



altro

# The road to neuroinclusion

Designing for accessible ridership



# Introduction

Not all disabilities are physically visible



It's thought that around one in five people in the US live with a disability

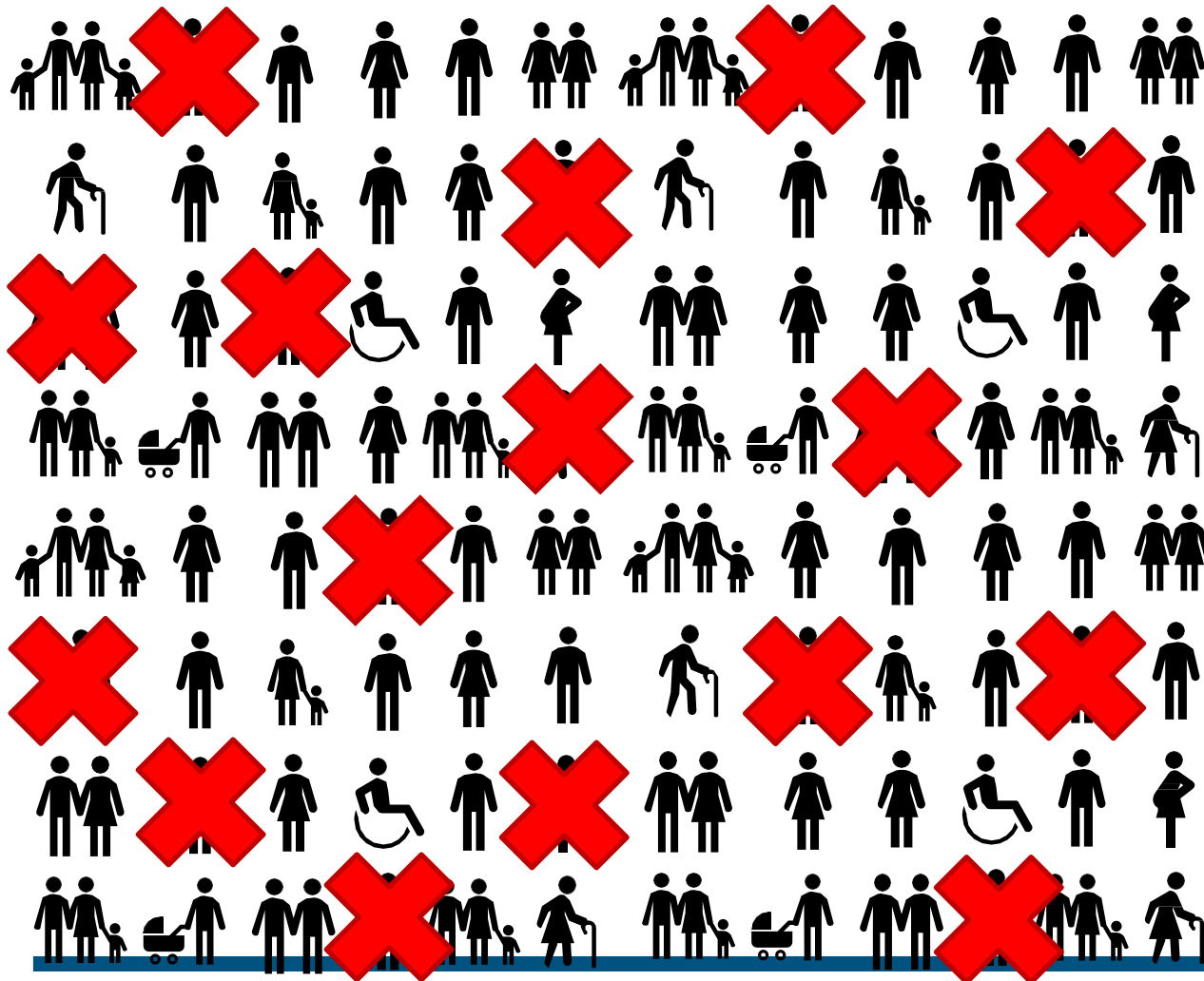
Around 80% of those people have a hidden disability

A large proportion of individuals with hidden disabilities, including neurodivergence and neurodegeneration, feel that current accessibility regulations do not adequately address their needs.



# Bus stopped

## Why everyone misses out



Around **15 - 20%** of the global population is thought to be Neurodivergent (including Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), Dyslexia, Dyscalculia, Dyspraxia, Tourette's Syndrome and Down's Syndrome)

There are currently no provisions for the accessibility of those with cognitive disabilities

# Welcome on board?

## Examining accessibility

### accessibility

*noun* [U]

the ability to get something easily



# Becoming mindful of differences

## Neurodivergent and neurodegenerative



### Neurodivergence

The concept of neurodivergence highlights that these differences are natural variations in the human brain, rather than deficits or abnormalities. It emphasizes the unique strengths and challenges that come with these differences.



### Neurodegenerative

Neurodegeneration refers to conditions that involve the progressive degeneration or death of nerve cells (neurons) in the brain and nervous system. These diseases often lead to a gradual decline in cognitive and motor functions.

# Becoming mindful of differences

## Neurodivergent and neurodegenerative



### Commonalities



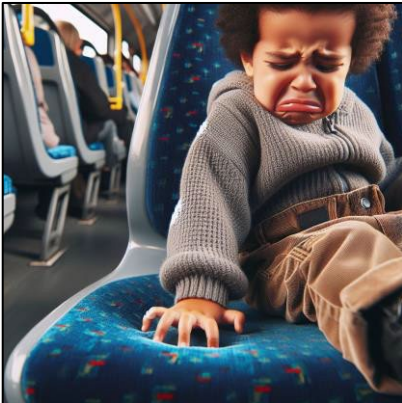
Vision



Temperature



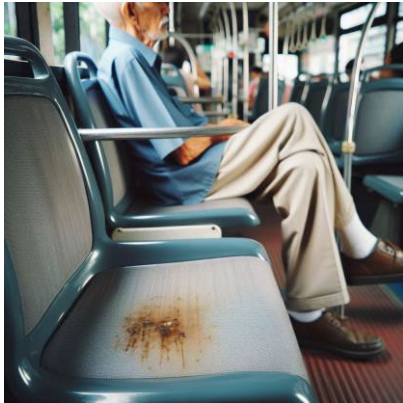
Sound



Touch



Smell



# A sense of style

Avoiding sensory overload



Why do buses adopt a different approach to interior design than other public spaces?

# A sense of style

## Avoiding sensory overload



- **Sensory overload can be distressing**
- **Constant visual stimulation can lead to feelings of anxiety and discomfort, making it challenging to concentrate or relax during the journey**
- **The lack of visual serenity can intensify other sensory sensitivities, leading to a heightened state of alertness and stress**

# See for yourself...

## Focusing on visual misinterpretation



Clear vision and color clarity



Impaired vision and color distortion

Visual impairment can have a significant impact on how a passenger interacts with the environment around them. People with dementia and visual impairment often:

- See things less sharply
- Experience color less vividly
- Need time to adapt to changing light levels
- Have a reduction in visual field and the loss of peripheral vision
- Experience problems with depth perception
- Have sensitivity to glare

# Contributing to change

## How can flooring make a difference?



Our latest products have been engineered with inclusivity in mind and aim to support a range of sensory aspects including:

- Visual processing
- Auditory sensitivity
- Temperature susceptibility
- Olfactory responses



# Considered approach

## Accessibility for all



### *Some basic design principles to think about*

- 1. Calming colors:** Use blues, greens, pastel tones, and neutrals that are associated with nature.
- 2. Natural Materials:** Use materials and surfaces that create a familiar feel offering an effect which is recognizable to people such as those from the natural world like wood and natural fibers.
- 3. Soft Textures:** Use cushioned and upholstered surfaces with consideration to texture. Avoid coarse, rough or abrasive textures.
- 4. Non-Reflective Surfaces:** Use matte finishes to minimize glare.
- 5. Improving Odor:** Adopt fragrance-free policies, ensure natural ventilation and use odor-absorbing materials.
- 6. Avoiding Sensory Overload:** Avoid bright and flashy colors, busy patterns, reflective surfaces, harsh lighting and loud acoustics.

# In summary

## The process to progress



- 1. Recognize** – That accessibility goes beyond visible physical challenges. The diversity of passenger and staff needs must account for sensory and cognitive requirements also.
- 2. Consider** – How bus interior design impacts on these needs and how consideration of them at the beginning of the design process can substantially improve access and inclusivity. Take time to reflect on potential trade-offs. What are the potential impacts of design decisions (both positive and negative) on other physical, cognitive, or sensory needs?
- 3. Evaluate** – Test and validate the design with representative passengers and staff, ensuring that the final product reflects their experiences.

If we are to deliver a transport network which allows the widest range of passengers to enjoy the benefits of independent mobility, then our networks must reflect the diversity of their potential users.

By adopting a pro-active approach to neuroinclusive design, we can take an essential step to making public transport more accessible to all and deliver an experience that benefits every passenger.



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**Contact us**