

Milliken™



Designing a Inclusive
Neuro-Inclusive
Workplace



As workforces are becoming increasingly aware of their own neurodiversity, employers need to work harder to attract and retain talent and ensure their competitive advantage. This guide is designed to inspire actionable recommendations for new and existing workplaces as we seek to build desirable, inclusive environments where all colleagues feel they can truly thrive.



Foreword

Milliken & Company has partnered with Henigan Consulting Group to distil their expertise in designing workplaces and cultures, and with the independent market research agency Sapio Research, to provide this practical, actionable guide for creating Neuro-Inclusive workplaces.

We used the latest research on neurodiversity in business, with sources including academic research papers, output by charities for neurodiversity and research by companies with expertise in specific areas of design. This has been layered with personalised insights from a series of qualitative interviews by participants who shared the details of their experiences of being neurodivergent in workplaces built for the neurotypical. Our participants' real-world experiences have provided an invaluable addition in converting academic theory into cost-effective, practical solutions to improve the workplace experience for all.

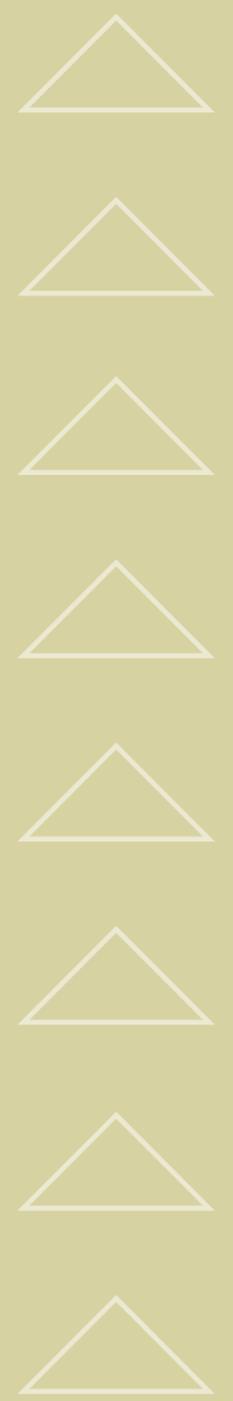
The specific neurodivergent conditions covered in interviews included autism, ADHD, dyslexia and dyspraxia. Given that sensory overwhelm is often felt more keenly by neurodivergent people, we have examined the workplace through the lens of the senses and how simple adaptations can improve comfort, focus and efficiency for all that use them.

We would like to thank our participants for their time, honesty and insights, and to the many institutions that are leading the way in creating inclusive spaces. By raising awareness of the specific needs and requirements of a neurodiverse workforce, they are supporting workers both inside and outside of their companies. This guide is only possible because we stand on the shoulders of academic giants and pioneers in this field.

Milliken

HCG

SAPIO
RESEARCH



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Neurodiversity Explained

Neurodiversity refers literally to the breadth of human cognitive functioning - a blanket term that exemplifies the continuum of differences in ways that individual brains can function. The concept was pioneered by the sociologist Judy Singer as a way to describe brains that function differently to those seen as 'typical', or now referred to as 'neurotypical'. These differences are on a sliding scale and can cover many different diagnoses and conditions, professionally referred to as 'neurotypes', such as autism spectrum disorder (ASD), dyslexia, dyspraxia, attention deficit hyperactivity disorder (ADHD) and tic disorders such as Tourette syndrome.



"We need to admit that there is no standard brain."

- Thomas Armstrong: *The Power of Neurodiversity*

The term **neurodivergent** is used to describe individuals with one or more of these neurotypes and also includes a range of neurological challenges related to environmental causes, brain injury and mental health challenges such as bi-polar disorder, obsessive-compulsive disorder (OCD) and eating disorders. The 'official' list of neurotypes comes from DSM-5 (The Diagnostic and Statistical Manual of Mental Illnesses - Fifth Edition, May 2013). Neurodiversity is becoming an umbrella term for wider conversations about different conditions (such as Long-Covid, PTSD and schizophrenia) and also speaks to a wider movement of understanding about diversity and complexity in our cognitive functioning.

WORDS MATTER

Words matter in neurodiversity discourse.

The language around this topic is currently in evolution as individuals can be more or less comfortable with labelling and its potential for 'othering'.

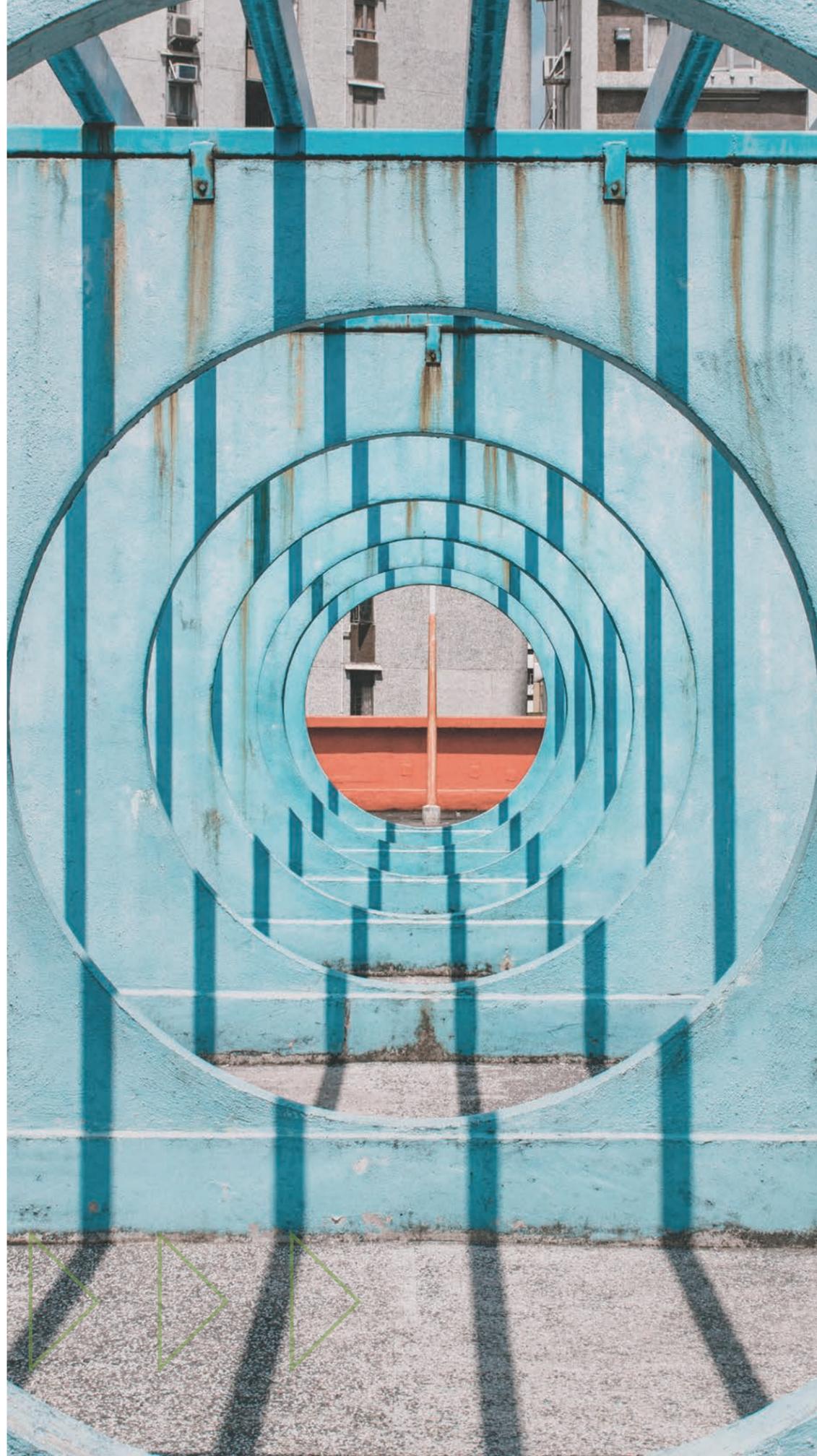
For the purpose of this guide, we refer to **neurodivergents** in line with current academic framing.



Many people, and as our interviewees typify, experience more than one neurotype or neurological challenge which can create a compounding impact on how they experience the world around them. Birkbeck University of London's 'Neurodiversity at Work 2023' report found of its recently completed survey of 1,117 individuals, only 370 reported one diagnosis, 328 reported two and 190 reported three (the remainder of respondents preferred not to say).



This supports the view that co-occurrence of neurotypes is relatively common, and presents with overlapping symptoms and experiences. These experiences are often down to being hyper-sensitive, or highly sensitive to sensory input, or hypo-sensitive where more sensory input is required.



It is important to remember we all have unique brains, and so whilst it can be helpful for us to understand common traits in a particular condition or neurotype, neurodivergence is infinitely varied and so even two people with the same neurotype will experience things differently!

"If you've met one person with autism, you've met one person with autism."

- Dr. Stephen Shore, an autism advocate who has ASD



When approaching workplace design, this infinite variation of neurodiversity can seem overwhelming to consider.

However, there are **three neurotypes** that together constitute around **70% of all neurodevelopmental diagnoses in the US** and between them cover a spectrum of sensory requirements, providing a valuable place to startⁱⁱ:



Other neurotypes that you can commonly come across in the office are:

- Dyscalculia can cause math to be a challenge but can also present as difficulties with directions or time telling.
- Bipolar disorder can affect people's energy levels, mood and behaviour.
- Anxiety disorders can make it hard to concentrate, and could cause restlessness and fatigue.
- Depressive disorders can also cause fatigue and difficulty concentrating.
- Schizophrenic disorders can cause auditory hallucinations and isolating behaviours.
- Visual Impairment, although not a neurotype, should be remembered when creating a diverse and inclusive workplace.

This is not a comprehensive list. Do consider connecting with official DSM-5 resources for further details.

DYSLEXIA

10% OF ADULTS



Challenges

- Organising Written Work
- Spelling
- Difficulty With Numbers
- Processing Speed
- Difficulties Reading Floor Plans
- Understanding Written Information Under Time Pressure
- Structuring Work Schedules To Meet Deadlines
- Sensory Sensitivity



Strengths

- Intuitive
- Creativity
- Inventiveness
- Pattern-Recognition
- 'Big-Picture' Thinking
- Qualitative Reasoning
- More Comfortable With Risk Taking
- Entrepreneurial

AUTISM

1-2% OF ADULTS



Challenges

- Rigid Thinking
- Restricted Behaviours
- Repetitive Behaviours
- Social Communication Challenges
- High Sensitivity For Sensory Stimulation



Strengths

- Problem-Solving
- Logical Bottom-Up Thinking
- Data-Driven Approach
- Free From Confirmation Bias
- Aptitude For Assimilating & Retaining Detailed Specialist Information & Knowledge

ADHD

4-5% OF ADULTS



Challenges

Inattentive ADHD:

- Easily Distracted
- Daydreaming
- Appearing Forgetful
- Constantly Switching Tasks
- Difficulty In Organising Tasks
- Making 'Careless Mistakes'

Hyperactive/Impulsive ADHD:

- Need To Move Constantly & Regularly
- Challenge To Stay Focused On A Task
- Preference To Talk & Interact Socially



Strengths

- Ability To Multi-Task
- Creative Thinking
- Problem-Solving
- Thrive On Change
- Adapt To Rapidly Changing Contexts & Environments
- Can 'Hyper-Focus' When In A State Of Flow

Combined Type ADHD:

- Signs Of Both Types

Why Does Designing A *Neuro-Inclusive Workplace* Matter?

Worldwide, it is estimated that between 15% and 20% of the population is considered to be neurodiverseⁱⁱⁱ. That is a significant proportion of talent to be considered. The improved understanding and awareness that people have surrounding neurodivergence means that rates of diagnosis are only increasing. In the US, 1 in 150 children were diagnosed with autism in 2000, but by 2020, this had increased to 1 in 36^{iv}.

1 in 150
children
Year
2000

1 in 36
children
Year
2020



Historical trends have shown that neurodivergents have been disadvantaged in terms of employment. Unemployment rates among neurodivergent people can be as high as 40% and up to eight times the rate of those who are neurotypical^v.

However, instead of seeing a natural variation of thinking as something 'broken' to be pathologized and 'fixed,' the rise of successful neurodivergent leaders like Richard Branson (Dyslexia), Elon Musk (Autism Spectrum Disorder) and IKEA founder Ingvar Kamrad (Dyslexia and ADHD) have championed the strengths — and potential commercial advantage — of neuro-divergent thinking.

“Being dyslexic is actually an advantage and has helped me greatly in life.”

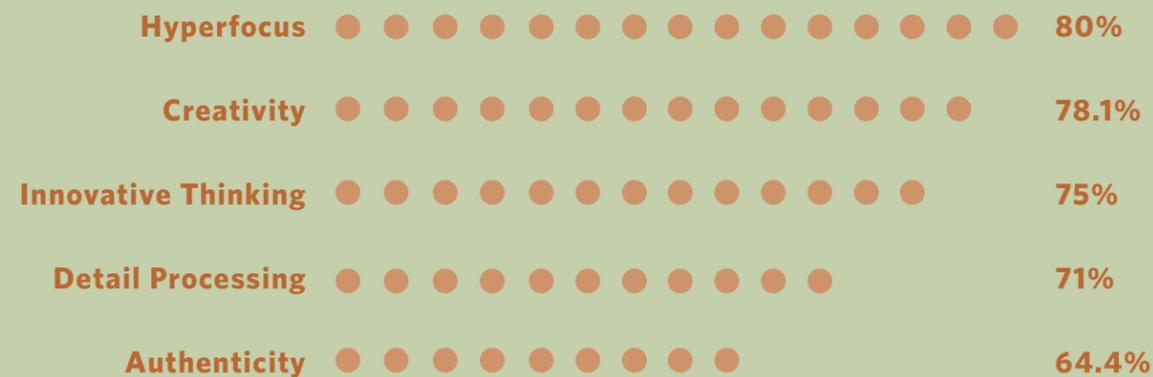
- Richard Branson wrote in *A Letter To 9-Year-Old Girl With Dyslexia.*



Creative insights, thinking outside of the box, problem-solving and visual-spatial capability are all being recognised as benefits neurodivergent people bring to the workplace. Even on recognised spectrums of ‘intelligence’ such as the 100-year-old IQ test, neurodivergent people often have recorded higher IQ scores (especially among those with autism) and studies have found that neurodiverse teams are 30% more productive than neurotypical ones and make fewer errorsⁱⁱⁱ.

The Top 5 Strengths Of Neurodivergent People

Identified through Birkbeck University of London’s survey



*weighted averages to account for higher percentage of ADHD and Autistic Neurotypes.

Savvy employers have already begun to see the competitive advantage with companies like JPMorgan Chase, Deloitte, Microsoft and Google having prominent neurodiversity programmes and recruitment strategies with results that justify the efforts. JPMorgan Chase reported that after three to six months of working in its Mortgage Banking Technology group, autistic employees were doing the work of people who typically required three years to train — and were 50 percent more productive.

“I firmly believe that companies could always benefit from having employees who see things in an unconventional way, which is something to remember any time an individual on the spectrum is seeking a job.”

- James Mahoney, Executive Director and Head of Autism at Work for JPMorgan Chase

The Challenges

The challenge comes with creating workplaces and working norms that allow neurodiverse workers to thrive. Indeed, many workplaces prove to be environments that are exceptionally challenging for those that struggle to focus or deal with distraction, regulate emotion, cope with exposure to multiple stimuli or communicate immediately and effectively. However, this problem is not just limited to neurodiverse populations. Designers have long experienced pushback against 'open-plan' and the perception of the extra noise and distraction that bother the average neurotypical introvert. Consider, too, the inconsistent temperature demands across the floor, commonly different between men and women^{vi}. Neurotypical populations also have their variances, tolerances and preferences.

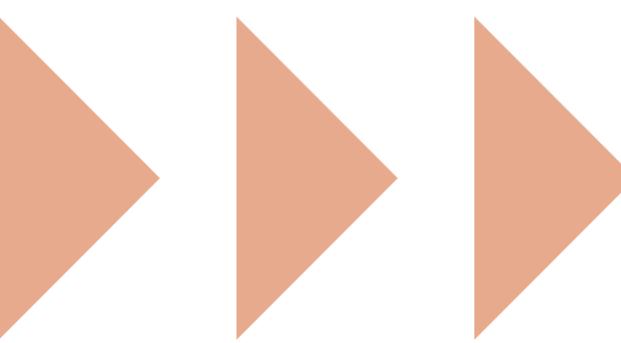


This has been heightened by the recent changes towards hybrid and remote working. HCG has noticed throughout their post-pandemic work that the fight to keep 'home working' is often about the ability to control the immediate environment, control how accessible you are to others, and the ability to do focused, uninterrupted work - all with the bonus of commute time back and the commute fare in your pocket. For neurodivergent employees, controlling these aspects of their working day are not just about comfort, but sometimes about the ability to function at all whilst maintaining physical and mental health.

- 1 "Having a flexible schedule"
- 2 "Being able to do part of the work from home"
- 3 "Having a private space to work in when required"

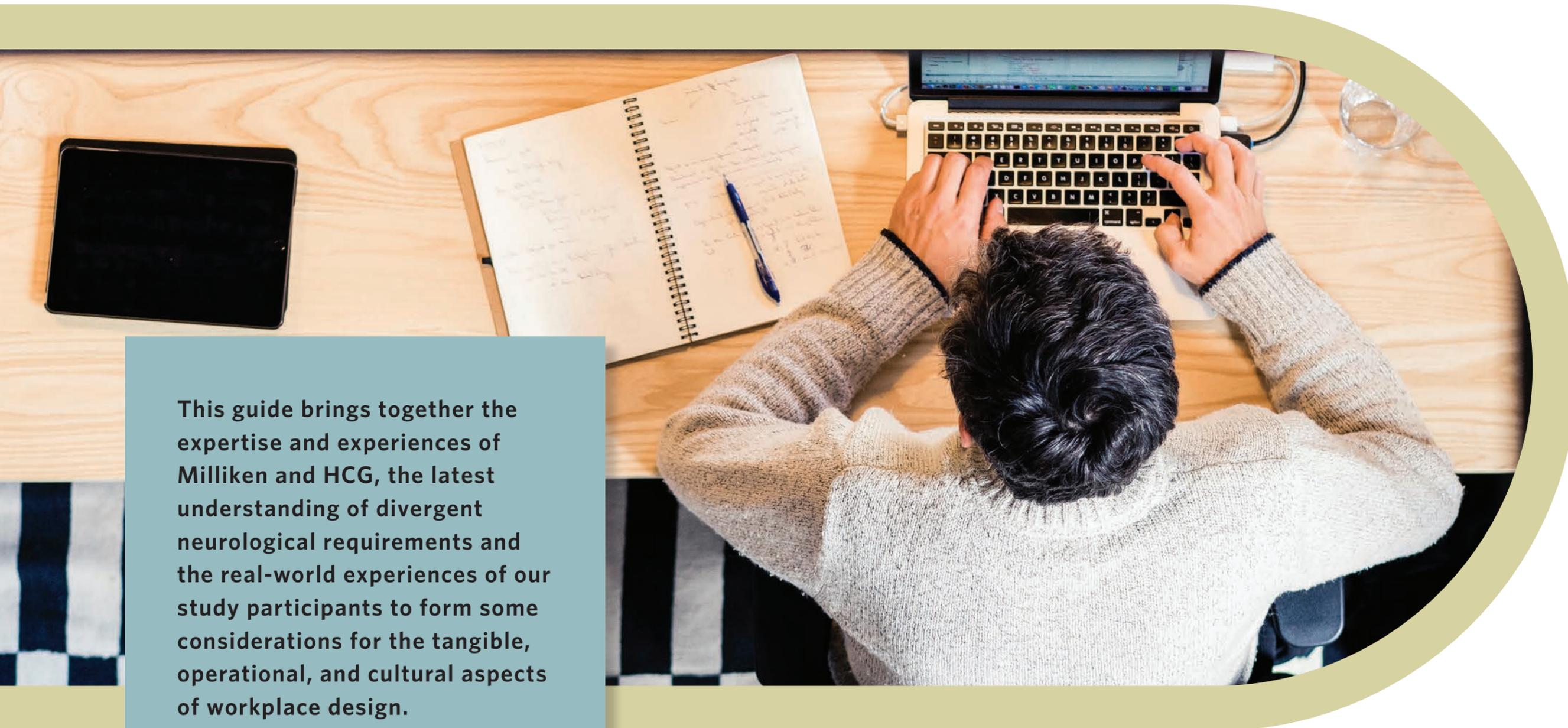
Were voted the top three most helpful adjustments organisations could make^{vii}.

When designing a neuro-inclusive workplace, choice, flexibility, and autonomy therefore go from *nice to have* to *must-haves* to attract and retain top talent that may otherwise go elsewhere. Workplaces that provide a variety of settings to suit a range of preferences, coupled with a culture that enables choice and autonomy about where people are when they do their work (rather than prescribing a 'fixed' model), empower all colleagues to self-manage their own preferences and needs. Success comes with creating an office that removes the need to 'work from home' as a coping strategy to get work done and makes it a choice. This benefits all the neurodivergents that make up a dynamic workforce; maximising productivity and comfort whilst fostering a sense of inclusion and accessibility.

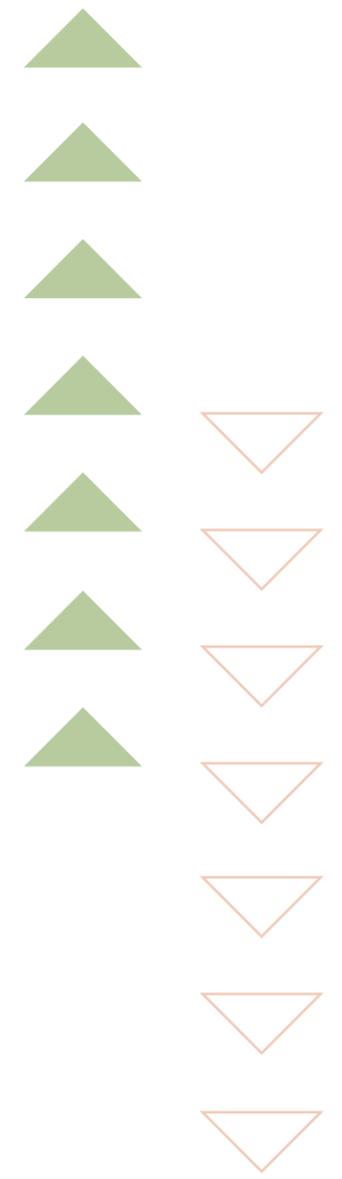


Designing A *Neuro-Inclusive Workplace*

One size doesn't fit all is the sum of it — both for neurodivergent and neurotypical employees. We all have preferences and tolerances to temperature, light, sounds and smells. We have favourite spots, people that delight or irritate us when we sit next to them and places that instinctively make us feel safe and comfortable versus those where we feel lost or unwelcome.



This guide brings together the expertise and experiences of Milliken and HCG, the latest understanding of divergent neurological requirements and the real-world experiences of our study participants to form some considerations for the tangible, operational, and cultural aspects of workplace design.



SMELL

'Scent scaping' or designing smells into particular environments has been steadily growing in popularity with retailers, hotels, and restaurants. You can hire companies to curate a distinctive scent to boost consumer spending, attract new customers or create a more memorable brand experience. Often paired with the sense of taste, smell is arguably one of the most powerful senses to stimulate, as the olfactory bulb is hard-wired into the limbic system — the emotional and memory centre of the brain. It is a sure-fire shortcut to make us feel something.

For example, Disney has popcorn trucks at the entrance gates to their parks in order to prime you for a theatre-type experience. It is deliberately designed to inspire particular emotions.

The use of scents to promote feeling in the workplace is currently an underutilised tool. Research from the *Journal of Environmental Psychology* has shown that focus and performance can be improved through the smell of coffee^{viii}. In Japan, the Takasago Corporation found that smell impacted the accuracy of typists, with 54% fewer mistakes when lemon scent was diffused through the air-conditioning system, 33% fewer with the smell of jasmine and 20% fewer with lavender.



Most of us have probably had the experience of being blasted with the scent of bread at a supermarket or almost eye-wateringly overwhelmed when walking past multiple competing perfume counters. For some neurodiverse people, hypersensitivity to smell can make scent not just disruptive but intrusive, with potential side effects including anxiety and panic, nausea and dizziness. This can be further exacerbated if there are other sensory stimuli present, such as loud noises and large crowds^{ix}.

There are also more involuntary smells or odours that may not be considered. Volatile organic compounds (VOCs) in common chemical contaminants found in office environments may be incidentally contributing to the scent-scape of the workplace. Paints, varnishes, adhesives, carpets, fabric materials and furnishings all have the potential to release VOCs. Aspects of building operations can be overlooked when considering the impact of smells, such as cleaning products and the ubiquitous automatically dispensing air fresheners that tend to haunt many toilets. Ventilation is key and when designed well can improve productivity by up to 29%^x.


29%

SMELL

Workplace design therefore needs to consider three aspects of controlling workplace smells:

1

Controlling or zoning smells that are being introduced into the environment by colleagues themselves such as food, drink, or sweat (from those post-workout gym kits or those commuting trainers).

2

Those coming from the building itself, like plant rooms, kitchens, the fixtures and fittings or from the environment directly outside, such as pollution.

3

Scents that you may want to deliberately introduce into the environment for a curated experience.

Neuro-Inclusive Operational Considerations:

- ▶ Limit spaces where hot food can be purchased and consumed to limit the range of more pervasive and stronger smells.
- ▶ Create food and drink free zones: This also supports inclusivity from the standpoint of employees with specific allergies by keeping potential allergens to specific spaces.
- ▶ Consider a 'scent-free' workplace policy, an idea becoming more widespread to support the control of allergens and air quality in North America, with some countries such as Canada introducing it into their federal policies^{xiii}.
- ▶ If scent-free feels a step too far, consider the worst offenders, which are usually automatic air-freshener dispensers in toilets and cleaning products and switch to fragrance free.
- ▶ Consider designing into your office etiquette behaviours that are considerate of others — specifically draw attention to smell and raising awareness of how smell impacts us all differently.

Neuro-Inclusive Design Considerations:

- Consider the proximity of working areas to areas where there will likely be strong smells, such as kitchens or plant rooms.
- Do consider the ventilation, in relation to smell moving around the building, in foundation designs.
- If using a curated smell, understand that one experience of the smell would be enough to heighten the limbic response. Those that have hypersensitivity to smell will need spaces where they can 'escape' the smell, should they need to.
- Consider creating microenvironments for scent to allow people to tailor their preferences. Don't assume the same response from everyone; peppermint may be mood-elevating for some, alleviating anxiety and sadness, but triggering and overwhelming for others^{xi}.
- In large organisations, designing tea-points or refreshment stations with different 'offers' - with the benefit of encouraging movement as colleagues seek their preferred brew - can support a deliberate curation of more or less stimulating spaces of smell.
- Provide adequate facilities to provide appropriate storage for gym kits, trainers and shoes and other personal items that may introduce stronger smells.
- Indoor air quality is degraded significantly by VOCs, so consider the cumulative impact of all materials and make efforts to minimise VOCs wherever possible. There is also the intersectionality with allergies and respiratory disorders to be considered that can support a strong business case to meet suggested standards^{xii}.
- Create 'clean air' zones or micro-environments, supported by air purifiers and planting and advertise them as such.

sound



SOUND

The office 'buzz' is something often spoken about fondly, and mourned when it is missing. Yet 'noise' (defined as 'unwanted sound') and how it interferes with concentration and focus is one of the most common complaints about the modern office - particularly if open plan.

BENN

● ○ ○
"[my worst office would] be extremely noisy, people, like, on the phones talking to clients and customers and things like that in the office, so just a lot of noise distraction."

productivity

66%

With sound, there is a paradox - too quiet, and even a whisper elsewhere hooks our attention and we have to mentally block the experience to refocus. Too loud, and we have to raise our own voices to be heard in something known as 'The Lombard effect', which of course compounds the issue by raising ambient noise levels. Colleagues can experience cognitive stress at both ends of the spectrum - by trying to hear each other, or indeed, by deliberately trying to not hear each other.

Effective acoustic design has a significant impact on performance. Julian Treasure's white paper 'Building in Sound' describes how hearing someone talking while you're reading or writing drops productivity by up to 66%^{xiv}. There are significantly poorer health outcomes for those of us spending time in noisy spaces, with the top offenders being cardiovascular disease, sleep disorders, hypertension and stress^{xv}.

SOUND

For neurodivergent brains, sound can cause even more of a cognitive stress. The noise level of the average office of 60-65 decibels means 'speech interference' happens. As colleagues talk from a meter or so away from each other at usual volume, also at around 60 decibels, someone else speaking, also at normal volume but nearby, 'interferes' with our ability to process what we are trying to listen to. Neurotypical brains may understand the sentence due to their cortical processing and the ability to 'filter' the excess sounds. However, for neurodivergent brains this can become extremely debilitating and excessively draining on their cognitive resources, especially for those that have conditions with processing disorders, hypersensitivity, or that involve misophonia (an extreme sensitivity to pattern-based sounds such as tapping, ticking, humming, chewing, etc).

HCG has found that sound and distraction are some of the most cited reasons for working from home, so considering the acoustic landscape of the office can be hugely beneficial in encouraging people to spend more time there. Noise is like water - it can seep around edges and so a blend of approaches are helpful to consider when designing space: Seal it, absorb it or mask it.

SEAL_{It}



ABSORB_{It}



or MASK_{It.}

"We have bandwidth for roughly 1.6 human conversations. So if you're hearing somebody's conversation, then that's taking up 1 of your 1.6. Even if you don't want to listen to it, you can't stop it: You have no earlids. And that means you've just 0.6 left to listen to your own inner voice."

- Julian Treasure, Chairman, The Sound Agency

Neuro-Inclusive Design Considerations: Acoustic Design:

Start design with acoustics in mind; fashionable hard surfaces like metal, glass and stone will increase reverberation and noise levels, so use sparingly or mindfully with other softer materials.

In the existing space, a cost-effective solution is to reduce reverberation by using wall-mounted boards, ceiling panels or dividers which can also work to interrupt visual distractions.

Deliberately design more active/noisy zones with quieter/low-traffic ones to provide variety and choice.

Offer dedicated quiet areas – either open or closed spaces dedicated to supporting intense concentration.

Do your research, as there are a number of great resources to help design acoustically comfortable spaces with checklists and guides^{xvi}. For instance, the International WELL Building Institute (IWBI) provides specific standards.

Don't make all areas for breaks and food 'buzzy'. Instead, consider a sensory room, decompression space, or indoor garden to support quiet recalibration.

JESS



"Often the only spaces available to decompress are the car park or the toilets."



Reduce Noise Pollution:

Consider purchasing 'quiet' models of white-goods and machinery - The Quiet Mark website is a useful resource^{xvii}.

Look at noise levels when considering adjacencies and team setups. Ask about noise levels and preferences; avoid sitting the quiet, focused teams next to noisy tea-points or the chatty teams with daily at-desk scrums and stand-ups.

Intelligent layout should separate and buffer distracting sounds from plant rooms, machinery, noisy plumbing and other utilities.

Deliberate Sound-Masking

Consider 'sound-masking' technology, such as playing gentle white noise to create deliberate sound interference, which reduces the distance at which you can be overheard from 15m to 5m^{xviii}.

The study found that this masking led to reported sound distractions being reduced by half, and a 47% improvement in employees' ability to focus on tasks. Short term memory accuracy was improved by almost 10%.

Neuro-Inclusive Operational Considerations:

1

Design your etiquette to support quiet areas, break out areas, appropriate spaces for calls and quiet focused work. The most useful distinction is often 'calls at desks and focus elsewhere', or 'focus at desks and calls elsewhere'.

2

Don't assume quiet/focused spaces should be one-person booths which can sometimes feel claustrophobic — sometimes people want the company, just not the noise, so library zones can work very well in this instance.

3

Consider using spatial and behavioural design together to indicate a person's 'availability' to be interrupted. We usually recommend some quiet spaces that are also 'do not disturb' spaces and a way for colleagues to signal their needs.

4

Consider describing the anticipated noise levels as part of the description of spaces: colour-code 'loud/busy' zones from 'quieter/more separate' zones to help colleagues way-find.

5

Personal acoustic control can be provided by supplying noise-cancelling headphones or earplugs with varying degrees of decibel reduction — from 'in my bubble' style noise reduction (to reduce ambient noise but still hear something), to complete noise-cancelling.

SARAH

"I find it sometimes easier to concentrate when there are people around me because I can't get distracted and I'm held accountable."

○ ○ ●

Jess expressed the need for designated zones for solitary working:

"A do not disturb area, I think, would be helpful for neurotypical people as well, because we're all impacted by noise and distractions and people coming up to our desk every 5 seconds."

Do not disturb



Benn

SENIOR ACCOUNT MANAGER

Advertising Agency — 20+ employees

ADHD & Epilepsy



- Relationship building
- Management
- Problem-solving



- Overwhelm with workflows
- Noise in the workplace
- Flickering lights



- Structure in days
- Quieter areas in the office
- Working from home

"I personally prefer to work from home because I get very easily distracted. So, when I'm in the office, I've told them, 'Look, guys, you can get me in the office, but my workload will suffer. The output will suffer, for sure.'"

"They really like having the radio on. If the radio's on, I can't focus, and it's to the point sometimes where I'll just go to a separate room and work away from everybody."

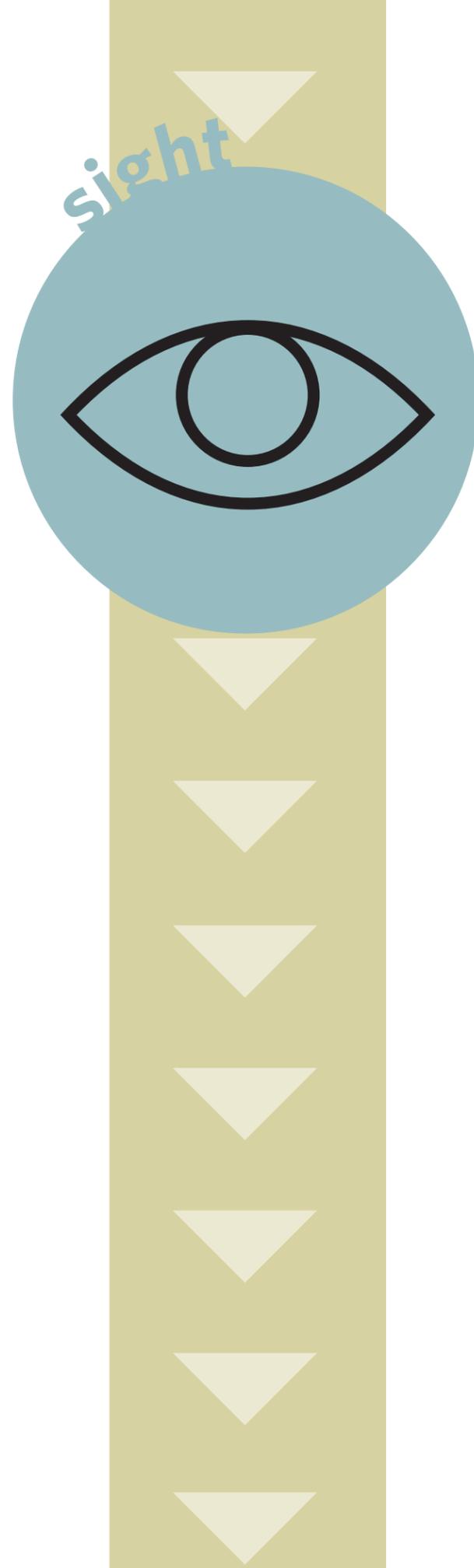
"Fluorescent tube lighting, that —, so I also have epilepsy. I can see the flicker, and I can almost feel it in my head. That's super distracting to me."

SIGHT

Feeling orientated and welcomed into your workspace is a first step towards inclusion and belonging. As with the other senses, neurodivergent brains can be at risk of sensory overload when multiple competing visual features are showing up at once^{xx}. Too many colours, textures, symbols, signs or patterns can cause anxiety, divide attention and create confusion and disconnection.

Workplace design needs to consider three aspects of the visual narrative:

Wayfinding is often a multi-sensory activity based on mental snapshots, sensations, and memory. Depending on an individual's processing preference, some people will rely on visual cues such as shape symbols and colours (landmarks); others require factual information, relying on sequential processes and number or word identification (signage); and others require the ability to form 3D spatial images in their minds (a mental map - common with dyslexia).



01 Wayfinding



Neuro-Inclusive Considerations For Both Design And Operations:

- 01** Consider the starting point - if reception is not at the starting point, ensure there is immediate clarity on getting there to prevent immediate confusion and disorientation.
- 02** Clear sight lines and viewpoints.
- 03** Directional signage sited to be visible from all directions of approach, where practicable and repeated at each decision and reassurance point^{xx}.
- 04** Creating a rhythm or pattern of design elements to create a recognisable coherence to support the orientation in the building, but designing in deliberate but subtle differentiation to prevent disorientation, for example, between floors.
- 05** Consider layering in other sensory aspects to a visual landmark, such as changing a texture, building a scent or layering in sound (running water, birdsong, classical music or white noise).
- 06** Combine colour coding with symbols or shapes to support those with colour blindness. Consider Braille or using embossed text to support tactile signage^{xxi}.
- 07** Consider the 'feel' part of the look and feel by testing the tactile elements of design that most people will touch, such as door handles, and the changes in texture of flooring to denote different zones.
- 08** Create unique or distinctive features in different zones of the building to create a memorable landmark.
- 09** Avoid large, anonymous desk setups in uniform patterns that become indistinguishable from each other.
- 10** Think carefully before changing familiar recognisable symbols such as for water closets.

02 Colour, Contrast, Pattern and Texture



Pantone 448C is a colour in the Pantone colour system and is considered the 'ugliest colour in the world', and as a result was chosen by the Australian government for cigarette packaging in 2012, which has since been copied by many others: a dull yellow-brown deliberately chosen to evoke disgust. By contrast, sunshine yellow can evoke feelings of warmth, creativity or optimism. Certain colours resonate with our emotions, and colour psychology is often

considered in the workplace, used primarily to connect employees to the organisational brand.

Yet, not everyone experiences colour in the same way; colours can appear more vivid to those with hypersensitivity. Research conducted by PPG Industries looked specifically at how paint colours affected people with autism. The study found that reds, blues, and yellows in their full intensity should be strongly avoided. Vivid or fluorescent colours on the opposite side of the colour wheel, when used together, can create a shimmer or moving effect which can be disturbing or disorientating. Décor with strong contrasts in pattern or texture can also be uncomfortable and over-stimulating. Conversely, colours and textures found abundantly in nature are particularly calming and soothing; muted palettes and neutrals are neuro-friendly for all.

Normal Vision



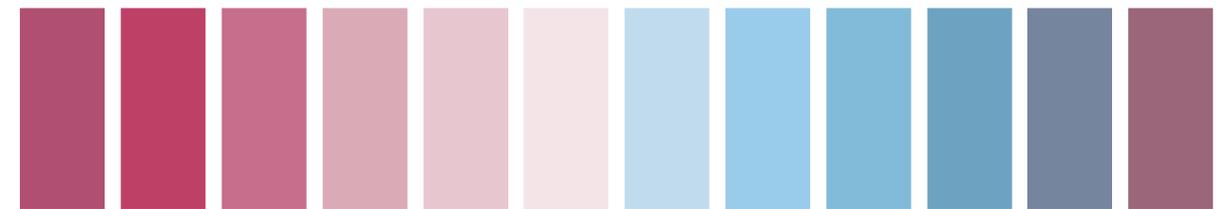
Deuteranopia



Protanopia



Tritanopia



Neuro-Inclusive Considerations For Both Design And Operations:

Reduce visual content in areas where concentration is required or there will be other content that requires processing (such as displays, signage or transition spaces).

Avoid repeating geometric forms of stripes, bars, and perforated materials that can appear to shimmer or move when viewed, particularly in stairwells or walkways.

Consider low-stimulation colour schemes and create deliberate specific areas of high stimulation.

Patterns that occur in nature, such as biomorphic shapes and curves, create less visual 'noise', thought to be due to human evolution within natural landscapes.

Create microenvironments that enable people to find the right level of visual stimulation for them.

Glass is both reflective and transparent, which can create distraction or over-stimulation; consider blinds and manifestations to support privacy and glare.

The most common form of colour blindness is red/green (1 in 12 men are colour-blind and 1 in 200 women) and ADHD adults tend to struggle with blue/yellow recognition — consider using a vision simulator and make a grey-scale version to consider palettes through a number of perspectives^{xxi}.

Neurodivergent brains may have low-contrast sensitivity. Colour blindness and even many neurotypical brains can be better supported with higher contrast designs^{xxii}.

Of course, there are benefits to having a lively, energetic space in the office that helps to foster collaboration and develop an office culture. Jess expressed an aspect of her ideal work setting:

JESS

"I think also just having larger areas for brainstorming and collaboration when people need it is also helpful for both neurotypicals and neurodivergent people..."

-
- Having those areas where you can write on a whiteboard, or play with crafts, or maybe having brighter colours and things for those collab areas can absolutely be beneficial for both people."
-



Sarah

SENIOR CONTENT MANAGER

Digital Agency — 2000+ global employees

Dyslexia & Dyspraxia



- Managing teams
- Copywriting
- Client management

"I find it sometimes easier to concentrate when there are people around me because I can't get distracted and I'm held accountable."



- Distractions
- Awareness in the workplace
- Point articulation

"One thing I do like at home sometimes will be a client meeting or an important internal meeting, because I can work split... I can have my notes just helping me articulate my thoughts, and my prompts so I find it easier to present."



- Hybrid working
- Colour coding
- Choice of tools in the office

"I like to write everything down, I find that really useful. It used to be you could just go and get a notebook, now they've locked them up."

"I may change the colour to make it clearer for me. I'm quite big on highlighting. I always have colour-coded headings and sections just so I can find things easier."

03 *Lighting*

Daylight is usually the benchmark for design standards in workplaces.

SARAH

"It's quite nice because it's all window so we get a lot of natural light"

The WELL Building Standard sets a baseline of 95 percent of building inhabitants sitting within 15 feet of the perimeter, with a fallback requirement for appropriate electrical illumination. What this doesn't consider, however, is the nuance of lighting for those with neurodivergent brains, where the ability to control lighting and the level of stimulation is infinitely preferable. Sunlight is variable, weather and season dependent, and although it should be available as an option, alternative spaces with controllable lighting empower the employee to make choices that work for them.

Many neurodivergent brains experience fluorescent lights differently: they perceive their flicker and so experience them as 'strobing', causing headaches, nausea, distraction, and impaired ability to function.

BENN

"I can see the flicker, and I can almost feel it in my head. That's super distracting to me."

Some people will take steps, such as wearing blue light glasses, to reduce the glare from screens and may even choose to work from home in order to control their lighting set-up.

JESS

"I also use blue blocker glasses to mitigate eye strain with screens and lighting that might be around."

"I absolutely hate lights that you can't control or dim or take down a little bit. I use a lot of floor lamps at home and that helps to mitigate some of the light sensitivity."

Neuro-Inclusive Considerations For Both Design And Operations:

01

Swap fluorescent lighting with LED to reduce flickering.

02

Ensure access to daylight and provide screens or blinds to reduce glare when required.

03

Note that being near a window can cause sensory overload in some circumstances, for example, where there is visible activity outside which significantly affects concentration.

04

Provide a variety of settings with differing lighting levels to create choice.

05

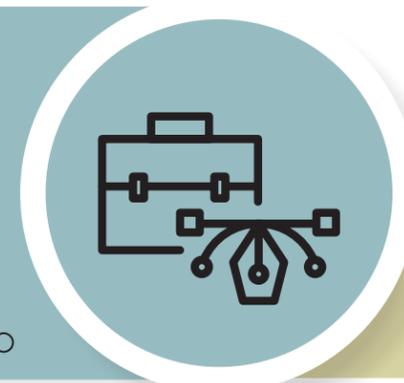
Ensure access to spaces where there is control over lighting levels to support autonomy.

06

Replace or shield any flashing devices and equipment.

07

Consider providing blue-light blocking glasses for those that may find it more comfortable.



Jess

SENIOR DESIGNER

Commercial Design — 10,000+ employees

Autism, ADHD & Long-Covid



- Design
- Creativity
- Time management



- Noise
- Lighting
- Interruptions



- Headphones
- Hybrid working
- Blue blocker glasses

“ Oftentimes when I’m in the office, I usually have my AirPods and I usually have some music going to keep my motivation high and just something to drown out some of the noise. ”

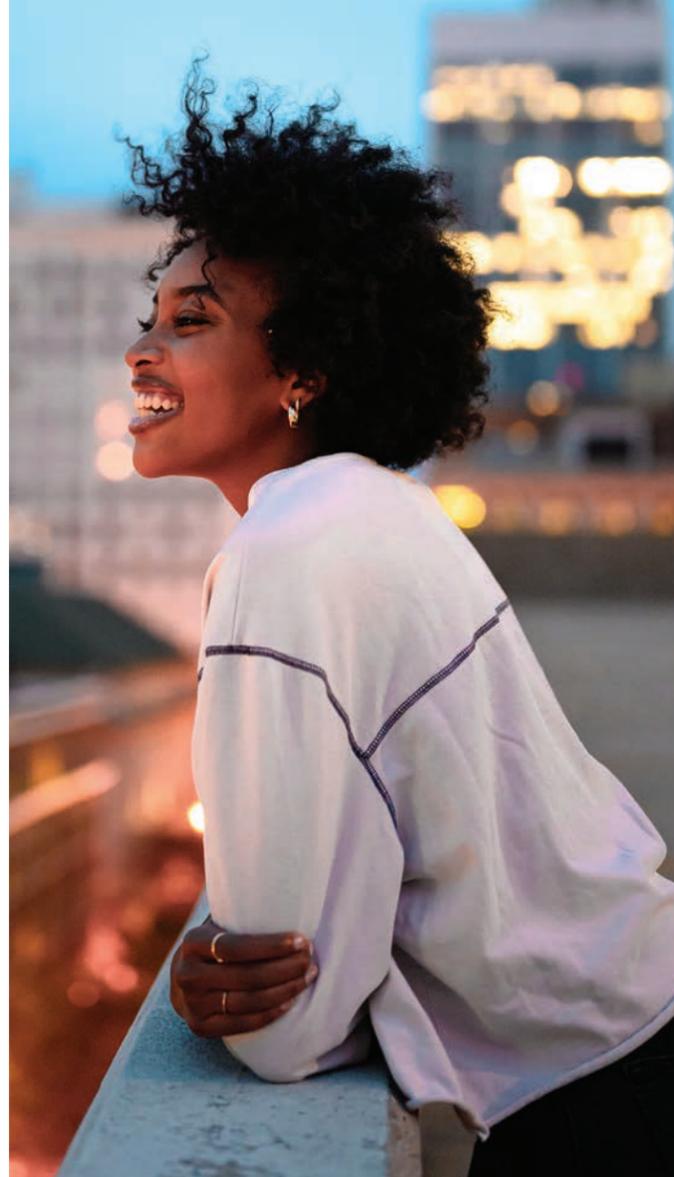
“ I also use blue blocker glasses to mitigate eye strain with screens and lighting that might be around... I absolutely hate lights that you can’t control or dim or take down a little bit. ”

“ It’s definitely easier to get work done when you’ve got a much smaller place that’s kind of closed off from the main office, versus just having a workstation in a big sea of open office space. ”

Comfort & Safety

Throughout our own study, our interviewees mention the desire to be able to recalibrate or decompress at work. In our busy, high technology, high stimulus world of work, a desire to 'escape' is echoed in neuro-typical as well as neurodivergent populations. Building spaces purely to mitigate and provide contrast to 'the office' have been achieved by incorporating biophilia and natural materials into the environment, and demonstrate an echo of all of us having that desire to just...be.

Many of us appreciate small 'comforts' at work and will seek these out deliberately. The best coffee, the nicest meeting room, the desk with the view you like, the corner where no one disturbs you. We have individual landscapes of preferences that connect to our preferred levels of experience and stimulation across the senses we have just explored. The more we talk about these preferences, the more we normalise the sliding scale of experience of what it is to be human.



We asked our interviewees about what other aspects of the workplace could be considered when ensuring the comfort and inclusion of neurodiverse employees:



"If they were just to educate themselves on what these conditions actually are, then they know that they can make these accommodations for that person."

Benn

Workplace Communication

Once the issues that people face are recognised, they often have a simple, practical solution that can be implemented. Employers often assume that creating a neuro-inclusive workplace will be a time-consuming and complex undertaking. Open and honest communication about requirements and best-practice can debunk this myth and create a wider healthy dialogue about healthy and inclusive workplaces.



"I think training would be useful, I also think as part of that may be like wider employee training. So being like, if your colleague has autism... having things in place, like, 'These are things you could consider and look out for and this is how to approach people and you know, don't take this to heart'... just to raise awareness on how people are different."

Sarah

Training

Educate your wider workforce and help them understand neurodivergence and what considerations would be helpful to their colleagues in the workplace, with the advantage of helping them consider their own needs too. By providing the right information and helping people be confident with the language and discourse, it removes some of the perceived awkwardness and fear of stigma or discrimination and provides a more supportive environment for neurodivergent colleagues.



"I absolutely appreciate the fact that my manager has allowed me to have the flexibility to just make my own schedule and trusts me to make the calls that I need to do."

Jess

Flexibility

An overarching theme that we saw from our interviewees was that they valued the trust that their companies placed with them to choose how they work. If you are just starting to make your workplace more inclusive, building this flexibility and open dialogue helps when the design or operational options that would support in-office are not yet available.

Key Statistics

Of 1,117 individuals, only 370 reported one diagnosis, 328 reported two and 190 reported three.

Dyslexia, Autism and ADHD constitute around 70% of all neurodevelopmental diagnoses.

Neurodiverse teams are 30% more productive than neurotypical ones and make fewer errors.

Hearing someone talking while you're reading or writing drops productivity by up to 66%.

15% and 20% of the population is considered to be neurodiverse.

In the US, 1 in 150 children were diagnosed with autism in 2000, but by 2020, this had increased to 1 in 36.

1 in 12 men are colour-blind compared to 1 in 200 women.

Top five strengths of neurodivergent people:

- Hyperfocus - 80%
- Creativity - 78.1%
- Innovative Thinking - 75%
- Detail Processing - 71%
- Authenticity - 64.4%

Conclusion

Birkbeck University of London's 'Neurodiversity at Work 2023' report asks participants of their study about what barriers they faced to disclosing their neurodivergence and/or requesting support:

64.7%

637

said that they were worried about stigma and discrimination from management.

55.0%

542

were worried about stigma and discrimination from colleagues.

40.5%

399

said there were no supportive and knowledgeable staff.

33.9%

334

found existing supports inadequate or unhelpful.

29.3%

289

responded that the support they needed was not provided.

22.7%

224

did not know who to ask for help.

Percentages are based on 1,000 participants in this study.

In the same study, organisations cited 'lack of disclosure' as their biggest challenge to making reasonable adjustments.



Waiting for workplace cultures to 'catch up' on creating psychologically safe environments that allow neurodivergent employees to comfortably articulate reasonable adjustments misses the tremendous opportunity workplace design can play in signalling inclusivity and safety.

The reality is that designing for neuro-inclusivity is merely designing for the physiological and psychological needs of all. The recommendations to support neurodiverse employees overlap with good practice to support general well-being, health, and productivity. We believe the greater the awareness and understanding of these needs, the greater the creative opportunities are for new inclusive solutions that optimise the incredible diversity of our workforce, creating incredible workplaces for us all to thrive.

End Notes



- i. [Autism and Education, PubMed \(Kathleen A Flannery, Robert Wisner-Carlson\)](#)
- ii. [Guidance for identification and treatment of individuals with attention deficit/hyperactivity disorder and autism spectrum disorder based upon expert consensus](#)
- iii. [Neurodiversity in the Workplace | Statistics | Update 2023](#)
- iv. [Data & Statistics on Autism Spectrum Disorder](#)
- v. [Ibid. A Neurodiversity at Work 2023: Demand, Supply and a Gap Analysis. Birkbeck University of London Professor Almuth McDowall C.Psychol. Professor Nancy Doyle C.Psychol. Dr Meg Kiseleva](#)
- vi. [Feeling stressed in an open-plan office? You're not alone](#)
- vii. [Birkbeck University of London's 'Neurodiversity at Work 2023](#)
- viii. [The impact of coffee-like scent on expectations and performance](#)
- ix. [Celebrating Neurodiversity: Looking at High Sensitivity](#)
- x. [Top 5 tips from the Air WELLography](#)
- xi. [The Subtle Connection Between Scent And Emotional Well-Being](#)
- xii. [VOC Reduction](#)
- xiii. [Canadian Centre for Occupational Health and Safety \(CCOHS\)](#)
- xiv. [9 ways that sound affects our health, wellbeing and productivity](#)
- xv. [Noise & Health](#)
- xvi. [Top 5 tips from the Sound WELLography](#)
- xvii. [Quiet Mark](#)
- xviii. [Sound in Offices](#)
- xix. [Design for the mind - Neurodiversity and the built environment - Guide](#)
- xx. [Designing for Neurodiversity and Inclusion](#)
- xxi. [Web Design Guidelines For Color Blind Audience](#)
- xxii. [Colour | NDS](#)



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