisy busy places difficult to navigate?

Access to views of green space helps everyone. Wider pavements as direct routes alongside alternative walkways that suit people seeking a quieter route that distances them from both traffic and other people at peak times are desirable. Alternative routes can be curved and flowing. All routes should offer places for rest and retreat where practicable and be easy and logical to navigate with integrated wayfinding and signage.

A distinctive building shape can make identification of different buildings easier. Orientation and wayfinding should be planned at the outset of a project to ensure that the arrangement of the buildings and their entrances on a site enables people to navigate and orientate themselves easily.

Reception and entrances should be easy to identify from a distance (an entrance canopy can be a helpful indicator) and key amenities such as toilets should be positioned near the point of arrival. Where different routes are needed for emergency evacuation these also need to be logical and easy to identify.

See PAS6463 Sections 5 and 6.

4.2. Envelope and facade

Features that can contribute to sensory overload are:

a. Glare and reflection – consider material choices, shading, heights and angles. A sunlight and glare analysis is recommended where large amounts of glazing is proposed.

b. Strobing or flicker effect from façade design – particular care is needed where there are passing vehicles with headlights,

c. Touchable features that become too hot or cold, such as metals and ceramics during extreme weather conditions

See PAS6463 5.3.2 for mitigating measures

The incorporation of some curved walls, rounded or chamfered corners where practicable, along with natural materials use significantly less mental energy to process. Flowing forms help with transitioning from one space to another and can give improved sightlines which help reduce anxiety before entering an area.

For brick buildings, selecting a brick with a softer, more natural appearance when constructed as a facade, (e.g. a rough cut or handmade, multi-tonal brick in a neutral shade) is significantly easier to process than a bright red or orange, wire cut brick which has a very precise and orthogonal finish.

External green facades can potentially reduce surface temperatures and absorb unwanted sound and are therapeutic to see if well maintained – consider low scented, non-prickly planting with low allergy potential.

See PAS6463 5.3.3

4.3. Windows and glazing

The specification of windows or glazing should consider features that reduce unwanted sounds, solar gain and glare and give views to calming outside spaces.

Glazing allows a view from one area to another which can be helpful for transitioning between two spaces, but in some cases can be distracting to learners. Blinds or curtains should be provided internally for individual control, avoid styles that might allow some slithers of light through, such as Venetian. (Sometimes higher-level windows are beneficial in allowing daylight in without significant glare or a need for window coverings).

Full height glazing or windows that have a sill height at a minimum 380mm above floor level or with opaque manifestation band will not be confused for an opening and will give some benefit to people with balance conditions (or vertigo if on higher floors).

See PAS6463 5.5

4.4. Access to nature

Outdoor spaces should provide areas for collaboration and others for quiet reflection – a mix of larger open areas and smaller semi enclosed spaces are recommended. Where space allows, provide opportunities for shelter and shade, and places to rest with a mix of seating or be active.

Further considerations are:

a. Consider if dog relief areas for assistance dogs are needed.

b. Can unique identifiers be introduced to help with orientation and wayfinding? Sculptures, fountains, unusual planting (providing this is consistent across the seasons) can all help.

c. Can quieter spaces be provided away from noisy activities such as sports, and background noise such as air-handling plant or vehicles .

d. Opportunities to connect with nature, such as hands-on involvement with planting or care of plants is helpful to mental and physical wellbeing. Ensure planting is not toxic or prickly. Heavily scented plants such as lavender, rosemary or thyme can be overwhelming so are best placed in areas where people pass through but do not dwell (this includes not placing them beneath windows where the scent can enter the building). Cut back plants regularly to ensure safe walkways are maintained and branches are not creaking or scratching nearby structures or buildings.

See PAS6463 7.2 and" Mental health and town planning: Building in resilience" (RTPI, 2020) for further reading.

4.5. Entering the building

Entrance canopies or lobbies can, where space allows, give the opportunity to pause before entering or leaving. Avoid materials that create a lot of glare, reflection or noise when it rains (such as polycarbonate). See PAS6463 5.3.2.

Avoid entrance and weather mats that contrast from the floor finish and ensure the metal bars in the mats in matwells are procured to blend with the tufted material as the striped effect can trigger epilepsy. See PAS6463 12.4

4.6. Wayfinding

Wayfinding, including navigation and orientation, can be challenging for many due to neurocognitive differences relating to information and sequential processing, number and word identification, placing greater dependence on other visual cues, such as symbols and colours. A multi-sensory layered approach to wayfinding is therefore helpful, with visual, audible and tactile information and the inclusion of appropriate, well recognised symbols on signage. A good wayfinding approach takes time to develop and stakeholder engagement from a variety of users to test assumptions is recommended.

Signage is a key aspect of wayfinding but should be supported by other wayfinding cues. Having some unique identifiers for each floor or building makes navigation easier for many people. Features or signs that draw upon at least two of the senses are beneficial.

For some people concentrating on navigation can be difficult due to the difficulty filtering out unwanted stimuli such as noise, crowds or eye contact. Making some elements of a building unique to that location can help. Such features (the classic example in a busy station is a very large clock), should exist alongside a comprehensive multi modal wayfinding system and clear wayfinding nodes.

In the example of a university, it may be that each block of a hall of residence has something unique in appearance or design style, so that students moving in on their first day can better navigate and feel an immediate sense of inclusion, connection and recognition of place within their block. This may be as simple as a prominent section of bright wall colour as you enter each building or every floor, or a statue or piece of artwork.

Additionally, a person receiving navigation instructions may find it easier to follow if they know they are aiming for, e.g., "the blue stair behind the horse statue". This helps people who find processing, remembering or following verbal instructions difficult and helps people with proprioception differences to navigate more easily.

Each element should have more than one unique identifier to enable as many people as possible to wayfind, as not everyone will be able to process just one identifier. A person with deuteranopia (red-green) colour vision deficiency (commonly known as colour-blindness) or due to a sight condition may only see monochromatically. Having a unique identifier additionally encourages independence when visiting the building for the second time.

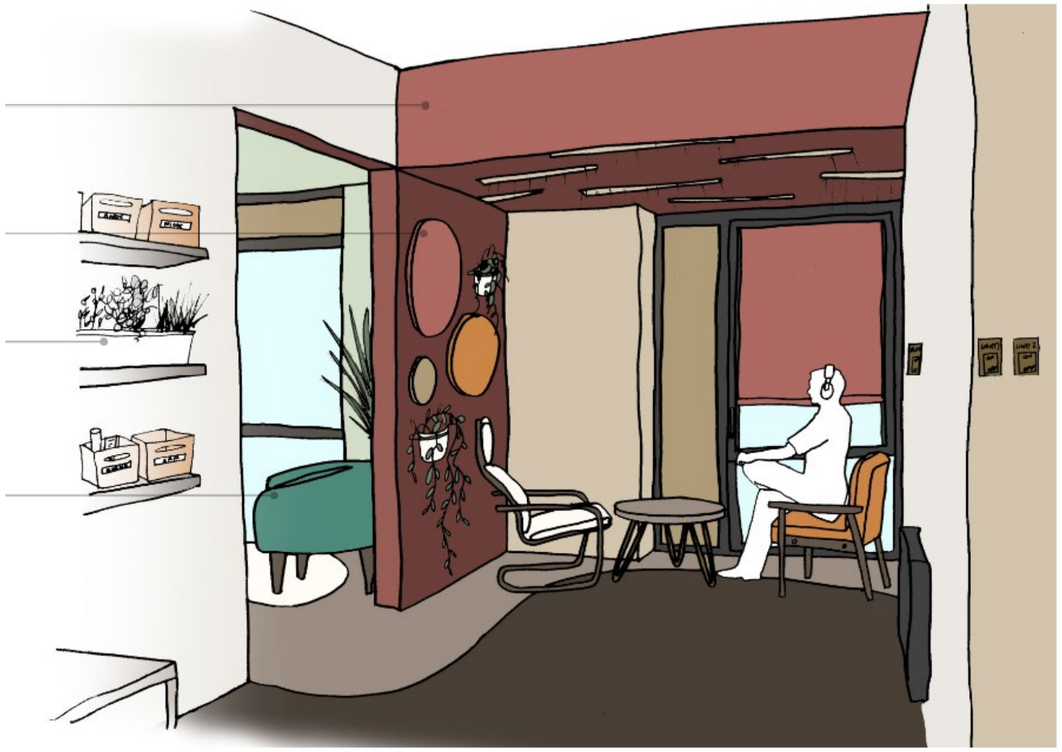
In addition to the importance of appropriate lighting (see PAS6463 11.12) and the opportunity to preview from corridors and transition spaces, other wayfinding considerations are:

a. English is unlikely to be the first language for many students and staff members. Consistent use of symbols can help people to grasp signage content quickly. (See PAS6463 Annex C).

b. Colour coding can be helpful but should not be the only way to differentiate and interpret meaning, as not everyone will see colour in the same way (10% of the male population have colour vision deficiency, often referred to as “colour blind”).

c. Some neurodivergent people routinely look down at the floor to avoid unwanted sensory feedback from the environment they are in. Wayfinding information on the floor such as arrows or a line can therefore be beneficial but it must always be subtle and supplementary to information provided on walls. Tactile information on the floor, which may be helpful for people with sight loss conditions, should only be considered after careful stakeholder engagement – there is no recognised floor tactile in the UK for wayfinding that has been agreed at the current time and it could present a trip hazard or discomfort to users.

d. Consistent location of key facilities such as toilets is helpful, alongside signage that has embossed text and internationally recognised symbols. (See PAS6463 Annex C for recommended symbols).



EXAMPLE OF A TRANSITION SPACE WITH VARIATION OF CEILING HEIGHT TO CONCEAL MVHR UNITS

Note: In environments where members of the public will visit regularly with specific conditions such as Parkinson’s or dementia, such as may be the case for medical assessments, it is helpful to follow additional guidance relating to dementia and design. For example, red flooring may be perceived as hot lava or blue floors can be perceived as water.

Consistently using the same style of sign through the campus is recommended and this can be a challenge when buildings are added or refurbished over time – having a consistent colour coding at least is recommended to prevent attentional bias occurring where users miss signs as they are looking for a particular colour or style. Modular signs can be very cost effective as they allow for easy changes to part of a sign(e.g. during reconfiguration or renaming of areas).

a. Consistency of sign position is helpful (e.g. at the same centreline or height to the top edge).

b. Keep signs separate from other wall displays where possible, to avoid sensory overload.

c. Whilst colour coding of floors, etc. may be helpful, avoid signs that present multiple colours.

d. People who struggle with wayfinding find confirmatory signs helpful on longer routes and these may need to be more frequent on complex routes.

Auditory signage such as talking signs can be helpful to people with visual impairments but should be triggered on demand, typically by a user’s SMART device, rather than making announcements to everyone who passes. Where technology is used as part of the wayfinding system, there should always be fixed non-digital information too.

Further reading: PAS6463 section 6 for specific guidance on neurodiversity and wayfinding.

For more information on general wayfinding, see Sport England’s AISF Guide Part E.

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4.7. Size, space and circulation

Space and layouts are a key consideration for areas that may feel uncomfortably large, too small , or cluttered as they do not allow for variation in personal and social space preferences (proxemics). These may also increase the likelihood of people injuring themselves on fixtures due to proprioception skills or balance conditions.

Design considerations include:

a. Clear layouts that offer predictability;

b. Opportunities to preview before entering a space (such as glazing or a photograph or floor plan on the wall outside), or splayed corners that allow a better view when approaching;

c. Allowing for variations in expected footfall, and alternative routes that may give a less busy option;

d. Avoiding long narrow corridors with poor sight lines;

e. Creating places in corridors to pause or step out of the flow, such as recesses;

f. Transition areas between different spaces, for example before entering a large atrium or lecture theatre – finishes can help to create the “journey” such as gradual changes in colour and light levels between two very different areas;

g. Suitable acoustics for the type and density of use;

h. Avoiding disproportionately high ceilings in very small spaces.

For particularly large spaces, it can be helpful to create smaller pockets that are semi-enclosed (such as with a cluster of high back seating or an open sided seating pod) to make the area less daunting. However, services such as lighting, power sockets, etc., will need to have the flexibility to allow for this to happen easily and be adjusted for different scenarios and use types. Having some seating that is at the edges of a space is helpful to allow people to sit where their backs are not to an activity. A variation in ceiling height can also create different zones that feel less intimidating. See PAS6463 8.2.1 for size and layout and 4.13 Furniture.

Buildings that are designed with a hierarchical organisation of scale and personalisation, so that spaces become smaller and more personalised the further on the journey into a facility that you go can feel logical. For example, a journey through a library may begin with a large social atrium with a lot of activity. Continuing on the journey, the spaces become quieter with small breakout areas and group rooms, then lastly, lead to the more intimate individual learning spaces where the user has more control of their environment.

See PAS6463 5.2.2 and 8.2.1.

The use of stairs can be an issue where very strongly contrasting nosings are provided as these can give too much visual stimulation through the presence of a strong striped effect. It is possible to achieve good visual contrast without choosing bright nosings. Equally multiple posters and images on side walls of stairs can cause overwhelm.

Some people may choose or need to use a lift, but consideration to personal space allowances can be a primary consideration for user comfort and the prevention of anxiety. Larger lift sizes, for example, are helpful by potentially meeting the larger proxemic space needs of different people. Fully glazed lifts are an issue for people with vestibular conditions and should therefore have frosted or solid manifestation applied to the lower part of the glazing.

In confined spaces such as lift cars, non-reflective, neutral finishes should be selected, (e.g. brushed steel rather than shiny, and no vivid colours). Passenger lifts should always have a mirror on the upper half of the rear wall of the lift car only, to avoid confusion.

See PAS 6462 12.1 and 12.6.2 for more on lifts.

4.8. Doors

Clarity of how doors operate is important. Revolving doors can be more difficult to use safely and without anxiety due to proximity and spatial awareness. Larger openings are preferred. Door furniture such as handles and locks should be easy to understand and use, an example is not fitting pull handles to the push side of a door and using manifestation to clearly differentiate between fixed panes and sliding doors in a glazed structure.

4.9. Acoustics

Noise can have a negative physiological and psychological impact. Whilst most neurotypical people can adjust to a reasonable variation in noise levels, this can be much harder for neurodivergent individuals if they experience hypersensitivity to sound, and they will benefit from acoustic zoning that offers places with different sound control measures.

Sudden loud noises can trigger vestibular and tinnitus challenges, but constant background noise can also be disturbing for some, and repetitive quieter sounds can be intolerable for others.

Challenges can be continuous noise, intermittent noise, unexpected noise, high volume noise, and/or specific frequencies of noise, including softer sounds such as a continuous hum, a ticking clock or a dripping tap (as is often the case for someone with Misophonia).

Acoustic design is a critical consideration, covering everything from locating noisy plant equipment further away from learning and quiet space, to selecting finishes and materials with acoustic absorption or isolation properties. It is recommended that an acoustic consultant be appointed at the earliest stage to develop a specialised acoustic strategy.

Control or removal of unwanted sounds is one of the biggest challenges affecting people and can have the most significant impact on physiological and psychological wellbeing.

Individual control for noise should be considered, including:

a. the ability to switch a fan on or off in spaces designed for individual use.
b. the option to close a window or ventilator panel when noise comes from the street.
c. the option to use a variety of spaces including access to a quiet room.
d. the option to choose the level of noise (e.g. between using paper towels and hand dryers).

Investment in appropriate acoustic performance is critical to the learning process and will therefore need to consider the design of layouts and appropriate zoning, general background noise reduction and specific room acoustic interventions. These areas are explored in further detail in PAS6463 Section 10. A table of recommended acoustic values for rooms is provided in PAS6463 Table 2.

4.10. Light and lighting

Appropriate lighting is essential for everyone, but critical for people with sensory/neurological processing differences. The quality of light, whether daylight or artificial, can create a stimulating and exciting space, one that is easier to navigate and/or contribute to a welcoming and calming ambience.

Allowing some adjustability where people may need to dwell for long periods, such as during study, is helpful in ensuring people's individual's needs can be met. For example, a combination of ceiling or wall lights, provision of desk/floor task lamps, blinds, dimmers can be empowering and give some control back to individual users which can often make the environment tolerable and avoid sensory overload.

People who experience visual hypersensitivity are often extremely affected by the presence of any perceptible flicker, or lighting that is too bright, or poorly positioned such that glare and reflection occurs and can be quickly overwhelming and trigger sensory overload or shut down. Tolerance for daylight is generally much higher than for artificial light sources.

LED is extensively used for environmental reasons but is susceptible to flicker if not designed with care. A specialist lighting consultant/designer is likely to be required to ensure that the lighting is appropriate for each setting and to ensure specified light sources have compatible driver technology for the luminaires selected.

A solar shading strategy should be considered together with the types of light used from concept design stage to avoid glare and distraction. These key design considerations should be developed in consultation with user groups.

The lighting strategy should consider how artificial lighting will function on bright summer days as well as during the winter months when there are fewer daylight hours to properly illuminate spaces and assist with the body's natural processes such as melatonin production, serotonin production and the circadian rhythm.

The following are key considerations:

- Design of external features such as brise soleil for any expanses of glazing to prevent strong sunlight, glare and shadow to enter the building.
- Avoid direct lighting where people could look directly at the light source – this can be achieved through use of shades, diffusers, or by recessing sufficiently.
- Avoid over specifying illuminance levels for the intended activities.
- Do not use surface mounted spot lamps unless angled away from any direct view;
- Ensure the gaps between light fittings for ambient light are correct to provide even light coverage (not pools of light and shade).
- Where sensors are used, these should fade in and out gently with a fade in/ out timing of 10 seconds minimum.
- When planning sensor lighting, consider activities that place the user at risk, such as within laboratories, at tea points, or in accessible toilets where someone could be plunged into darkness if insufficient movement is detected. Thermal detectors are safer than movement in these areas.
- Consider the colour temperature of lamps. In most environments 3000-4000 kelvins is used. Warmer colour temperatures 3000 kelvins and below are less stimulating and recommended for environments that should be calming – for example quiet rooms and bedrooms in halls, with the ability to add a desk lamp if required.
- Illumination ratios should be considered for adjacent areas, so that there is not a drastic change in level but a transitionary zone; (see PAS6463 11.11).
- Strong shadows should be avoided.

Lighting and visual contrast work together to create spaces that are easier to navigate. Where contrast is high between key surfaces, a lower level of lighting may suffice (subject to user testing). Where the contrast is lower between surfaces, or an area is complex with some hazards (such as level changes), then brighter lighting will usually improve safety.

Further reading: PAS6463 section 11.

BS EN 12464-1 and BS EN 12464-2 are the standards for further technical information on indoor and outdoor lighting, and reference should be made to BS EN 17037 and BS 5489 for more information on daylighting.

4.11. Visual noise, patterns and glare

Flicker and visual movement from lighting and features in the built environment are a common cause of visual disturbance, discomfort and eyestrain and likely triggers for headaches and migraines. Often the flicker of a light or movement through or past patterned features can create a strobing effect that can have a detrimental effect on people with photosensitive epilepsy (even if the individual has not consciously seen this).

Avoid features or fixings that can create flashing or changing light and shade effects, features that allow slithers of bright sunshine or strong lighting through such as venetian blinds or railings and other linear features that overlap one another and can cause a flicker or optical effect as people pass them. See PAS6463 12.4 Note 2.

Very careful consideration should be given to areas that people cannot avoid and where they may need to remain for some time. In these locations, it is important to make sure finishes are not too vivid in colour, multi-coloured or contain dominant highly contrasting patterns such as stripes, or checks, or details that cause unintended movement in the visual field. Examples include light coloured timber battens on a darker acoustic backing material.

Visual clarity and consistent use of colour will help to create an environment that feels comfortable. Keep strong vivid contrast for key features only and avoid bold patterns, particularly at dwell points. Biophilic patterns and muted colours are recommended (but muted should not be interpreted as neutral, any bright colour can be muted with a little black added).

Blinds or curtains to windows or internal areas of glazing should be considered. Venetian blinds should be avoided as they tend to let slithers of bright light through at the edges or when partially closed. In some areas, it is helpful to consider ways in which unwanted glare, or privacy, can be achieved to a variable level. For example, in areas of personalisation such as smaller group or individual rooms, two or more levels of control can be helpful, the first to diffuse light and afford some privacy, and the second option offering complete privacy and full window blackout, such as:

a. A double-blind with a semi transparent and a black out roller blind;
b. Manifestation film plus a roller blind or curtain,
c. A voile or net curtain, plus a heavier blind or curtain;

See PAS6463 5.5.1 Window treatments

It can be difficult to achieve the right balance in shared facilities such as classrooms, but manifestation at lower levels of glazing can help to prevent constant distractions of people moving by outside.

Restorative spaces such as quiet rooms should be particularly calming in choice of colours, use of patterns, and the control of privacy, glare and lighting.

4.12. Artwork

Artwork can act as unique identifiers or cues to support easier wayfinding and orientation. Artwork displays can also provide an opportunity to introduce images that are calming, (such as images of outdoor natural environments) but specific care should be taken to avoid:

a. Any images that might cause negative reactions. Examples of common phobias include trypophobia, spiders, clowns, snakes etc..
b. Pictures that can be perceived as a building feature, such as a doorway or steps if life size.
c. Images that contain vivid colours or strong linear patterns which could overstimulate (these can be used but in places that people can avoid).
d. Stakeholder engagement on the artwork strategy for a new facility is recommended.

See PAS6463 14.1.10

4.13. Finishes

Finishes can contribute to well-being or anxiety and sensory overload. Key considerations are:

- **a.** Acoustic properties to reduce unwanted sounds;
- **b.** Selecting fractal patterns that occur in nature rather than linear or blocks;
- **c.** Careful consideration given to use and orientation of patterned floor or wall tiles;
- **d.** Minimal use of reflective surfaces – choose low sheen or matt;
- **e.** Consistent flooring colour floors throughout each space;
- **f.** Changes in floor colour should be at door thresholds and not mid floor (or a graduated change introduced;
- **g.** Use of natural materials, or natural looking, such as wood effect, is encouraged;
- **h.** Finishes or materials that give a connection with the local environment or nature can be helpful (see PAS6463 7.4);
- **i.** Choose materials with low VOC's– as odours and scents can be overwhelming;
- **j.** Walls may be touched by sensory seeking individuals or to aid wayfinding so easy clean surfaces are helpful.
- **k.** Avoidance of vivid colours – use muted colours and not too many;
- **l.** Large expanses of brilliant white on walls can overwhelm;
- **m.** Muted colours should particularly be used on walls behind screens or the lecture positions, (occasional vivid colours in places which people can easily avoid or can sit with their back to them may be acceptable but large areas of bright red should be avoided).

See PAS6463 Section 12 Surface Finishes.

Visual contrast between key surfaces is helpful to visually impaired people and adds clarity – this should meet national guidance. Refer to BS 8300-2, Clause 12 and Annex B for guidance on visual contrast and light reflectance values.

4.14. Furniture

Places to rest or dwell are helpful to allow someone to rest or prepare themselves for entering a new place or different environment (such as one that is noisier, busier or brighter).

Providing places where people can sit just outside a busy area are particularly helpful. Seats that wrap or have high backs can provide a place of prospect and refuge, helping people to assess and reset before continuing their journey through a building. See also 4.17 Size Space and Circulation.

Some people may find that they are unable to use an enclosed focus pod unless it has glazing with a view out, due to their personal proxemic requirements (see PAS6463 5.2.2).

Avoid fabrics on seating that feel harsh or rough as they cause discomfort. Softer fabrics and textiles are preferable. Furniture that is soft to the touch and use of natural materials, such as timber, with rounded corners, can be therapeutic and calming and reduce the likelihood of accidental injury when bumping into them.

For more on seating mix and dimensions, see BS8300-2.

When choosing textiles for seating drapes or other finishes, see 4.11 Finishes in this document, and PAS6463 sections 7.4 and 13.5.

Suitable healthy plants indoors can be beneficial, but these should be placed in a structured way and not contribute to the feel of a cluttered or disorderly environment. The placement of integrated planting into furniture and other features, or designated planters can be helpful. Choose plants that are suitable to touch safely without risk of harm and low allergy.

See PAS6463 5.3 and 14.1.10

Further general reading: PAS6463 section 13

4.15. Fixtures and fittings

Fixtures and fittings, (including freestanding items placed in the environment, such as coffee machines or hand sanitizers), should be intuitive to use and easy to operate, typically with one hand and easy to grip.

Selecting electrical products that have low noise ratings and ensuring that cupboards and lids are soft close is helpful and particularly important in sleeping accommodation. For example, the hum of a fridge cutting in and out can be intolerable for some people whilst studying or trying to sleep.

Quiet Mark is an independent global certification programme associated with the UK Noise Abatement Society charitable foundation which certifies quiet products. **Quiet Mark**

See PAS6463 Section 13 for further guidance.

4.16. Quiet rooms for restoration and recovery

A quiet room that provides a place to recover from sensory overstimulation is an important facility for self-management. A quiet room is not for multiple people to use but a dedicated small space for someone to go on a reactive basis. Opportunities to include rooms for this purpose should be taken whenever opportunities arise, so that people do not have to travel far to reach one.

A designated quiet room, purposefully designed for that purpose, is always in addition to quieter floors, focused study spaces and adhoc places that offer opportunities for prospect and refuge as you move through a building or external space.

The location and prominence of quiet rooms can be very important in universities which often have vast campuses and multiple buildings. For this reason, signage should include quiet spaces in the same way as they would be expected to include other important ancillary spaces such as toilets and faith rooms. Awareness and familiarity can be important so opportunities to provide quiet rooms in consistent places across different buildings will be helpful, where possible.

In most cases, it is unwise for a quiet room to serve other purposes, such as faith, as there is likely to be a conflict in demand and user needs. A quiet room can contain some items that are stimulating, to support people with a mix of hyper and hypo sensitivity, but such items should be concealed in a cupboard and returned here after use. There are management considerations when providing a quiet room, to ensure it is not used for other purposes or left untidy.

PAS6463 14.1 contains comprehensive guidance on how to create quiet rooms, and there is a checklist in PAS6463 Annex B which includes management considerations.

4.17. Sanitary and welfare

Many people have strong preferences for specific types or features within toilet accommodation.

A mix of provision including some self-contained toilet rooms where an individual has some control, (in particular from the sudden noise from hand driers used by others), can be helpful. Others may fear enclosed spaces and would prefer the larger environment of a male or female cluster with cubicles that don't have full height doors.

Considerations include:

- If hand-driers are installed, these should be the low noise type (such as models certified by Quiet Mark) and not positioned in locations where they are likely to be triggered unexpectedly.
- People with vestibular conditions can benefit from grab rails and an emergency cord for support so may choose to use the accessible provision for this reason.
- Many people have a hyper-sensitive sense of smell (olfaction), therefore adequate ventilation and avoidance of scented cleaning or air fresheners is important.
- Finishes in small, confined spaces become even more important. Tiling with a contrasting grout colour can be visually disturbing and highly reflective finishes should also be avoided. See also 4.12 Finishes and PAS6463 section 12.4.

It should be noted that whilst many of the sensory differences experienced will be lifelong, there are also times when neurodivergent and neurotypical individuals may experience changes – an example would be during hormonal changes associated with menstrual, menopausal or pregnancy or during gender transitioning. At these times, sensitivity and symptoms can increase and the sanitary and welfare accommodation, including toilets and quiet rooms, become critical to self-management of symptoms.

BS30416 2023 contains helpful guidance on Menstruation, menstrual health and menopause in the workplace which is very applicable to staff and students in university settings. The guide is free to download.

BS 30416:2023 Menstruation, Menstrual Health, Menopause | BSI (bsigroup.com)

4.18. Assistance dogs

Sometimes a person with a neurodivergent trait will have a trained assistance dog for reassurance or to alert them to danger, such as the onset of a diabetic or epileptic event.

For information on accommodating assistance dogs, including dog relief areas, see Sport England's AISF Guide Part B Section 5.10.

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4.19. Sleeping accommodation

University sleeping accommodation, such as halls of residence and student housing, should provide environments that offer the flexibility for students to make easy, modest and non-intrusive adjustments to meet their needs.

Acoustics are a particularly important consideration. See Table 2 of PAS 6463 for recommended values. For low allergy and easy maintenance and cleaning, vinyl or wood effect flooring will be easy to keep clean but allows students to tailor with a rug if wished. Any flooring should have appropriate acoustic backing to prevent transmission to levels below.

Potential for VOC's and offgassing need to be considered when specifying and installing flooring and wall panelling, (resulting from use of some adhesives, floor levelling compounds, finishing of hardwood floors, as well as some carpet products).

Where appliances need to be provided within the student's sleeping area (e.g. a small fridge for medical supplies), careful thought should be given to specifying Quiet Mark accredited products so that sleep and quiet study is not disturbed.

Décor and colour schemes should be muted rather than bright, with limited use of patterns, giving a calming environment. If wished, stimulating colours and patterns can be introduced by the occupant through choice of bedding, cushions and accessories.

The ability to add freestanding lamps that offer colour temperature and variable brightness can be helpful on desks and at the bedside but rely on a safe surface for a task lamp and a nearby socket. Overhead lighting should ideally allow dimming and windows should have effective black out curtains or blinds so that sleep is not disturbed by daylight entering the room.

4.20. Emergency evacuation

When people have hypersensitivity through the senses, the combination of a loud fire alarm, flashing beacon and flurry of people moving in a single direction can be overwhelming. Coupled with the potential difficulty of navigating a different route to normal, there is significant potential for this to contribute to anxiety. In some cases, this may result in panic or a shutdown that prevents someone from communicating or moving. See PAS6463 14.5 Emergency Evacuation.

Universities should already have in place robust fire safety arrangements in place that includes Personal Emergency Evacuation Plans (PEEPs) for known individuals using the building (such as students and staff) as well as Generic Evacuation Plans (GEEPs) that anticipate the needs of other building users where there is little opportunity or a detailed plan (such as visitors).

PEEPs and GEEPs should cater for all types of additional or different evacuation requirements, including physical disabilities, temporary impairments due to injury, illness or pregnancy, and also take into account cognitive, learning and neurological differences that may result in individuals needing support.

For further information on developing PEEPs and GEEPs, see Sport England's AISF Guide Part F "Emergency Evacuation" and Table F2.

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