

Towards neuroinclusive public open spaces

Evidence and implications from the City of Sydney



A report by UNSW City Futures Research Centre

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Towards neuroinclusive public open spaces

Cover photo: Hyde Park



“ With approximately 15–20 per cent of the population being neurodivergent, a city that excludes them is not just failing a minority; it’s failing its majority vision of being inclusive, liveable, and fair.

Dr Fatemeh Aminpour, The Fifth Estate

Figure 2: Royal Botanic Garden

Executive Summary

This report presents findings from a two-phase study investigating how neurodivergent adults experience public open spaces in the City of Sydney and how urban environments can better support inclusion. The research translates lived experience into practical insights for policy, planning and design, with particular relevance to the City of Sydney's Inclusive and Accessible Public Domain Guidelines.

Key findings

Across interviews and survey responses, three cross-cutting themes emerged:

1. Predictability is a core access requirement

Legible, consistent, and predictable environments enabled independence and reduced anxiety. Participants encountered barriers in cluttered, ambiguous, or constantly changing settings. Barriers were often dynamic rather than purely physical, including:

- crowding and unpredictable pedestrian flows
- unclear right-of-way in shared zones and shared paths
- café furniture and temporary clutter encroaching on movement space
- inconsistent lighting transitions, particularly in tunnels and underpasses
- complex underground networks with insufficient wayfinding cues

2. Sensory environments strongly shape participation

Participants identified noise, glare, flicker, visual clutter, harsh lighting, and enclosed conditions as drivers of fatigue, distress, and avoidance. Calm, regulated spaces increased the duration of stay and participation in public life. Supportive qualities included:

- access to green and blue elements
- softer, consistent lighting
- reduced competing stimuli
- natural soundscapes
- opportunities to move away from intensity without leaving the space entirely

These findings emphasise that sensory quality plays a decisive role in accessibility and participation, extending beyond comfort considerations.

3. Amenities function as inclusion infrastructure

Participants closely monitored seating, toilets, shade and drinking water in public open spaces. These amenities were vital for participation, used strategically to:

- manage energy and fatigue
- regulate sensory and emotional states
- extend time spent in public space

Contribution to policy and practice

This report contributes to three key areas of value:

1. Reframing accessibility

Accessibility encompasses more than compliance with minimum standards; it requires ensuring that individuals can reliably navigate, use, and remain in public spaces with confidence.

2. Translating lived experience into practical insight

The findings demonstrate the value of systematically integrating neuroinclusive principles into urban policy and practice, including active involvement of individuals with lived experience in evaluation processes for locations with the highest public impact.

3. Strengthening the implementation of existing policy

The research reinforces and extends the City's current guidelines by providing an evidence base for more consistent, intentional and lived-experience-informed application.

The scope of this report is limited to public open spaces. Participants also shared valuable insights regarding public transport environments and services. These findings, while important, fall outside the scope of this report and will be analysed and disseminated in a separate publication.

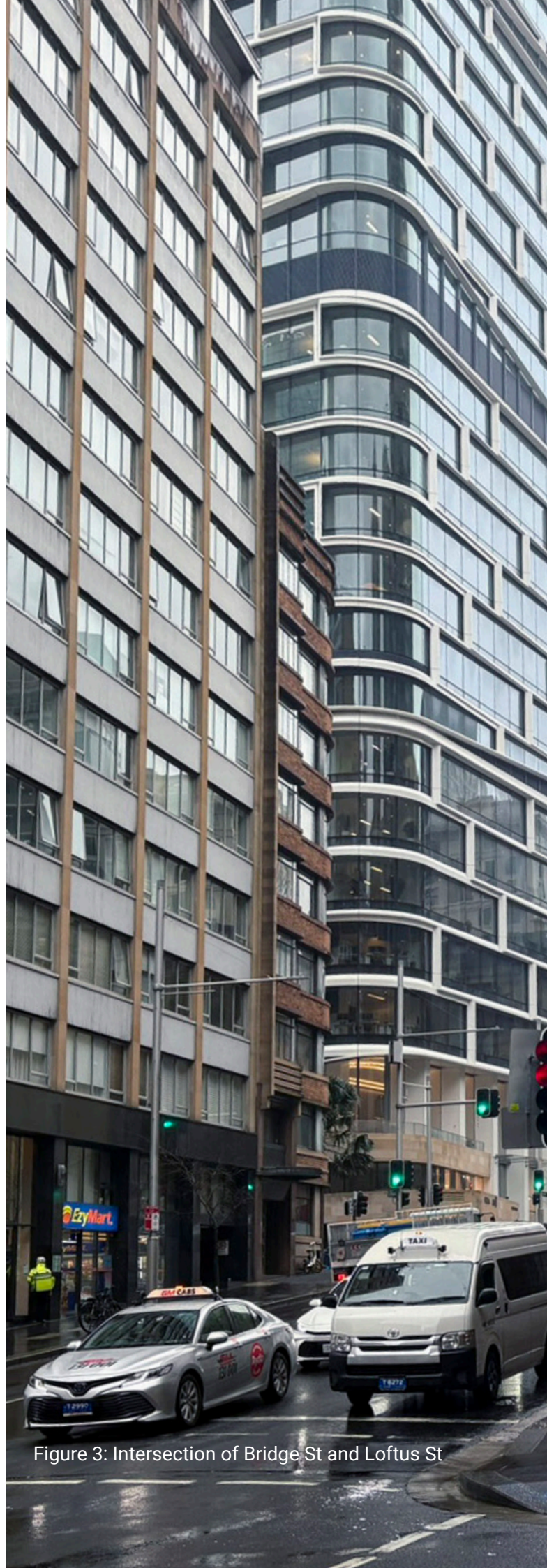


Figure 3: Intersection of Bridge St and Loftus St



Figure 4: Town Hall Square

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Abbreviations

ABS	Australian Bureau of Statistics
ADHD	Attention Deficit Hyperactivity Disorder
ASD	Autism Spectrum Disorder
AuDHD	Autism and ADHD combined
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
NDIS	National Disability Insurance Scheme
NSW	New South Wales
OCD	Obsessive-Compulsive Disorder
TfNSW	Transport for New South Wales
UTS	University of Technology Sydney
UNSW	University of New South Wales
USyd	University of Sydney
PTSD	Post-Traumatic Stress Disorder
dB	Decibel (unit of sound level)



Figure 5: George St, Town Hall Station

1 Introduction

1.1 Why neuroinclusive cities matter

Our cities are not designed with neurodiversity in mind. They are largely built for an assumed “average” neurotypical user, even though neurodivergent people, including those with autism, ADHD and sensory processing differences, make up an estimated 15–20 per cent of the population (Doyle 2020). In Sydney, this equates to roughly one million people.

Without considering neurodivergent needs, everyday public spaces can become inaccessible to a significant proportion of the population, up to one million people across Greater Sydney.

Neurodivergent people experience and interpret urban environments differently. Noise, visual clutter, crowding, lighting conditions and unpredictable movement patterns can make everyday public spaces overwhelming, stressful or inaccessible (Black et al. 2022). As a result, many neurodivergent people avoid places that are otherwise intended to support social connection, wellbeing and participation.

This is not a niche accessibility issue. Neuroinclusive design affects access to education (Riordan et al. 2024) and employment (Weber et al. 2022), independent mobility (Department of Infrastructure, Transport, Regional Development,

Communications and the Arts 2022), social participation and mental health (Raymaker et al. 2020). It also disproportionately impacts people already experiencing socioeconomic disadvantage (Australian Bureau of Statistics 2022). While public awareness of neurodiversity has increased significantly, urban planning and design remain one of the last frontiers of inclusion (Kenna 2023).

Over the past decade, governments have made important progress on disability inclusion – from the Australian Disability Strategy (2021–2031) to NSW Disability Inclusion Action Plans. These frameworks have substantially improved mobility and physical accessibility. However, there are no equivalent, systematised frameworks for sensory accessibility and neurodiversity in the public domain. This gap results in policy and planning decisions that often rely on limited consultation or minimum compliance, rather than grounded, evidence-based standards.

This research responds directly to that gap. It is one of the first Australian studies to systematically explore neurodiverse-friendly design principles in public open spaces. It provides empirical insight into how sensory, cognitive and social factors shape access for neurodivergent communities in everyday urban life.

1.2 Social model of disability

This research is grounded in the social model of disability, which understands disability as arising from the interaction between individuals and environments that contain physical, sensory, cognitive and social barriers (Shakespeare 2006).

Rather than denying the reality of impairment or its impact on individuals, the social model emphasises

society's responsibility to remove barriers and create inclusive environments. When environmental, institutional and social barriers are reduced, people with disabilities are better able to participate independently, with dignity and equal opportunity.

The City of Sydney recognises this shared responsibility to remove barriers within the infrastructure and public spaces it manages. It also acknowledges its role in protecting and promoting the rights of people with disabilities and in fostering a culture that values diversity and inclusion across the community.

1.3 Case study: City of Sydney

The City of Sydney Local Government Area provides a compelling case study due to the diversity, intensity and complexity of its public spaces and users. The area accommodates residents, workers, students and visitors, exposing people to a wide range of environmental conditions and social interactions throughout the day and night.

The City's review of the previous Inclusion (Disability) Action Plan (2017–2021), alongside consultations with autistic people and other community members, identified that past efforts have largely focused on physical disabilities. The City recognised a clear opportunity to expand this focus and better understand the experiences and needs of neurodivergent people.

The City of Sydney contains a rich typology of public spaces, including:

- pedestrianised zones (e.g. Martin Place, Pitt Street Mall, Dixon Street),
- shared streets (e.g. George Street, Hay Street),
- underpasses and underground networks (e.g. Devonshire Street Tunnel, QVB and Town Hall underground connections),
- civic squares and centres (e.g. World Square, Darling Square, Town Hall Square),
- waterfront environments, and
- a network of parks ranging from iconic parks (Hyde Park, Royal Botanic Garden, Barangaroo Reserve) to neighbourhood parks and pocket parks.

Studying this diversity enables a comprehensive understanding of how different spatial typologies can support or hinder neurodivergent inclusion.



Figure 6: West Circular Quay, a civic space



Figure 7: George St, a shared street



Figure 8: Hyde Park, an iconic park

1.4 Methodology

This project employed a two-phase mixed-method approach to understand how neurodivergent people experience public open spaces in the City of Sydney.

Phase 1 involved 15 in-person, semi-structured walking tour interviews with neurodivergent adults, conducted by Dr Fatemeh Aminpour and Dr Maximilienne Whitby. Participants guided the researchers along routes familiar to them, describing how and why they used specific spaces, what supported or hindered their comfort, and how these environments affected their daily lives.

This in-situ method allowed participants to reflect on real-time experiences rather than abstract preferences. The researchers documented routes, spatial features and sensory conditions through photography and sound-level measurements in places participants identified as particularly noisy or quiet.

Participants were recruited through partner universities (UNSW, USyd and UTS) and City of Sydney libraries, and all regularly lived, worked, studied in or visited the City of Sydney.

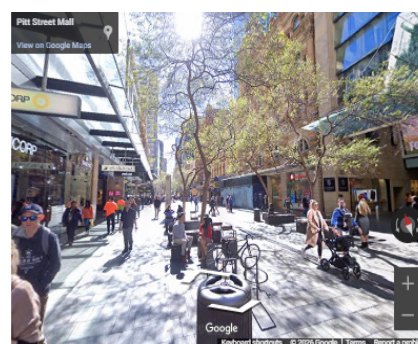
Interview data were analysed thematically to identify shared patterns, divergences and recurring environmental factors shaping experience. This approach prioritised depth of insight over generalisation and foregrounded lived experience as evidence. Interviews continued until thematic saturation was reached, with no substantially new themes emerging in later interviews, and recruitment was therefore concluded at this point.

Phase 2 translated key themes from Phase 1 into an online questionnaire. Participants evaluated selected public spaces using interactive 360-degree Google Maps imagery and rated their comfort with specific environmental features. A total of 50 responses were received, of whom 32 identified as neurodivergent, 7 as neurotypical, and 11 selected 'not sure'. The survey was open for two months.

Given the small size, the survey analysis does not attempt to make a statistically robust group comparison. Instead, it is used as an exploratory tool to examine whether the environmental qualities identified by neurodivergent participants as supportive or challenging were also reflected



Figure 9: Phase 1: semi-structured walking tour interviews



	Extremely uncomfortable	Uncomfortable	Neutral
Ambience	☐	☐	☐
City noise	☐	☐	☐
Movement of crowd	☐	☐	☐
Resting opportunities	☐	☐	☐
Surrounding uses and activities	☐	☐	☐
Others	☐	☐	☐

Figure 10: Phase 2: Survey using interactive 360-degree Google Maps imagery

more broadly among respondents. Findings are therefore interpreted as indicative patterns rather than representative differences between populations. As responses appear consistent across groups, this is discussed as evidence that neuroinclusive features may offer broader benefits.

An exhibition of preliminary findings from Phase 1 was held at UNSW Kensington campus from 14–24 October. This created an accessible forum for community feedback and knowledge exchange between researchers, practitioners, and people with lived experience. Feedback from the exhibition was incorporated into the analytical process and used to refine the interpretation of findings presented in this report.

1.5 Purpose of the study

The purpose of this study is to strengthen the understanding of how urban environments can better support neurodivergent users by addressing the sensory, cognitive, and social dimensions of access. The research aims to:

- identify characteristics of public open spaces that enable or hinder neurodivergent participation,
- articulate how everyday features (such as signage, furniture, planting, lighting, and footpath design) shape comfort, safety, and willingness to remain in public space,
- provide evidence-based recommendations to inform inclusive planning, design and management.
- situate the findings within relevant international, national, state and local policy frameworks to interpret and strengthen current commitments to accessibility and inclusion.

By foregrounding lived experience, this study expands understandings of universal design beyond physical accessibility and highlights how small, cumulative design decisions can have significant impacts on inclusion.

Importantly, these findings confirm that neuroinclusive design extends benefits to all users. Environments that are more predictable, legible and comfortable support a wider range of users, including older adults, visitors, and people experiencing stress or fatigue.

The findings inform the City of Sydney's Inclusive and Accessible Public Domain Guidelines and provide practical insights to support future master planning, design and decision-making. The research also lays the groundwork for larger studies and for translating evidence into practice across local government, professional and educational contexts.

1.6 Report structure

This report is structured to move from lived-experience evidence to thematic interpretation and finally to policy and practice implications.

Chapter 1 introduces the purpose of the study, its theoretical grounding in the social model of disability, the rationale for focusing on neuroinclusive cities, and the City of Sydney as the case study context. It outlines the methodology and clarifies the contribution this research makes to knowledge, policy and practice.

Chapter 2 presents the findings of the study, organised around three overarching experiential dimensions:

- **Walking the city:** how movement and navigation shape access;
- **Sensing the city:** how sensory qualities such as sound, light, smell, surfaces and weather affect comfort and participation; and
- **Sharing the city:** how social presence, amenities and everyday interactions influence belonging and inclusion.

Within each section, participant quotes foreground lived experience, followed by interpretive analysis and evidence-informed design recommendations. This structure is intended to preserve participants' voices while translating insights into actionable guidance.

Chapter 3 situates the findings within relevant policy frameworks and guidelines. It first locates the research within international, national and state disability policy contexts, including rights-based and inclusion frameworks. It then provides a detailed alignment between the findings and the City of Sydney's Inclusive and Accessible Public Domain Guidelines. The chapter demonstrates where the research reinforces existing directions and where it extends them by incorporating sensory, cognitive and social dimensions of access.

The report concludes by reflecting on the broader significance of neuroinclusive urbanism for Australian cities and identifying opportunities for future work.



Figure 11: Martin Place

2.1 Walking the City

“ A lot of times, I find myself almost walking into people because I can’t tell where they were going to go ... If you’re walking somewhere 10-20 minutes, it’s a lot of instances that this happens ... I get exhausted.

[Female, 20s, ADHD]

2.1.1 Footpaths



Figure 12: Market St next to Westfield Sydney

Across interviews, everyday footpaths were described as environments where movement often required sustained effort. Participants' accounts point to two interconnected dimensions shaping these experiences: unpredictability in pedestrian flow and the presence of obstacles and competing uses of footpaths. These conditions frequently interacted, increasing cognitive load and emotional strain and shaping how manageable and comfortable walking felt in different contexts. The findings show that the organisation, legibility and management of footpaths determined whether they were experienced as navigable or overwhelming.

I am on edge the whole time I am walking because you can't predict what's going to happen and how people are going to act on the footpath. I can manage my condition better if I don't have to [deal with it].

[Male, 40s, AuDHD]

When there is a queue in some stores, and it's not managed well, and there is no egress on the footpath ... it can be really distressing because this is not how I planned to get here.

[Female, 30s, AuDHD and PTSD]

Unpredictability in pedestrian flow

Participants described footpaths in busy or tourist-heavy areas as especially challenging because pedestrian movement was often experienced as unpredictable, with people changing direction suddenly and sometimes disregarding informal norms such as keeping left. The lack of clear lanes or directionality made it difficult to anticipate others' movements, which participants linked to near-collisions and a frequent need to adjust their path. Many described this heightened vigilance as cognitively effortful, making longer walks exhausting or overstimulating. Intersections and narrow streets were experienced as particularly stressful, as people approached from multiple directions with little order. In contrast, wider or well-organised footpaths with clearer directionality, where movement patterns were more consistent and legible, were perceived as calmer and easier to navigate.

Obstacles and competing uses of footpaths

Participants described footpaths as contested spaces where multiple competing uses, such as café seating, queues, bus or light rail stop crowds, pub spill-over, demonstrations, bike parking, and poorly placed infrastructure, reduced space for walking and disrupted pedestrian flow. These obstacles often forced people to slow down, weave through crowds, or step onto the road, increasing stress and feelings of vulnerability. Narrow footpaths were especially challenging when temporary or informal uses spilt into the walking space, particularly at night or during peak activity times. Participants emphasised that while many of these activities were legitimate and contributed to urban vibrancy, the lack of management and clear pedestrian priority made navigation difficult and unpredictable. The cumulative effect of repeated obstructions required additional cognitive and emotional effort, turning everyday walking into an overwhelming task, intensifying anxiety, frustration and fatigue, especially in already busy urban streets.

Design recommendations

- 1 Use clear yet subtle design cues (such as paving patterns, lighting, or furniture placement) to help people understand where to walk and encourage consistent movement (e.g., keeping left).
- 2 Make busy or long footpaths wide enough so people can comfortably pass each other, even when walking at different speeds.
- 3 In high-traffic areas, use clearer visual cues and subtle physical guidance to direct movement and reduce people weaving unpredictably across the footpath.
- 4 Establish and enforce a minimum unobstructed walking width to keep a clear walking zone on footpaths at all times, free from café furniture, queues, signs, bike parking and temporary obstacles.
- 5 Integrate small setback zones, niches or edges where people can pause briefly and recover without blocking movement or being surrounded.
- 6 Require cafés, bars, shops and venues to manage queues and waiting areas so they do not block footpaths, particularly during peak times and at night.
- 7 Move fixed infrastructure, such as poles, signs, bins, bike racks and lighting columns, away from the main walking lines and towards the edge of footpaths, especially in narrow sections.
- 8 Keep bike parking and shared bike drop zones separate from pedestrian paths to reduce clutter and trip hazards.
- 9 Make it clear who is responsible for keeping footpaths clear, so obstructions are not ignored or treated as "nobody's problem".
- 10 Regularly review footpath performance across different times and adjust permits, layouts and management to prevent recurring obstruction.

2.1.2 Underpasses

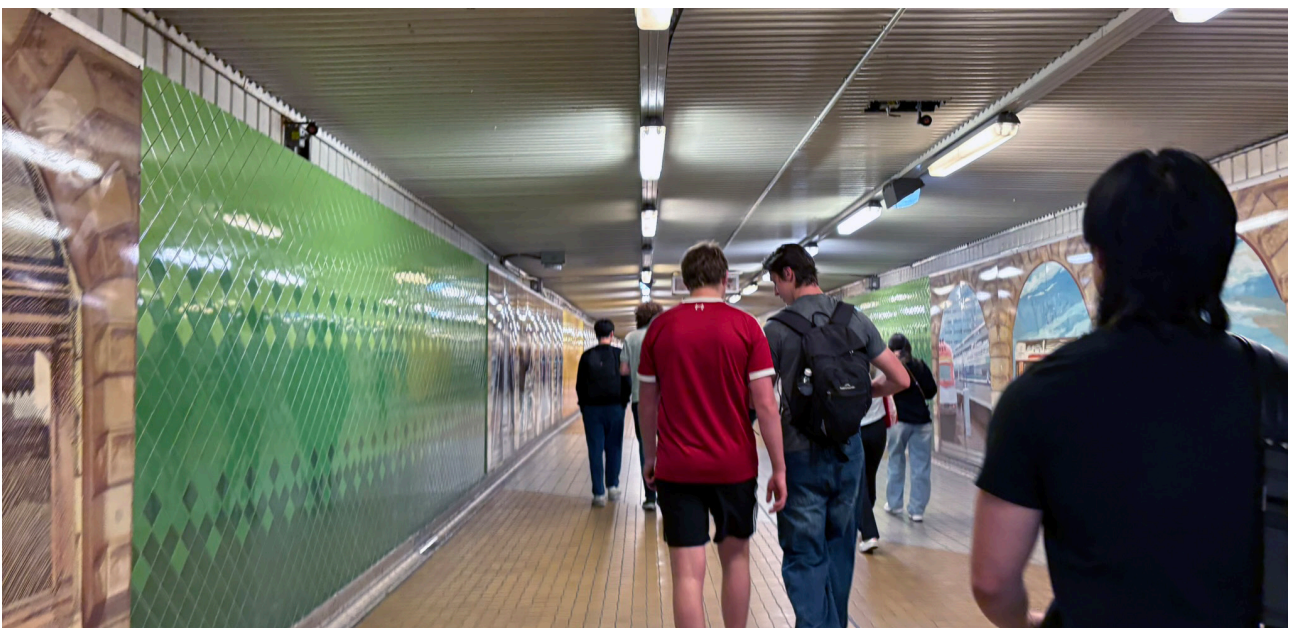


Figure 13: Devonshire St Tunnel

Underpasses were consistently identified as more demanding environments than surface-level routes. Participants' accounts point to three interconnected dimensions shaping these experiences: challenges in navigating personal space, difficulties with wayfinding, and heightened sensory discomfort. These pressures accumulated and interacted, increasing cognitive and emotional effort and shaping how safe, oriented and comfortable people felt in these spaces. As a result, many participants avoided underpasses where possible, even when they offered practical advantages such as shorter routes. The findings indicate that underpasses function as critical pressure points within everyday urban journeys for neurodivergent pedestrians.

I avoid it because there [are] too many people ... we're all close together and squashed together and moving, and everyone's got a different speed. That's kind of confusing. That's a bit overwhelming.

[Female, 30s, AuDHD]

Sometimes the sound is really echoey. This is an enclosed space ... even from a long way away, the sound gets really intense. It comes from all directions.

[Male, 40s, AuDHD]

Navigating personal space

Participants consistently described underpasses, such as the Devonshire Street tunnel or the QVB passage, as particularly challenging environments for navigating personal space. Compared with surface-level routes, these spaces were experienced as more crowded, narrower, and more enclosed, forcing people into close proximity with others moving at different speeds, which ultimately increased feelings of confusion or overwhelm. Additionally, Devonshire Street raised safety concerns due to its limited escape routes.

Wayfinding

Wayfinding emerged as a significant challenge in underpasses, with participants describing repetitive layouts, poor signage and a lack of clear orientation cues. Several reported getting lost, backtracking or moving through space repeatedly until they recognised a destination. Many preferred to stay above ground, where access to visual landmarks, street names, and digital navigation tools, such as Google Maps, made orientation easier.

Sensory discomfort

Participants consistently described underpasses as sensory-intense environments where noise, lighting, heat and enclosure combined to create discomfort and overstimulation. Underground spaces were often perceived as louder and more echoey than surface routes, with sounds such as music, busking, footsteps and conversations bouncing off hard surfaces, making noise seem to come from all directions. Several participants used coping strategies, such as headphones or earplugs, to manage auditory overload. Lighting was also frequently identified as a major source of discomfort, with flickering, harsh or competing artificial lights contributing to visual overstimulation. Heat, poor air quality and unpleasant smells further intensified negative sensory experiences underground. Some noted relief when stepping outside, with natural light, fresh air and more diffuse soundscapes.

Design recommendations

- 1 Provide multiple entry and exit points, or ensure visual connections to nearby spaces where feasible, so people do not feel trapped underground.
- 2 Avoid placing shops, busking or informal selling in narrow underground corridors, as this reduces space to move comfortably.
- 3 Provide clear, well-lit maps at every underground entry point, showing exits, key destinations, and how to reach the street above.
- 4 Reinforce wayfinding through environmental cues such as colour coding, floor patterns or ceiling treatments that indicate directionality.
- 5 Make exits easy to recognise by clearly labelling them with street names and nearby landmarks.
- 6 Ensure mobile navigation tools (such as Google Maps) work well underground by supporting connectivity and matching layouts with what people see on their screens.
- 7 Minimise hard, reflective materials in underpasses and corridors that amplify sharp sounds. Use acoustic treatments to dampen sound reverberation.
- 8 Use consistent, even, non-flickering lighting. Avoid harsh contrasts and competing light sources.
- 9 Improve ventilation and thermal comfort to reduce heat, humidity and lingering smells in underground spaces.
- 10 Limit auditory clutter from retail music and busking in enclosed underground environments.
- 11 Where possible, introduce visual relief through natural materials, greenery and gradual transitions to daylight near exits.

2.1.3 Shared zones



Figure 14: George St shared by Sydney Light Rail, pedestrians and cyclists

Participants described shared zones as spaces where unclear rules, mixed speeds, and competing priorities made movement feel stressful and unsafe. Uncertainty about the right-of-way reduced confidence and increased hesitation, especially for those who relied on predictability to navigate safely. Speed differentials between pedestrians and micromobility users were a recurring concern, with fast-moving bikes, their bright lights, and sudden audible warnings (“ding ding”) creating pressure to move aside despite limited space. While some participants appreciated shared streets for their reduced car traffic, these benefits depended on predictable behaviour and clear spatial cues. Overall, shared zones were experienced as workable only when movement was legible and speeds compatible; otherwise, they became sites of heightened anxiety, vulnerability, and perceived risk.

It's a bit uncomfortable for me crossing the road in the non-designated area [of George St] ... people on cycles, they're sometimes passing by very quickly, and I don't know if it's safe.

[Male, 20s, PTSD/anxiety]

This route [on South Dowling St footpath] is a bit unclear if it's a bike lane. A lot of deliveries with bicycles come down this way quite aggressively ... It's one of the most difficult things in the evening.

[Male, 40s, AuDHD]



Figure 15: South Dowling St footpath shared with bikes

Design recommendations

- 1 In shared zones, clearly signal pedestrian priority through consistent surface treatments (e.g. colour and texture), rather than relying solely on signage.
- 2 Where shared use is unavoidable, use subtle design cues (e.g., paving patterns, lighting lines or planting edges) to help people understand where each group tends to move.
- 3 Provide frequent, clearly marked pedestrian crossings on shared streets so people feel confident about when and where to cross.
- 4 Reduce glare from bike and scooter lights in busy pedestrian areas by introducing guidance on acceptable light intensity, direction and shielding, where this can be done safely.



Figure 16: George St and Hay St intersection

2.1.4 Pedestrianised streets



Figure 17: Pitt St Mall, a car-free promenade

Participants consistently preferred pedestrianised streets or plazas, such as Pitt Street Mall, Darling Square, and parts of Chinatown, for their calmer atmosphere, easier navigation, and freedom from cars. The absence of vehicles reduced noise, visual distraction and perceived risk, allowing people to relax, focus and engage more comfortably with their surroundings. In contrast, streets close to vehicular traffic (such as Bridge Street or Broadway) were described as noisy, anxiety-inducing and distracting, often requiring ear protection or avoidance. Clear, legible signals that a space was intended primarily for pedestrians reduced the mental effort required to navigate and fostered a stronger sense of comfort and control. While pedestrianised areas could still become crowded or difficult to pass through during events or markets, the removal of cars made these spaces more tolerable.

Towards neuroinclusive public open spaces

I find car traffic quite anxiety-inducing and overstimulating, so I do like that it's far away from car traffic.

[Female, 30s, AuDHD and PTSD]

I do like areas that clearly indicate this is for pedestrians. Otherwise, it takes more thinking to navigate traffic.

[Female, 40s, ASD and sensory processing differences]



Figure 18: Dixon St, a pedestrianised street

Design recommendations

- 1 Use consistent surface materials and layout (e.g., continuous paving, no kerbs, and tighter vehicle entry points) to make it obvious that pedestrians have priority in pedestrianised areas.
- 2 During markets, events or busy trading periods, keep a clear walking route through pedestrianised areas so people can move through without having to push through crowds.
- 3 Cluster seating, trees and amenities in ways that support both lingering and movement, without forcing pedestrians into narrow or awkward paths.
- 4 Reduce the impact of nearby traffic (noise, fumes and visual clutter) at the edges of pedestrian areas by planting, setbacks or screening.



Figure 19: Tumbalong Bvd, a pedestrian thoroughfare

2.1.5 Backstreets and secondary routes

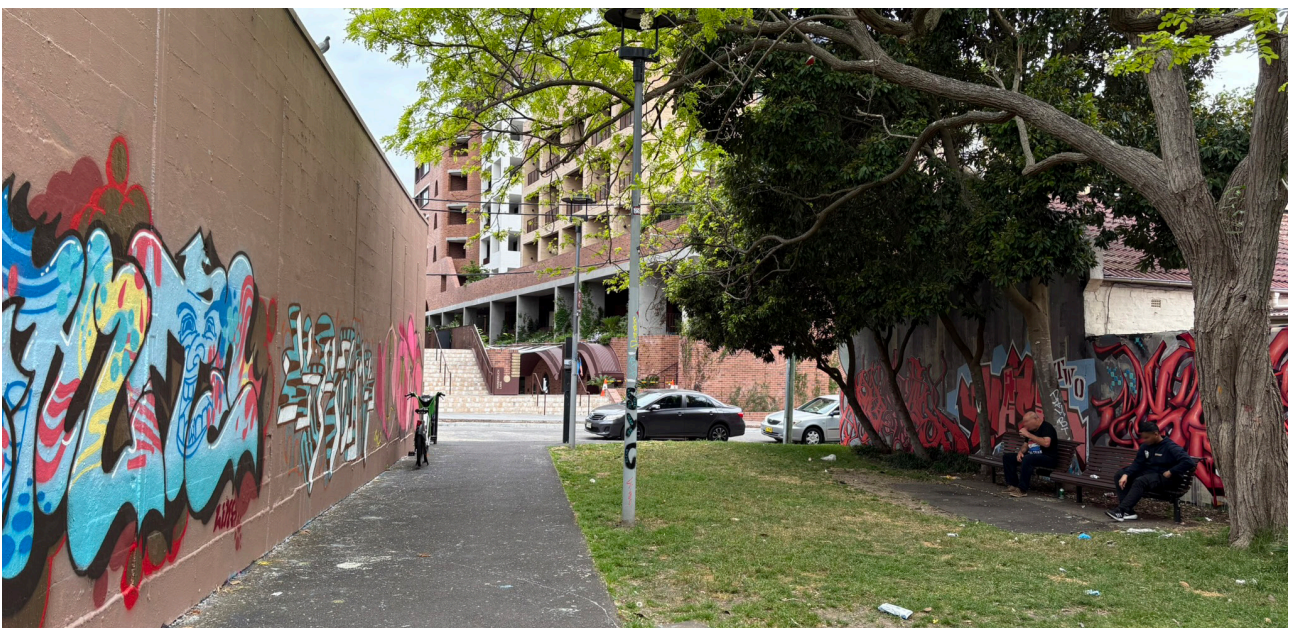


Figure 20: James St, an alternative pedestrian friendly route to Cleveland St

In response to the challenges associated with crowded footpaths and busy roads, participants actively adapted their routes and walking practices to manage sensory load. Many deliberately chose quieter, less crowded backstreets, even if they meant longer routes. For some, backstreets were selected for visual interest, greenery and variety, transforming everyday travel into a calming or stimulating sensory journey rather than a purely goal-directed task. Streets punctuated with places to pause and rest were also valued, as they reduced the pressure to keep moving and supported recovery when participants felt overwhelmed. At the same time, route choice was shaped by context. When tired, running late or commuting, some prioritised the most direct and efficient route despite higher sensory costs.

[Here] I have opportunities to rest and lie down, eat, and get myself fixed for whatever reasons. So, I don't feel like I am always in a rush, which is usually the case when I am travelling in the City.

[Female, 20s, ADHD]

If I had more time, [James Street] is probably the way I'd prefer to go. Because there are trees around, and there are no people pushing, and it's just a more pleasant walk.

[Male, 40s, AuDHD]



Design recommendations

- 1 Add greenery, shade and visual interest along backstreets to provide sensory relief from busy main streets.
- 2 Provide small places to pause and rest (e.g., benches, edges, low walls) along secondary routes to support recovery without blocking the main walking space.
- 3 Improve signage and maps to show quieter alternative routes alongside main streets, so people can choose how they travel.
- 4 Avoid over-programming or over-activating all secondary streets, so some routes remain intentionally calm and low-key.
- 5 Ensure backstreets remain well-maintained and well-lit, so choosing them does not involve trade-offs in personal security.

Figure 21: Kensington St, an alternative pedestrian-friendly route to Regent St.



Figure 22: Balfour St with resting spots

2.1.6 Wayfinding on footpaths



Figure 23: One Central Park as a landmark

Wayfinding emerged as a key factor shaping how confidently participants could move through the city. Participants' accounts point to three interconnected dimensions influencing these experiences: the role of street signage, challenges with orientation and directionality, and reliance on spatial cues and mental mapping. Together, these dimensions shaped the cognitive effort required to navigate, as well as participants' sense of confidence, independence and control while moving through public space. The findings suggest that wayfinding is experienced less as a technical issue of information provision and more as an embodied process shaped by how legible, intuitive and supportive the environment feels in practice.

I get lost very easily. If I read a map, I wouldn't remember. I have to keep referring to what's on the map. If I compare myself to others at work, all my sensory intake is slower.

[Female, 30s, AuDHD]

I don't usually go to the financial district very often ... you are in a weird bunch of buildings that don't have anything written on them. And the signage is poor.

[Female, 30s, AuDHD and OCD]

Street Signage

Participants expressed mixed experiences with street signage, ranging from appreciation of City of Sydney maps and distance markers to complete reliance on Google Maps. Some valued pylon signs for advance planning, reducing phone use or supporting independence, particularly in well-serviced public areas. Others reported rarely noticing or using flag signs, either because the information was too small, visually cluttered or less intuitive than digital navigation. Detours or infrequent directional cues increased the likelihood of getting lost and made navigation exhausting. Overall, signage was most effective when it was legible, frequent and aligned with how people already navigated the city.

Orientation and directionality

Many participants described difficulty understanding orientation and directionality, even when “You are here” maps were present. Challenges included knowing which way a map was facing, translating map information into bodily movement, and understanding multi-level or internal routes not clearly shown on street maps. Several participants relied on Google Maps’ directional arrows or live view, physically rotating their phones or bodies to align with the route. This shows how static signage can feel disconnected from the embodied process of real-time orientation.

Spatial cues and mental mapping

Participants relied on spatial cues, such as landmarks and street layout, to build mental maps of the city, although their effectiveness varied. Recognisable landmarks like UTS or One Central Park provided reassurance and orientation, while anonymous or repetitive façades made it harder to stay oriented. Parallel street layouts were described as easier to navigate due to their predictability, while curvilinear paths could lead to disorientation when attention was diverted. The findings show how both visual anchors and urban geometry shape people’s ability to navigate and feel grounded in the city.

Design recommendations

- 1 Provide frequent and continuous directional cues, especially along detours and longer routes, so people feel confident they are on the right path.
- 2 Make signage easier to notice by improving its size, contrast and placement, especially on visually busy streets.
- 3 Use destination names people recognise (such as landmarks, major streets and stations), not just street names.
- 4 Place maps and signs at key decision points, such as station exits, major intersections and plazas, to support advance planning.
- 5 Design signage that complements digital navigation, recognising that many people switch between their phones and physical signs.
- 6 Avoid giving people too much information at once. Use familiar, recognisable cues along routes so understanding builds gradually over time.
- 7 Orient maps to match the direction people are facing and clearly show this on the sign, so users do not need to mentally rotate the map.
- 8 Clearly show level changes, escalators, lifts and internal routes, especially where destinations are not visible from the street.
- 9 Use distinctive buildings, planting, colour, public art or identity features to create strong landmarks that help people stay oriented.
- 10 Avoid long stretches of visually repetitive building façades, as they make it harder for people to recognise where they are.
- 11 Embed lived-experience testing of wayfinding environments into both consultation and project delivery.



Figure 24: Playground at Darling Quarter

2.2 Sensing the City

“ When it’s quiet, you have more resources to see the blue sky and the birds flying. It’s just nicer. When I’m so uptight trying to listen, I don’t have any capacity to do anything else or notice anything else. I feel too intense.

[Female, 50s, auditory processing differences]

2.2.1 Sound/Noise

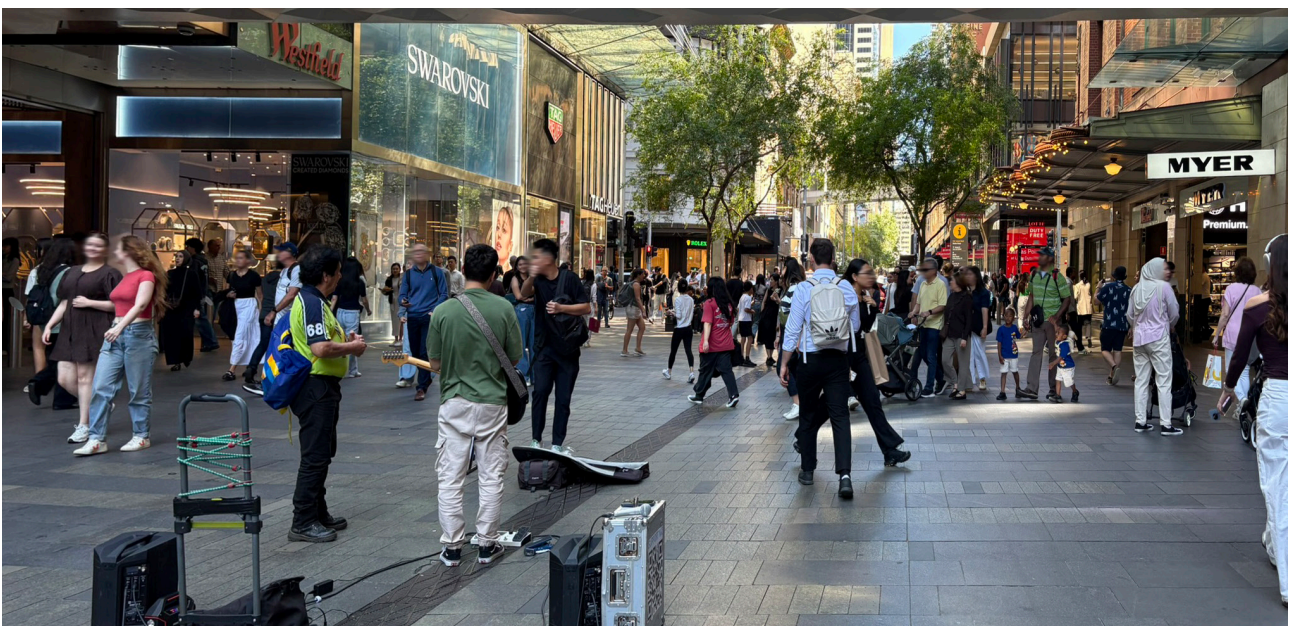


Figure 25: Buskers in Pitt St Mall

Auditory environments emerged as one of the most influential factors shaping participants' comfort, behaviour, and willingness to remain in public spaces. Experiences were not determined by volume alone, but by the quality, organisation, and predictability of sound. Participants consistently described certain sound types as physically and cognitively overwhelming, while others were experienced as tolerable or even supportive when they followed understandable patterns. Across accounts, predictability, coherence, and sensory control shaped whether urban soundscapes felt stressful or restorative. The following sections unpack these distinctions in more detail.

Motorbikes suddenly? No. Sirens? No. Trucks? Double no. But if you're far enough away, you can mitigate the very loud, punctuating ones.

[Female, 30s, AuDHD]

I wouldn't prefer to be too close to Darling Quarter, where you have a much larger playground and therefore a lot more children. It's more about the volume of people there and the chances of kids screeching nonstop.

[Female, 20s, AuDHD]

Sharp, high-pitched sounds as sensory stressors

Participants consistently described sharp, high-pitched and unpredictable sounds (such as sirens, tram bells, alarms, construction noise, and large groups of playing children screeching) as the most distressing auditory experiences in public open spaces. The unpredictability, pitch, and intensity of these sounds led to rapid sensory overload, physical tension, fatigue, and withdrawal. Many participants relied on noise-cancelling headphones or ear protection to cope, though this came at the expense of personal safety and situational awareness. Environments with lower, diffuse, and predictable sound levels (generally below ~60–65 dB) were described as calming and restorative.

Coordinated versus chaotic public sounds

Participants distinguished strongly between coordinated, rhythmic, or meaningful sounds (e.g., music, trains, ambient crowd noise) and chaotic, overlapping sounds (e.g., multiple amplified speakers, loud religious preaching, poorly controlled busking). Sounds linked to human activity were often experienced as positive when contained, predictable and singular. However, they became overwhelming when multiple sources competed for attention. The issue was not simply volume, but the organisation, intensity and overlap of sound.

Predictability as a buffer for urban noise

Predictability emerged as a critical factor in sound tolerance. Rhythmic, visible, and time-limited sounds (such as trains, light rail or aircraft) were often described as manageable, even when loud, because participants could anticipate their onset and duration. In contrast, sudden, sharp or directionless noises (e.g. bells, jackhammers, alarms) were described as jarring and physically painful. Noise was also more tolerable when it aligned with expectations (e.g. a planned night out) rather than when it occurred unexpectedly during everyday travel.

Design recommendations

- 1 Introduce sound-buffering elements, such as vegetation, acoustic screens and textured surfaces, near busy roads and construction sites, to soften noise.
- 2 Provide quiet micro-retreats (e.g., shaded seating away from car traffic) where sound levels consistently remain below ~60 dB, so people can reliably step out of high noise and recover.
- 3 Designate clear acoustic zones (performance zones vs. quiet circulation routes), and quieter movement routes so people can choose the level of sensory intensity they want.
- 4 Support cultural activity while managing cumulative noise impacts through licensing, scheduling and monitoring.
- 5 Improve visual cues and legibility to help people anticipate noise sources.
- 6 Reduce reliance on sudden auditory alerts where visual or tactile alternatives are possible.
- 7 Design streets and public spaces to support predictable sensory journeys, especially along everyday walking routes.

Loud music from all directions ... I found the amplification annoying. Sometimes the buskers are not good.

[Female, 30s, AuDHD]

With music, there's rhythm and more organisation. If it's some religious speech, I would try to locate myself away from it. That's not the kind of background noise I would prefer.

[Female, 20s, AuDHD]

2.2.2 Visual environment

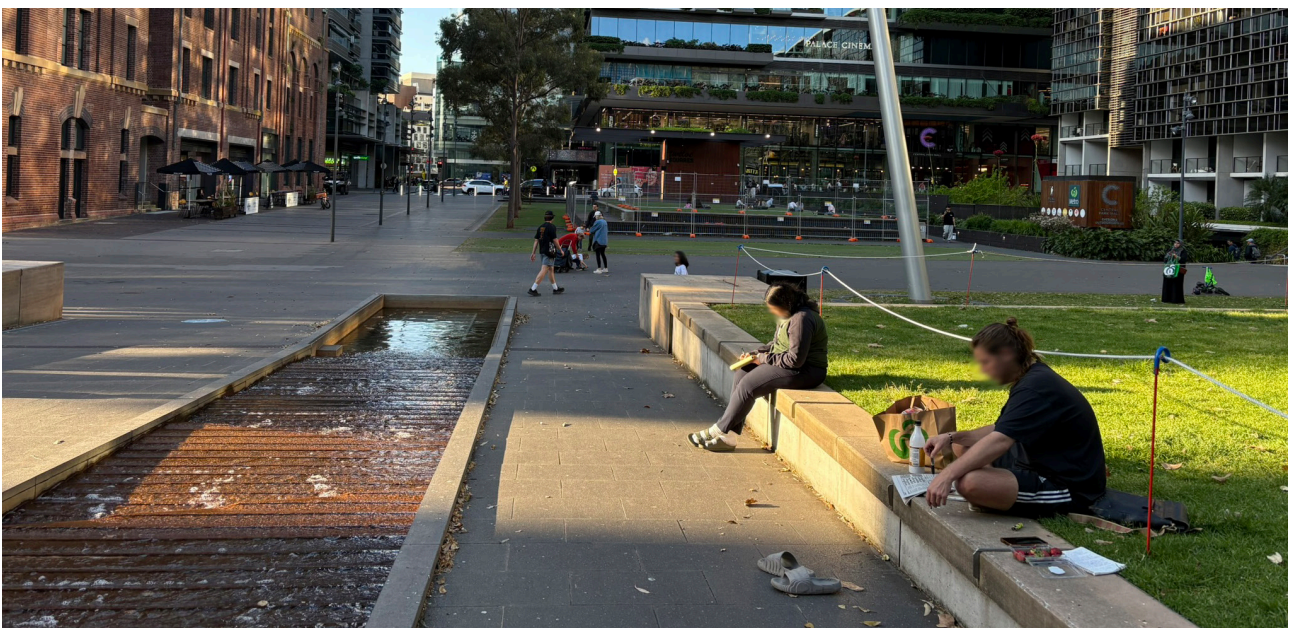


Figure 26: Chippendale Green showing controlled natural lighting and harmonious colours

Participants described visual comfort as closely linked to legibility, simplicity and consistency rather than to aesthetics alone. Environments that reduced unnecessary visual complexity, for example, through simple layouts, restrained patterns, harmonious colour palettes and controlled lighting, supported ease of movement, reduced cognitive load, and helped people remain regulated in public space. In contrast, overly complex patterns, high contrast, flickering or harsh lighting, and competing visual stimuli were described as distracting, exhausting, or physically uncomfortable, particularly for people with visual sensitivities or heightened sensory overload.

I like the harmony [of sandstone buildings]. It's quite calming. It's not too bright or stimulating ... I'd rather go somewhere with a soothing, harmonious palette vs lots of competing colours.

[Female, 30s, AuDHD and PTSD]

The trees have enough shade. In terms of glare and light sensitivity, sometimes sunglasses don't do enough.

[Female, 30s, AuDHD]

Simple layouts and restrained visual patterns

Participants preferred environments with clear spatial order and limited visual clutter, particularly where building layout helped manage crowd movement and direction. Visual simplicity was valued for its practicality, even when described as “boring”. Complex patterns, irregular forms or visually “messy” elements were often tolerated but not preferred, especially during movement. Small, inconsistent patterns could become distracting, particularly when participants felt overwhelmed.

Natural and harmonious colour palette

Participants consistently described natural, muted and harmonious colour palettes as calming and easier to process. Sandstone, blues and greens were often associated with cleanliness, calmness and visual comfort, while bright, saturated or aggressive colours, particularly red, were described as difficult or distressing. Competing colours were more challenging than a restrained, coherent palette.

Controlled, consistent lighting

Lighting was a major factor shaping visual comfort. Participants’ experiences aligned with existing research (Gutiérrez et al. 2022), showing that neurodivergent people, particularly autistic individuals, are more likely to experience atypical visual processing, including heightened sensitivity to brightness, glare and flicker, and a higher prevalence of uncorrected or functionally significant refractive differences, such as astigmatism and visual stress. Participants valued filtered natural light, access to shade, and evenly distributed lighting, and expressed strong discomfort with harsh, cold, flickering or overly bright light sources. High contrast, glare, cold white lighting, and flicker, particularly from fluorescent sources, were described as physically uncomfortable, disorienting and even nauseating. Consistency was also important. Patchy or uneven lighting and bright reflections increased discomfort and visual strain, especially at night.

Design recommendations

- 1 Use larger, consistent paving materials in busy walking areas, rather than small, busy or highly patterned tiles.
- 2 Limit visually complex façade and surface patterns along primary walking routes, as they can be tiring to the eye.
- 3 Keep movement corridors visually calm, and allow more colour and expression in places where people stop and spend time.
- 4 Prioritise the use of natural, muted colours (e.g., stone, timber, earth tones) for public domain elements.
- 5 Avoid large areas of harsh or high-contrast colours, particularly red, in everyday public spaces.
- 6 Provide filtered daylight through trees and canopies to avoid exposure to prolonged, direct sunlight.
- 7 Use warm-temperature, non-flickering lighting in pedestrian areas, and avoid fluorescent sources where possible.
- 8 Ensure consistent lighting levels to minimise glare and strong contrasts, particularly at night.
- 9 Limit overly bright digital screens and illuminated advertising in public spaces, especially after dark.
- 10 Select non-reflective, matte materials to reduce glare and harsh reflections.

When you look at a light, and you see lines going through it, I have that pretty badly. Nighttime is overbearing with all the streetlights, with the cars’ headlights ... they’re very, very bright. It makes me feel sick.

[Female, 20s, AuDHD]

2.2.3 Smell and odour

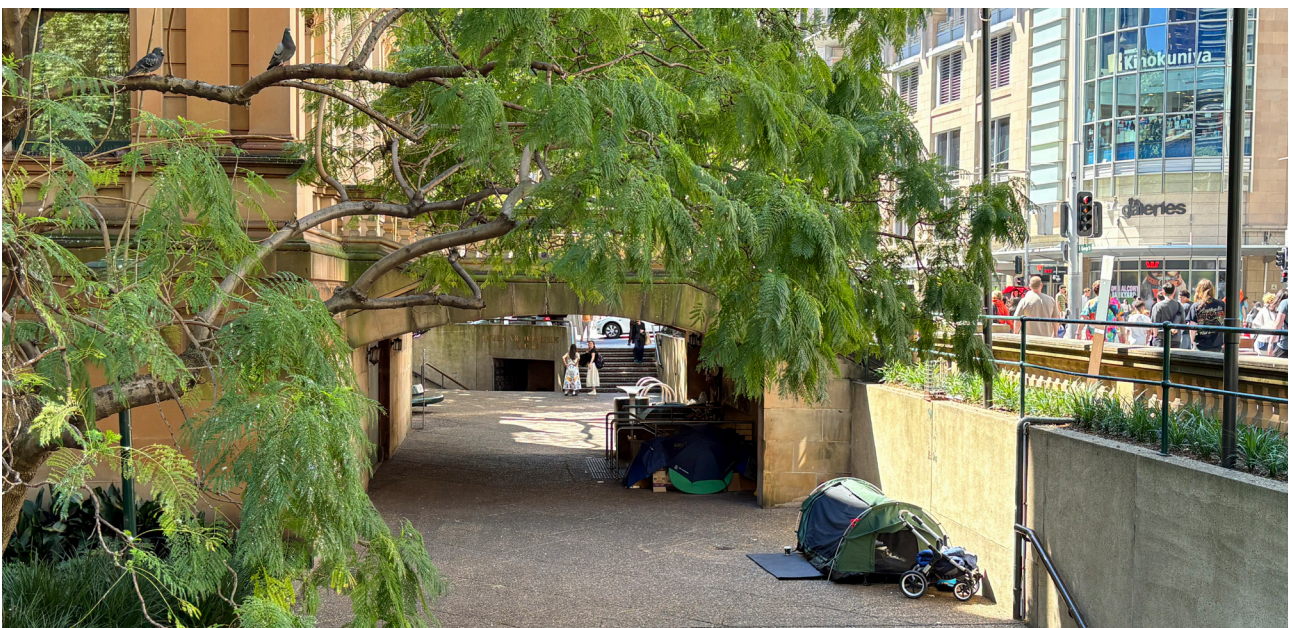


Figure 27: Odour concentration near Town Hall linked to limited sanitation and environmental management

Smell was described as a context-dependent sensory barrier rather than a universal deterrent. While many participants ranked sound and visual stimuli as more influential overall, certain smells, particularly cigarette smoke, human-related odours in enclosed or poorly serviced spaces, and poorly managed waste, could trigger immediate avoidance or route changes. In contrast, natural smells (e.g. rain, vegetation, fig trees, coastal air) were often described as positive, grounding and emotionally meaningful. The impact of smell was shaped by intensity, proximity, duration and the ability to move away, highlighting smell as a highly spatial and relational sensory factor in public space.

As soon as you go into an enclosed space, like a train, like a bus, if people are wearing a lot of perfume, even if they are wearing a lot of deodorant, it's not great.

[Female, 40s, ASD and sensory processing differences]

A lot of people with ADHD rely on coffee, tea, matcha and cigarettes, but I can't be close to nicotine because I am hypersensitive to smell. That's a competing access need.

[Female, 30s, AuDHD]



Design recommendations

- 1 Locate smoking areas, bins, loading zones and food exhaust outlets away from main walking routes, entrances and seating, recognising that proximity intensifies sensory impact.
- 2 Provide alternative route options (e.g. indoor vs. outdoor, street edge vs. internal route) so people can actively choose lower-odour environments rather than being forced through concentrated sensory zones.
- 3 Use planting to introduce gentle, natural scents, such as native vegetation, rain-activated plants or coastal species, to support calm sensory experiences without creating overpowering smells.
- 4 Require an impact assessment of smell as part of public domain planning and approvals.

Figure 28: Fig trees contribute a subtle natural scent to the space.



Figure 29: Chippendale Green food plaza showing spatial containment of food smells

2.2.4 Thermal comfort



Figure 30: Seating located under tree canopy at Chippendale Green

Participants consistently described weather, particularly heat, humidity, wind, and rain, as a critical factor shaping whether they visited public open spaces at all. Heat was especially difficult to regulate, often triggering distress, fatigue or avoidance, while shade, tree canopy, and access to cool, sheltered places enabled continued movement and participation. These lived experiences align with emerging evidence suggesting that neurodivergent individuals, particularly autistic people, may exhibit atypical sensory responses to temperature and thermal conditions and reduced tolerance to heat and humidity (MacLennan et al., 2021). Rain and wind further influenced route choice, with fragmented shelter, wind tunnels, and reliance on umbrellas increasing cognitive and sensory load. In contrast, sheltered seating, continuous awnings, and protected pause points supported sensory regulation.

I like cold for emotion regulation. So summer is not my favourite season to be outside. I sit under the big fig tree when it's really hot – It's nice and shady.

[Female, 30s, AuDHD and OCD]

Rain noise is really good ... I really like the smell. [When it's rainy] it's not as bright. But there aren't enough places outside, like public spaces, where you can be in a thoroughfare and just be outside with cover.

[Female, 30s, AuDHD]



Figure 31: Shade, shelter and wind protection as key elements of pedestrian networks

While participants primarily spoke about exposure, shade and shelter rather than specific material qualities, the implications of their experiences extend to how public space materials and microclimates are designed. A substantial body of urban climate and public health research demonstrates that dark pavements, heat-absorbing surfaces, and poorly designed shade structures can significantly increase pedestrian thermal discomfort (Djekic et al. 2018; Li et al. 2023). In contrast, vegetated surfaces and access to water features have been shown to reduce perceived temperature and support thermal comfort in public space (Vasilikou et al. 2020). Given participants' strong accounts of heat-related distress and avoidance, these findings suggest that material choices are also an access and inclusion issue. These considerations are therefore framed as evidence-informed extensions to the design recommendations, complementing participant experiences.

Design recommendations

- 1 Provide continuous shade and shelter along walking routes by using connected awnings, tree canopy, colonnades or covered edges. Long uncovered stretches reduce comfort and exclude people with heat and sensory sensitivities.
- 2 Include sheltered seating, such as roofed benches and covered edges, so people can pause outdoors during rain or heat without having to move inside.
- 3 Reduce wind tunnel effects in exposed areas, especially near tall buildings and waterfronts, using vegetation, wind screens, building form and sheltered alternative routes.
- 4 Avoid dark, heat-absorbing pavement and surface materials in high pedestrian areas.
- 5 Avoid shade structures and canopy fabrics that absorb and re-radiate heat (e.g., dark materials).
- 6 Prioritise lighter-coloured, reflective materials for paving and street elements, especially where shade coverage is limited.
- 7 Provide access to drinking water as a standard inclusion feature in parks, plazas and high-use walking corridors to support cooling and self-regulation.
- 8 Where appropriate, incorporate subtle water elements (e.g., fine misting, shallow moving water, small fountains) as microclimate features.

I have a temptation to occasionally frequent areas which are not the most windy. Darling Harbour is a lot open, and lot of areas I frequent are back-alley areas for that reason.

[Female, 30s, AuDHD]

2.2.5 Walking surfaces



Figure 32: Inconsistent surfaces increase the chance of tripping over

Walking surfaces emerged as a critical but often overlooked factor shaping confidence, attentional demand and bodily comfort during everyday movement. Participants' accounts point to three interconnected dimensions shaping these experiences: the importance of stable, predictable walking surfaces; the role of surface material and sensory feedback; and the particular challenges posed by stairs. Across all surface types, maintenance emerged as a central accessibility issue. These findings emphasise that surface design and upkeep are fundamental components of inclusive pedestrian environments.

It's the feeling of the gravel moving when I'm taking a step [that I don't like]. On a solid surface, like this footpath, I'm feeling my body in a sturdy way.

[Female, 20s, AuDHD]

I love brickwork. It just feels comfortable underfoot. There is a decent amount of tactile response for my feet ... it also helps me orient myself in space.

[Female, 30s, AuDHD and OCD]

Stable, predictable walking surfaces

Participants expressed a strong need for stable, even ground surfaces that felt secure underfoot, reduced attentional demands, and supported confident movement. Loose or shifting materials like gravel, mud or dirt were frequently described as unpleasant or distracting due to unpredictable tactile feedback, including movement, sharpness, or slipperiness underfoot. Participants with proprioceptive differences or attentional variability reported increased stumbling or near-tripping on uneven surfaces, particularly during longer walks or when fatigued. Regular maintenance was identified as critical, as poorly maintained surfaces increased cognitive load by requiring continuous attention to avoid tripping, regardless of material type.

Preference for natural flooring

Some participants expressed a conditional preference for natural materials such as timber or brick when these surfaces were even, coherent and well-maintained. These surfaces were valued for their sensory feedback through sound and vibration, which supported bodily awareness and orientation through a subtle “call-and-response” experience with each step. However, this preference diminished when natural materials became uneven, slippery or poorly aligned. Hard, high-impact materials such as concrete were sometimes associated with discomfort or joint strain, while softer, impact-absorbing surfaces were perceived as more comfortable underfoot.

Stairs

Stairs were frequently identified as challenging elements of pedestrian infrastructure, particularly during descent, in wet conditions, or where surfaces were narrow, slippery or poorly lit. Many participants relied on handrails for balance, especially those with proprioceptive differences, joint hypermobility or fatigue. These experiences align with emerging evidence of higher rates of joint hypermobility, postural instability and proprioceptive differences among neurodivergent populations, particularly autistic people and individuals with ADHD (Baeza-Velasco et al. 2025; Csecs et al. 2022). Wide stairs with consistent riser heights and clearly defined nosing were perceived as safer, while gradient or irregular stair designs were seen as unreliable.

Design recommendations

- 1 Make sure main walking routes have even, stable surfaces.
- 2 Avoid using loose gravel in areas where people regularly walk.
- 3 Treat maintenance of walking surfaces as a core accessibility requirement rather than an operational afterthought.
- 4 Minimise surface transitions. Where unavoidable, make them clearly visible and easy to feel underfoot.
- 5 Use natural materials selectively, only where they can remain level and well-maintained over time.
- 6 Consider how surfaces feel and sound underfoot, as these cues help people stay oriented.
- 7 Do not prioritise visual appearance if it compromises safety, comfort or slip resistance.
- 8 Use softer, impact-absorbing surfaces in high-use pedestrian areas where appropriate (e.g. around stairs, play areas, steep slopes).
- 9 Provide handrails on both sides of stairs, using materials that are comfortable to touch and easy to maintain.
- 10 Keep step heights and depths consistent, and use clear visual contrast on stair edges.

Neurodivergent people are at higher risk of tripping over and falling. Having more postural sway ... I would be tripping over it all the time, and it actually made me too anxious to walk over here, so I would actively avoid it because it was scary.

[Female, 20s, AuDHD and PTSD]

2.1.6 Nature



Figure 33: Royal Botanic Garden as a place of respite from the sensory intensity of the surrounding city

Across the study, nature was described as a critical counterbalance to the intensity of urban environments. Participants used green and blue spaces for recreation, sensory regulation, recovery and pacing daily life. Three qualities appeared to be particularly relevant: the extent to which spaces felt buffered from surrounding urban activity, the characteristics of natural soundscapes, and the visual qualities of green and blue landscapes. These findings suggest that the design and management of urban nature contribute to everyday accessibility for neurodivergent users.

Water [on the Glebe Foreshore] has a correct level of visual stimulation. It's a background, constant enough for me to look at ... Wind through leaves is incredibly good. That's one of the reasons I go to parks.

[Female, 30s, AuDHD]

I like Hyde Park because it's quite structured. I can see clearly what's in front of me and still know what's going on around me.

[Female, 30s, AuDHD and OCD]

Feeling away from the busy, serious urban environment

Participants consistently distinguished between green spaces that merely sit within the city and those that feel buffered from its intensity. Parks bordered closely by roads or used primarily as pedestrian thoroughfares were described as less restorative, even when visually attractive. In contrast, larger or more enclosed parks, such as Hyde Park and the Royal Botanic Garden, were valued for reducing exposure to traffic noise and its visual movement and constant pedestrian flow. A sense of enclosure, depth, and internal quiet enabled participants to feel less on display and more at ease.

Calming effects of natural sound

Natural sounds (such as water, trees and birds) were widely reported to be calming and preferable to urban noise, provided they were consistent, diffuse, and did not compete aggressively with traffic noise. The sound of water, especially when consistent and moderate in volume, was described as soothing and offering an audio escape. Birdsong was generally comforting, and the wind through trees was valued for its rhythmic rustling. Sound quality, rather than volume alone, shaped whether environments were experienced as restorative.

Visual restoration through green and blue landscapes

Greenery and open views supported visual restoration by encouraging slower movement and offering relief from the visually dense and fast-paced conditions of urban streets. Green and blue landscapes provided visual depth, openness and continuity, contrasting with the fragmentation and constant visual demands of the surrounding built environments. Water elements, through reflections, harbour views or gentle movement, and tree canopies moving in light wind were consistently valued for offering a balanced level of visual stimulation that was engaging without being overwhelming. Participants appreciated both structured landscapes (such as Hyde Park) for their clarity, legibility, and sense of order, and more organic environments (such as the Botanic Gardens) for their richness, variation, and sense of natural immersion.

Design recommendations

- 1 Prioritise quiet areas within parks, located away from busy roads and commuter routes.
- 2 Create a sense of depth and enclosure through planting, landform or layout.
- 3 Avoid placing most seating along park edges, where it is next to traffic. Distribute seating deeper within green spaces.
- 4 Use entry thresholds (e.g., groves, pergolas) to support sensory transition from street to park.
- 5 Use subtle water features (e.g., gentle trickling, shallow moving water) placed away from major traffic noise.
- 6 Avoid loud or dramatic water features in already noisy environments.
- 7 Design for sound quality by prioritising consistent natural soundscapes (e.g. water, wind in trees, birds) that feel diffuse and rhythmic.
- 8 Maintain clear views of greenery and water, avoiding excessive visual clutter.
- 9 Balance structure and informality by combining legible paths with more natural planting patterns.
- 10 Support gradual visual engagement through layered planting, gentle curves, tree avenues and slow-moving water, rather than abrupt focal points, to support sustained visual comfort and attentional recovery.

Sometimes on the bus or light rail, I just sit on TikTok continuously because I don't want to be in the space... I'm exhausted by all the noise and people. But this is an area where I wouldn't probably have my phone... because it's just birds, so it's nice.

[Female, 20s, AuDHD]



Figure 34: Hyde Park Chess Board

2.3 Sharing the City

“ I am a very lonely person. I can’t stay at home on my own all day. But if I interact with people, they will find out that I have a problem. I just like very brief interactions with people.

[Female, 50s, auditory processing differences]

2.3.1 Social belonging

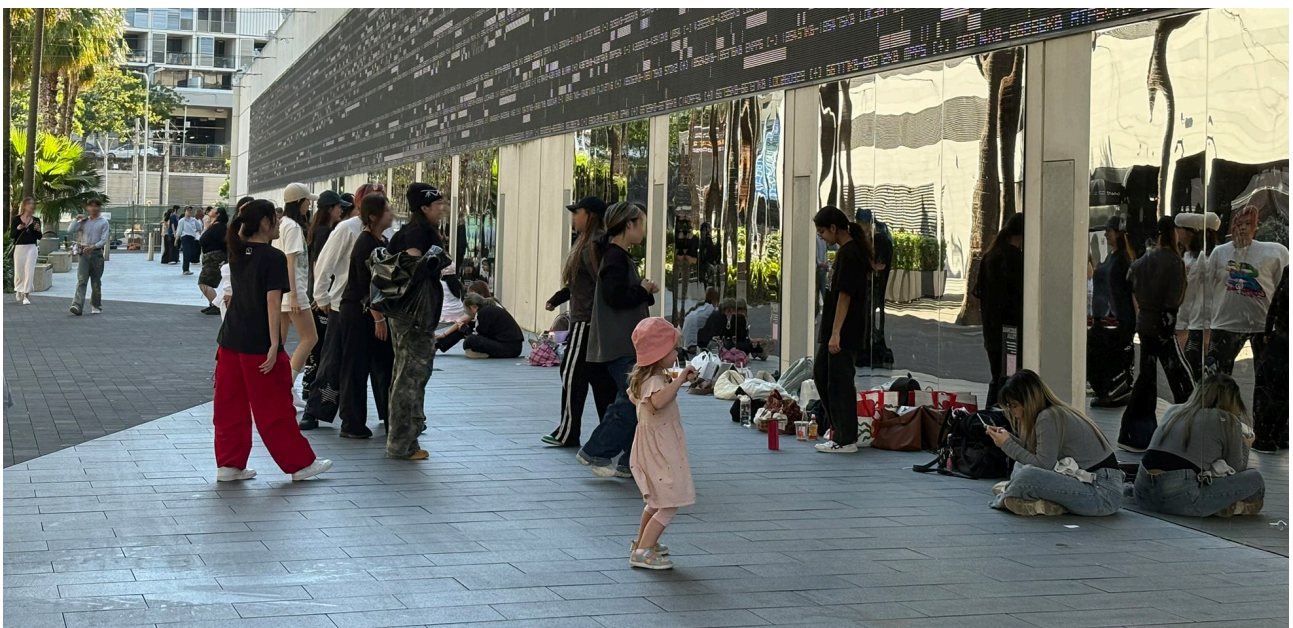


Figure 35: Informal dancing and social activity at Dancers' Alley

Participants described public spaces as social environments that shaped comfort, attention and willingness to participate. For many neurodivergent participants, spaces with visible movement, informal social life and ambient activity often felt reassuring and emotionally supportive, while very quiet or empty spaces could feel uncomfortable or isolating. Participants valued environments that offered opportunities for low-pressure social presence, observation and shared activity without requiring direct interaction. Public spaces that combined social energy with choice (i.e. places to sit, observe, explore or participate) supported both autonomy and connection.

I like watching people play chess. It's kind of interesting. In less crowded areas, I find I am often the person being watched, which I don't love.

[Female, 20s, AuDHD and PTSD]

Sometimes we are bound to a pension budget ... so free places to go really help ... [Not going out] is not too great for mental health ... So, I've got to go outside.

[Female, 30s, AuDHD and OCD]

Comfort in social energy

Many participants valued being among others without needing to interact, instead preferring opportunities for passive observation and shared presence. They consistently sought seating and pause points that balanced prospect (clear sightlines) with refuge (a sense of protection), allowing them to monitor surroundings without feeling exposed. Features such as planting, corners, setbacks, and changes in level helped create these semi-protected conditions and reduced social demand. In contrast, highly exposed spaces, such as central lawns or inward-facing seating, were often avoided due to increased self-consciousness. Comfort depended on whether the level of activity matched expectations for the place, with deserted spaces often increasing discomfort.

Pockets of sensory and cultural discovery

Participants valued public spaces with small-scale pockets of interest that offered sensory, cultural or intellectual engagement. These elements (such as heritage structures, gardens, public art or informal exhibitions) supported curiosity, exploration and self-directed engagement. For many neurodivergent participants, these features provided meaningful stimulation that helped sustain attention, regulate sensory needs or support conversation. Importantly, these sensory and cultural interests were embedded in everyday environments, such as street art or light features noticed during routine walks. In contrast, large-scale or event-based spectacles (such as Vivid Sydney) were often described as less accessible due to crowding, long waits, and heightened sensory demands.

Access to free social opportunities

Access to free, informal social opportunities was described as essential for participation, wellbeing and inclusion, particularly for those with limited financial resources. Public spaces enabled engagement in everyday activities such as exercise, dance, protests, markets, and community gatherings without economic barriers. This is especially significant given consistent evidence that neurodivergent people, particularly autistic adults and people with ADHD, experience higher rates of underemployment compared to the general population (Australian Bureau of Statistics 2022).

Design recommendations

- 1 Design plazas and squares to support easy movement through space, not just staying in one spot.
- 2 Avoid layouts that create large empty areas outside peak times.
- 3 Provide seating where people can watch the activity without being the centre of attention.
- 4 Support a mix of uses that sustain everyday social presence across the day.
- 5 Integrate small-scale, distributed points of interest (e.g., public art, heritage elements, planting and lighting) to encourage gentle curiosity.
- 6 Allow for tactile, visual, and observational engagement without requiring participation.
- 7 Support change over time (e.g., seasonal planting, rotating art) to maintain interest without overload.
- 8 Ensure public spaces support free, informal activities (e.g., dance, exercise, social gatherings).
- 9 Design for flexibility rather than fixed programming or heavy commercialisation.
- 9 Provide open, durable surfaces that can accommodate different uses over time.
- 10 Incorporate seating near trees, planting edges, level changes or built elements so people feel supported without being hidden.
- 11 Orient benches and chairs to face paths, streets or activity, allowing people to observe comfortably and socialise without interaction.
- 12 Avoid layouts that place people in highly exposed, display-like positions (e.g. seating rings around empty lawns).

2.3.2 Supportive infrastructure



Figure 36: Availability of different types of seats at Darling Square

Participants' accounts indicate that everyday amenities play a critical role in shaping whether public spaces are usable, sustainable and welcoming over time. Access to basic facilities, the connectivity of spaces within daily journeys, and the design of seating and resting opportunities all influenced how much planning, effort and energy participation required. These factors shaped how long participants could remain in public spaces, and whether they felt able to use spaces spontaneously and confidently. The findings suggest that attention to these everyday amenities is central to supporting inclusive and equitable use of public open space.

The concept of urinary leash is pertinent. A lot of autistic people tend to have stomach issues and weird digestion, so having ample clean toilets around is quite important.

[Female, 30s, AuDHD]

I never sit the way he's sitting with my legs just straight down. I sit comfortably with my feet up, like knees to chest. I think a lot of neurodivergent people would agree with that.

[Female, 30s, AuDHD and OCD]

Everyday basics: toilets and water

Toilets were described as a high-priority amenity that shapes route choice and advance planning, with uncertainty about facility locations often experienced as stressful. Access to drinking water was also essential for supporting longer stays in parks. These findings align with research on interoception (i.e., the sensing of internal bodily signals), which influences how people recognise needs such as hydration, rest and toileting. Emerging evidence suggests that interoceptive processing in neurodivergent people can contribute to delayed recognition of bodily needs (Williams et al. 2023). These insights reinforce the importance of predictable, clearly signed access to toilets and drinking water.

Connectivity and convenience

Participants repeatedly described using public open spaces as part of their trip chain, meaning they were used because they were located near stations, along daily routes or between home, work and errands. Transport access strongly shaped how often participants used public spaces, sometimes outweighing other preferences. Some participants described a strong reliance on staying within their postcodes, highlighting the cumulative energy required to plan a trip beyond these areas. Nearby supermarkets and cafés supported longer stays by reducing the need for additional planning.

Inclusive seating

Seating emerged as a major dimension of access in public space use. Participants discussed the need for posture variation and movement, and for sitting in non-standard ways (e.g., cross-legged or knees up). Standard street furniture was often experienced as ergonomically restrictive, with seats described as too high, too narrow or uncomfortable for different body sizes and sitting preferences. Back support and opportunities to lean against surfaces were repeatedly linked to comfort and the ability to remain in a space for longer periods. Surface material also shaped seating use. Metal seating was often described as cold and unpleasant, whereas timber was preferred for its tactile comfort. Tables were valued for enabling activities such as journaling, drawing or laptop use, often framed as supporting self-regulation or sustaining time outdoors.

Design recommendations

- 1 Make amenity locations easy to find in advance, using consistent signage online and on-site so people can plan their visit.
- 2 Prioritise cleanliness and quick maintenance, so people can trust that amenities will be usable when they arrive.
- 3 Prioritise high-quality public space around transport interchanges and along key walking routes, where people rely on amenities.
- 4 Co-locate key amenities (e.g., seating, shade, toilets, water, and affordable food options) to support longer, more comfortable visits to public spaces.
- 5 Invest in local pocket parks, recognising that convenience can outweigh size.
- 6 Provide a diverse range of seating, including benches with backrests, loungers, low walls and decks, suitable for individuals and small groups.
- 7 Design seating to support different postures (e.g., sitting sideways, legs up, shifting position), using wider seats and flexible configurations.
- 8 Include tables, such as picnic tables and small worktables, to support eating, writing, drawing and laptop use where appropriate.
- 9 Use warmer-touch materials such as timber where possible, and avoid overusing cold, highly conductive materials like stainless steel.

[It] takes a lot of energy to get all your sh*t organised and get out of the house. I want to make the most of that and be gone for a long time. Probably, I get hungry. I just get a snack from Woolworths here.

[Female, 30s, AuDHD]



Figure 37: View of the Sydney Tower Eye from Hyde Park

3 Policy and guideline context

3.1 Why policy and guidelines matter for this study

Australia has a strong and growing policy and guideline landscape that supports the rights, inclusion and participation of people with disabilities. Across national, state and local levels, commitments increasingly recognise accessibility, dignity and inclusion as shared public responsibilities rather than individual burdens.

However, attention to access remains weighted towards physical and technical dimensions. While some strategies and guidelines acknowledge comfort, legibility and anxiety, there is limited and inconsistent consideration of how sensory load, cognitive effort, social energy and environmental predictability shape everyday access for neurodivergent communities. These experiential dimensions are rarely treated as core access requirements across the full journey or as factors influencing people's ability to use and remain in public space over time.

Despite strong commitments to accessibility, neuroinclusive design is not yet systematically embedded in local government public domain guidance in Australia.

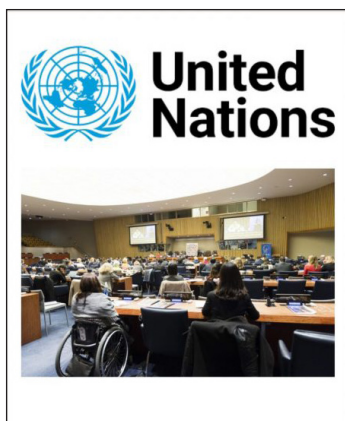
This research addresses that gap by contributing lived-experience evidence of how streets, parks and civic spaces are encountered in practice. This chapter situates the findings within existing policy and guideline documents and uses them to interpret, strengthen and operationalise current commitments, supporting the consideration of neuroinclusion as part of everyday urban life rather than as a specialist or exceptional condition.

The policy context is presented in three parts:

- **International frameworks** include both rights-based instruments and globally recognised design guidelines that shape expectations for inclusive public environments.
- **National and state frameworks** establish rights, responsibilities, expectations and practical standards for inclusion across Australia.
- **City of Sydney's Inclusive and Accessible Public Domain Guidelines**, which provide the primary local policy anchor for this research.

The report concludes with a discussion of the study's limitations and a concluding section.

3.2 International frameworks



United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)

The City of Sydney Inclusion (Disability) Action Plan 2025-2029 is grounded in the principles of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which Australia ratified in 2008. Several core UNCRPD articles are directly relevant to this research and to the City's role in shaping the public domain, including:

- Respect for dignity, autonomy and choice (Article 3);
- Accessibility (Article 9), including access to the physical environment, transport, information and communications;
- Awareness-raising (Article 8), by promoting greater social awareness towards persons with disabilities;
- Living independently and being included in the community (Article 19);
- Personal mobility (Article 20) in the manner and at the time of their choice;
- Participation in cultural life, recreation, leisure and sport (Article 30) on an equal basis with others

Findings from this study align with the intent of the UNCRPD by raising awareness around barriers to neurodivergent people's access to mobility and public life, which can impede their autonomy, choice and dignity.



Global Street Design Guide

The Guide's principles of a protected clear path, defined frontage zone, dedicated street furniture zone, and buffer zone directly respond to the challenges participants described around obstructions, competing uses, and disrupted flow. However, this research adds important nuance by foregrounding the cognitive and emotional labour involved in everyday walking for neurodivergent users. These findings can strengthen the Guide's call for high-quality sidewalk design by demonstrating how spatial organisation directly shapes the predictability of footpaths, which is critical to whether walking feels manageable or overwhelming for neurodivergent pedestrians.

3.3 National and state frameworks

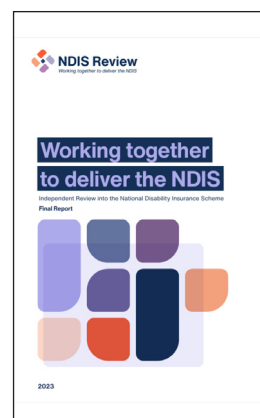


Australia's Disability Strategy 2021–2031

Australia's Disability Strategy 2021–2031 provides the national framework for implementing the UNCRPD across all levels of government. The Strategy's vision of an inclusive society aligns strongly with the City of Sydney's Inclusion (Disability) Action Plan, particularly in relation to the outcome areas of:

- Inclusive homes and communities,
- Safety, rights and justice
- Health and wellbeing, and
- Community attitudes.

This research can inform the Strategy by offering fine-grained insights into how inclusion is experienced in public open spaces, walking routes and everyday civic environments (see Section 3.4). The study supports the Strategy's emphasis on removing environmental and attitudinal barriers that limit participation, particularly for people whose needs are less visible or less well addressed by traditional access approaches.



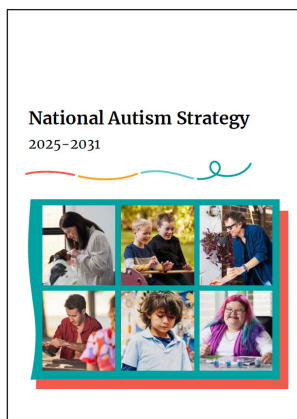
National Disability Insurance Scheme (NDIS) and foundational supports

Recent reforms to the National Disability Insurance Scheme (NDIS), following the 2023–24 Review, have emphasised the critical role of foundational supports delivered through community and mainstream systems. While 5.5 million Australians (21.4 per cent) had disability in 2022 (ABS), only around 751,446 people were active NDIS participants in 2025. This means that the vast majority of people with disabilities (86 per cent) do not receive individualised NDIS support and therefore rely primarily on a combination of mainstream services, community support and inclusive public environments.

In this context, findings from this research show how public spaces function as foundational support by enabling:

- independent movement without constant assistance,
- informal regulation of sensory and emotional states,
- low-cost or free participation in social and cultural life, and
- recovery and rest during everyday travel.

The research highlights that when public environments are poorly designed or managed, the burden shifts back onto individuals, emphasising the importance of local government action alongside individualised support systems.



National Autism Strategy 2025–2031

The National Autism Strategy 2025-2031 calls for a safe and inclusive society where Autistic people can thrive, with a strong emphasis on social inclusion, participation and environments that reduce unnecessary barriers.

This research aligns closely with the Strategy by documenting how Autistic and neurodivergent participants experience sensory overload in crowded, noisy or visually complex environments, and difficulty navigating unpredictable or ambiguous spaces.

By translating these experiences into actionable design and policy insights, the study supports the Strategy's commitment to improving quality of life in ways that are meaningful to Autistic people, particularly through mainstream environments such as streets, parks and civic spaces.



NSW Disability Inclusion Plan 2021–2025

The NSW Disability Inclusion Plan establishes four outcome areas, including creating liveable communities and improving access to mainstream services. The research can therefore strengthen the NSW framework by showing how local-scale interventions (such as footpath management, seating design, shade, wayfinding and maintenance) can tangibly improve inclusion at the everyday level.



NSW Walking Space Guide

Participants' experiences of distress caused by unmanaged obstructions directly align with the Walking Space Guide's evidence that such elements substantively reduce effective walking width and alter pedestrian behaviour. The Guide documents that queues (e.g., around bus stops, ATMs, and street markets) can reduce the clear walking width and that street furniture can attract lingering behaviour. This research extends these findings by showing that those spatial disruptions function as access barriers, particularly for people who rely on predictability and advance planning to move confidently.

The Walking Space Guide explicitly recognises that some pedestrians are sensitive to walking in close proximity to strangers and that crowding leads to restricted movement, shoulder brushing and a loss of comfort. Participants' accounts in this study provide rich qualitative evidence of what this "restricted movement" feels like in practice: heightened anxiety, exhaustion, lingering distress after returning home, and, in some cases, long-term avoidance of entire areas. This reinforces the importance of applying the Guide's comfort standards in high-demand areas.



NSW Pedestrian Underpass Design Guideline

The TfNSW Pedestrian Underpass Design Guideline recognises that underpasses can be experienced as enclosed, poorly lit and uninviting. Participants' accounts in this study strongly reinforce this position but extend it by showing how enclosure, crowding, sensory intensity and disorientation interact to create cumulative cognitive and emotional burden, particularly for neurodivergent users.

3.4 City of Sydney Inclusive and Accessible Public Domain Guidelines



The City of Sydney's Inclusive and Accessible Public Domain Guidelines provide the primary policy anchor for this research. The Guidelines articulate a strong commitment to dignified, equitable access across streets, parks and public spaces, and already embed many principles that closely align with the lived experiences reported in this study.

This chapter situates the findings from this study within the City's existing framework. Rather than introducing new policy directions, this section identifies areas to which the findings from this research can contribute.

The findings resonate most strongly with the following components of the Guidelines:

Footpath zone inclusion and access requirements

The Guidelines identify a predictable, continuous and accessible path of travel as a foundational requirement, particularly for people who are blind or have low vision. This research suggests extending that principle by demonstrating that predictability is also a core access requirement for many neurodivergent pedestrians. Participants described "barriers" as both physical obstacles and dynamic and social conditions, such as crowding, erratic pedestrian movement, queues, and interactions with micromobility. These barriers undermined their ability to anticipate movement and maintain a stable walking line. Pinch points and clutter were found to significantly disrupt path consistency, forcing frequent adjustments, near-collisions and heightened vigilance.

Consistent with this, the findings also validate the Guidelines' performance standards on obstructions and furniture zones. Participants emphasised that unpredictable obstacles, such as café furniture, A-frames and temporary installations, have a disproportionate impact because they reduce the capacity to plan ahead and move with confidence. In this way, the research reinforces the importance of maintaining clear, legible and consistent footpath zones as a matter of inclusive access.

Street furniture

The Guidelines specify that street furniture should be located within a dedicated furniture zone, set back at least 500mm from the continuous accessible path of travel, and should not compromise clear walking widths—an approach that closely aligns with participant experiences. Participants consistently reported that cluttered environments and unexpected obstacles increased stress, disrupted walking rhythms and heightened the risk of conflict with other pedestrians.

This research suggests further nuance by highlighting the importance of intentional pauses and edges. Participants valued small niches, setbacks and edge conditions where they could stop, re-orient or self-regulate without obstructing pedestrian flow. Rather than viewing pausing as incidental, the findings suggest that well-designed furniture placement can support regulation and inclusion while preserving the integrity of the accessible path.

Lighting

Participants identified flickering, harsh, competing or inconsistent lighting, particularly in underpasses and underground environments, as a major source of sensory discomfort and overstimulation. These experiences align directly with the Guidelines' objectives regarding consistency, minimising glare and supporting safe, legible navigation at night.

While the Guidelines appropriately foreground low-vision outcomes, this research suggests that lighting quality is also a sensory access issue, affecting neurodivergent pedestrians' comfort, orientation and willingness to use certain routes. The findings recommend that local governments treat flicker and competing light sources as access barriers, and prioritise smooth lighting transitions, particularly at the entry and exit points of tunnels and underpasses, to reduce abrupt sensory shifts and support orientation.

Signage and wayfinding

The Guidelines explicitly recognise anxiety and confusion as consequences of unsuccessful wayfinding, a framing that strongly resonates with participant accounts. Participants described wayfinding as cognitively demanding, particularly when confirmation of location, direction or route continuity was missing.

This research further identifies underpasses and large internal networks as high-risk wayfinding environments. In these contexts, participants required more frequent confirmation cues and reassurance to maintain confidence and avoid withdrawal or route avoidance.

Shared zones and shared pathways

The City of Sydney Guidelines recognise that shared zones and shared paths can be unpredictable and disorienting, particularly for people who are blind or have low vision and for people who are Deaf or hard of hearing. The findings from this study strongly reinforce these concerns and extend them to neurodivergent users, for whom unclear right-of-way, speed differentials and bright micromobility lighting were frequently described as sources of stress and uncertainty.

While the Guidelines focus on pavement markings, tactile cues and technical compliance, this research found a behavioural dimension: participants indicated that shared environments work only when movement is legible and speeds are compatible. Where fast-moving cyclists and delivery riders were present, shared zones were experienced as unsafe and cognitively demanding.

These lived experiences align closely with the intent of Transport for NSW's Technical Direction on shared zones, which defines them as environments where pedestrian priority must be clearly communicated through design, not just regulation. The Direction specifies that shared zones should be self-enforcing, with low operating speeds (up to 10 km/h) achieved through spatial design, surface treatments and traffic calming. However, participants' persistent uncertainty about priority and reports of high-speed micromobility suggest that many shared environments are not functioning as intended.

The findings therefore point to the need for stronger spatial cues, clearer separation or additional design and operational measures to ensure that pedestrian priority is visible, legible and enforceable in practice. Without this, shared environments risk excluding those who rely most on predictability and clarity.

Planting

The Guidelines explicitly recognise planting as a wayfinding aid and environmental cue, particularly in supporting orientation and navigation. Participants' experiences in this study extend the value of planting beyond wayfinding and aesthetics to its sensory, emotional and social functions. Planting was frequently described as supporting sensory regulation, offering relief from noise, visual clutter and exposure.

Participants preferred parks with natural boundaries and layered vegetation, which created a sense of enclosure while still allowing outward views. These qualities supported feelings of comfort and safety, enabling people to remain in public spaces without feeling exposed or overwhelmed. In this way, planting contributed to environments that balanced the ability to see others with partial shielding, supporting a comfortable level of social presence without pressure to interact.

Park furniture

While the Guidelines frame seating primarily in terms of physical access, this research suggests an important social and sensory dimension. Participants described seating as a key tool for regulating energy, posture and social exposure, rather than simply a place to rest. Seating enabled people to pause, recover from sensory overload, observe their surroundings at a comfortable distance or participate in public life without sustained movement or interaction.

Participants also highlighted the importance of seating that supports diverse bodies and behaviours, including options that allow for non-standard postures, leaning, feet-up positions or sitting side-on. Seating with backrest, opportunities to lean against edges or walls, and seating that offers a sense of partial enclosure were valued for providing physical support while reducing feelings of being on display. In this way, the research suggests that the Guidelines consider seating diversity.

Play spaces and recreation spaces for young people

The Guidelines already embed the Everyone Can Play Design Guidelines, including the principles of being able to find, play, stay and belong. Findings from this research strongly support these principles, particularly the emphasis on proximity to amenities such as toilets, shade and seating, which participants described as essential for extending time spent in parks and sustaining participation for children and accompanying adults.

Participants' experiences suggest further nuance by highlighting how sensory conditions within and around play spaces shape whether a park feels usable for everyone. Several participants described heightened stress when play spaces were highly noisy, noting that sharp or continuous sounds could dominate the surrounding park and limit their ability to use adjacent areas. Rather than opposing play activity, participants emphasised the need for thoughtful spatial relationships between play spaces and other park functions, so that different sensory needs can be accommodated simultaneously.

This research informs the Guidelines by underscoring the value of sensory zoning within parks, where play areas are clearly defined yet integrated, and where graduated transitions (such as planting, topography or distance) help modulate noise and activity.

Nature experiences

The Guidelines explicitly state that parks should enable people to experience nature through multiple senses, and that alternative modes of engagement are appropriate where full physical access to natural elements is not possible. This position aligns closely with participants' experiences in this study, who consistently highlighted the restorative qualities of green and blue elements in urban parks, including the calming effects of trees, water features and open skies. Visual access to greenery and water was described as soothing and grounding, while natural sounds, such as rustling leaves or water movement, helped soften the intensity of urban noise. These sensory qualities supported emotional regulation and recovery from overload.

Importantly, participants valued nature experiences that allowed them to feel momentarily "away" from the demands of the city, even while remaining within it. This sense of psychological distance did not require immersion in the wilderness, but was achieved through carefully designed, accessible encounters with nature embedded in everyday public spaces.

Wayfinding within parks and civic spaces

The Guidelines' emphasis on reducing anxiety, confirming location and orientation, and clearly identifying accessible routes aligns closely with participant experiences in this study. Participants frequently described disorientation and frustration when key amenities, particularly toilets and water bubblers, were not signposted until encountered. This uncertainty increased cognitive effort and, in some cases, led people to shorten their visits or avoid unfamiliar parks altogether. Participants emphasised that knowing what lies ahead, including the location of amenities and the nature of paths and transitions, reduced stress and supported confidence in navigating public spaces.

Study limitations

This study was designed to prioritise depth of lived experience over breadth of representation. As such, several limitations should be acknowledged when interpreting the findings.

Sample size and qualitative scope

Phase 1 involved 15 participants in in-depth walking interviews. While this is a relatively small sample, recruitment continued until thematic saturation was reached, indicating that no substantially new themes emerged from additional interviews. The study, therefore, does not claim statistical representativeness, but instead offers rich, context-specific insight into how neurodivergent adults experience public open spaces in the City of Sydney. Participant characteristics were recorded using sex (female/male) rather than gender identity; future research may consider capturing gender diversity to enable more nuanced analysis.

The exploratory nature of the survey phase

Phase 2 involved 50 survey respondents, including 32 participants who identified as neurodivergent. The number of respondents identifying as neurotypical was small, and therefore, the survey was analysed as an exploratory tool to complement the qualitative insights rather than to enable statistically robust comparisons between groups.

Seasonal and climatic context of fieldwork

Fieldwork was conducted between April and October, which corresponds to autumn, winter and spring conditions in Sydney. As a result, participants lived-experience accounts were less likely to capture the full impacts of extreme summer heat and high-humidity conditions. The design recommendations relating to thermal comfort, therefore, draw primarily on participant experiences of exposure, shade, shelter, wind and rain. Where additional recommendations (e.g., regarding materials, heat absorption, and microclimate) are included, they are explicitly framed as evidence-informed extensions based on established research rather than direct participant testimony.

Conclusion

This research demonstrates that for neurodivergent people, the difference between participation and withdrawal is often determined by factors such as predictability, sensory load, environmental legibility and the availability of supportive amenities.

The findings show that barriers are frequently dynamic, including crowding, clutter, ambiguous movement patterns, inconsistent lighting, uncomfortable temperature and poor wayfinding. In contrast, when environments are calm, legible and supportive, participants described greater confidence, independence and willingness to engage with the city.

This research strengthens existing policy commitments and guidelines by showing how current principles, such as continuous accessible paths of travel, street furniture, signage and wayfinding, can be better understood and more effectively implemented when informed by lived experience. Many of the City of Sydney's existing guidelines already align with what participants valued; the opportunity now lies in applying them more consistently and with greater attention to sensory and cognitive dimensions of access.

The implications extend beyond neurodivergent communities. Interestingly, the Phase 2 survey suggested that many environmental qualities identified by neurodivergent participants were also valued by neurotypical respondents. This reinforces the idea that neuroinclusive design is not only beneficial for a specific group but can also enhance the comfort, legibility and usability of public space more broadly. Designing for neurodiversity, therefore, strengthens, rather than narrows, the inclusivity of the public domain.

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Figure 38: East Circular Quay

