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Design Opportunity 1 of 8

Bus stop accessibility

***ncat**
national
centre for
accessible
transport





Design Opportunity 1 of 8

Bus stop accessibility

This is one of eight design opportunities developed from ncat's extensive research with disabled passengers across the UK.

For those who wish to explore the full evidence base, detailed findings can be found in the accompanying research report.

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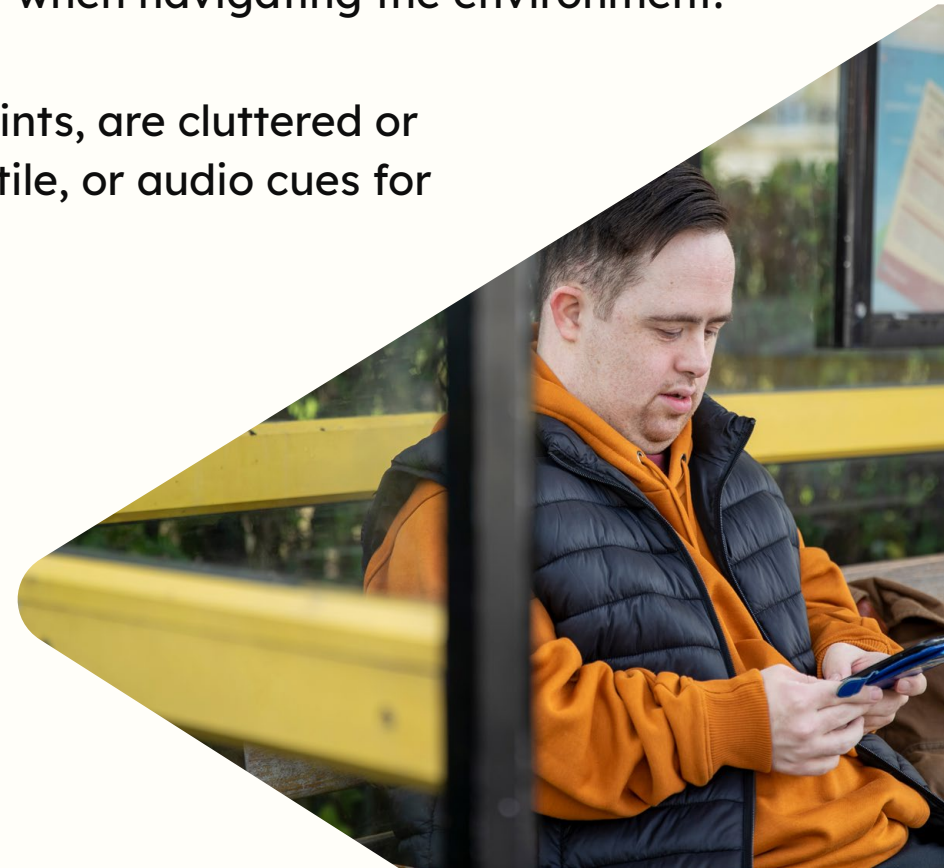
Barriers

Bus stops play a vital role in the public transport system, yet current designs frequently fall short of meeting the access needs of disabled passengers.

Through engagement with disabled passengers via interviews, focus groups, and survey responses, recurring challenges were identified. These included: physical access barriers, unclear or inaccessible travel information, safety issues during boarding, difficulty in identifying approaching buses, and stress or uncertainty when navigating the environment.

Many bus stops lack dropped kerbs or clear boarding points, are cluttered or poorly laid out, and do not provide consistent visual, tactile, or audio cues for orientation or information.

These design shortcomings are reflected in ncat survey findings. While these may seem like minor oversights, they can significantly affect travel confidence, independence, and safety for disabled passengers.



Bus stop accessibility

How might we design bus stops that are universally accessible, predictable, and informative for people with diverse impairments so they can travel with autonomy, dignity, and confidence?



Objectives: Physical access and safety

“

Some stops don't have a dropped kerb, when this happens you have to travel up/down the road to locate one or use a different bus stop altogether that you know has a dropped kerb.

Have had to travel a further 10 mins to locate a bus stop with a dropped kerb.

”



Objectives: **Physical access and safety**

What if bus stops were easy and safe for everyone to navigate to, approach and use?

- ▶ **How might access routes be made more predictable and usable for everyone, including wheelchair users and people with vision impairments?**
- ▶ **How might the physical effort, obstacles, or risk involved in getting to and waiting at a bus stop be reduced or removed?**
- ▶ **Which aspects of kerb design, stop placement, or nearby features like crossings or shelter positioning could be improved to make access easier and safer?**



Objectives: **Bus alignment predictability**

“

If buses don't pull up close enough to the stop, there is a gap and my ankle can get [caught] there.

”



Objectives: **Bus alignment predictability**

What if every bus arrived and aligned in a consistent, predictable way, making boarding safe, intuitive, and stress-free?

- ▶ **How might bus stop design support passengers in knowing where the bus will stop and how to align with its doors or ramps?**

- ▶ **What physical design elements or cues (e.g. tactile markers, signage, audio prompts) would make boarding easier for people with vision or mobility impairments?**

- ▶ **Could features like ground markings, physical guides, or even smart technologies (e.g. sensors, driver-assist tools, or visual cues) help bus drivers align more consistently, improving the predictability of door and ramp placement for passengers?**

- ▶ **What design or policy changes could make the boarding process feel more standard and reliable across different locations?**



Objectives: Spatial awareness and wayfinding

“

Floating bus stops are impossible, if you need to try and find the bus stop, but you can't see the bus stop or a sign, it's impossible.

”

“

On bus stops, it's all glass. I hate glass, I can't see it at all.

”



Objectives: **Spatial awareness and wayfinding**

What if passengers always knew where to wait, board, and orient themselves, even in unfamiliar, crowded, or complex environments?

- ▶ **How might layout, surfaces, or environmental cues like lighting, colour contrast, or fixed features (e.g. benches, shelters) support orientation and help passengers know where they are in the space?**
- ▶ **Could tactile, visual, or structural elements help people locate key features like the shelter, seating, or boarding point?**
- ▶ **How can bus stops be designed for confidence and calm, especially when sensory or cognitive processing is affected?**



Objectives: Multi-modal travel information

“

There were no screens the last time I used this bus station. It hurts my neck to look up so high.

”



Objectives: **Multi-modal travel information**

What if travel information at every stop was usable by everyone, whether you read it, hear it, or touch it?

- ▶ **How might information at bus stops be communicated to people who are blind, deaf, neurodivergent, or don't use digital devices?**
- ▶ **How could the reliability and clarity of real-time info be improved, especially when multiple buses share a stop?**
- ▶ **Could a mix of digital tools and physical features (like tactile buttons, printed timetables or audio prompts) help ensure everyone gets the information they need, even without a smartphone?**



Objectives: **Bus identification**

“

How to know which bus stop if there are several or which bus coming is mine?

”



Objectives: **Bus identification**

What if it was always obvious which bus was approaching, even for those who can't see it well or hear it coming?

- ▶ **How might a bus's arrival, its number and/or destination be better signalled to those with vision or hearing loss?**
- ▶ **Could this be addressed through the design of the bus, the stop, or the interaction between them?**
- ▶ **How might the design of onboard systems and stop-side features, including automated announcements or visual displays, ensure passengers can reliably identify the right bus stop and/or bus without relying solely on the driver?**



Objectives: **Hailing a bus**

“

I don't sit at bus stops. They're far from the road, and drivers might not see me.

”



Objectives: **Hailing a bus**

What if signalling a bus to stop didn't rely on physical speed or strength, visibility, perfect timing or wasn't needed at all?

- ▶ **How might disabled people signal to a driver without needing to wave or move quickly?**
- ▶ **What could a more inclusive hailing interaction look like, especially in quiet or rural settings?**
- ▶ **Is there potential for solutions such as accessible hailing buttons (solar-powered or tactile), wearable tech, or app-based alerts to inform drivers in advance?**
- ▶ **Could we reimagine the process entirely, for example, by having buses stop automatically when someone is at a stop?**



Objectives: Waiting and boarding, clarity and comfort

“

Shelters and seating at the bus stops: there are those thin metal benches, absolutely useless, I will fall off from those.

”

“

There's no queue system: anywhere you stand you're blocking the aisle.

”



Objectives: Waiting and boarding, clarity and comfort

What if the space at the stop made it easier for everyone to wait comfortably, navigate queues, and know who has priority without tension?

- ▶ **How might we design seating and shelter spaces that include wheelchair users and support different body types or access needs?**
- ▶ **What prompts or signals (for example, signage, floor markings or spatial layout) could help make queuing behaviour feel more equitable and intuitive?**
- ▶ **What design choices could help people feel more in control and less vulnerable while waiting or getting on the bus?**



Objectives: Adaptability across settings/locations

“

There are no disabled toilets at this bus station. The only toilet is positioned far away.

I had to get out of my manual wheelchair to use it. On my own, I'd feel too anxious to do that.

”



Objectives: **Adaptability across settings/locations**

What if every bus stop design could flex to meet the needs of urban, rural, busy, and quiet areas, without compromising accessibility?

- ▶ **What essential features should exist in every bus stop, regardless of location?**
- ▶ **How might modular, scalable design help adapt to local constraints or climates?**
- ▶ **Could we develop principles or templates that others can build from, rather than fixed solutions?**



Target users

This opportunity primarily focuses on the needs of:

- ▶ **Wheelchair users and people with limited mobility**, who may face challenges with access routes, kerb heights, or space to manoeuvre
- ▶ **Blind and visually impaired passengers**, for whom predictable layouts, tactile information, and reliable orientation cues are essential
- ▶ **Elderly passengers**, who may experience overlapping challenges such as reduced mobility or slower reaction times.

It also aims to consider the needs of:

- ▶ **Deaf or hard-of-hearing passengers** who may miss announcements or struggle with one-mode information
- ▶ **Neurodivergent individuals and people with cognitive impairments**, who benefit from clarity, predictability, and low-sensory environments
- ▶ **People with sensory sensitivities**, for whom lighting, sound, and crowds can affect comfort and safety.



Design scope and constraints

In scope: This opportunity focuses on practical, implementable improvements to bus stop environments that enhance accessibility, comfort, and confidence for disabled passengers.

In-scope proposals should:

- ▶ Comply with UK accessibility laws and guidance (e.g. Equality Act 2010, Inclusive Mobility, BS 8300)
- ▶ Support a range of impairments: physical, sensory, cognitive, and neurodivergent
- ▶ Improve physical access, safety, and wayfinding at and around stops
- ▶ Be suitable for local authority delivery (for example, through existing procurement or maintenance pathways)
- ▶ Work in both urban and rural settings, or be clearly adaptable
- ▶ Combine physical, sensory, and/or digital features to improve usability
- ▶ Be mindful of real-world conditions like weather, vandalism, and maintenance.

Design directions may include changes to layout, signage, information access, seating, or hailing with flexibility for context.

Design scope and constraints

Out of scope:

This opportunity does not cover:

- ▶ Changes to buses themselves (for example, interiors, ramps, or vehicle tech)
- ▶ National-level policy or system-wide operational reforms
- ▶ Major changes to ticketing, scheduling, or routing
- ▶ Smartphone-only solutions without alternatives for non-digital users.



Stakeholders

- ▶ **Local councils and transport authorities**
- ▶ **Bus operators and drivers**
- ▶ **Installers of infrastructure (for example, bus stops)**
- ▶ **Manufacturers of infrastructure**
- ▶ **Urban planners and infrastructure teams**
- ▶ **Disability advocacy groups and communities**
- ▶ **Digital travel app developers**
- ▶ **Passengers wide range of physical, sensory, or cognitive needs**
- ▶ **Technologists working on vehicle tracking/
broadcast/autonomous technology.**

Next Steps

Visit the [Translating research into design opportunities project page](#) to find links to the full report, along with a shorter ‘highlights’ version that is also translated into easy-read and BSL.

The main project page also has direct links to the 8 individual design opportunities as below:

- 1 Bus stop accessibility**
- 2 Bus interior flexibility and accessibility**
- 3 Personalising ‘live’ travel information**
- 4 Train station accessibility**
- 5 Awareness of diverse travel needs**
- 6 Clarifying operator-passenger commitments**
- 7 Improving existing assistance services**
- 8 Identifying and sharing inclusive transport practices (vehicle, infrastructure, service, etc.)**

Contact Us



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