AUDE Neurodiversity Toolkit

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Neurodiversity

Design and management guide for Higher Education environments

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Neurodiverse Inclusive Design

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Neurotypical	Approx 80% of the population
Neurodivergent	Autism, ADHD, Dyspraxia
Neurodegenerative	Alzheimer’s, Parkinson’s

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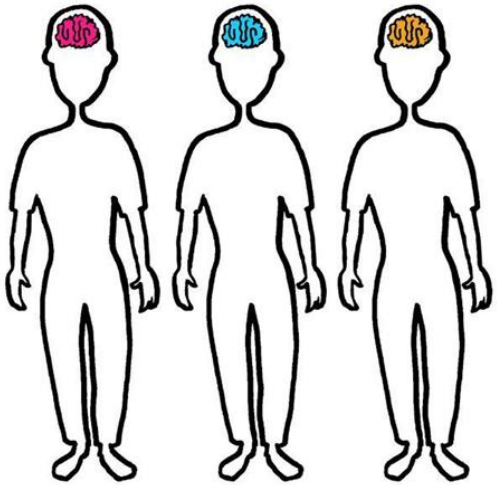
NEURODIVERSE



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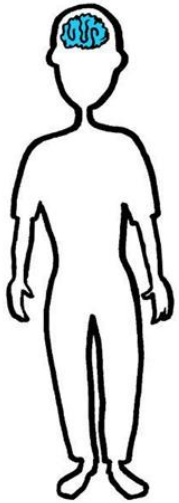

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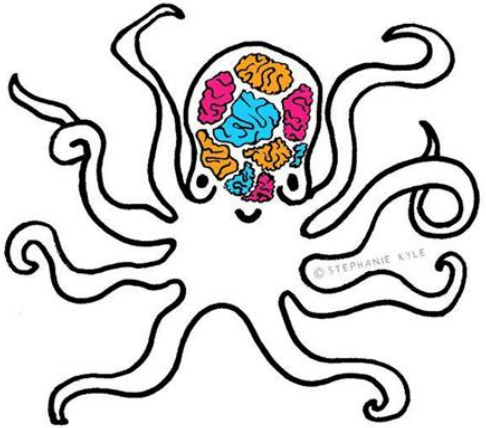

AN OCTOPUS WITH NINE BRAINS COULD BE NEURODIVERSE.

A PERSON WITH ONLY ONE BRAIN IS NEURODIVERGENT.

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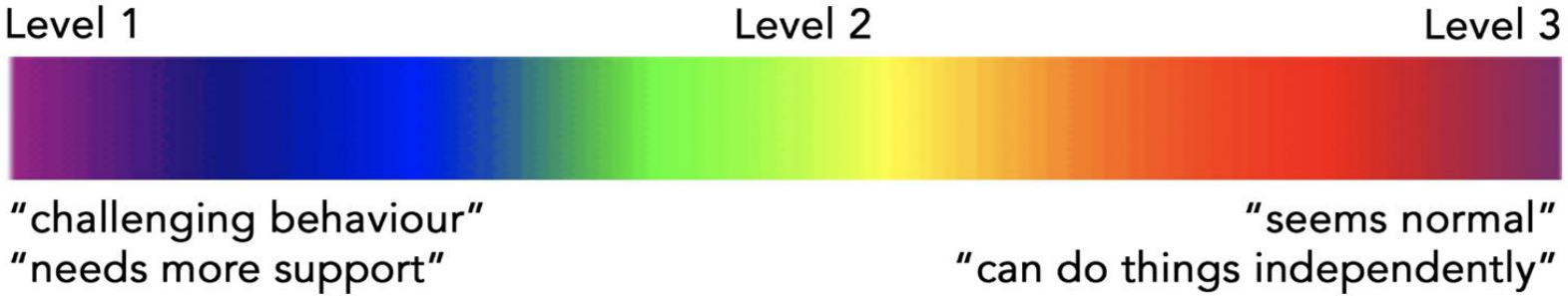
Neurodivergence is a spectrum



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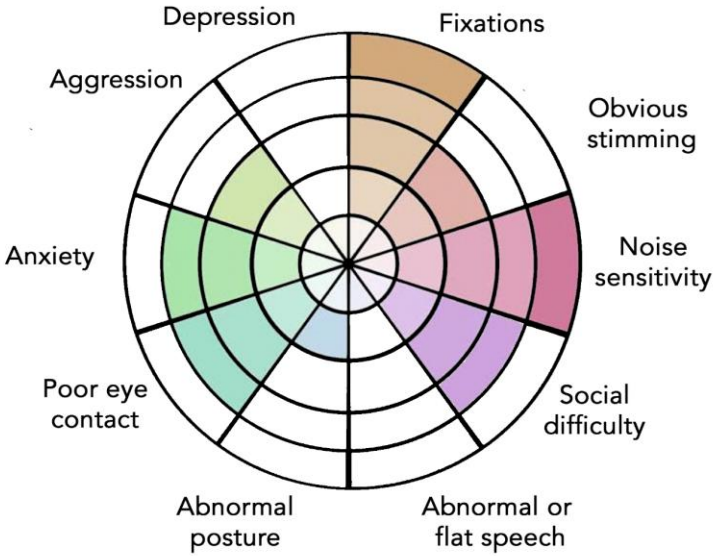
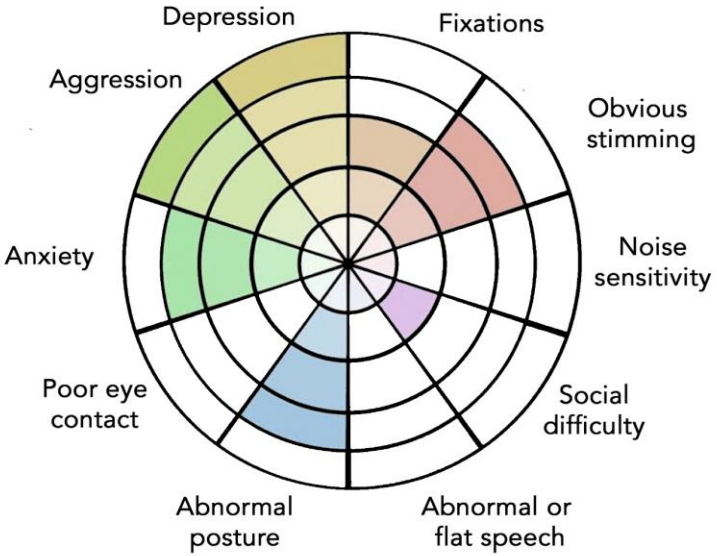
Neurodivergence is a spectrum





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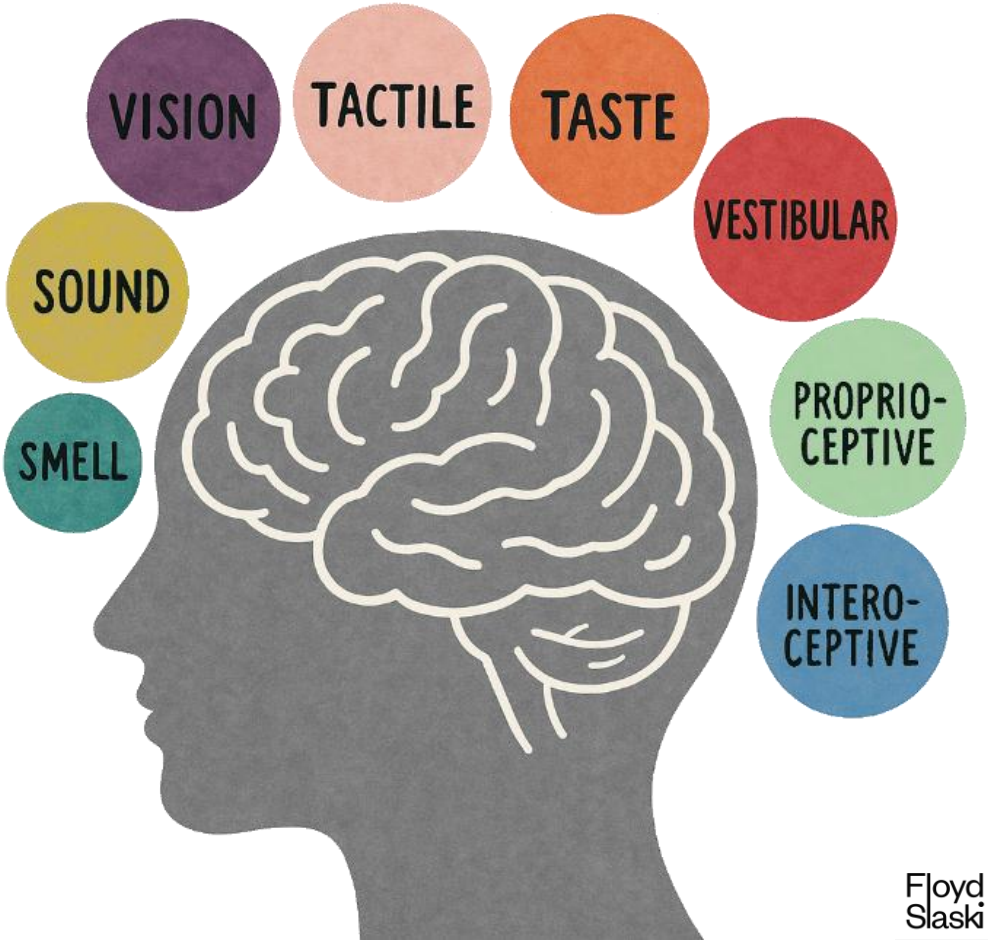
Sensory Processing

Sensory processing is how information is perceived, processed and organised when received through the senses i.e., hearing, sight, smell, touch, taste and movement. To have a sensory processing difference, is to react through the senses in a different way to the majority



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Original Project:
University of Nottingham

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Original Project

Client: University of Nottingham

1. Internal CPD workshop on Neurodiversity for estates teams and decision makers
2. Neurodiversity Design Guide to be used as part of ER's
3. Checklist of action items at each RIBA work stage for both the client and the design team
4. Review of existing hubs for accessibility
5. Building specific design guides with renders and examples
    a. Residential Spaces
    b. Teaching and Learning Spaces
    c. Working and Office Spaces
    d. Catering Spaces
6. Video flythrough using Twin Motion to simulate the effects of sensory overload.

Smart devices and appliances should be utilised (not just smart lights) as many smartphone accessibility features enable students to use voice controls and other assistive technology to operate smart devices.

Where possible, a **visual connection to nature** should be achieved through careful landscape design and planning of the building fenestration to orient bedroom windows towards desirable views.

There should be a large area, or multiple smaller areas, inside the room which **allows students to personalise their space.** For some students, comfort can be found in the personalisation of the environment. This can be achieved by specifying wall surfaces that are suitable for the use of Blu Tack or zero-damage picture hanging strips, and by **providing large areas of pinboard, shelves, and picture rails etc.**

Providing a personalisable space **directly in front of the bed such as a whiteboard and pinboard** or ferrous plaster (for use with magnets) can be a prompt for important things such as to take medication or reminders of upcoming events. Additionally, students who have more anxiety when alone at night may benefit from being able to keep comfort items and photos close.

There should be a **clear route** from the front door to the window at least 1000mm wide, but it is strongly recommended to increase this further. This helps to make sure the bedroom is visitable by ambulant disabled visitors, but most importantly, provides space for the student.

Maximising the space available between furniture will give neurodivergent students **space to pace and stim,** and gives students with hidden disabilities (that may not require a fully accessible room) more space to perform **physiotherapy exercises or other activities to help them manage their condition.**

Standard En-suite Bedroom Summary

1. Non-white walls, suitable for the use of blue tack
2. Muted/de-saturated feature colours
3. Variation in ceiling height to create transitions and hide MEP equipment
4. Using finishes to define spaces/zones
5. Dark skirting board to help with spatial perception
6. Individually controlled smart lighting with dimming and colour tone options
7. Clearly labelled switches
8. Wall washing lights to avoid glare
9. Additional acoustic absorption
10. Acoustic pinboard for personalisation
11. Using natural geometries where possible
12. Storage for visible clutter above eye-level
13. Integrated shelf for phone, medications and other essentials
14. Storage with multiple divisions to help students organise "doom piles"
15. Storage under bed
16. Separate, visible laundry baskets to help manage "floordrobes"/ "chairdrobes"
17. Dense fibre carpet planks with acoustic underlay and similar frictional properties and height to the vinyl floor
18. Window with purge ventilation
19. Views to nature
20. Black out blind, roller style
21. Perimeter strips to prevent light seeping in
22. Task lighting
23. A second privacy blind, roller or curtain, to diffuse light (5-7% transmittance)
24. Magnetic whiteboard
25. Non-reflective brassware and handles

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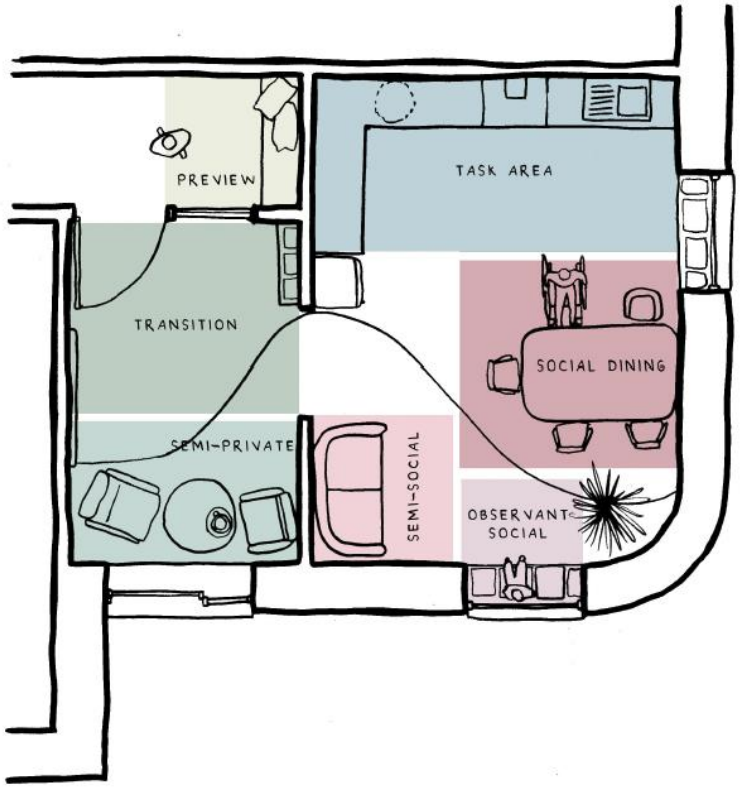
Every element of a shared area **does not need to be fully accessible, but should utilise accessible choices** where there is minimal cost difference e.g. selecting H or D-shaped handles for cupboards and drawers instead of knobs which are harder to operate.

Including accessible elements like a pull-out counter at a lower height and choosing easily operable switches and controls will **accommodate a lot of temporary difficulties** that a student may encounter, for example if they break a foot or wrist halfway through the semester.

There should be a **1000mm wide clear route** from the entrance door of the shared area to the furthest window.

There should be a **differentiation between spaces** such as a living space (relaxation) and a kitchen space (preparation) to **help students with zoning.** This can be through finishes, the inclusion of a rug, a lowered ceiling height or a difference in lighting conditions.

If possible, shared areas should be designed to **incorporate a range of spaces with different atmospheres, and levels of social and private spaces.**



Shared Area Summary

1. Non-white walls, suitable for the use of blue tack
2. Muted/de-saturated feature colours
3. Variation in ceiling height to create transitions and hide MEP equipment
4. Using finishes to define spaces/zones
5. Dark skirting board to help with spatial perception
6. Individually controlled smart lighting with dimming and colour tone options
7. Clearly labelled switches
8. Wall washing lights to avoid glare
9. Additional acoustic absorption
10. Acoustic pinboard for personalisation
11. Using naturally curvy forms and furniture where possible
12. A range of moveable seating options with different styles, fabrics, comfort levels and postural support
13. Semi-private seating if a semi-private space cannot be created
14. Space to accommodate a wheelchair user visitor and a clear route from the entrance to the furthest window
15. Bold colours and patterns in smaller, exchangeable items such as cushions and rugs
16. Incorporation of plants
17. Acoustic textile lamp shade
18. Smart charging pads and other smart devices
19. Communal storage with a closable door to avoid visual clutter
20. Dense fibre carpet planks with acoustic underlay and similar frictional properties and height to the vinyl floor
21. Window with purge ventilation
22. Views to nature
23. Black out blind, roller style
24. A second privacy blind, roller or curtain, to diffuse light (5-7% transmittance)
25. Non-reflective brassware, equipment and handles
26. Open shelving above sinks

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Offer a **variety of environmental choices** by situating desks in areas with different lighting levels, such as brighter or darker spaces, and quieter zones. This caters to individual sensory preferences and supports a more inclusive work environment.

Create different atmospheres for working, such as designated spaces with stimulating or calm characteristics. This allows individuals to choose an environment that suits their specific focus requirements and sensory preferences.

Include working spaces that are removed from the main flow of energy, for example, featuring low ceilings, alcoves, a darker environment or out of the visual field. These spaces provide a sense of privacy and sensory regulation for individuals who benefit from reduced visual and auditory stimuli.

Place **seating areas in various locations** around the building, in particular areas where someone is likely to need to step out to take a call or wait for someone. There should **also be space for assistance dogs** where teams can wait comfortably without impeding the flow of traffic.

During the early design stages, create designated breakout spaces, transition spaces, informal areas, pause places and seating areas and allow more space for circulation. As the design progresses and becomes coordinated with other disciplines, these are the spaces that are most likely to shrink, be relocated or removed from the scheme and they are critical for neurodivergent people and people with hidden disabilities.

Primary Working Summary

1. Individual working with acoustic partitions and individual task lighting
2. Individual, acoustically isolated booths with thermal comfort control
3. Using finishes to define spaces/zones
4. Different feature colours for each zone
5. Wayfinding and unique identifiers in ceiling design
6. Height adjustable tables and chairs
7. Using plants, storage and stub walls to create smaller spaces and divide
8. Multi-function building elements with acoustic treatment
9. Additional acoustic absorption
10. Using curved features
11. Variety of different types of seating
12. Preview through glazed screen
13. Board with image of layout and booking schedule
14. Unique identifiers to distinguish key spaces
15. Identifiable wayfinding nodes
16. Curves in floor
17. Non-white, non-reflective surfaces
18. Wayfinding lights
19. Storage space for postural support
20. Space for assistance dogs
21. Variation in ceiling height to create transitions and hide MEP equipment
22. Contrasting skirting board to help with spatial perception
23. Manifestation along glass doors and preview glass
24. Full height windows on ground floor level
25. Black out blinds

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There should be a **seated area near the queue to place orders** where this type of ordering system is in use.

The seating should have a **clear view to the server** so that building users know when to go up. Some people cannot stand for very long while waiting in a queue, even though they may have little difficulty while moving. e.g. people with conditions affecting their balance or autonomic nervous system.

There **should also be a seated area where someone can wait** for takeaway orders. This can be the same seating area, providing it is large enough and both areas can be seen from the seated position.

Ideally, there should be a quiet place to wait. This can be achieved by providing a seated area outside the cafe, but with a view to the server through a glazed screen.

All waiting areas should be designed to also **include space for an assistance dog** to also ensure that they are not in the way of other building users or obstructing the main circulation.


CLEAR ENTRANCE AND
INTUITIVE WAYFINDING
SURFACE FOR
ADVANCE INFORMATION
MULTI SENSORY WAYFINDING CUES
BELOW EYE LEVEL
01
TRANSITIONAL DESIGN
PREVIEW INTO SPACE
THROUGH SCREEN
SOMEWHERE TO SIT AND
PROCESS TRNASITION

Lecture Theatre Summary

1. Non-white walls
2. Muted/de-saturated feature colours
3. Variation in ceiling height to create transitions and hide MEP equipment
4. Using finishes to define spaces/zones
5. Contrasting skirting board to help with spatial perception
6. Wall division to help with spatial perception
7. Additional acoustic absorption
8. Lecture room unique identifier
9. Storage for postural and mobility aids with socket for charging
10. Non-reflective brassware and fittings
11. Using curved features
12. Space for an assistance dog
13. Dual light transmittance/black out blind
14. Differentiating area of floor for speaker
15. Different colours/materials for seating blocks
16. Loose chairs and tables in multiple locations
17. Larger seats at ends of rows, discreet
18. Seats with more legroom/space for aids
19. Non-white, non-reflective desks
20. Access at top and bottom
21. High level windows
22. Preview/transition space within the room
23. Partial restorative space (comfier seating, individual lighting, more acoustic insulation - could be converted to acoustic isolation booth)
24. Recessed handrail
25. Wayfinding lights within steps/handrail
26. Contrasting colour with skin tones
27. Taller back rests that also provide more leg room for those behind

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The **minimum space between rows of desks** to accommodate wheelchair users should be 2050mm. This allows for sufficient space for a wheelchair user to navigate through the rows and sit comfortably at a desk.

Seating layouts should be flexible enough to allow building users who are partially sighted to sit close to the screen. This benefits building users with visual impairments who may need to sit closer to the screen to see the content clearly, and having **flexible seating arrangements allows them to do so without feeling excluded.** Similarly, some neurodivergent building users who are sensitive to visual overload may require flexibility to sit further away.

Round or oval tables are preferred over rectangular tables because they allow for more equal participation and engagement among all building users. Rectangular tables can create power dynamics and make it difficult for building users to communicate effectively with each other.

A combination of larger and smaller tables are ideal, as this creates multiple social inclusion options. This is beneficial for building users who may not be comfortable with the social or sensory input level of larger groups as well as for those who may require more space due to a physical disability. To improve the success of the layout, tables should be able to be split into multiple groups to adapt to teaching exercises. For example, a 4-person table and an 8-person table can still be split into 3 groups of 4 building users, whereas a 4-person and a 6-person table, or 4-person and a 10-person table cannot, resulting in building users needing to move around the space and away from their preferred environment or seat choice.

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The AUDE Toolkit

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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 must 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.

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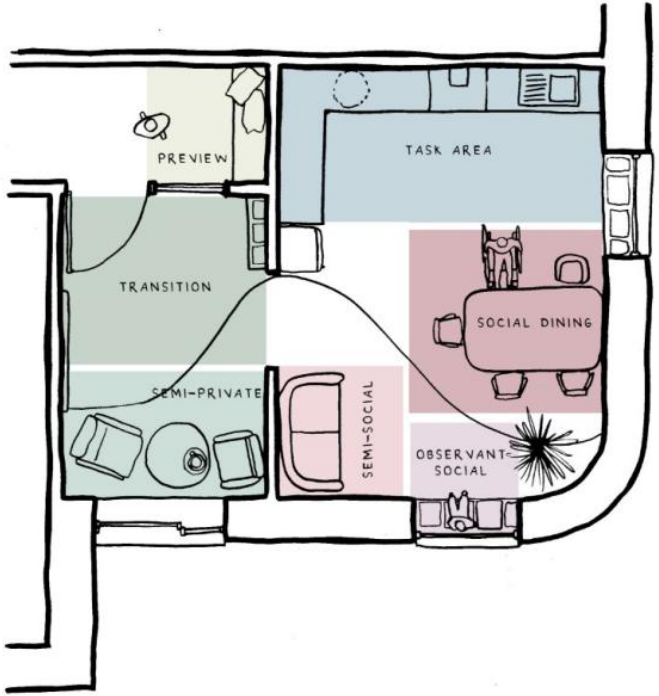
3.6. Choice and control

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.

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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.

Accessible and inclusive sports facilities | Sport England

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.

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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

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Neurodiversity and Non-visible Disabilities Project Checklist

Management

		Stage 0 Strategic Definition	Stage 1 Preparation and Brief	Stage 2 Concept Design	Stage 3 Spatial Coordination	Stage 4 Technical Design	Stage 5 Manufacturing and Construction	Stage 6 Handover	Stage 7 Use
M16	Coordinate a design review workshop of proposals against the AUDE Neurodiversity and Non-visible Disabilities Design Guide, PAS 6463 and BS 8300 etc. Ensure the design team is informed about the key areas requiring input, even if specific details are not yet available.			☐	☐				
M17	**Consult the stakeholder groups early in the design stage** and at several intervals during the design stage.			☐	☐	☐	☐		
M18	Ensure that design reviews and **sessions with stakeholder groups are accessible,** in a quiet space with low sensory stimulation, with a planned restorative space nearby, with presentations/visual information provided in advance along with information about the accessibility, location and provisions of the actual meeting. See Appendix A for more information.			☐	☐	☐	☐	☐	☐
M19	**Record the outcome** of each inclusive design and performance requirement decision and include it with the stage report.			☐	☐	☐	☐	☐	☐
M20	Ensure that **tendering contractors understand the need to meet the neurodiversity inclusive design requirements** and incorporate this into the tender selection process.				☐	☐			
M21	Carefully review the tender returns and any proposed alternatives to ensure they do not compromise the Neurodiversity and Non-visible Disabilities inclusive design principles.				☐	☐			
M22	**Ensure the approved inspector or local authority building control appreciates the importance of inclusive design** principles and the obligations under Part M and BS 8300.				☐	☐			
M23	Ensure that consultants and contractors with a design responsibility that are appointed later on in the project have an understanding of neurodiversity and non-visible disabilities, to a level that will allow them to fulfil their obligations without compromising the Neurodiversity and Non-visible Disabilities inclusive design principles, i.e. ensure the cost estimator is including for additional items and enhancements that are required, or that the glazing subcontractor understands the manifestation requirements in order to design properly. Provide training where necessary.				☐	☐	☐		
M24	Work with the design team to develop the Design and Access Statement for Planning and the Access Strategy for Building Control approvals, highlighting building management techniques that will achieve compliance with BS 8300, PAS 6463 and the AUDE Neurodiversity and Non-visible Disabilities Design Guide.				☐				
M25	Liaise as appropriate with **Local Authority on Access**, Conservation and Planning.				☐				
M26	Ensure a management strategy for neurodivergent building users can be utilised to **accommodate needs that can't be addressed through design.** Develop and adapt this strategy as the design progresses.			☐	☐	☐			
M27	**Arrange and ensure access reviews are conducted** during the construction phase to ensure best practices for inclusive sensory design are being properly implemented.						☐		

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Neurodiversity and Non-visible Disabilities Project Checklist

Design

		Stage 0 Strategic Definition	Stage 1 Preparation and Brief	Stage 2 Concept Design	Stage 3 Spatial Coordination	Stage 4 Technical Design	Stage 5 Manufacturing and Construction	Stage 6 Handover	Stage 7 Use
D14	**Consult stakeholder groups** including people who experience sensory overload, before making a final decision at each stage.			☐	☐	☐	☐		
D15	**Integrate feedback from stakeholder groups** and inclusive design consultant at each stage.			☐	☐	☐	☐		
D16	At each stage, provide still images/photographs that show how the finishes/spaces look, to be previewed in advance, and utilise desktop **virtual reality panoramas and fly-through** videos to show to stakeholder groups				☐	☐	☐		
D17	**Review/update sun shading, enhanced acoustic, wayfinding and sensory strategies** as the design progresses.				☐	☐	☐		
D18	Develop technical design, including detailed strategy drawings and specifications and ensure enough detail is recorded in the tender pack to **reduce deviations from accessible specifications.**				☐	☐	☐		
D19	Carefully review the tender returns and any proposed alternatives to ensure they do not compromise the AUDE Neurodiversity and Non-visible Disabilities inclusive design principles.				☐	☐	☐		
D20	Ensure enough information is provided to subcontractors and specialist designers so that they can develop their designs without compromising the Neurodiversity and Non-visible Disabilities inclusive design principles.					☐	☐		
D21	Review/update **maintenance, operation and handover strategies** aligned to inclusive design and accessibility principles, to include neurodiversity.					☐	☐	☐	
D22	Prepare a **schedule for Building Control access strategy** submission, alongside any other submissions requiring consent.					☐			
D23	Update / finalise Building Control access strategy.					☐	☐	☐	
D24	Review subcontractor design information against the AUDE Neurodiversity and Non-visible Disabilities Design Guide, and ensure the AUDE Neurodiversity and Non-visible Disabilities design principles are not compromised.					☐	☐		
D25	Review materials and finishes samples to ensure they meet the requirements of the AUDE Neurodiversity and Non-visible Disabilities Design Guide, particularly the following sections: Overall Design Strategies, Finishes and Layout and Wayfinding Through Design, as well as BS 8300					☐	☐		
D26	Review all finishes to ensure they meet the required LRV colour contrasts, including the finishes that need minimal contrast as detailed in the AUDE Neurodiversity and Non-visible Disabilities Design Guide, and review finish PTV / R values regarding slip resistance to include shoes, barefoot and wheelchairs.					☐	☐		
	Review all finishes to ensure they meet the required LRV colour contrasts, including the finishes that need minimal contrast as detailed in the AUDE Neurodiversity and Non-visible Disabilities Design Guide, and review finish PTV / R values regarding slip resistance to include shoes, barefoot and								

New Neurodiversity design guide published

06 February 2025 Martin Higgs, AUDE Communications and Campaigns Manager

AUDE publishes today the new work **'Neurodiversity – Design and management guide for Higher Education environments'** which has been co-authored on behalf of the association by Jean Hewitt (of Buro Happold) and Stephanie Kyle (for Maber Architects). Increasingly the association is interested in the ways in which inclusive design can make our buildings and campuses better working and living environments for the widest possible range of people.

Serving the needs of neurodiverse members of our university communities is a key part of inclusive design. We are very conscious of the breadth of advice already provided into this space (via RIBA, British Standards, Building Regulation Approved Documents and more), and the guide aims to signpost the key advice available elsewhere, and avoid conflict with that pre-existing guidance and support.

In interacting with the guide, we ask members to think of it as an element in a larger toolkit, which would ideally be moved through in three steps. These are:

- **Watch the short training video online**
- Download and read the guide using the link in the first of these bullet points
- Use the AUDE Neurodiversity and Hidden Disabilities Plan of Work Checklist (also available at the same link).

How do we design for neurodiversity?

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Calm

- Chroma
- Consideration of sensory stimulation
- Visual balance
- Enhanced Acoustics
- Pause places
- Restorative spaces
- Low clutter
- Naturalistic shapes

Clarity

- Logical wayfinding
- Hierarchy of atmosphere
- Transition spaces
- Intuitive use
- Wayfinding nodes
- Unique identifiers
- Consideration of perception

Control

- Choice of environment
- Choice of socialness
- Lighting control
- Preview
- Advanced information
- Intuitive wayfinding
- Autonomy and independence

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Consideration of sensory stimulation

Including sensory seeking and sensory avoidant options

HB Reavis London Headquarters, Photo by Spacestor

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CHROMA

LOWER HIGHER

CHROMA

LOWER HIGHER

Floyd Slaski

Chroma

Colour component LRV Chroma

62YY 83/382 →

Colour Palette Fandeck

High

Low

Floyd Slaski

62YY 83/382 →

Colour Palette Fandeck

10GG 83/125 →

Colour Palette Fandeck

30GY 83/150 →

Colour Palette Fandeck

45GY 83/023 →

Colour Palette Fandeck

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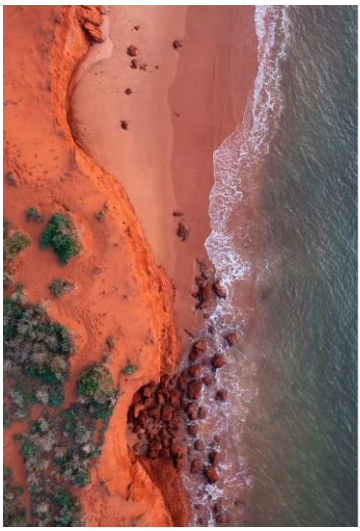

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Consideration of perception

Using materiality and interior design to soften hard architecture and reduce sensory input

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Naturalistic geometries, shapes and forms

Using materiality and interior design to soften hard architecture and reduce sensory input

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quickshooting

Neo Geometric

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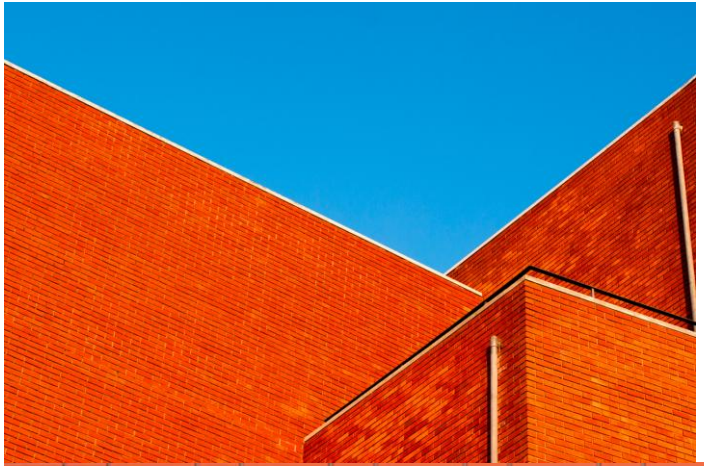

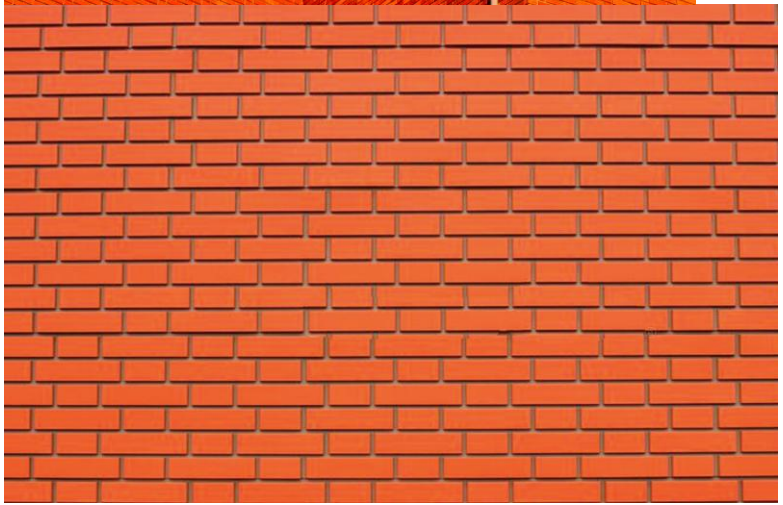

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Multi-sensory wayfinding and recognition of place

Through elemental individualism, visual, auditory & tactile cues

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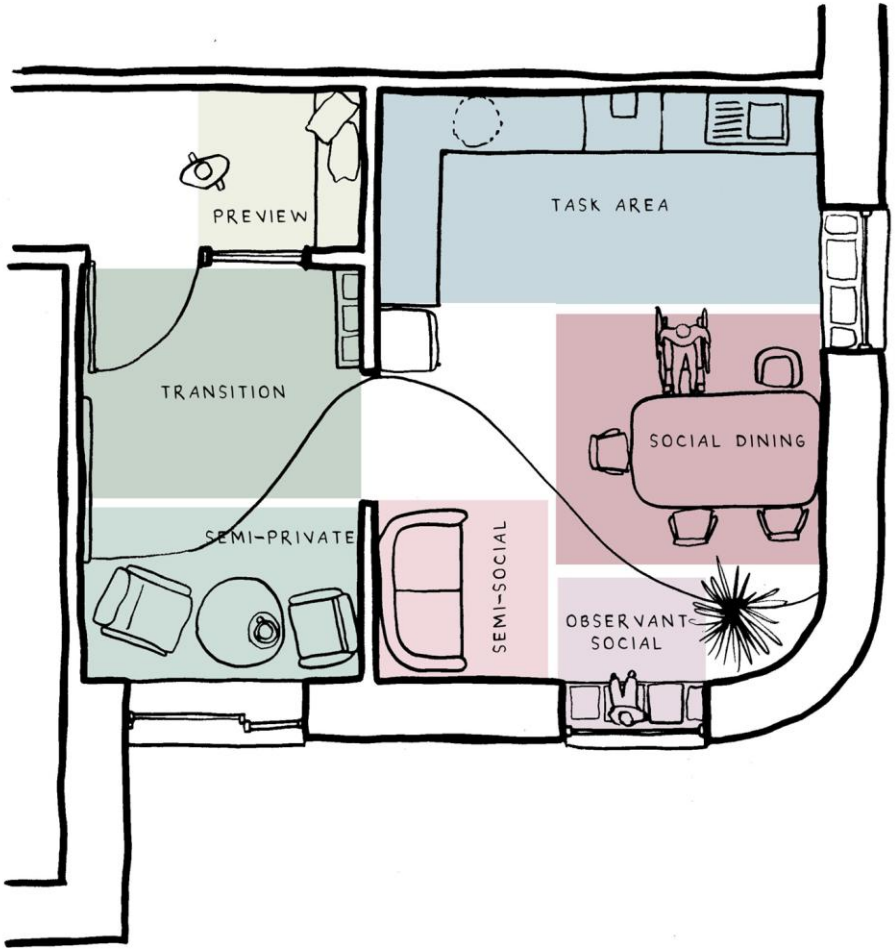
Logical, stepped hierarchy of atmosphere

Incorporating preview spaces, transition spaces, wayfinding nodes and pause places



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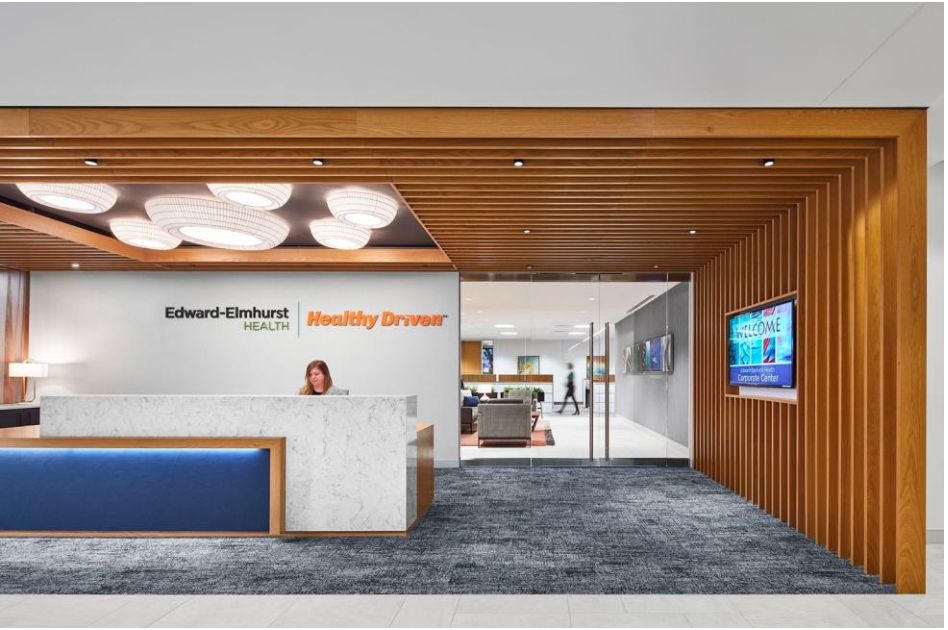
CLEAR ENTRANCE AND
INTUITIVE WAYFINDING
SURFACE FOR
ADVANCE INFORMATION
MULTI SENSORY WAYFINDING CUES
BELOW EYE LEVEL
01
TRANSITIONAL DESIGN
PREVIEW INTO SPACE
THROUGH SCREEN
SOMEWHERE TO SIT AND
PROCESS TRNASITION


Edward-Elmhurst
HEALTH
Healthy Driven
WELCOME
Corporate Center

Intuitive navigation and operation

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Environmental options between similar spaces and within larger spaces

Including furniture availability, sensory input and social level

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AUDE
Neurodiversity
Toolkit
(members only)

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Floyd Slaski Architects
Inclusive Design Guide
(free download)

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