Design Manual
NR/GN/CIV/300/01

Wayfinding


Platforms
Tickets
Information
Assistance
meeting point

Document Verification

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KING'S CROSS SQUARE
King's Cross Station
Underground
Taxis
Entrance
No entry
4
Entrance
No entry
2

Foreword

This Wayfinding Design Guidance presents Network Rail's requirements for the design and specification of new and updated station directional signage on the UK national rail network.

Although developed initially for UK managed stations, regional concessions are encouraged to adopt the principles of the system as the railway moves to a more unified operating model under Great British Railways.

The intended audience for these guidelines are station managers, rail transport operators, sponsors, project teams, sign designers/suppliers and others involved in the planning, design and implementation of passenger wayfinding signage for Network Rail stations.

This guidance supports regulatory NTSN requirements to achieve linewide consistency in station signage installations undertaken across the UK network. It promotes the installation of wayfinding in a consistent manner that enables designs and compliance to be measured as described in NR standard **NR/L2/CIV/150.**

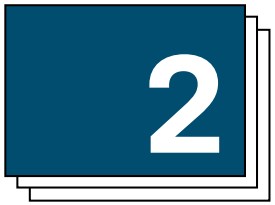
Standards Reference

Station Wayfinding Design and Assurance Procedure
NR/L2/CIV/150

How to use this document

Section 1
Introduction

This chapter outlines the purpose and scope of this document, explains the field of design known as Wayfinding, and the stages involved in a Network Rail project.

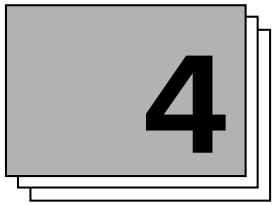


Section 2
The Principles of Design

This chapter sets out the salient design principles to take into consideration when undertaking a signage and wayfinding design project within a Network Rail Station environment.

Section 3
Wayfinding Strategy

This chapter explores the process through which a designer can understand the project site and its movement framework, so as to formulate a wayfinding strategy.



Section 4
Information Structure

This chapter provides guidance on how to present information in such a way that it can be grasped easily and effectively, translating complex data into valuable and meaningful information.

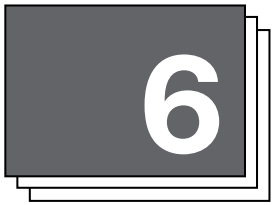
Hint and tips:

To quickly navigate this document clink on any of the titles on this page.

To return to the contents page you can click on the Double Arrow symbol.

Section 5
Graphic Standards

The graphic standards defined in this chapter have been designed to address traveller requirements and should be applied consistently across all signage and wayfinding applications in stations.



Section 6
Sign Family

The suite of sign types is a family of elements that has a common design language. Each element is tailored to fulfil a certain function and convey a certain type of information in the passenger's journey.

Section 7
Integration with Other Systems

This chapter deals with how wayfinding should integrate into other types of information at stations, how to establish a hierarchy and how to balance competing interests for space and attention.

Section 8
Technical Guidance

This chapter provides technical guidance and clear principles to follow to suit consistent, high quality production and installation of wayfinding signage to all stations.

Appendix A
Document References

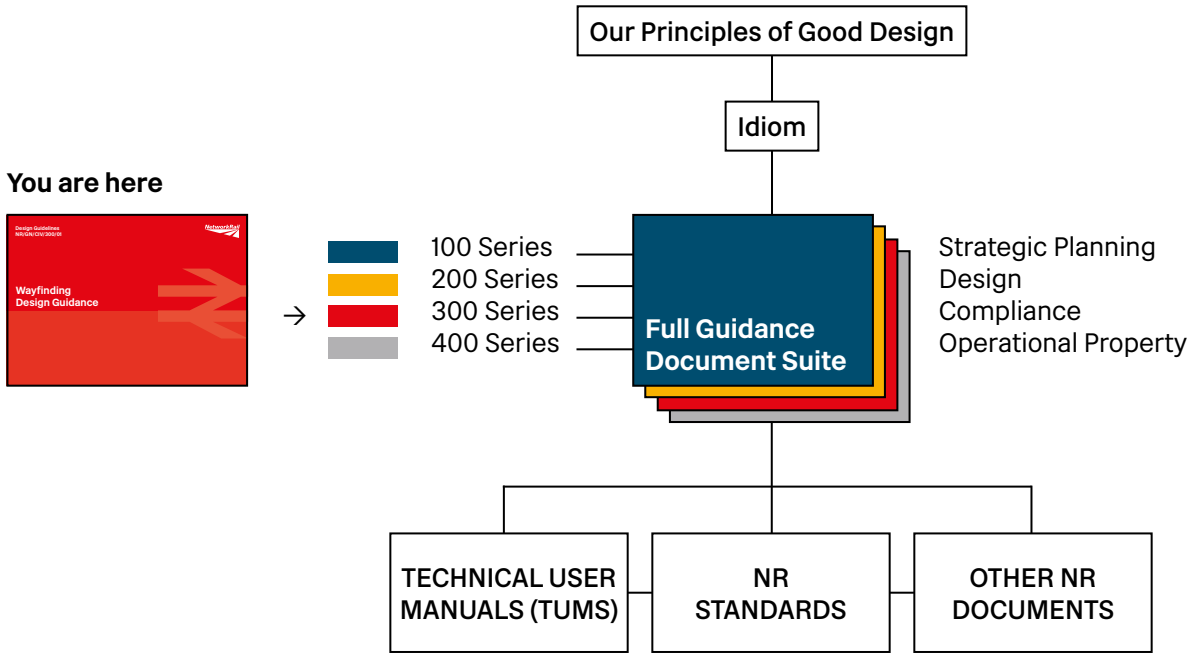
Document references including books, PDFs and websites. A further reading list includes Design Guidelines, British Standards and National Standards documents.

Appendix B
Acknowledgements

Image and content credits and acknowledgements.

How to use the guidance suite

The Network Rail Document Suite



References to other documents

- Code of Practice Guidance
- National Standard
- Network Rail document
- European Standard

Example:

Standards Reference

Application of the PRM NTSN
PRM NTSN: GEGN8615

Design of Buildings and their Approaches to meet the needs of Disabled People — Code of Practice (2015)
BS 8300

NR Guidance Suite Reference

Inclusive Design Guidance
NR/GN/CIV/300/04

This guidance has a Network Rail standards Green status, and the contents do not require derogation

A full list of relevant documents, and other guidance suite documents is contained in the appendix.

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13 & 14 via lift from platforms 8/9 & 10
1-3, 6-11, 13 & 14 via stairs
Way out
1 to 3, 6 to 12 level access
13 & 14 via lift from platforms 8/9 & 10

1

Wayfinding Design Guidance
Introduction

1.1 Purpose

At railway stations the design and positioning of rules for directional, orientation and identification information and signposting is commonly known as wayfinding. Wayfinding encompasses all the ways in which people orient themselves in physical space and navigate from place to place.

The provision of an effective wayfinding system is recognised as a means of assisting passengers in undertaking their journey efficiently, comfortably, accessibly, conveniently and safely.

This guidance supports statutory requirements for accessibility by achieving consistency between wayfinding signage installations undertaken in different stations across the Network. It sets out the requirements for the provision of wayfinding in a coherent and consistent manner that enables designs and compliance to be measured.

This document focuses on compliance with primary legislation and regulations made under it. In particular, the Equality Act, DfT/Transport Scotland Code of Practice Design Standards for Accessible Railway Stations, and the PRM NTSN for accessibility which prescribes consistency in visual information in signposting. It is advisable to align with this standard in order to comply with both National and European requirements of achieving a coherent, comprehensive and consistent system across the railway network.

This document should be read in conjunction with the Network Rail Wayfinding Design and Assurance Procedure Standard, NR/L2/CIV/150, which has been produced to support the implementation of a consistent signposting system across the UK's network of rail stations.

The guidance fits within a framework of other wayfinding guidance manuals and standards that should be consulted during the design and procurement of station passenger signage, such as the Rail Delivery Group Wayfinding Best Practice Guide, which focuses on improving the passenger connections between the rail network and the first and last mile journey.

Standards Reference

Station Wayfinding Design and Assurance Procedure
NR/L2/CIV/150

NR Guidance Suite Reference

Inclusive Design
NR/GN/CIV/300/04

2020
NR/L2/CIV/150
Station Wayfinding Design & Assurance Procedure

2015
Design Standards for Accessible Railway Stations

1.2 Scope

This Guidance can be applied to fixed directional wayfinding signage intended for use by passengers at both current Managed and Franchised Stations. This includes wayfinding signage in all passenger-facing areas, including those which may be used infrequently by passengers.

This Guidance applies to the following types of proposed or actual Works when undertaken on buildings and civil infrastructure that is owned, or is to be owned, by Network Rail:

1. Enhancements:
Wayfinding signage that is delivered through a project that changes operational capability or function of the building or infrastructure.

2. Replacements:
Signage replacement where there is no change to the functionality of the building or infrastructure.

3. Renewals:
Signage that is replaced at the end of its design life.

4. Temporary works:
Signage supplied on a temporary basis for no longer than six months.

5. Permanent works or staged construction:
Signage supplied on permanent works, or as a stage in construction where temporary works may have the same impact on the infrastructure as permanent Works

This Guidance is intended for Network Rail and non-Network Rail parties involved in the design, remitting, design approval, installation and bringing into use of signage and wayfinding for station premises. It supersedes the previous Wayfinding Guidance document published in 2011.

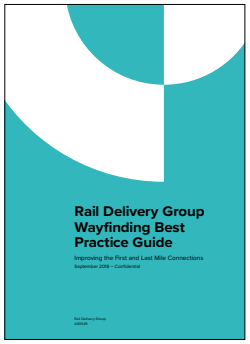
This Guidance supports the free and safe movement of people and addresses passenger service delivery issues of:

a) Security and safety
b) Visual information for passengers
c) Efficiency
d) Accessibility
e) Ambience
f) Branding and corporate design

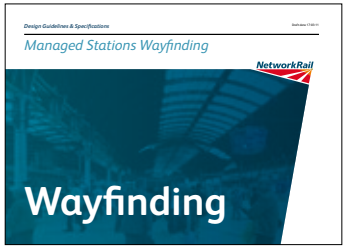
This Guidance also supports applications for Landlord's Consent from Network Rail.

Works not covered by this Guidance include:

1. Non-public or operational lineside signage;
2. Safety signage
3. Heritage and listed building requirements.
4. Emergency Do Not Enter (EDNE) signage
5. Electronic Visual Customer Information Systems (CIS) installed in stations.



2018
Rail Delivery Group Wayfinding Best Practice Guide



2011
Previous Managed Stations Wayfinding Guidelines

1.3 What is Wayfinding?

Wayfinding is a little known field of design that crosses a number of disciplines, including urban design and planning, product design, graphic design, information design and behavioural psychology. At its most essential, wayfinding is directly concerned with fundamental human needs, such as being able to travel effectively, to find one's destination in time, to let others know where one can be found. To assist people in finding their way, signage is often added as an afterthought to the design of environments. However, the best design outcome would be to consider wayfinding at the start of any space planning exercise.

'Wayfinding' refers to the design field devoted to planning and designing coherent systems which incorporate maps, signs, directional markers and the insertion of small clues throughout the built environment that enable orientation. The wayfinding system codes the environment – through naming systems which identify, colour which differentiates, numbering systems that perceptually order the space, and the imposition of hierarchies which cast greater importance on some places rather than others. Good wayfinding systems employ explicit signs and information as well as implicit cues and symbols.

1.4 Project Stages

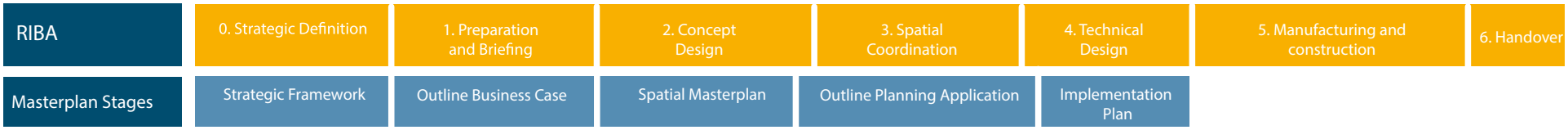
GRIP Stages are being replaced by PACE (Project Acceleration in a Controlled Environment). The key benefit of PACE is that it provides a more flexible control framework to tailor control points to suit the requirements of the project.

The comparative timeline below shows a comparison between PACE and GRIP when the PACE Milestones are delivered sequentially. It is permissible to overlap the activities required to deliver individual milestones and an accelerated programme.

Projects should refer to the PACE standard NR/L2/P3M/201 while developing wayfinding strategies and signposting proposals for significant station works.

Comparative Timeline of Design Stages

Note that PACE and GRIP stages do not correlate directly with RIBA workplan stages, but are approximately shown here



By the end of the PACE Strategic Development & Project Selection stage:

An outline Wayfinding Strategy should be considered as part of NR/L2/CIV/003 F004 Architectural and Layout Acceptance submission.

At the start of the PACE Project Development & Design Stage:

An outline Wayfinding Proposal should be developed for any station project as part of the NR/L2/CIV/003 F004 Architectural and Layout Acceptance submission. It is advisable that a Wayfinding design consultant is appointed.


Platforms
6 and 7
Via escalator
Platforms
0 to 5
Welcome to
King's Cross
Welcome to
King's Cross
Platforms
4 and 5
Platforms
0 to 3
Platforms
6 and 7
Via lift
Platforms
0 to 5

Wayfinding Design Guidance

The Principles of Design

2

2.1 The Station Environment — (De)cluttering

The objective of the signage and wayfinding designer is not to add more words, signs or clutter into spaces but instead to work collaboratively with architects and those responsible for the station layout to design spaces in which people can intuitively navigate.

Planning intuitive spaces requires:

- → A layout which provides clear sight lines toward entrances, exits, and vertical circulation cores;
- → An understanding of how the layout of spaces affects pedestrian circulation;
- → A clear pattern of routes and hierarchy of routes through spaces;
- → An understanding of how finishes, lighting and subtle design cues may guide people's movement more powerfully than a written message.

Cluttered

Information clutter

Platform information competes with train operator and station information, advertisement and retail signage.

Lack of visibility

Signage colours do not stand out against the cluttered background. Text size is frequently too small to be read from a convenient distance.

Product aesthetics

In many cases current signage presentation gives an impression of lack of consideration for aesthetics.

Poor maintenance

Station assets do not have consistent ownership and are often not kept up to the same level.

2.1 The Station Environment — (De)cluttering

In cases where a space is not legible, wayfinding information should be presented in such a way that it engenders efficient and effective understanding. The success of signage rests on how well information has been organised for travellers to grasp, process and utilise for making quick decisions during their journey.

Stations often contain many areas of considerable historical and architectural value. Most Network Rail managed stations have listed building status and the planning and consents team should be consulted to establish all planning and listed building consent obligations.

Clean and consistent

Consistent and predictable placement

Consideration given to the consistency of signage placement and mounting heights can significantly improve the predictability of information for travellers.

Appropriate spacing between signs

To enable clear visibility, signage should stand out from its environment. A predictable rhythm of signage should be established in order to set expectations for the traveller. Signage which is squeezed together without consistent layout consistency is more difficult to follow.

Clear sight lines for signs

Signs should be placed perpendicular to the main flow of passenger movement to allow the passenger to find the relevant wayfinding information intuitively.

Clean layout

Information designed according to a set of definitive standards – for layouts, letter heights, line spacing, colour palette – will read as a system and give the passenger confidence in the accuracy of the information.

2.2 Network Rail Brand — Public and Corporate

Much of the British public associates the National Rail symbol for public use with national rail travel in the UK. This symbol has become identified with railway stations and is implemented both to direct to managed stations, for instance on Transport for London directional signage, as well as for station identification itself. Therefore, Network Rail's corporate logo is not clearly understood by the public, and can cause confusion if used on wayfinding signage. For clarity, this corporate logo should not be introduced on directional signage.

Public use

This symbol was designed in 1966 by the Design Research Unit and was implemented in the same year. It is used within the public realm and on station identification, indicating National Rail stations as well as franchised stations. Travellers associate the symbol with train travel in the United Kingdom.

Corporate use

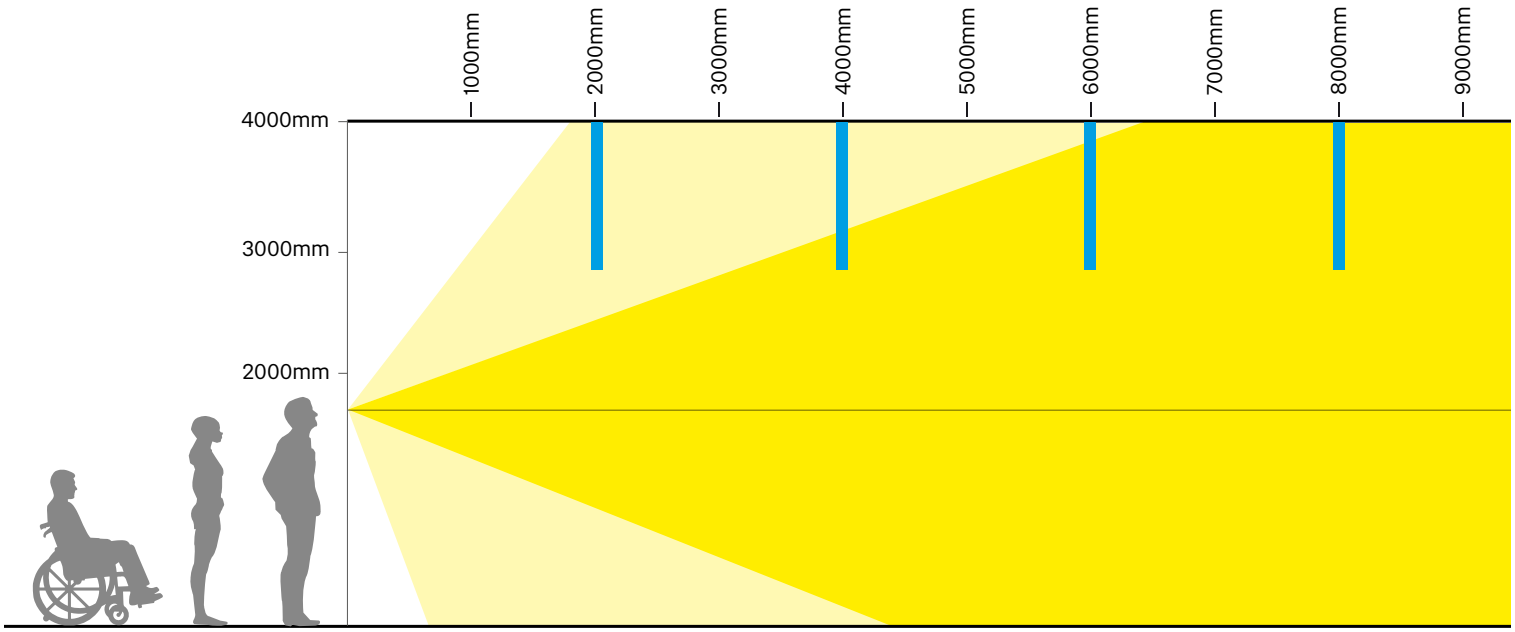
This logo was designed in 2002 and is for corporate use only. It is used within the Network Rail corporation and should not be visible on wayfinding elements.

The double arrow symbol is owned by the Department for Transport which licenses its use. For additional information regarding its use in specific areas please refer to the National Rail Design Guidelines NR012.

For colour references please refer to Colour Palette, section 5.4 of this document.


NetworkRail
Here to help

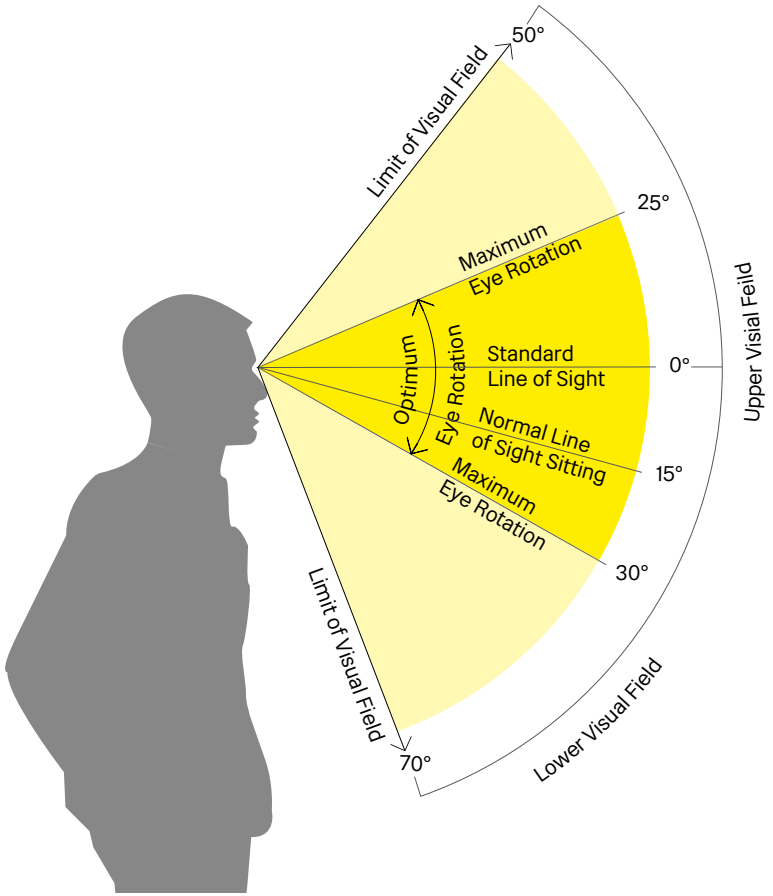
2.3 Sight Lines and Legibility

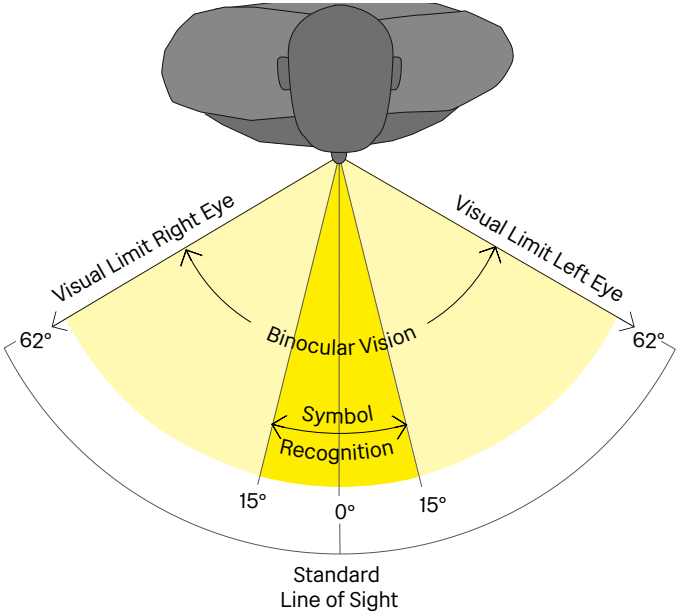


Typical Viewing Angles

In order to be functional, signage should be legible. The first step to understanding legibility is to understand the human Field of View. The average visual field for a person with full binocular vision is roughly 160 degrees horizontally and 120 degrees vertically, without turning the head. Part of this visual field is peripheral vision, and not suited for recognition of characters and symbols. For signage to be read comfortably, it should be positioned at heights and distances that are comfortable for reading without strain.

Please refer to RIS-7700-INS, the Rail Industry Standard for Station Infrastructure, for additional information on mounting heights for signage.





Visual Fields

Human visual fields

People will tend to read signage from different distances based on whether it is placed overhead or at eye level. From overhead signage, they tend to stand in 4–6m distance in order to read it without straining their neck too much, from eye-level signage they tend to stand 1–2m away.

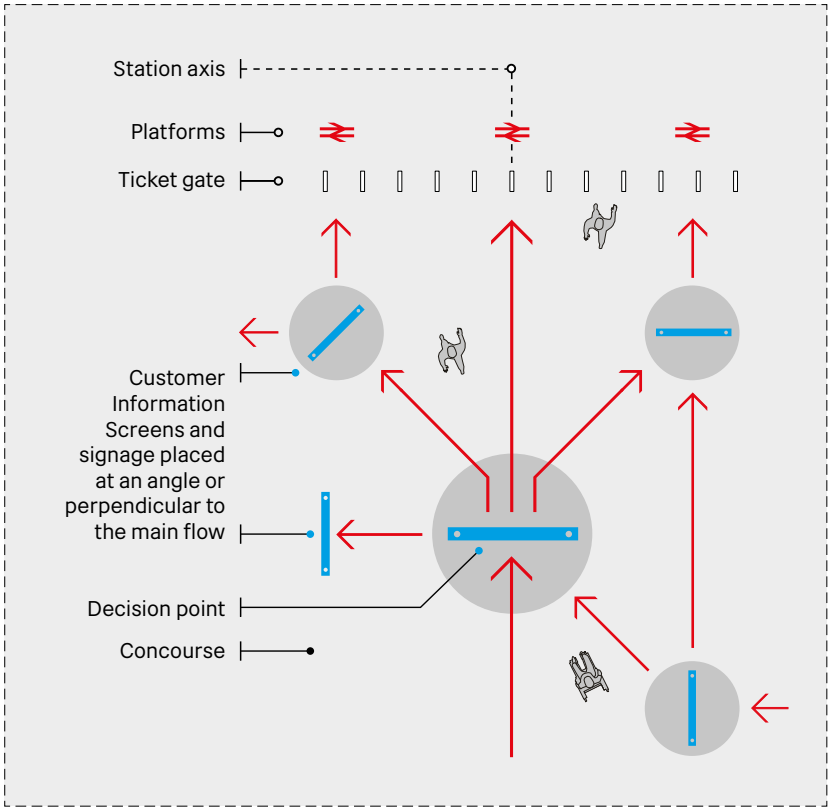

Caffè Ritazza
Tickets and Travel Centre
Piccadilly Mall
Shopping
Platforms 8 to 14
Metrolink Taxis Local Buses

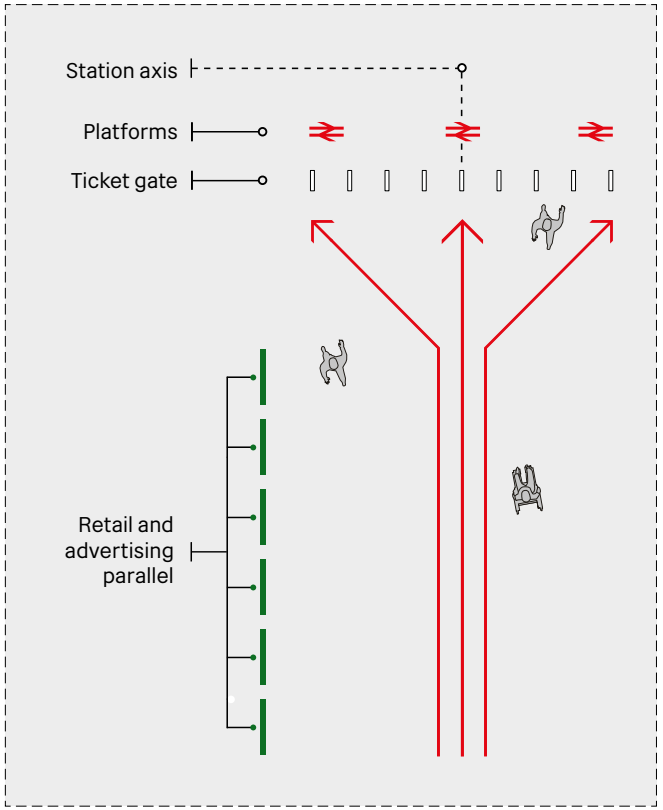
3

Wayfinding Design Guidance

Wayfinding Strategy

3.1 Visibility to and from Decision-Making Points

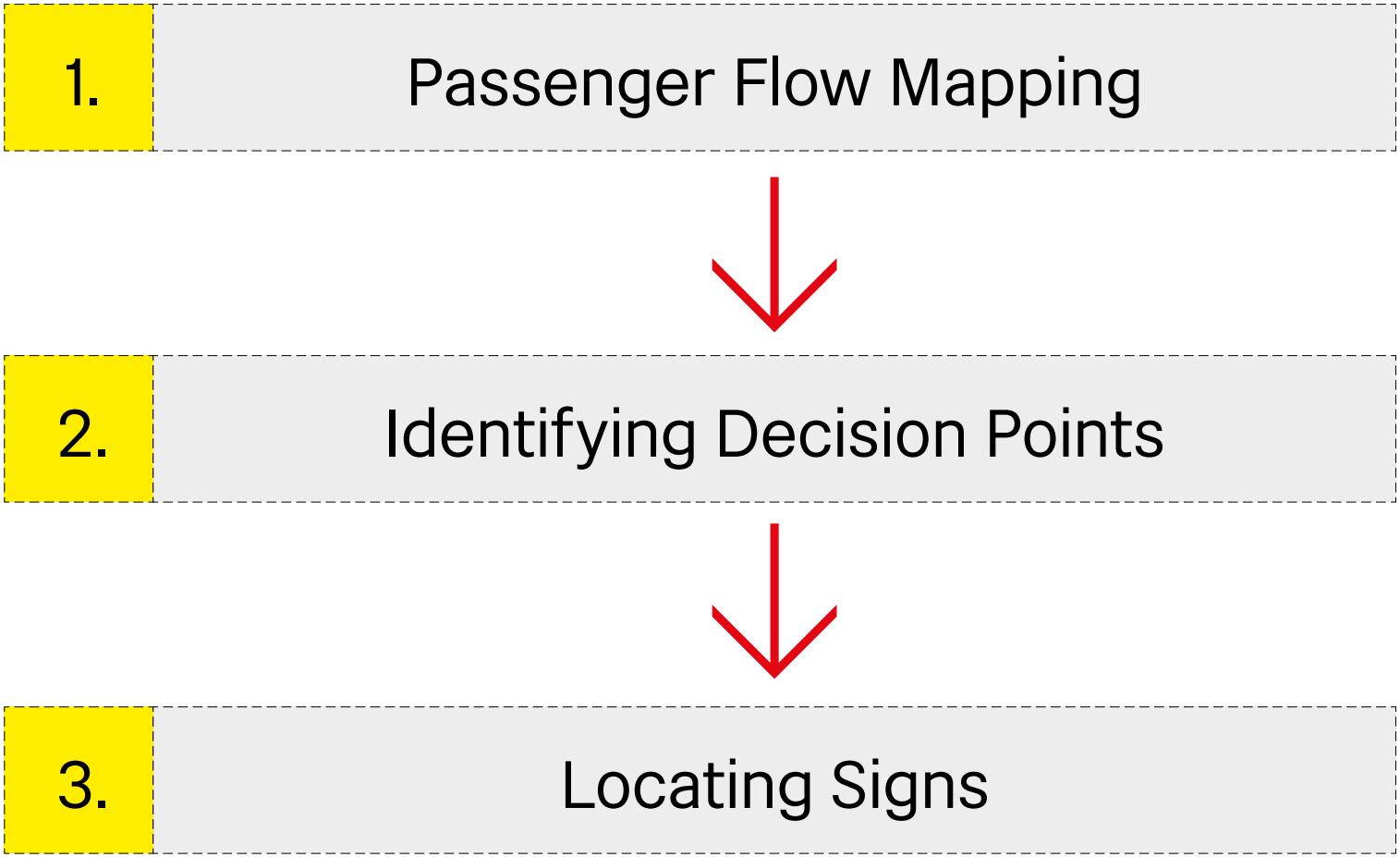




Signage Location Schematic Diagram

In stations, it is critical that there are clear lines of sight between the passenger decision-making points and the signage which is providing information for that decision to be made. Signs should be located with a common rationale, considering how they will be read, by whom, from which direction, at which height, and in relation to other elements that exist or will exist within the space.

The location of signage should always follow from the passenger circulation mapping and decision point analysis, and not the other way around. Signs should be placed perpendicular to the main paths of movement, so that they can be seen by flows of passengers while moving.



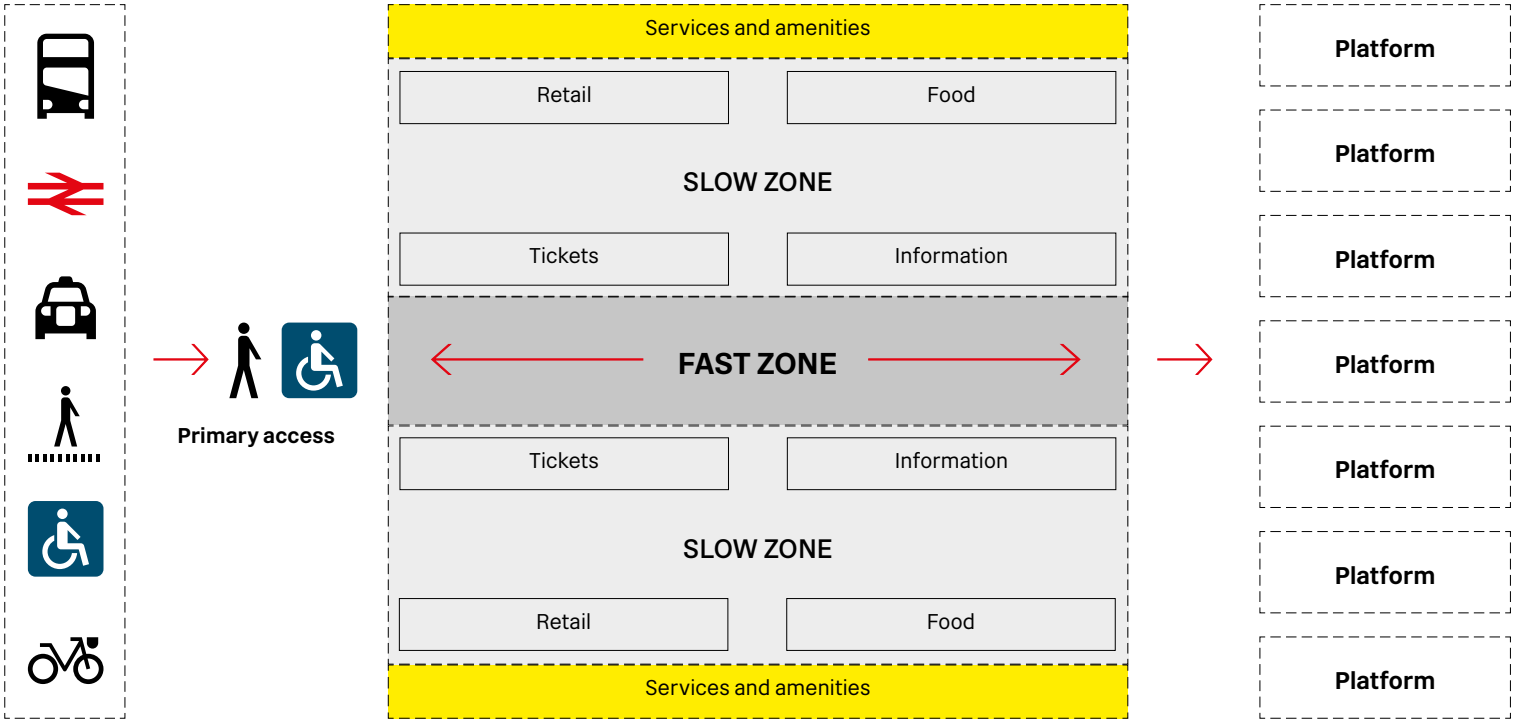
Wayfinding Project Sequence

Care should be given to follow this sequence:

1. passenger flow mapping;
2. identifying decision points;
3. locating signs.

This sequence has often not been considered in existing station design, leading to cross-flow and friction.

3.2 Passenger Flows and Destinations



Ideal Passenger Flow

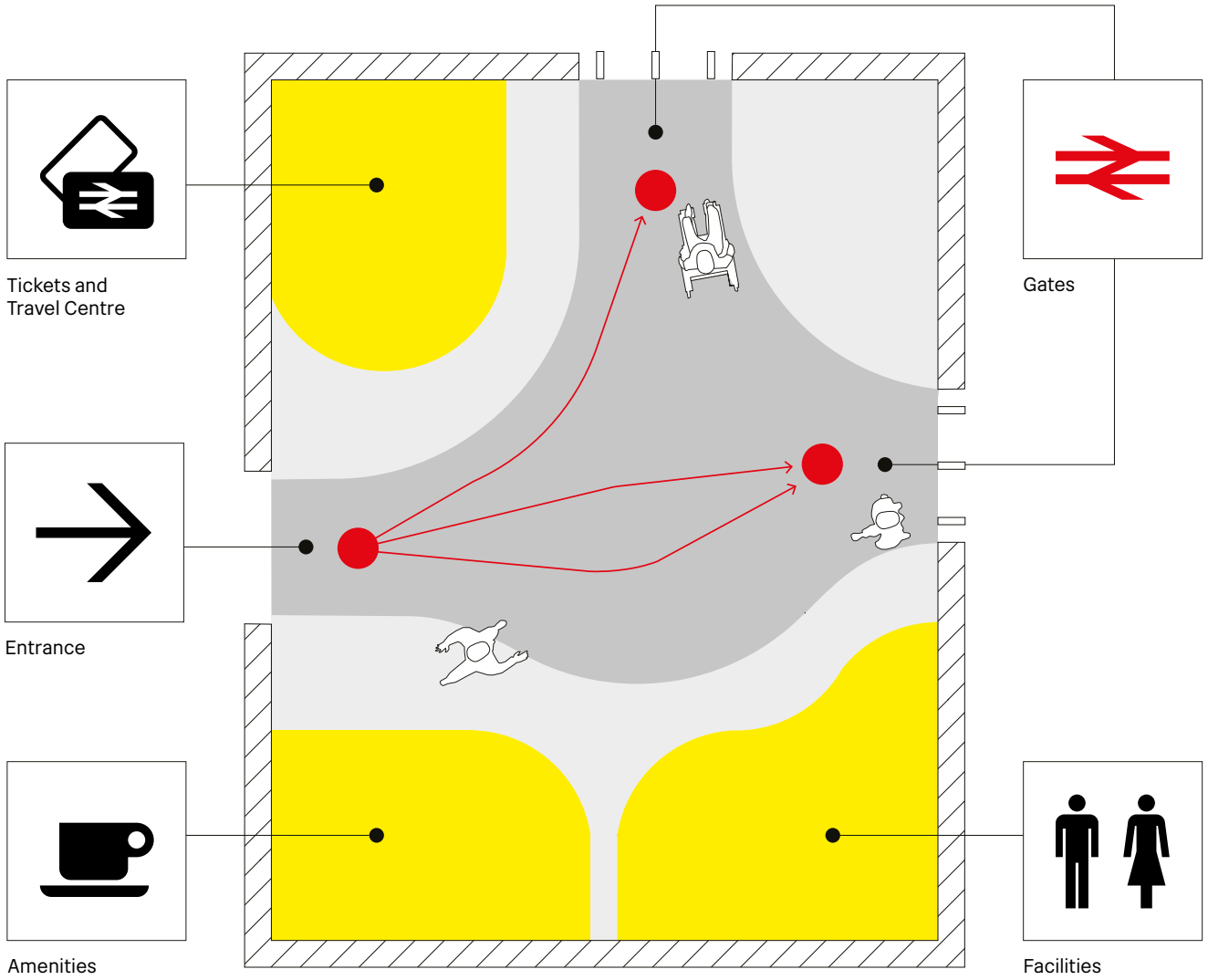
To understand how people find their way through a space or station, a first important step is to map their circulation. It is essential to know their primary origins and destinations. If they are in a rush, they will take the shortest path. Flows should be observed or crowd modelled to test the operational concept for the station.

Zones for fast movement should be cleared of obstructions and prioritised on the journey between entrance and platforms. Mapping passenger flows is an initial step in the process of developing an appropriate wayfinding strategy.

Fast zones versus slow zones of movement

Some decision points are located in transient spaces characterised by fast-paced movement, where it is important to deter passengers from stopping and creating bottlenecks in circulation spaces. These locations require fast, immediate directional information that can be accessed without stopping, for example over the heads of crowds with text large enough so it can be read and acted on from a distance. At other points, visitors may seek more in-depth map/directory information. This requires more time, and therefore the location should be suitable for visitors to stop without obstructing passenger flows.

3.2 Passenger Flows and Destinations



Primary Flows and Decision Points

- Movement spaces (fast zone)
- Decision points
- Opportunity spaces
- Dwelling spaces (slow zone)

Decision points

Decision points are locations where the passenger should make a wayfinding decision. For example, the passenger may choose whether to continue along the current route or take a turn at an intersection of paths.

Passenger flow analysis

By analysing passenger flows within movement spaces, it is possible to determine fast zones (for time-poor passengers) and slow zones (for time-rich passengers). Opportunity spaces are thereby created outside fast zones, where passengers stop in dwelling areas to wait for travel information or make use of retail and other station facilities.

3.3 Whole Passenger Journey – Departures

Liverpool Street

1.

Station Approaches
Upon arrival, passengers look to confirm station ID and time. An Exterior Station Name Sign featuring the double arrow logo should be positioned at the Entrance. For stations with a building canopy the Station Name Sign should be incorporated into the station canopy. Where stations have more than one entrance, each station entrance should be numbered.

2.

Entering the Ticket Hall
Upon entering the Ticket Hall passengers will require wayfinding to direct them. They may also meet a member of staff at the entrance, mobility assistance point or arranged meeting point. Directional signage is required to guide passengers to information, ticket facilities and the Departures board / passenger information screens.

Once passengers have confirmed their fastest or preferred route of travel with the assistance of staff or with the passenger information boards, they confirm train departure times and rail services. If passengers have time, they may use the amenities and services provided and familiarise themselves further with the station wayfinding to find the lift or escalators.

3.

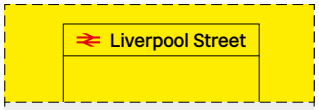
Ticket Hall to Platform
From the Departures board / passenger information screens, directional signage should be provided to platforms. Platform numbers should be clearly visible to passengers from the concourse. Typically, a bank of ticket gates will have only one accessible gate. To facilitate smooth flows on step-free routes toward the accessible ticket gate, both high level and low level signage should be provided to increase visibility for those using wheelchairs. Line diagram signs should be provided to passengers en route to platforms that illustrate the platform layout.

Once on the platform, passengers will look for confirmation that they are at the correct platform in order to board the right train. A platform number should be located on the platform. Accessible routes should be clearly marked.

A passenger will pass through a number of distinct stages on the journey to and from the station. At each stage during the journey, the passenger may ask a particular question, relating to the space and the decision to be made there, and these stages together make up the Whole Passenger Journey.

For information to be placed effectively at stations, a common approach is to be taken at all stations wherein specific information should be consistently presented and positioned at each stage of the journey, regardless of constraints imposed by the station design. The journey of a passenger on departure from a station is shown on this page and the journey on arrival to the destination station is shown on the following page.

3.4 Whole Passenger Journey – Arrivals



1.

Alighting from the Train onto Platform
Signage should be consistently located on platforms so that the passenger can see the station name clearly from inside the train upon arrival. Passengers exit the train onto the platform. Upon alighting from the train, passengers should be able to see signs giving directions to the Way Out.

If required, a member of staff can be met on the platform, at a meeting point or mobility assistance point which should be clearly signed.

2.

Exit from the Platform
From anywhere within the station premises, a Way Out sign should always be clearly visible and an Emergency Exit sign legible by passengers under emergency operational conditions. Both types of signs require illumination in areas of low luminance.

Way Out signs should be instantly recognisable from the consistent use of a distinctive colour, proportions and layout. Where the usual way out is to be used as the emergency, then the Way Out signage should be subject to the same functional requirements as emergency exit signing.

3.

Exit from the Ticket Hall
At the station concourse passengers look to check the time, services and destination on passenger information screens, station wayfinding or by asking a member of staff at the information desk. If passengers have time, they may use amenities and services provided or look to find the exit, lift or escalators. Where there are alternative numbered exits routes leading to separate street locations, this information should be included on the Way Out sign.

The strategic placement of lift signs should encourage their usage in order to reduce accidents on stairs and escalators. Where stations have several lifts to provide level access to more than one line or mode of transport there should be a lift layout sign at each lift call point and inside each lift.

4.

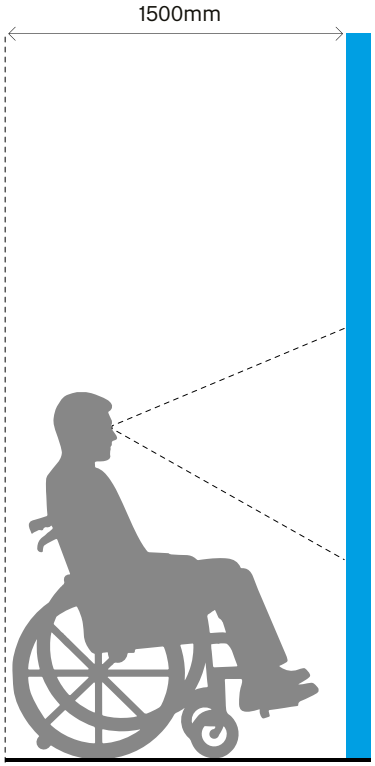
Exit Onward Journey
Some passengers may be looking for a different mode of transport within the station environment or just outside which should be supported by station wayfinding.

Signs displaying how to reach connecting modes of transport, including tram, underground, air travel, bus, taxi, cycles and parking should be clearly visible from all directions in the ticket hall.

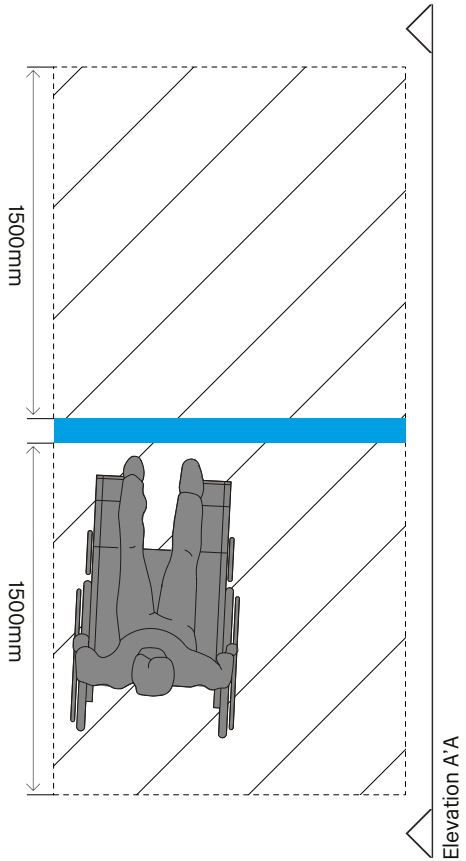
On arrival into a new city, for example, upon alighting and accessing the main concourse, a passenger may ask ‘where is the taxi stand?’ The answer should appear within the concourse in the form of signage.

Signage should only respond with as much information as is absolutely necessary. This is termed Progressive Disclosure of Information and is a principle that should guide the signage information design and placement. Otherwise, if asked to think several steps ahead and to remember these details amongst the other distractions around, the passenger may become overloaded and forget essential information along the way.

3.5 Inclusive Design



Elevation A'A



Minimum Viewing Zone

When locating free-standing signage within a station environment, a suggested wheelchair-safe waiting zone of 1500mm should be space-proofed, to assure a comfortable and safe space without impacting on pedestrian flows.

For any public project, there will be a broad audience with a range of different needs and abilities which may affect how they read signs. Inclusive design caters to all groups equally. In order to develop a signage and wayfinding project for the station environment that meets Network Rail's objectives for inclusive design, this guidance should be read in tandem with Network Rail's Inclusive Design Guidance NR/GN/CIV/300/04.

For example, up to 8% of the male population and up to 0.5% of the female population are affected by some form of colour blindness, with red-green colour blindness being the most common. Due to this fact, colour should not be relied upon on its own to convey important distinctions, but should be accompanied by a secondary measure to check the wayfinding message is universally accessible. It is not only the choice, but also the pairings of colours that matter. In order for text on signage to be visible, it needs sufficient contrast with its background. A common rule of thumb is that the contrast between the foreground colour and background colour should be at least 70%. Colour contrast between foreground and background can be calculated through comparing the Light Reflectance Values (LR) of the two colours. Signs should also be well illuminated for clear reading.

The signage designer should also take into consideration such factors as capitalisation when designing signage. Words written in all capital letters can be harder to read than those formed of upper and lower case, including for people with dyslexia and vision impairments. Because lowercase letters have more distinctive shapes and greater variations than capital letters, the combination of lowercase letters creates a more distinctive 'word footprint', making them easier to distinguish and to read than an all-cap 'word footprint'. The spacing between letters is important to check that letters do not appear to blur together for people with vision impairments.

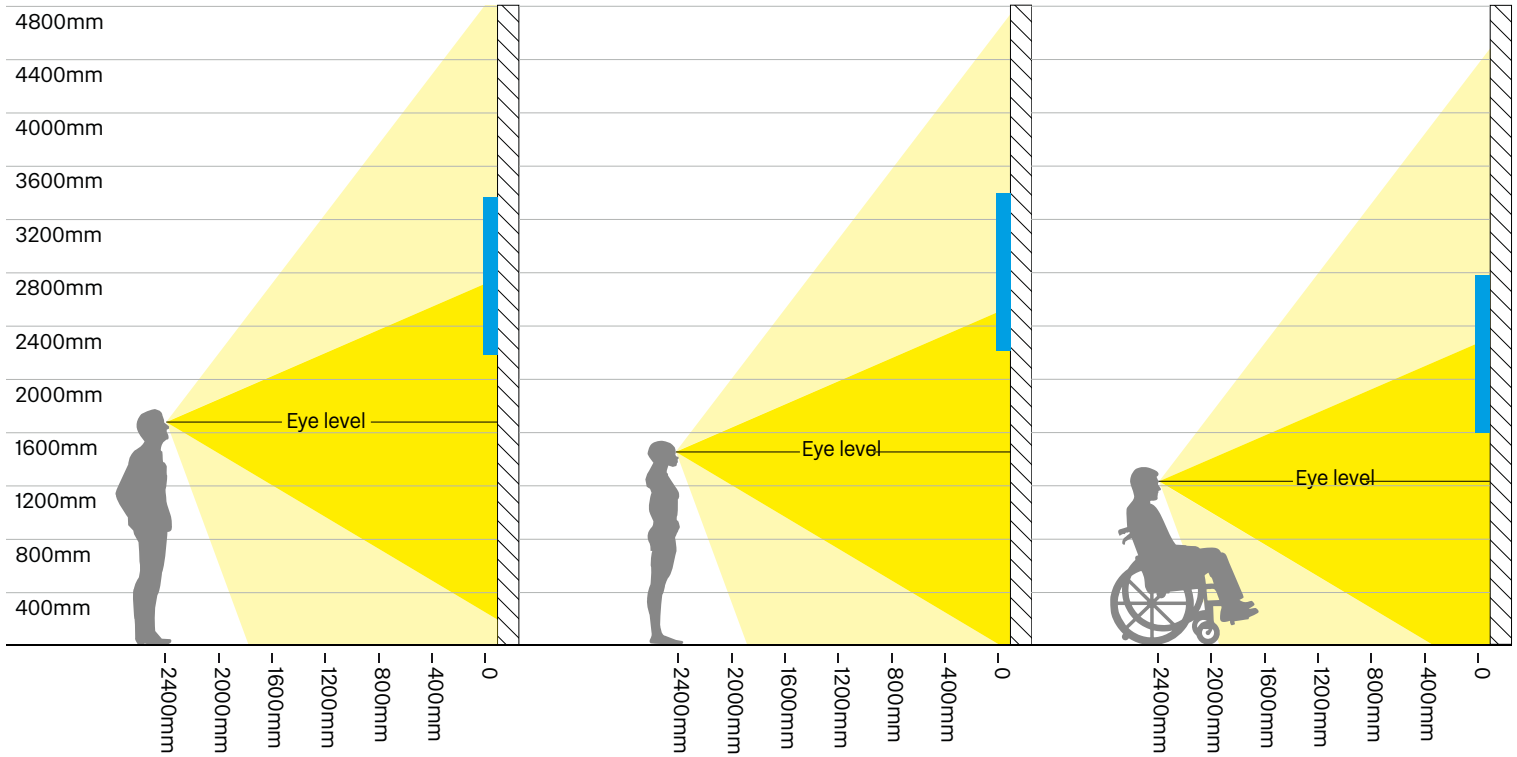
Standards Reference

The Sign Design Guide (2000)

Design of Buildings and their Approaches to meet the needs of Disabled People – Code of Practice (2018)

BS 8300:2018

3.5 Inclusive Design



For persons of reduced mobility, who may be travelling through the station via step-free routes, it is advisable to provide signage on these routes at both a high and low level so as to accommodate their needs. These and other principles of good sign design can be found in the reference documents provided below, including The Sign Design Guide (2000) and British Standard BS8300. Additionally, statutory signage regulations should be observed to check that signage should be usable by people with various types of needs, and should often stipulate standards for aspects such as tactile lettering, braille, pictogram sizing and letter heights.

The following diagrams illustrate comfortable viewing angles, distances and minimum viewing zones for different user groups.

Accessible Wall-Mounting Heights

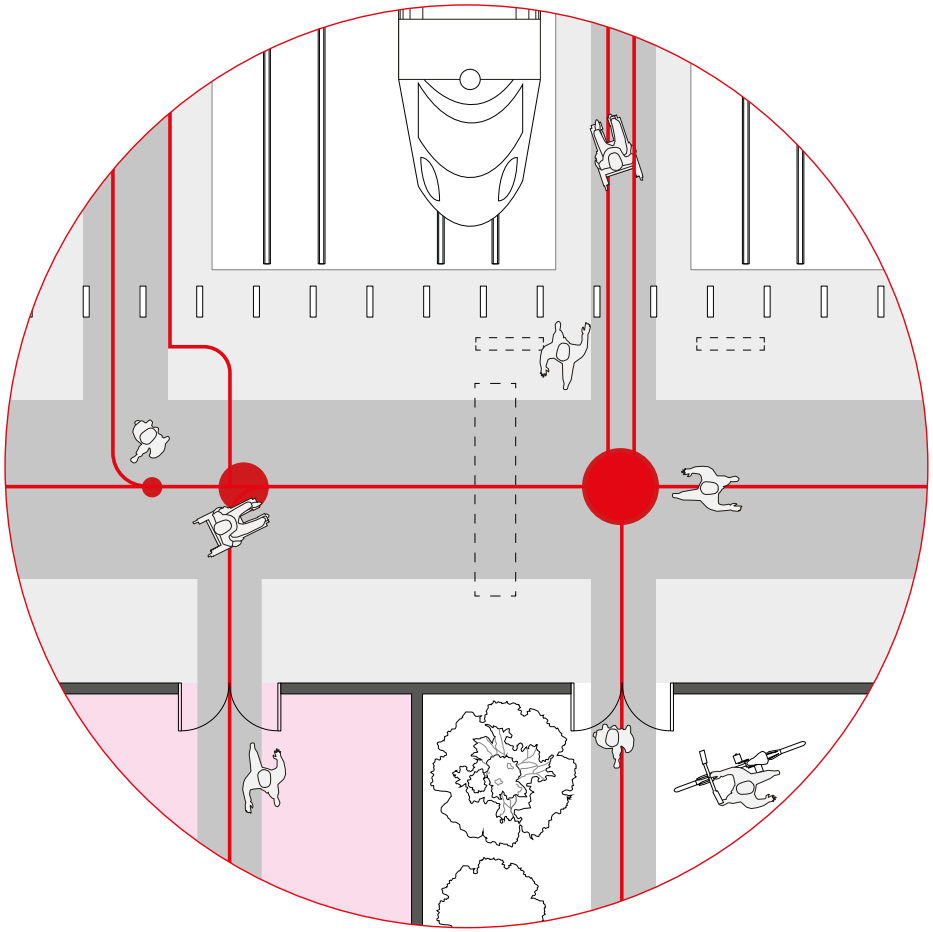
Accessible Wall-Mounting Heights

On step-free routes, it is advisable to provide signage at both a high and low level to accommodate to the needs of all users.

NR Guidance Suite Reference

Inclusive Design
NR/GN/CIV/300/04

3.6 Mapping User Flows and Decision Points



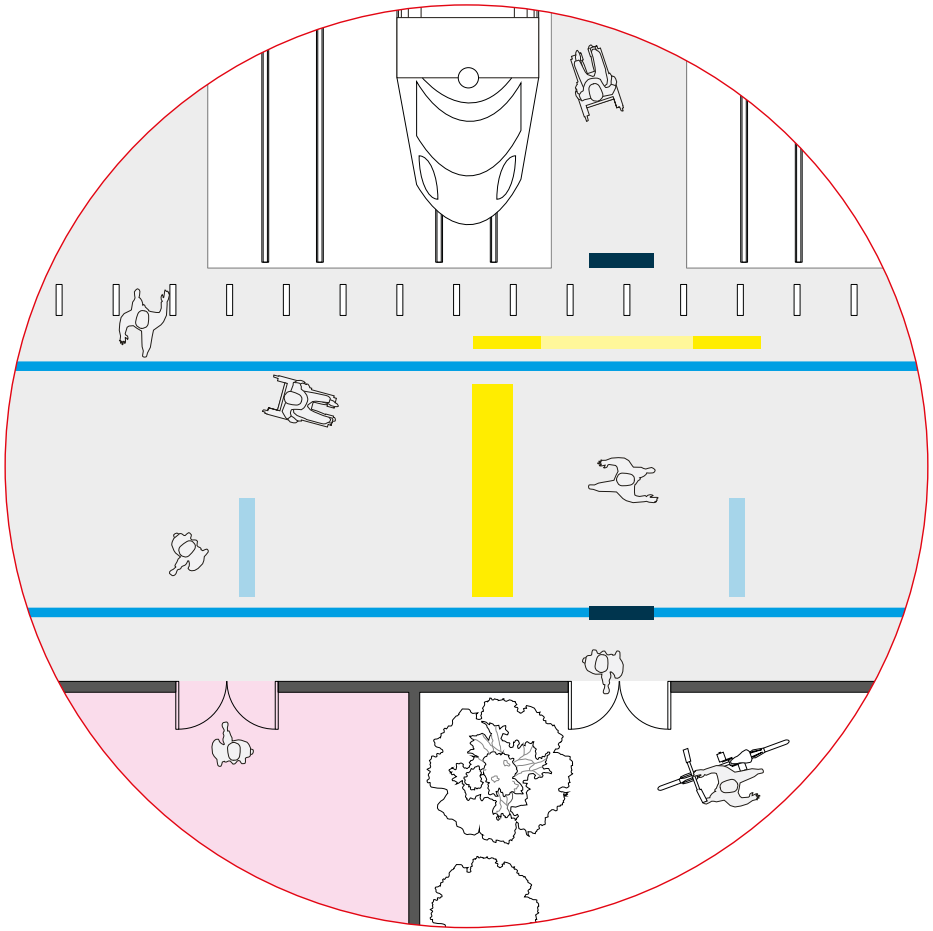
Schematic Diagram
Decision Points

- Decision points
- Visitor routes
- Circulation zone – main axis
- Circulation zone
- Other transport services
- Customer Information Screen

Signage should be placed at decision points or as close to the decision point as possible, taking into account the user flows and mounting points available in the space. Placing a sign after the decision point may cause a passenger to backtrack, which can be detrimental in a crowded flow and can cause loss of time en route to a train.

Decision points may be at intersections of paths or at an entrance to a building. They can be also be in front of a lift or at the top of a staircase or escalator.

3.7 Signage Location Planning



Schematic Diagram Signage Location Planning

- Way Out sign
- Perimeter ribbon
- Totem
- Customer Information Screen
- Platform number sign
- Circulation zone
- Other transport services

Having identified the decision points within a project, the next step is to pinpoint locations for wayfinding and signage in a form of documentation that can be used by the extended design team and contractor. Typically, a CAD (Computer Aided Design) program may be the most suitable software, as locations will need to be recorded with accuracy.

At this stage, the location plans represent a strategy for signage within the site, charting the categories of signs, the specific typologies of signs, their locations and unique address within the sign type series.

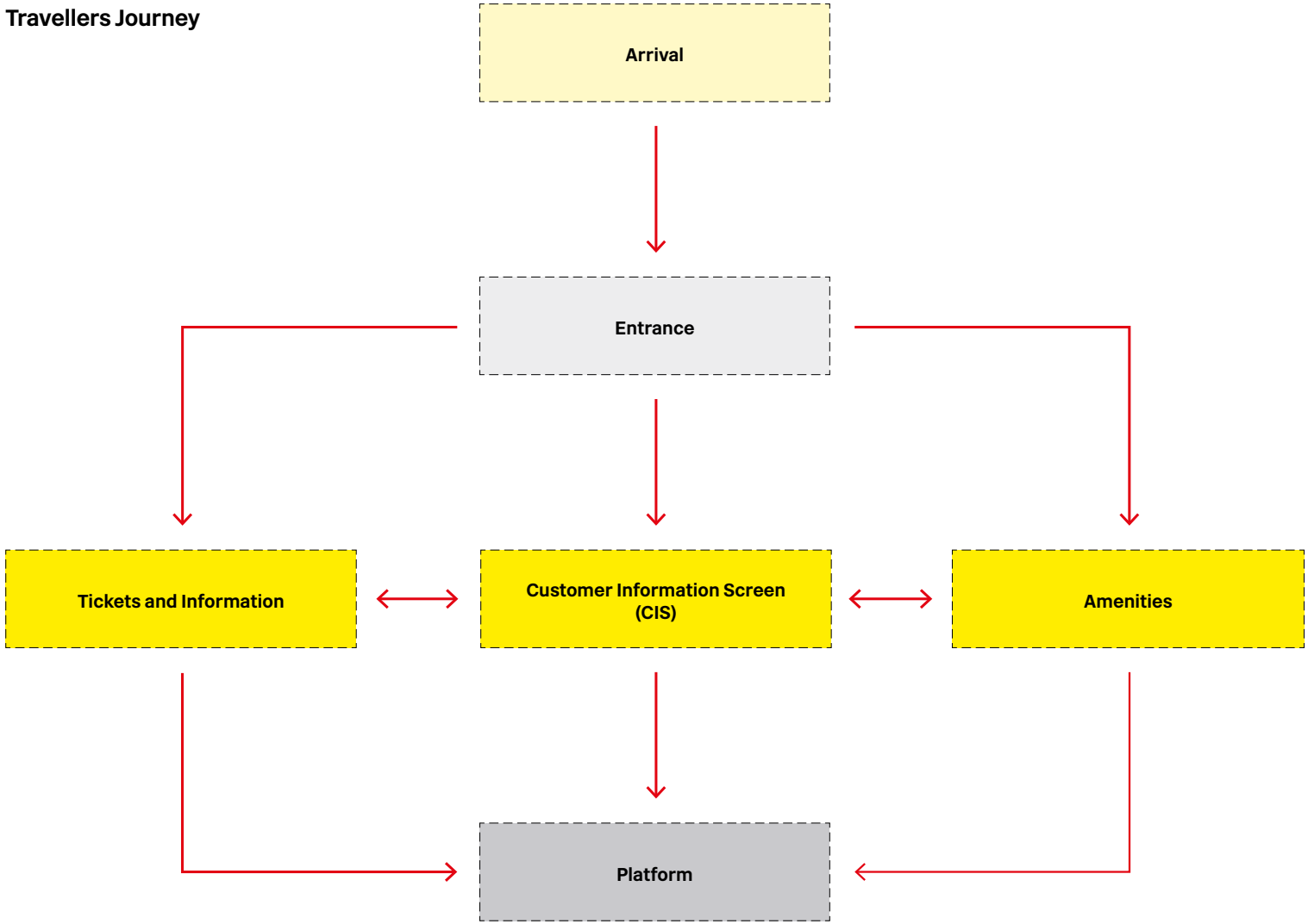

Welcome
to
Birmingham
New Street Station

4

Wayfinding Design Guidance
Information Structure

4.1 Progressive Disclosure of Information

Travellers Journey



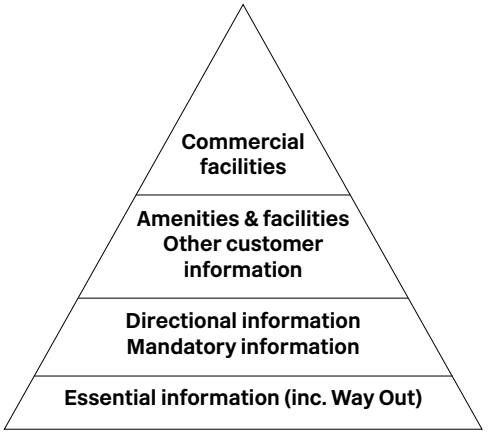
The wayfinding design process at stations starts with analysing flows, mapping decision points and locating signs at these points. In parallel, traveller journeys and the information these travellers require are defined and mapped into the space.

At this point, the messages on signage should be planned. In so doing, the principle of progressive disclosure of information should be applied so that only as much information as necessary is given at each specific decision point. This avoids overloading the visitor with too much complexity.

4.2 Hierarchy of User's Needs

Maslow's hierarchy of needs is a psychological theory put forward by Abraham Maslow in 1943, which uses a classification system to describe how human needs correlate with motivational behaviour. Four classes of human needs are represented as a pyramid with the essiential needs at the bottom and the more convenience needs and desires at the top. Starting at the base and rising upward, an individual should have the needs of each stage met within themselves before their motivations rise to the next level.

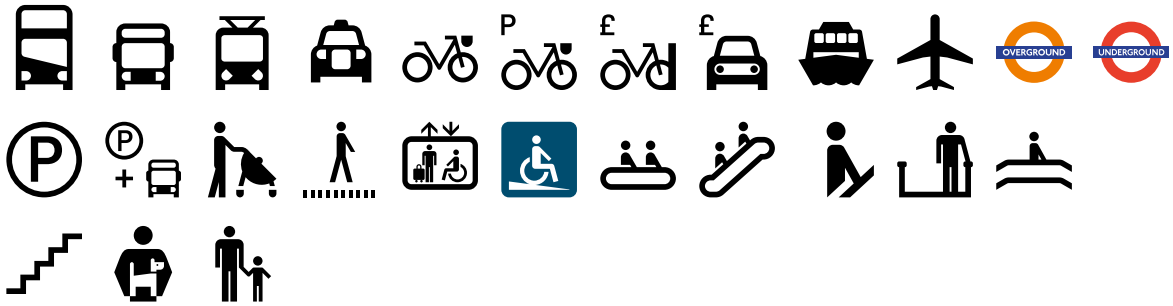
In much the same way, a hierarchy of importance should be followed within station signage design, which correlates with station users' needs.



4.3 Information Hierarchy

1. Essential journey information
— Train travel
— Way Out

2. Onward journey information
— Transport Interchange
— Journey inside station



3. Amenities & facilities
— Toilet and shower facilities
— Main station facilities
— Other amenities

4. Commercial establishments
— Restaurants, cafes, shops, hotels

A clear and consistent hierarchy of information is essential to wayfinding. This hierarchy defines how information is presented consistently across all channels of information. Designing an information hierarchy requires thinking from the passenger's point of view about their primary, secondary and tertiary needs, and then using graphic means to emphasise importance.

As passengers read a list of destinations in signage from the top down, the hierarchy of information for passengers should start with the station user's most essential needs at the top, working down to their least critical requirements. The high importance of safety, directional and mandatory signage should be reflected visually in the information design.

Essential rail travel, tickets and Way Out information should be listed at the top, followed by onward journey information, internal station circulation, amenities and facilities, working down to less essential commercial services at the bottom.

4.4 Information Grouping

To organise information for efficient wayfinding, destinations will be grouped by direction. This strategy streamlines abstract textual information with direct spatial information to facilitate passengers' understanding.

A consistent classification, structure and order of information will need to be established across Network Rail's Stations.

1 — Directional arrow

Grouping the information by direction allows the use of only one arrow. A larger arrow visually binds the group of information and should lead travellers to their destination faster. The arrow is part of the typeface design, complimenting the clean and timeless design.

2 — Hierarchy

The wayfinding information is grouped by direction, with a maximum of 4 per group. Within each group, the information is organised by importance.

3 — Lines

Lines have been added on the totems to more clearly divide the different directions.

4.5 Use of Language

Abbreviations

This list of Network Rail abbreviations and punctuation is indicative. Any queries should be addressed to Network Rail Managed Stations Design team. Abbreviations or contractions should only be used where space is limited. Abbreviations do not include a full stop. For example: Rd - Road, Sq - Square, Saint Austell - St Austell. Where unavoidable, the following permitted abbreviations can be used:

— N North
— E East
— S South
— W West
— Jn Junction
— Ctl Central
— Rd Road
— Sq Square
— St Saint or Street
— Pk Park

Ampersand

Avoid using the ampersand and use 'and' instead. For example: Left luggage and lost property. The exception to this is station names (see 'Station names' in this section).

Hyphenation

When used in continuous text, a character space should not be inserted either side of the hyphen. For example: self-service. A hyphen should not be used to indicate a time or day period, the term 'to' should be used instead, for example: Monday to Saturday or 18 00 to 21 00.

Dates

Dates should be displayed in the order of day, month, year. Suffixes such as 1st or 2nd should not be used. The preferred abbreviation for days and months are as follows: Mon, Tues, Wed, Thurs, Fri, Sat, Sun, Jan, Feb, March, Apr, Jun, Aug, Sep, Oct, Nov and Dec.

Money

The characters '£' and 'p' should not appear together in the same figure. For example values equal to or greater than £1 should be shown with the '£' symbol, ie. £2.00 and values less than £1 should be shown with the character 'p', i.e. 20p. The decimal point should be represented with a full point.

Numerals

The terms 'number' and 'No.' should not be used in phrases such as 'platform 5'.

Station names

Station names should be shown in full, as in the all line timetable, i.e. Glasgow Central. In this case the ampersand is used for joint name, e.g. Priesthill & Damley.

Telephone numbers

All telephone numbers should be stated in full, ie. 020 7123 4567, without hyphenation and preceded with the word 'telephone'.

Time

All times should be shown in the 24hour clock. A character space, rather than a punctuation mark, should be inserted between the hours and minutes, for example: 20 00.

Upper and lower case

Upper case letters (capitals) are only used for the initial letter of a sentence or line of information on a sign panel. All other text is to be displayed in lower case, with the exception of the following:

— Places, e.g. Ryedale House
— Station names, e.g. Euston Station
— Tickets and Travel Centre

Language on signage should be direct and simple, allowing the passenger to:

→ Find what they need

→ Understand what they find

→ Use what they find to meet their needs

Principles that can be employed when drafting sign messages which will help to confirm this include:

→ Logical organisation with the passenger in mind

→ Non-aggressive tone of voice

→ Active voice, short sentences

→ Common, everyday words

→ Easy-to-read design features

5

Wayfinding Design Guidance
Graphic Standards

Network Rail
Typography
Sign systems
Travellers
Super graphics
Journey
Train stations
On time

Rail Alphabet 2 SIGN Medium

5.1 Typography

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890

Rail Alphabet 2 SIGN Medium

This publication is the first to use Network Rail's new font named Rail Alphabet 2. It has a strong family resemblance to the original Rail Alphabet lettering, designed in the Sixties, by Margaret Calvert and Jock Kinneir. An important feature being the use of upper and lowercase black letters on a white background, for signs.

Rail Alphabet 2 is a continuation and evolution of the original Rail alphabet and also that of New Rail Alphabet. Rail Alphabet 2 has been designed by Margaret Calvert in collaboration with Henrik Kubel. The font system consists of a single weight for signs and a family of 3 font weights with accompanying Italics, specifically engineered for text use. The font retains the overall proportions of the original alphabet but has been crafted in a lighter weight to compliment Network Rail's new way-finding system (designed by Spaceagency). The construction of the letters are sharper and slightly more condensed, aiding legibility and saving space.

The Rail Alphabet 2 typeface and associated pictograms can be obtained from the Network Rail Brand Hub.

5.2 Line Spacing and Graphic Lock-ups

Margins

It is not only the size and weight of type which matters when viewed from a distance. The spacing of letterforms and vertical distance between lines of text also have an impact on legibility.

For people with vision impairments, letters and lines of text can blur when spaced too close together. A balance should be sought between spacing text so as to be accessible for people with vision impairments, and laying out blocks of text that read as a single message.

Margins

The Cap-Height (CH) is used to determine the margins and vertical spacing. The space between the pictograms and the typography is the Cap-Height.

5.2 Line Spacing and Graphic Lock-ups

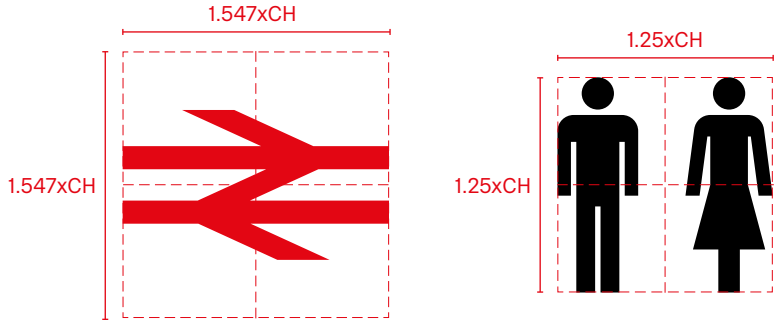
Leading

Leading refers to the vertical spacing between lines of text. It is relevant to legibility in that lines of text which are spaced too close together may appear to blur together.

Tracking

Tracking sets out the spacing between letters within a word or block of text. This may affect the density of word or group of words. The density of the group of letters affects their legibility.

Leading and Tracking



Pictogram alignment

The height and width of the pictograms is most often 1.25 times the Cap-Height (CH) of the typography. However, exceptions include Platforms, Underground and Overground pictograms, where the width is 1.547 times the Cap-height (CH), and they are centred horizontally and vertically within the space.

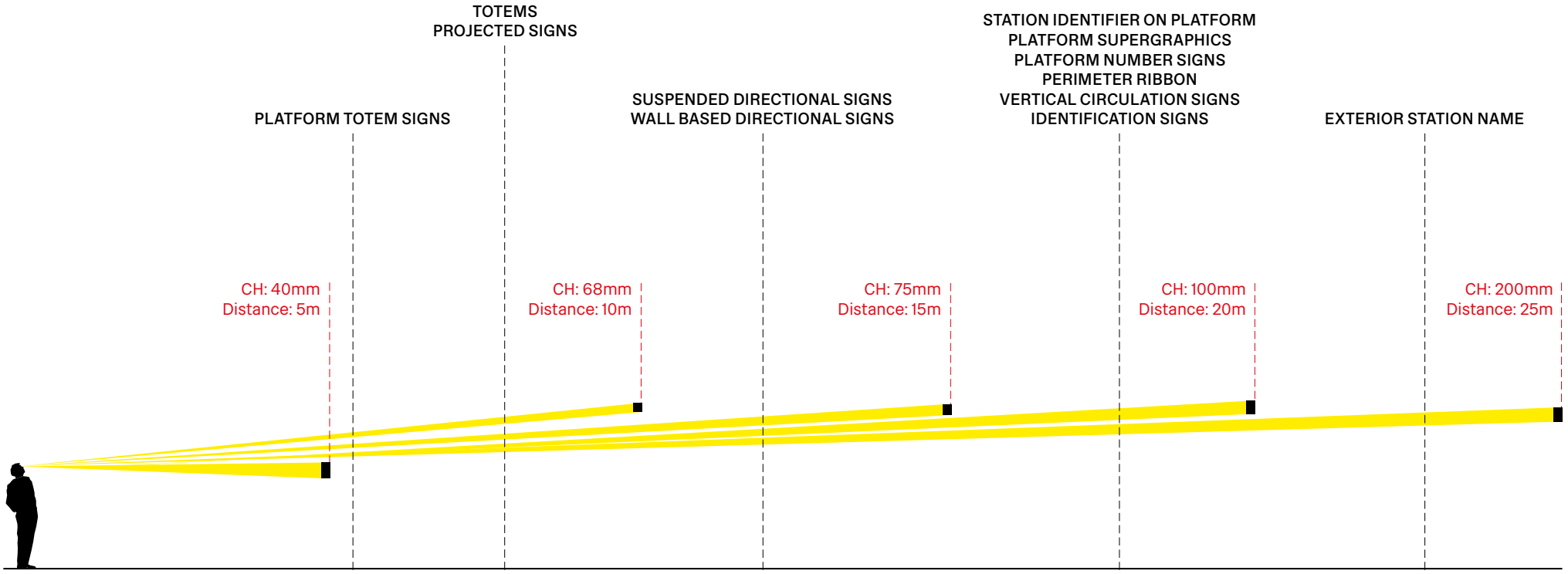
5.3 Sizing to Distance

DISTANCE FROM TEXT (METRES)	Inclusive Mobility (DfT)	Centre for Inclusive Design and Environmental Access	Crossrail	Docklands Light Railway	Gatwick Airport	Heathrow Airport	Average	Recommended Sizes For Network Rail
	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)	Text size (CH: mm)
5 m	50mm	12.5mm	18mm	18mm	14mm		22.5mm	45-68mm
10 m	100mm	25mm	36mm	34mm	28mm	14mm	39.5mm	68mm
15 m	150mm	37.5mm	53mm	50mm	34mm	21mm	57.5mm	100mm
20 m	200mm	50mm		67mm	40mm	28mm	77mm	100-210mm
25 m	250mm	62.5mm		85mm		35mm	108mm	210mm
30 m	300mm	75mm		103mm			159mm	210mm
50 m	500mm	125mm		170mm			265mm	210-375mm

In order for signage to be functional, information should be legible, including by those with impairments. Text legibility standards are written into most universal accessibility regulations. However, which size of text is legible from which distance is not universally agreed upon. It is important to be aware that standards vary based on country, on setting, on whether the viewer is walking or driving etc. and to use judgement on each project about which standards are more appropriate in that case.

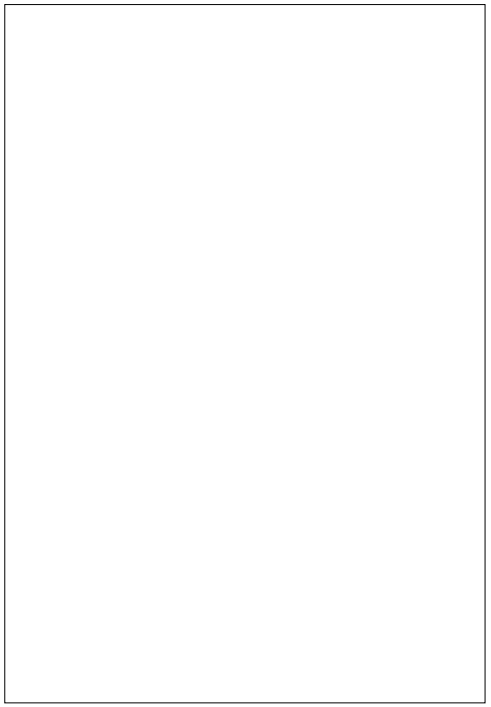
Other International Standards

5.3 Sizing to Distance

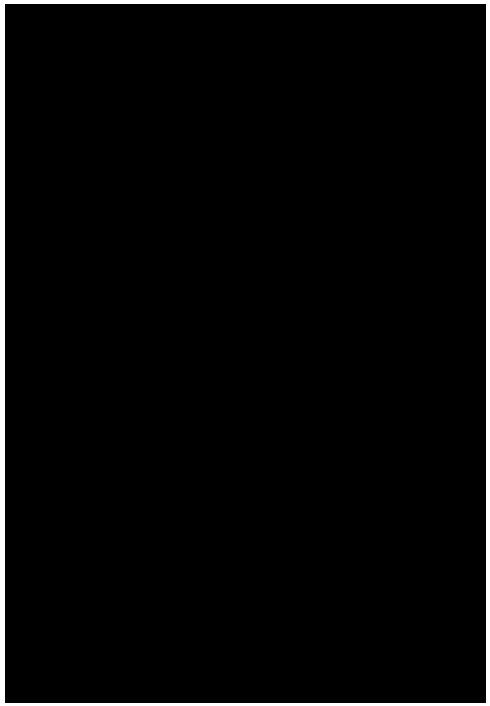


Minimum Cap-Height (CH) for Network Rail Signage

5.4 Colour Palette



RAL 9016
PMS Bright White
CMYK 0/0/0/0
RGB 255/255/255
—
1. Background colour
2.PRM pictograms – placed on a blue background



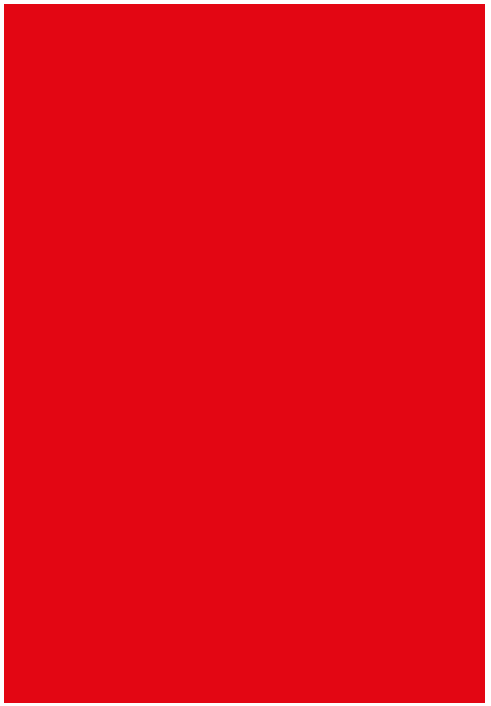
RAL 9005
PMS Process Black
CMYK 0/0/0/100
RGB 0/0/0
—
1. Arrows, pictograms and text – placed on a white background
2.Background colour Way Out sign

The sign colours are defined in accordance to the Reichs-ausschuss für Lieferbedingungen (RAL) standard for paint application. Approximate matches for Pantone Matching System (PMS) are provided as reference only. Die cut vinyl application or inkjet printing are not acceptable on permanent signs. CMYK (Cyan, Magenta, Yellow and Black) and RGB (Red, Green and Blue) approximate matches are provided as reference for printed (CMYK) and digital (RGB) temporary signs only.

5.4 Colour Palette

RAL 1018
PMS Process Yellow
CMYK 0/0/100/0
RGB 244/228/0
—
1. Arrow Way Out sign – placed on a black background
2.Text Way Out sign – placed on a black background

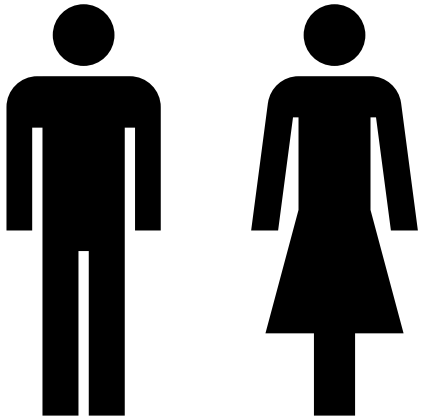
RAL 240 30 35
PMS 3025
CMYK 100/25/10/55
RGB 0/81/114
—
Background colour PRM pictograms



RAL 3020
PMS 485
CMYK 0/100/100/0
RGB 255/0/0
—
National Rail pictogram only – placed on a white background

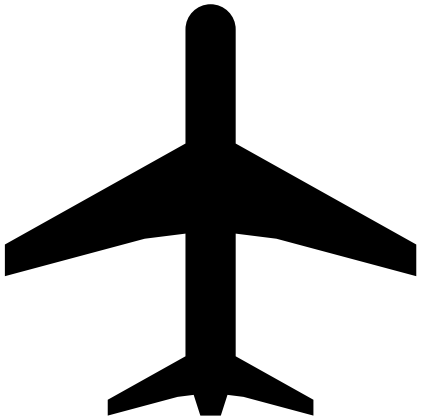
The wayfinding colour palette – including all colours in PMS, RGB and CMYK – can be obtained from the Network Rail Brand Hub.

5.5 Pictograms

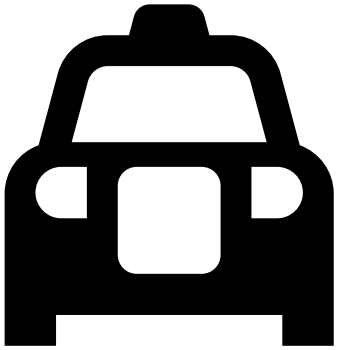


Toilets

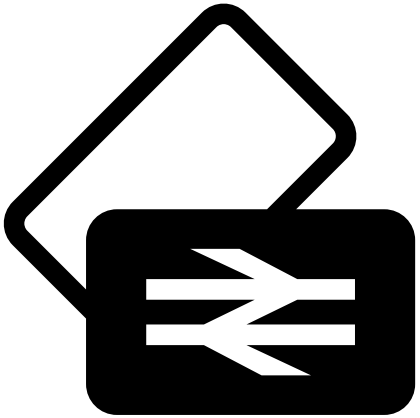
Luggage Trolley



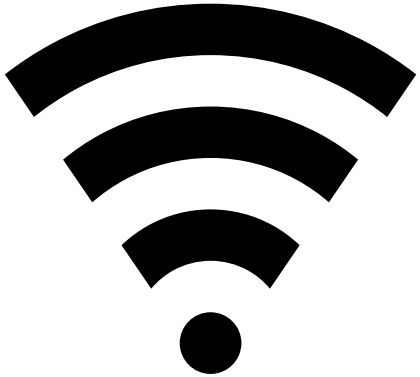
Airport



Taxis



Tickets



Wi-Fi

Pictograms are pictorial symbols which convey meaning without the use of descriptive text. Pictograms can communicate a message to speakers of many different languages at once.

All Network Rail pictograms can be downloaded here. They are available in vector format and can be used in a PC as well as a Mac environment.

5.5 Pictograms – PRM

People with Reduced Mobility

Auditory Impairment

Vision Impairment

Accessibility

Priority Seating

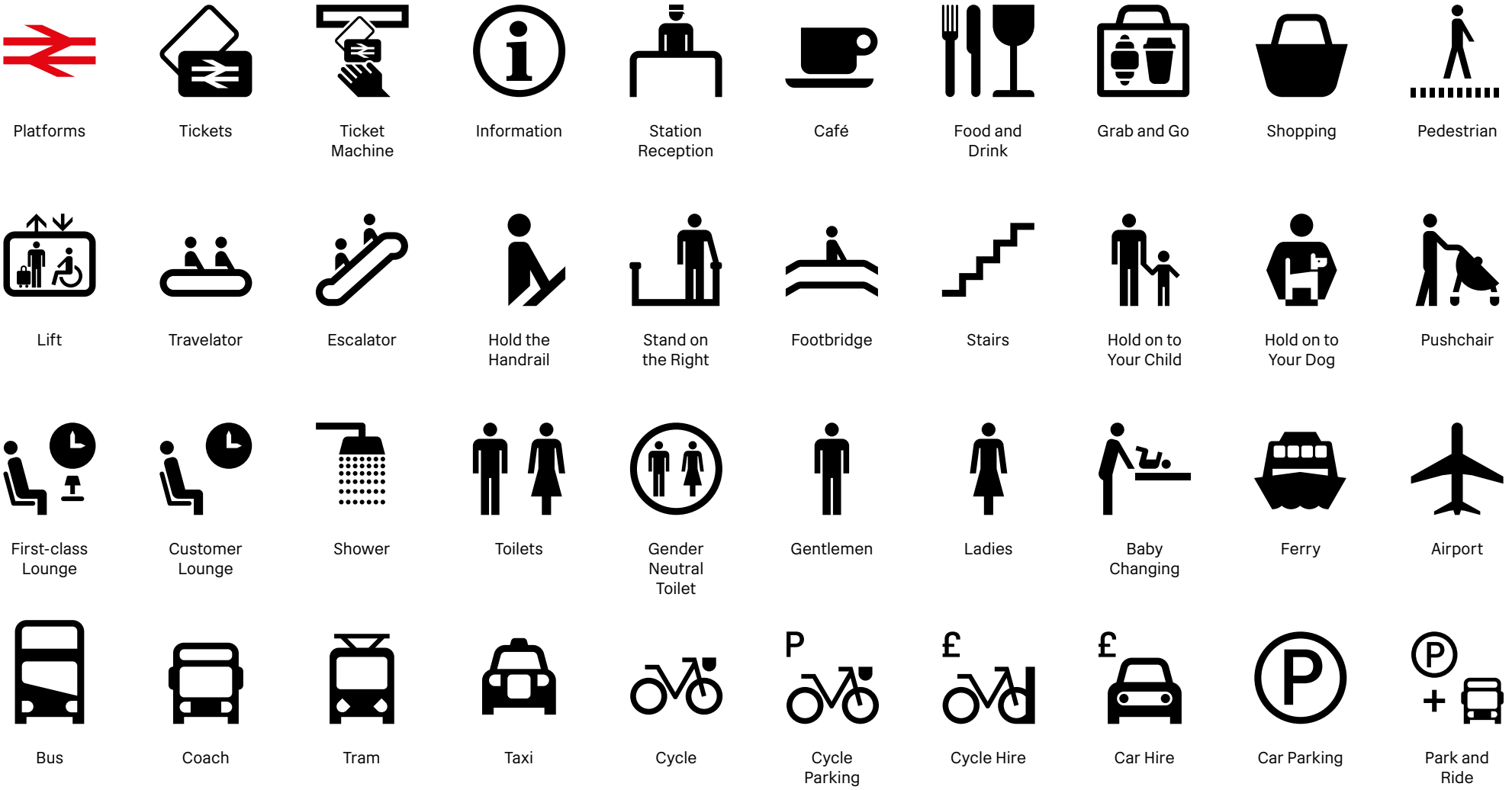
Changing Facilities WC

As a direct and universally accessible form of communication, internationally recognised pictograms are often required on statutory signage. Thus, pictograms used for statutory signage are also governed by strict legibility standards to check they are large enough and recognisable enough to be clear and visible for all travellers.

Please note that three different pictograms representing Priority Seating have been provided within the Network Rail pictograms library displayed on the next page. These Priority Seating pictograms - showing a pregnant woman, a mobility impaired passenger and a parent and small child – may be used together or separately.

PRM pictogram colours

This guidance follows the European Union Technical Standard for Interoperability 2014 on PRM in its interpretation that the subject of colour raised in Appendix N.3 refers specifically to clause (9) of point 4.2.1.10, as referred to in clause (9). PRM pictograms should therefore always be white, with a dark blue background.


Platforms
Tickets
Ticket Machine
Information
Station Reception
Café
Food and Drink
Grab and Go
Shopping
Pedestrian
Lift
Travelator
Escalator
Hold the Handrail
Stand on the Right
Footbridge
Stairs
Hold on to Your Child
Hold on to Your Dog
Pushchair
First-class Lounge
Customer Lounge
Shower
Toilets
Gender Neutral Toilet
Gentlemen
Ladies
Baby Changing
Ferry
Airport
Bus
Coach
Tram
Taxi
Cycle
P
Cycle Parking
£
Cycle Hire
£
Car Hire
P
Car Parking
P
Park and Ride


Luggage Locker


No Luggage


Lost Property


Luggage Trolley


Charging Zone


Bureau de Change

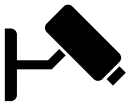

Cash Machine


Hotel


Post Box


Post Office


Wi-Fi


CCTV


Tourist Information


Meeting Point


Waste Recycling


Litter


Hand Dryer


Soap Dispenser


Drinking Water


British Transport Police


Accessibility


Ramp


Changing Facilities WC


Priority Seating I


Priority Seating II


Priority Seating III


People with Reduced Mobility

Auditory Impairment


Visual Impairment

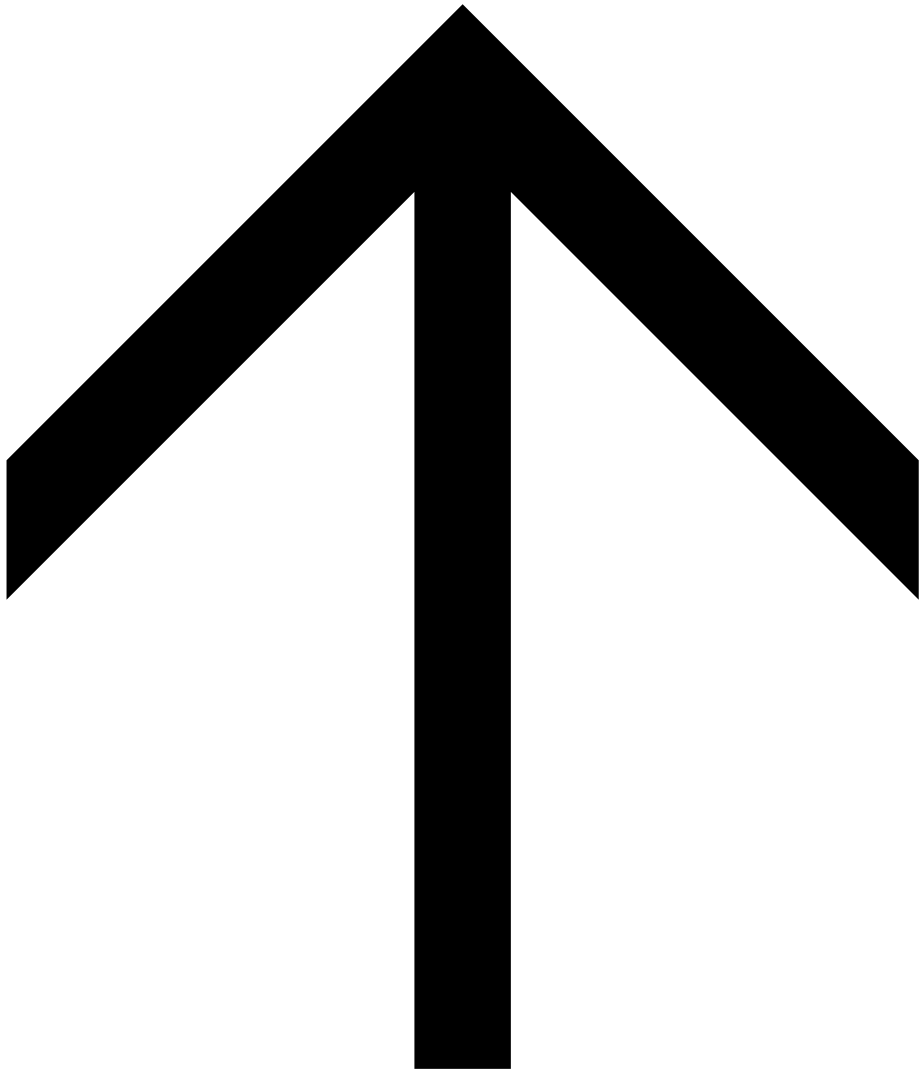

Mobility Assistance


Vaping Zone


No Vaping

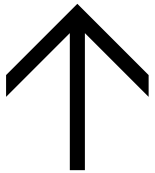
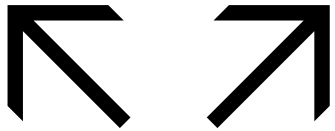
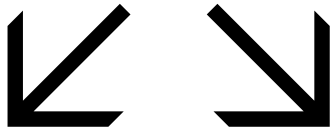
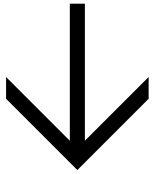

No Smoking

5.6 Arrows



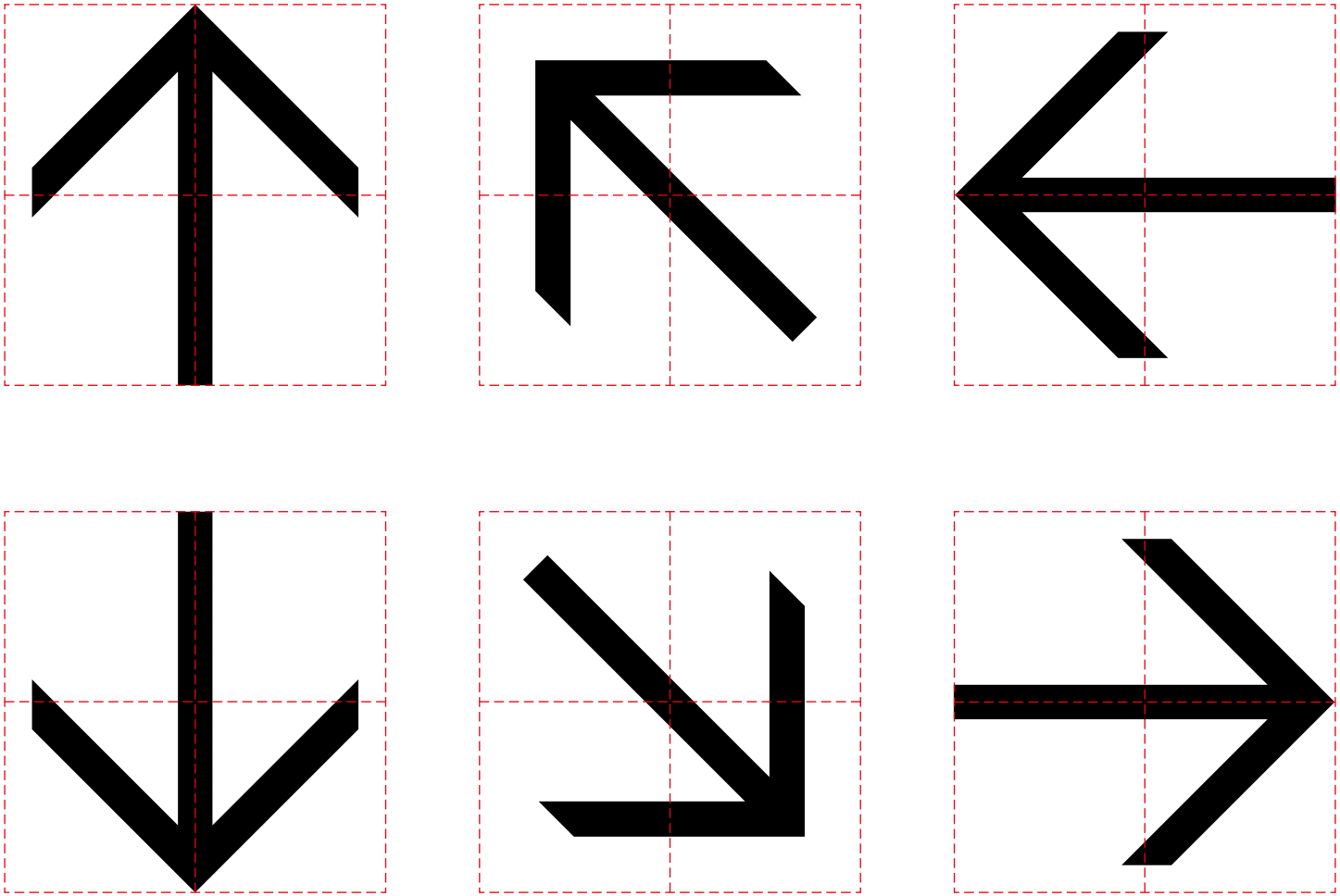
The Network Rail directional arrows are bespoke, designed to compliment the wayfinding design. Arrows accompany the typography. The scale of arrow depends on the sign type. For further information, please refer to Section 6: Sign Family.

5.6 Arrows – Order

Straight ahead / Up To represent straight-ahead direction, or level change	
Diagonal or Up To direct across a diagonal flat area, or to represent level change (up). When representing level change (up), the arrow can be accompanied by the text “via lift”, “via escalator” or “via stairs” to indicate the way of getting to the upper level	
Left / right For standard left/right directions	
Down Only to represent level change. The arrow can be accompanied by the text “via lift”, “via escalator” or “via stairs” to indicate the way of getting to the lower level	
Down via lift Only to represent a level change (down via lift)	

The use of arrows on signs should follow a certain order, to clarify directions and avoid allowing arrows to point at each other.

5.6 Arrows – Alignment



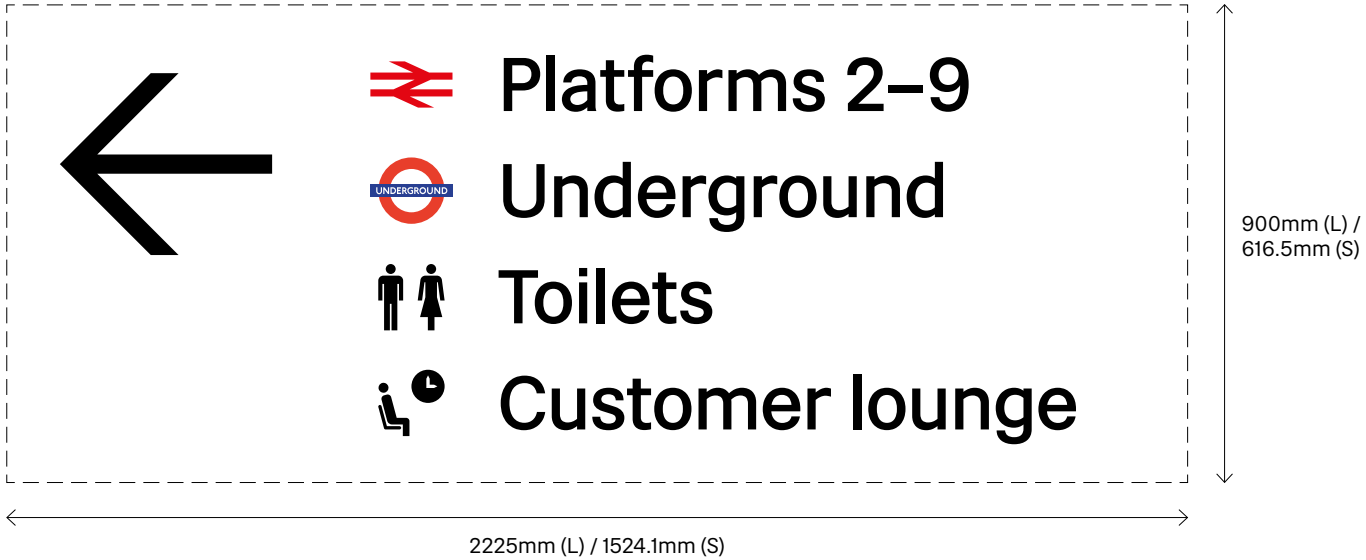
The arrow tail is longer than the width of the arrow head. In order to keep the arrow size consistent, regardless of orientation, they are contained with a square grid and aligned to the square equally horizontally and vertically.

All Network Rail wayfinding arrows can be obtained in vector format from the Network Rail Brand Hub. .

6

Wayfinding Design Guidance
Sign Family

6.1 Recommended Sizing



This example shows the recommended size for a suspended directional sign. A smaller alternative size is also given. When sizing signs, it is important to take margins as well as vertical and horizontal alignment into account at all times.

Recommended sizing (L)

- Stroke weight arrow: 36.23mm
- Cap-Height text: 100mm
- Height pictograms: 125mm

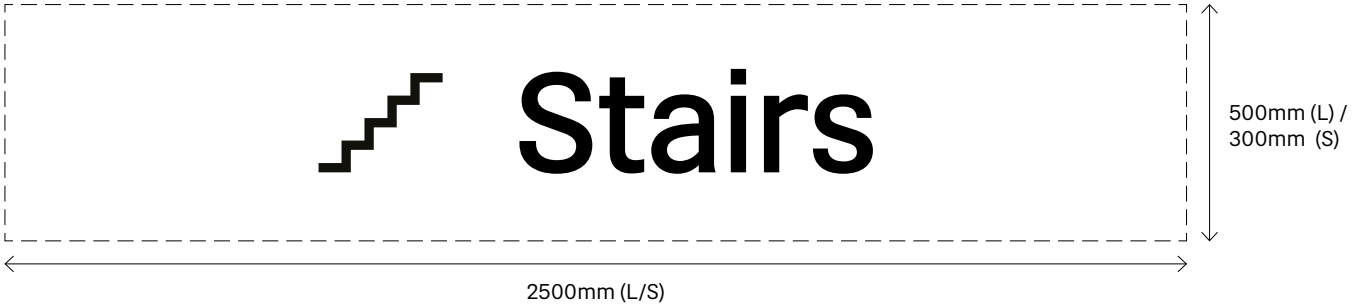
Smaller alternative size (S)

When wall based directional signs will be viewed from a closer distance, an alternative size can be used for the wayfinding information. The Cap-Height for these signs is 68.5mm.

The recommended sizes for sign types given are informed by ergonomic as well as informational factors. Depending on the traveller's distance and the direction of travel, sign types may suit differing situations. In order to size type, decision points should be mapped throughout the station environment. These are the points at which the passenger may require information to make a decision about which way to go, and will look toward signage. Distances between decision points and signs should be measured. These distances inform the type sizing.

As a priority, signage should be designed so that text is of a sufficient size to be legible from the decision point from which the sign may be read. At the same time, the suite of sign types should work together to create a consistent and complete system for wayfinding. From freestanding totems to wall-based directional signs, the visual communication needs consistency in order to meet traveller's needs. Therefore, a set of recommended type sizes is given.

6.1 Recommended Sizing



This example shows the recommended size for a vertical circulation sign. A smaller alternative size is also given. When sizing signs, it is important to take margins as well as vertical and horizontal alignment into account at all times.

The hierarchy of sizes accounts for the distance from which that type may be viewed, as well as the relative importance of that category of signage. Standardising type sizes by using such sizing categories, maintains typographic consistency. Text sizing on public signage is also governed by accessibility codes to check it will be universally accessible.

Recommended sizing (L)

- Cap-Height text: 210mm
- The information on the vertical circulation signs is horizontally and vertically centred, with an equal amount of white space top and bottom

Smaller alternative size (S)

When vertical circulation signs may be viewed from a closer distance, an alternative size can be used. The height for these signs is 300mm. The Cap-Height of the text is 100mm.

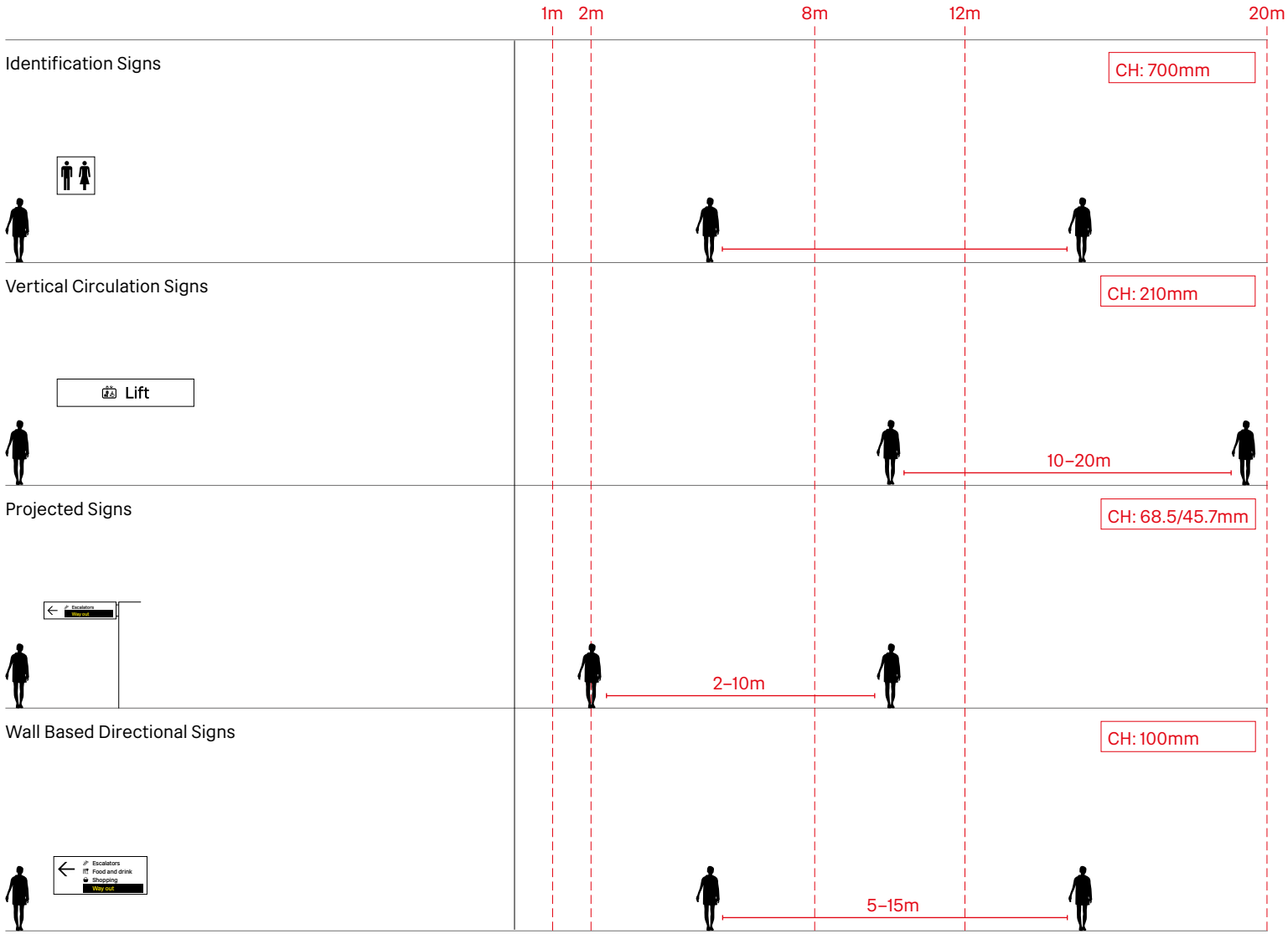
Determining sign type sizes

Rolling-out and installing a wayfinding scheme involves a number of steps. First, movement flows and passenger decision points should be mapped. The designer should ascertain what questions should be answered for the passenger at these decision points. Then signage content to address these questions can be placed. Signage should be placed as close to the decision point as possible, to avoid entire flows of passengers going out of their way to read signs. Ideally signs in the recommended sizes given can be integrated seamlessly into the architecture. However, in some instances this may not be possible. When determining an alternative size for a sign in the station environment, location and viewing distance needs to be taken into consideration at all times.

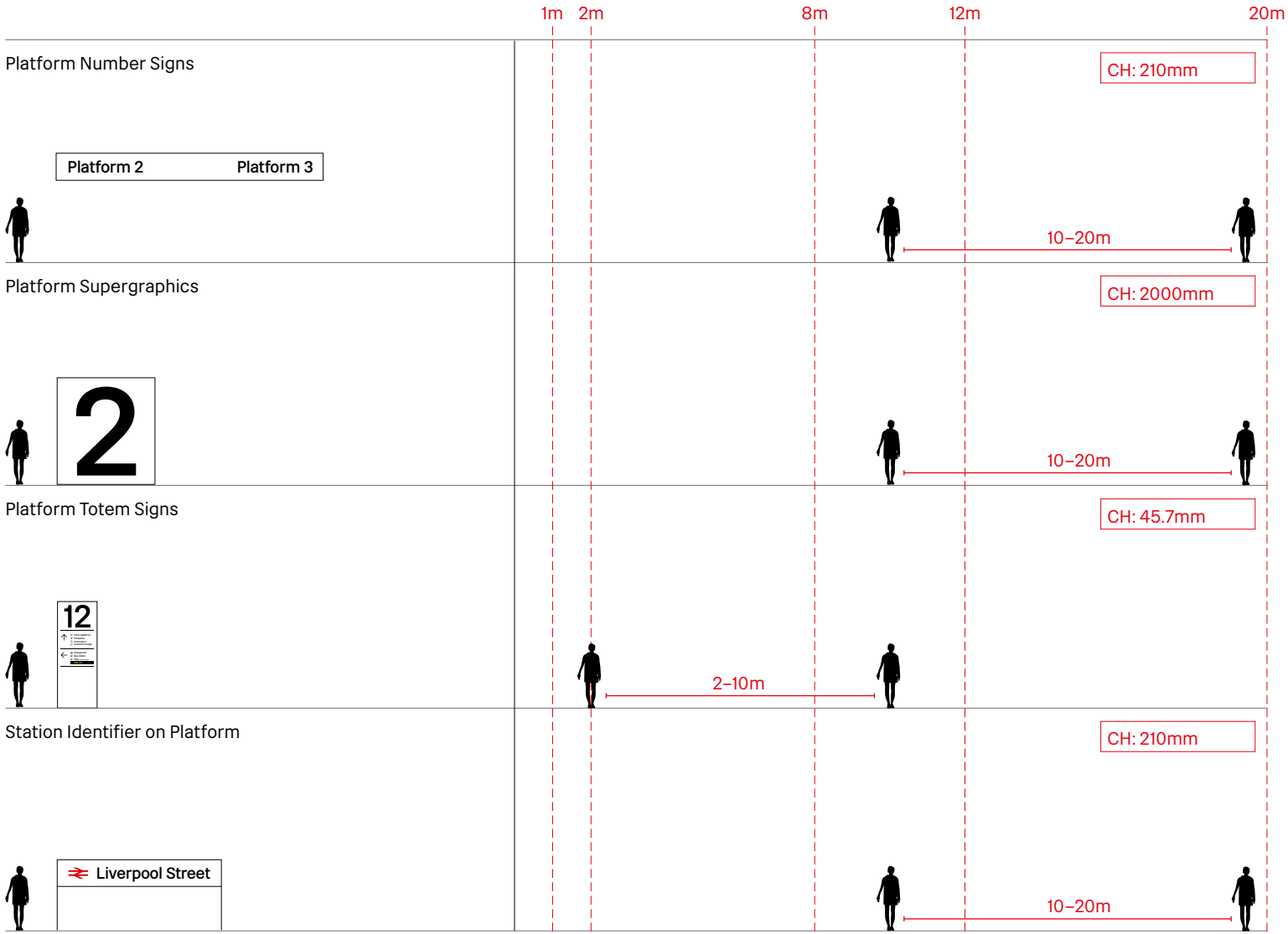
6.2 Sign Family Sizing

A series of text sizes are required to respond to the different parameters of a station. The hierarchy of text sizes should account for the distance from which that text will be viewed, as well as the relative importance of that category of signage. Some signs may be eye-level for close viewing within a confined space or very tall beacons to be viewed from across a concourse. The traveller may be stopped or may be moving. All of these considerations should be weighed in sizing text. The charts on this page and the next page set out text sizes for the sign types at stations.

6.2 Sign Family Sizing



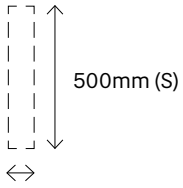
6.2 Sign Family Sizing



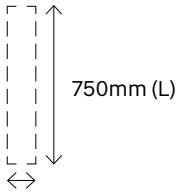
6.3 Exterior Station Name

Exterior Station Name Sign (small, front)

Exterior Station Name Sign (large, front)



Exterior Station Name Sign (small, side)

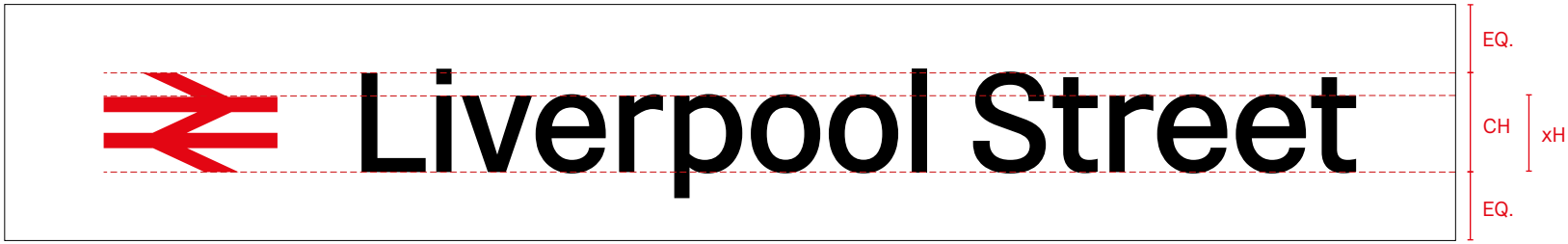


Exterior Station Name Sign (large, side)

The exterior station name sign identifies the station and signifies its presence. It should be placed in a prominent position to allow it to be clearly seen from key pedestrian access routes to the station. Monumental lettering can be attached permanently to the station building. As such it is as much an architectural feature as an environmental wayfinding element. The typography should comply with these guidelines. The name of the station is accompanied by the National Rail logo. The information should be horizontal whenever possible.

Recommended sizing

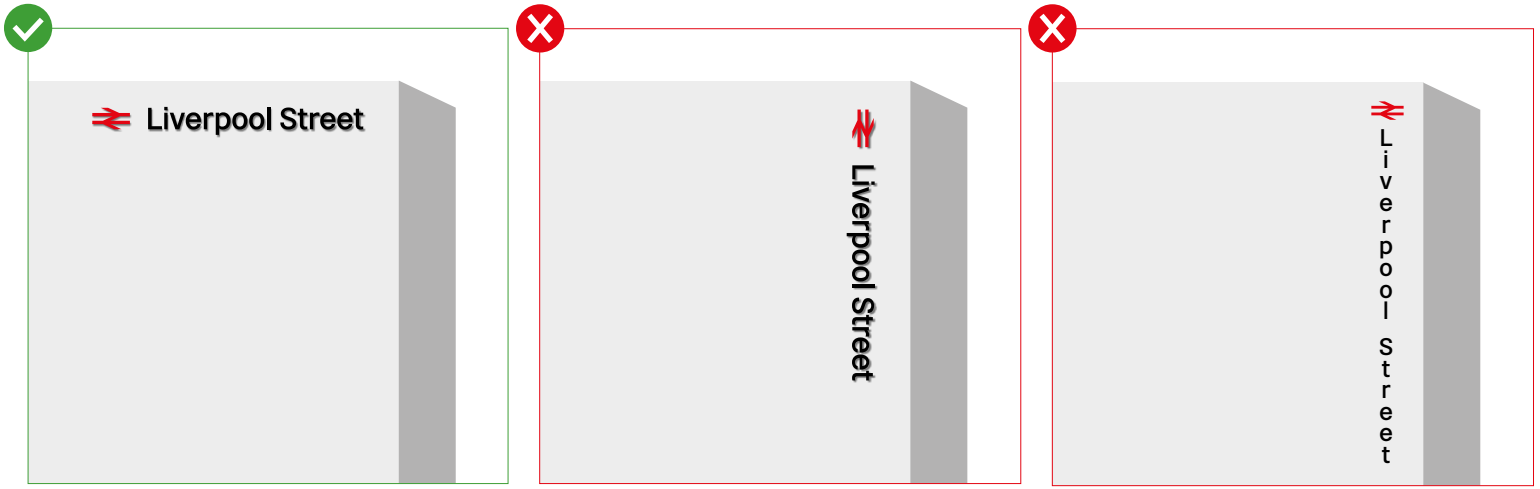
- Cap-Height (CH) small exterior station name sign (S): 210mm
- Cap-Height (CH) large exterior station name sign (L): 375mm
- The National Rail logo is always placed before the station name. The logo is aligned to the CH of the station name
- All information is centred horizontally, with equal space (EQ.) top and bottom



Horizontal Alignment

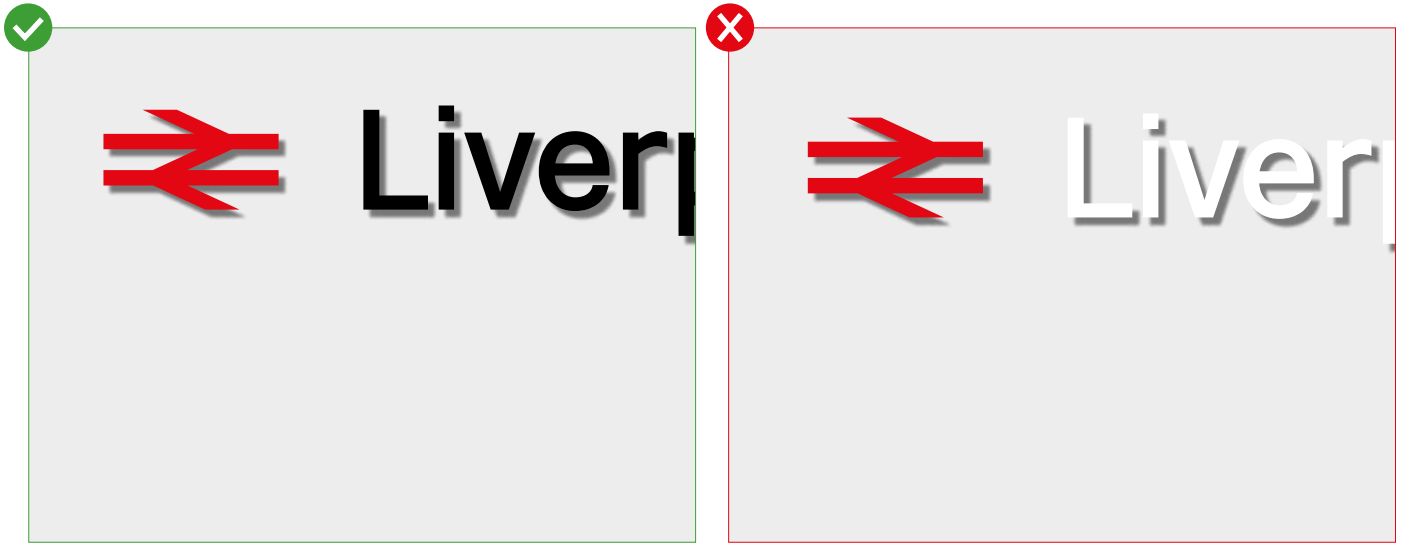
Vertical Alignment

6.3 Exterior Station Name



Placement

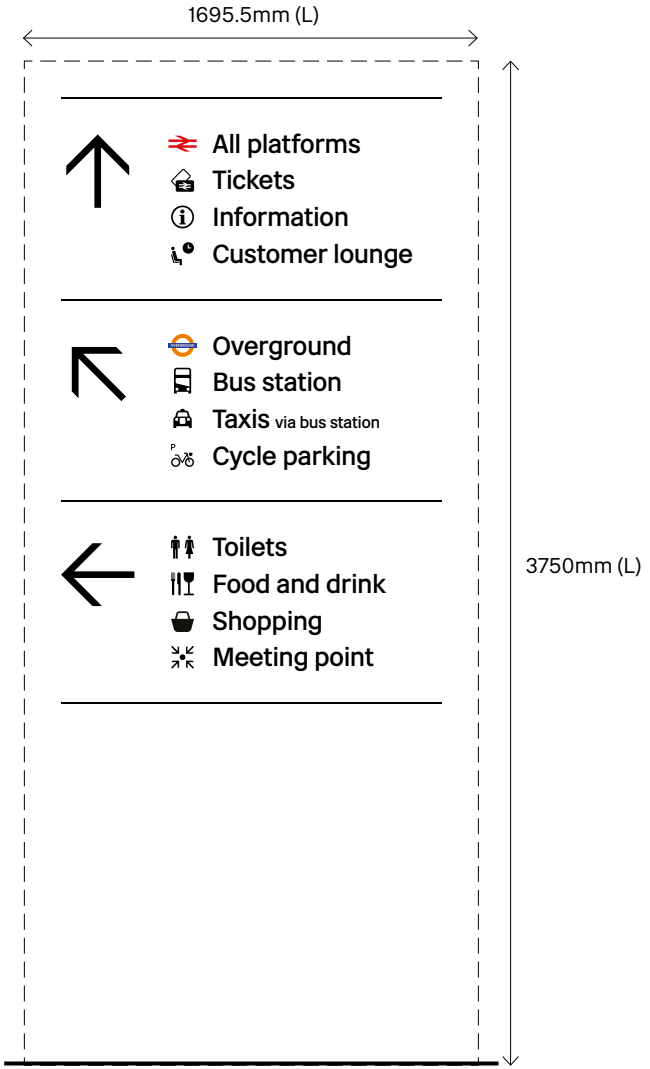
- Text should be horizontal where possible
- If the design requires a vertical sign, this should be achieved by rotating the whote station name by 90 degrees clockwise
- Letters should never be stacked vertically

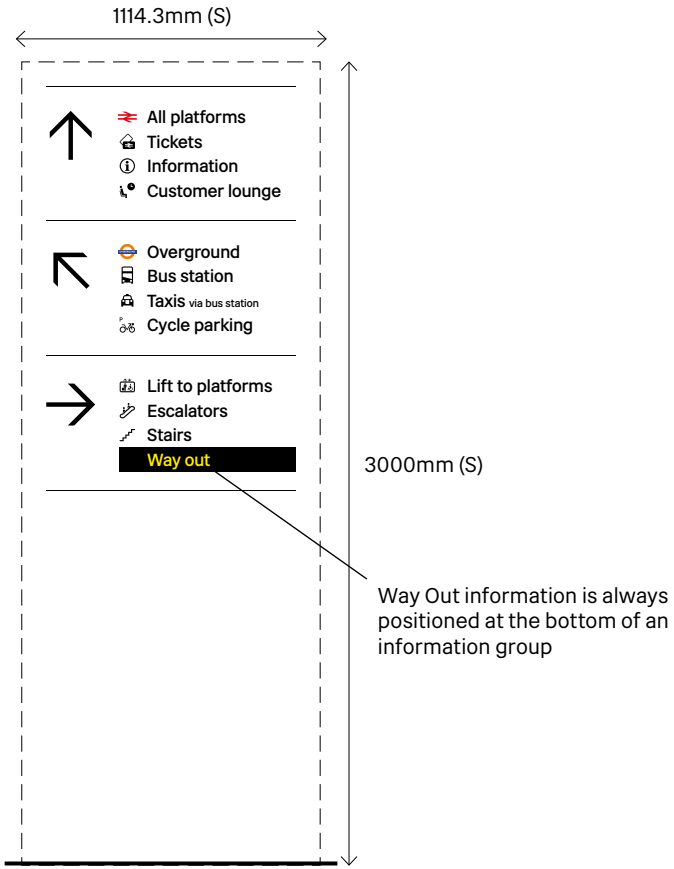


Contrasting colours

- It is important to provide sufficient contrast between the station name and the backgound.
- The National Rail logo is always recognisible by its red colour.

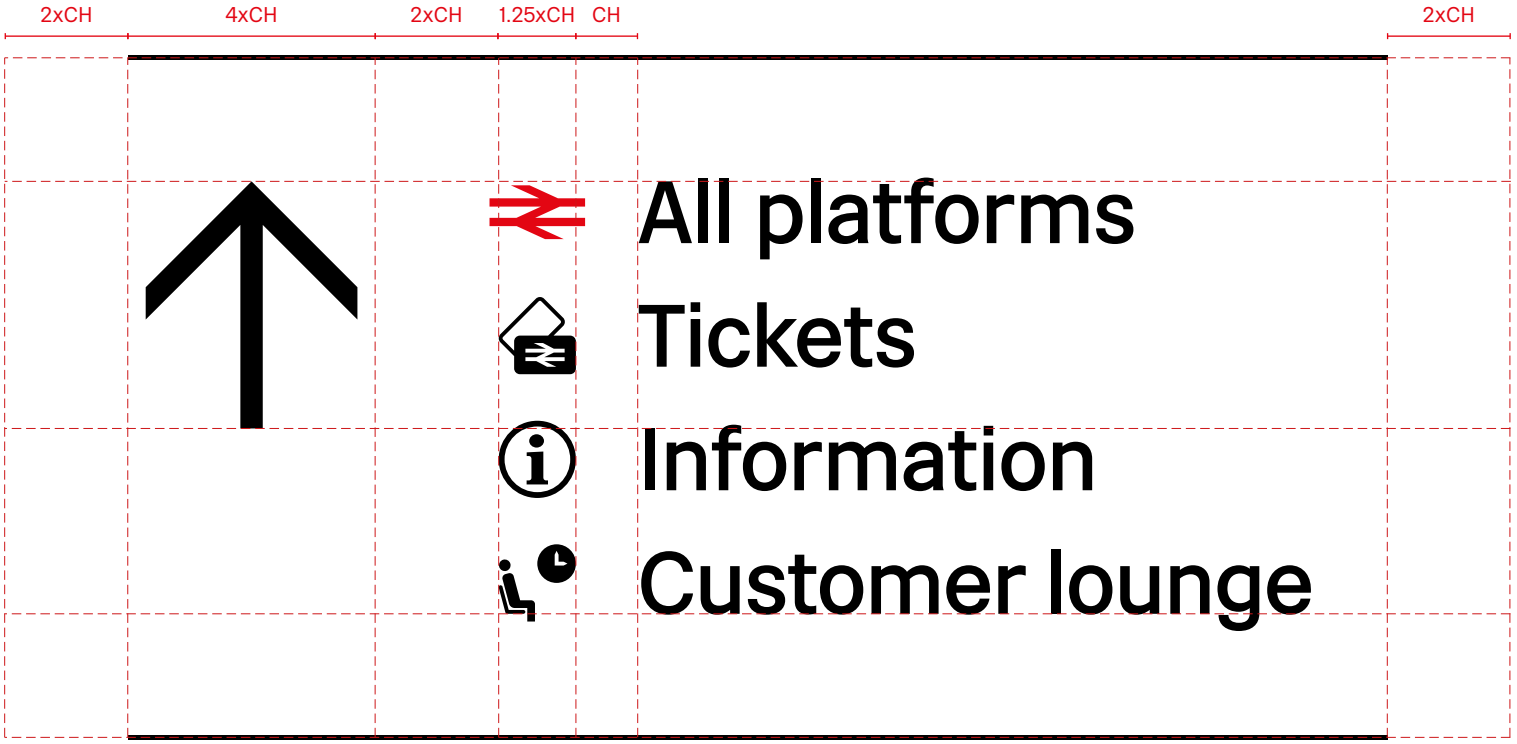
6.4 Freestanding Directional Signs — Totems





The totems are designed in 2 different sizes. When the station design allows for information to be visible from a distance of 12-14 metres, the larger totem size is recommended. When the concourse size allows for a viewing distance of 8-10 metres, a smaller totem can be installed. The wayfinding information on the totem is grouped by direction, with a maximum of 4 destinations per group. Within each group, the information is organised by importance.

6.4 Freestanding Directional Signs — Totems



Recommended Cap-Height (CH)

- Large (L) totem: 68.5mm / 42.81mm
- Small (S) totem: 45.7mm / 28.56mm

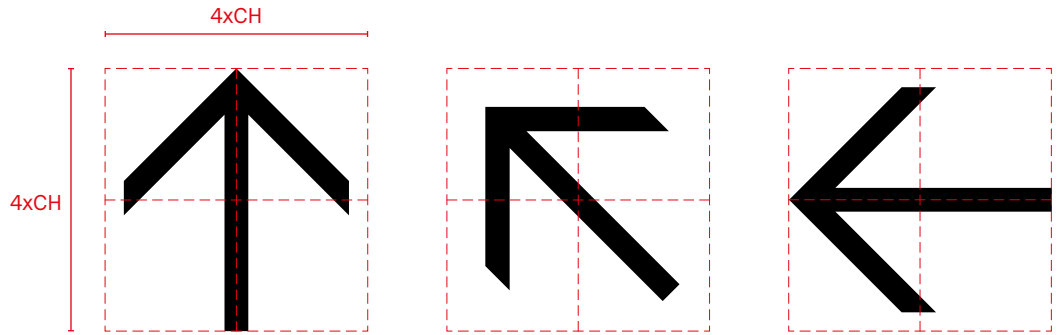
Recommended stroke weight dividing line

- Large (L) totem: 5.3mm
- Small (S) totem: 3.5mm

Recommended stroke weight arrow

- Large (L) totem: 24.81mm
- Small (S) totem: 16.55mm

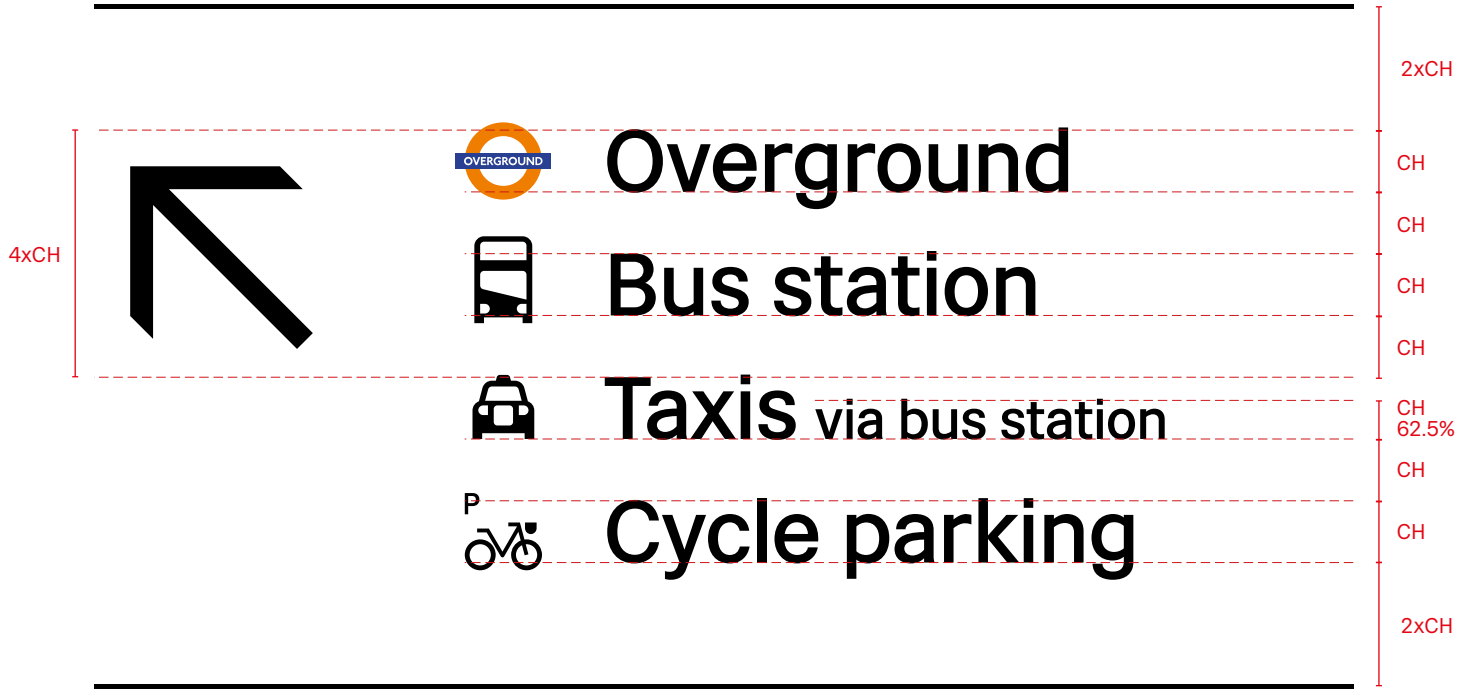
Margins and Vertical Alignment
Upper group magnified view



Arrow alignment

The height of the vertical arrow is 4 times the Cap-Height (CH) of the typography. In order to keep the arrow size consistent, regardless of orientation, they are contained with a square grid and aligned to the square equally horizontally and vertically.

6.4 Freestanding Directional Signs — Totems



Recommended Cap-Height (CH)

- Large (L) totem: 68.5mm / 42.81mm
- Small (S) totem: 45.7mm / 28.56mm

Recommended stroke weight dividing line

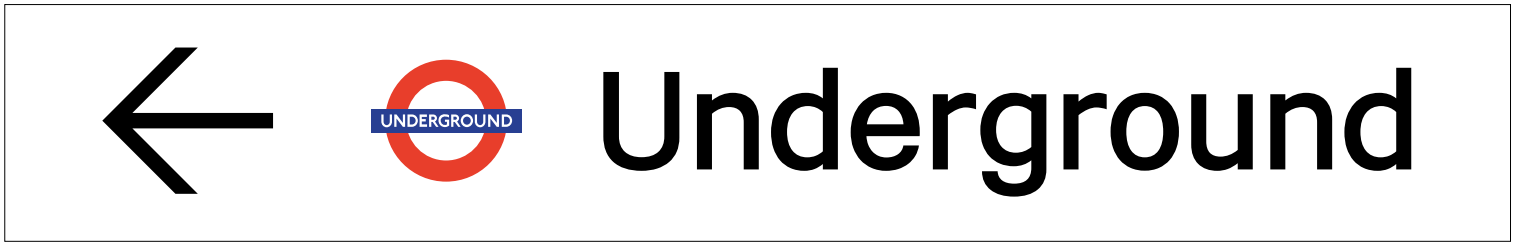
- Large (L) totem: 5.3mm
- Small (S) totem: 3.5mm

Recommended stroke weight arrow

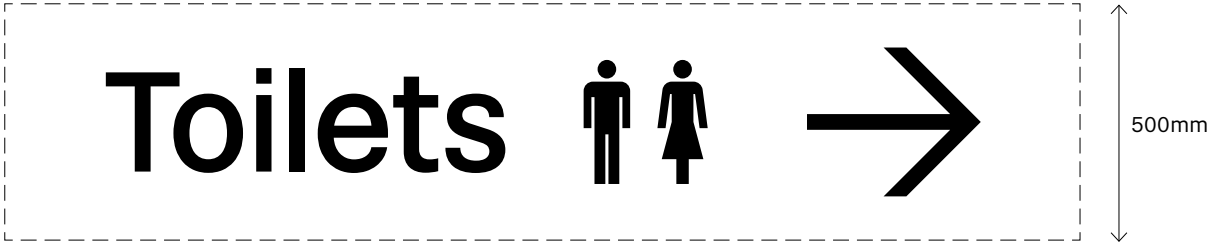
- Large (L) totem: 24.81mm
- Small (S) totem: 16.55mm

Horizontal Alignment
Middle group magnified view

6.5 Perimeter Ribbon



Direction to the Left



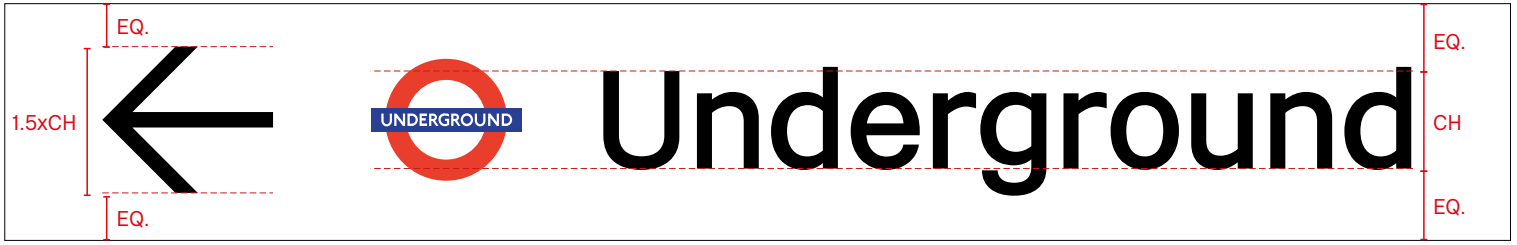
Direction to the Right

A perimeter ribbon may be utilised additional to other signage when the station layout allows for visibility to the perimeter walls surrounding the concourse. Its length and the number of ribbons may vary, depending on the station architecture. Wayfinding information is positioned exactly where it's needed. Key information should be legible. The information should to be visible from across the concourse, from 10-20m away. Avoid redundant directions. Keep information clear and simple. 'Way Out' is to be differentiated by the colour yellow, with a black background.

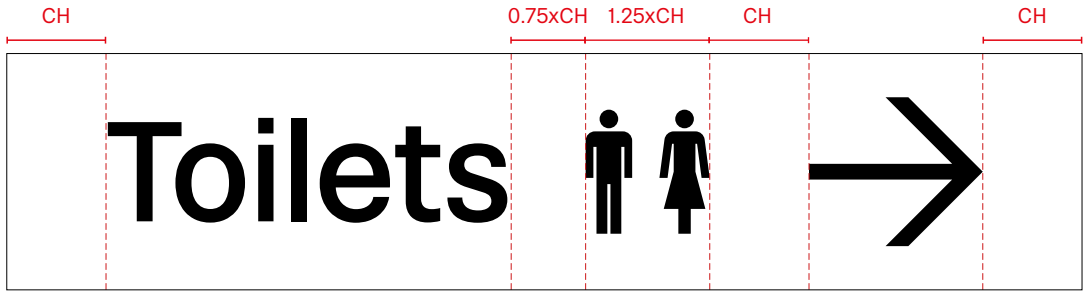
Recommended sizing

- CH text: 210mm
- Height arrow: 315mm
  (150% of the CH of the text)
- Stroke weight arrow: 33.3mm

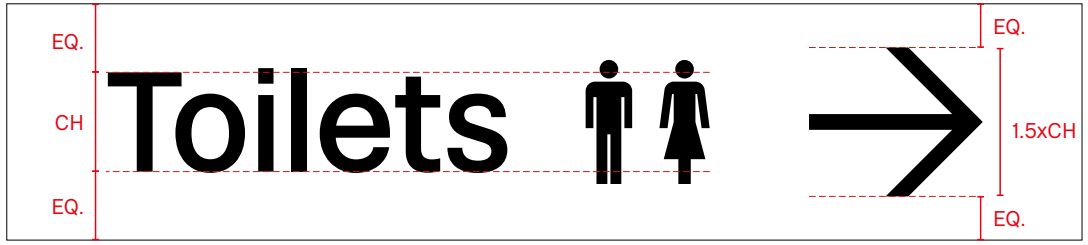
Vertical Alignment



Horizontal Alignment



Vertical Alignment



Horizontal Alignment

Vertical Alignment, Way Out Information (Direction to the Left)

Horizontal Alignment, Way Out Information (Direction to the Left)

Vertical Alignment, Way Out Information (Direction to the Right)

Horizontal Alignment, Way Out Information (Direction to the Right)

6.6 Suspended Directional Signs

Directional signs provide information about facilities and destinations within the station. The information on these signs needs to be visible from a long distance so that passengers can make decisions on which way to go while moving. The signs are ceiling suspended, enabling them to be seen above a crowd.

The wayfinding information on these signs is grouped by direction, with a maximum of 4 destinations per group. The arrow is always positioned on the left, pointing people in the right direction.

Recommended sizing

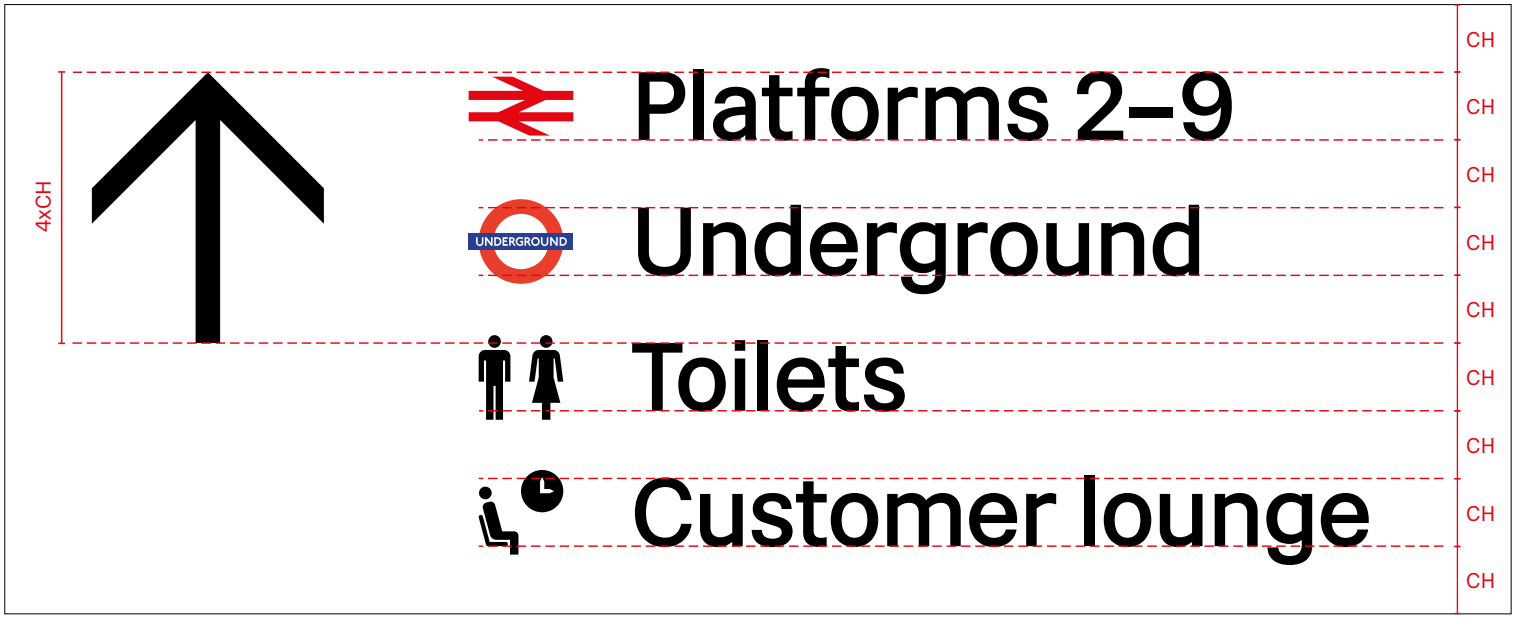
- Stroke weight arrow: 36.23mm
- Cap-Height text: 100mm
- A minimum headroom clearance of 2.3 metres needs to be maintained at all times

Where there are alternative numbered exits routes leading to separate street locations, this information should be included on the Way Out sign.

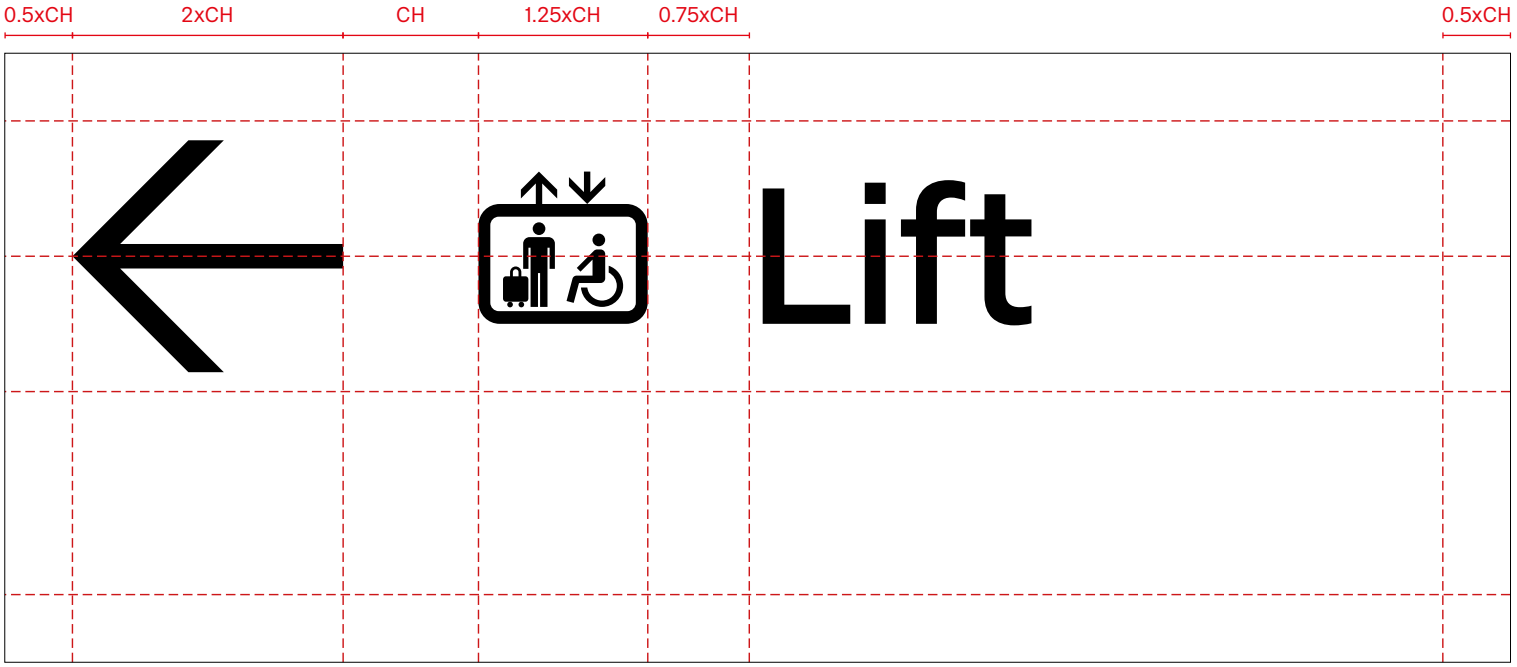
Smaller alternative size (S)

When suspended directional signs will be viewed from a closer distance, an alternative size can be used for the wayfinding information. The Cap-Height for these signs is 68.5mm.

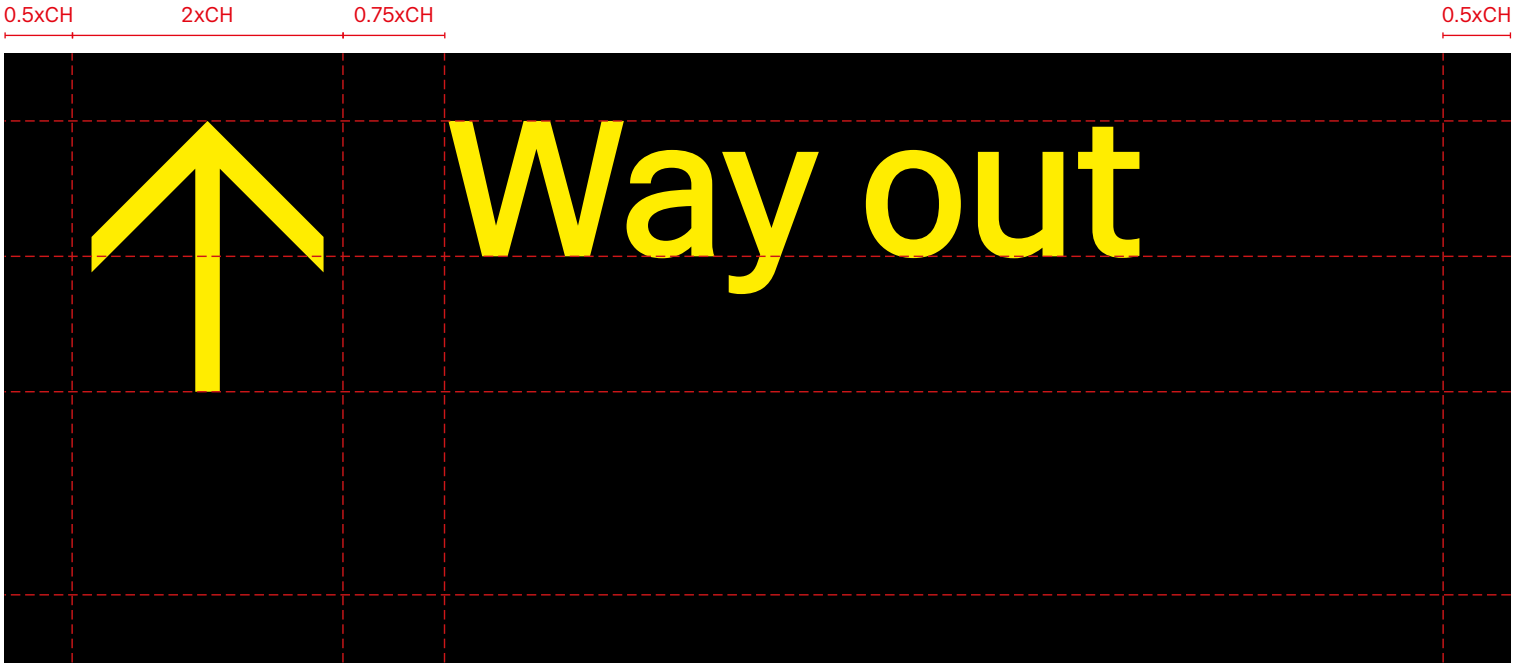
Margins and Vertical Alignment



Horizontal Alignment



Margins and Alignment Lift Sign



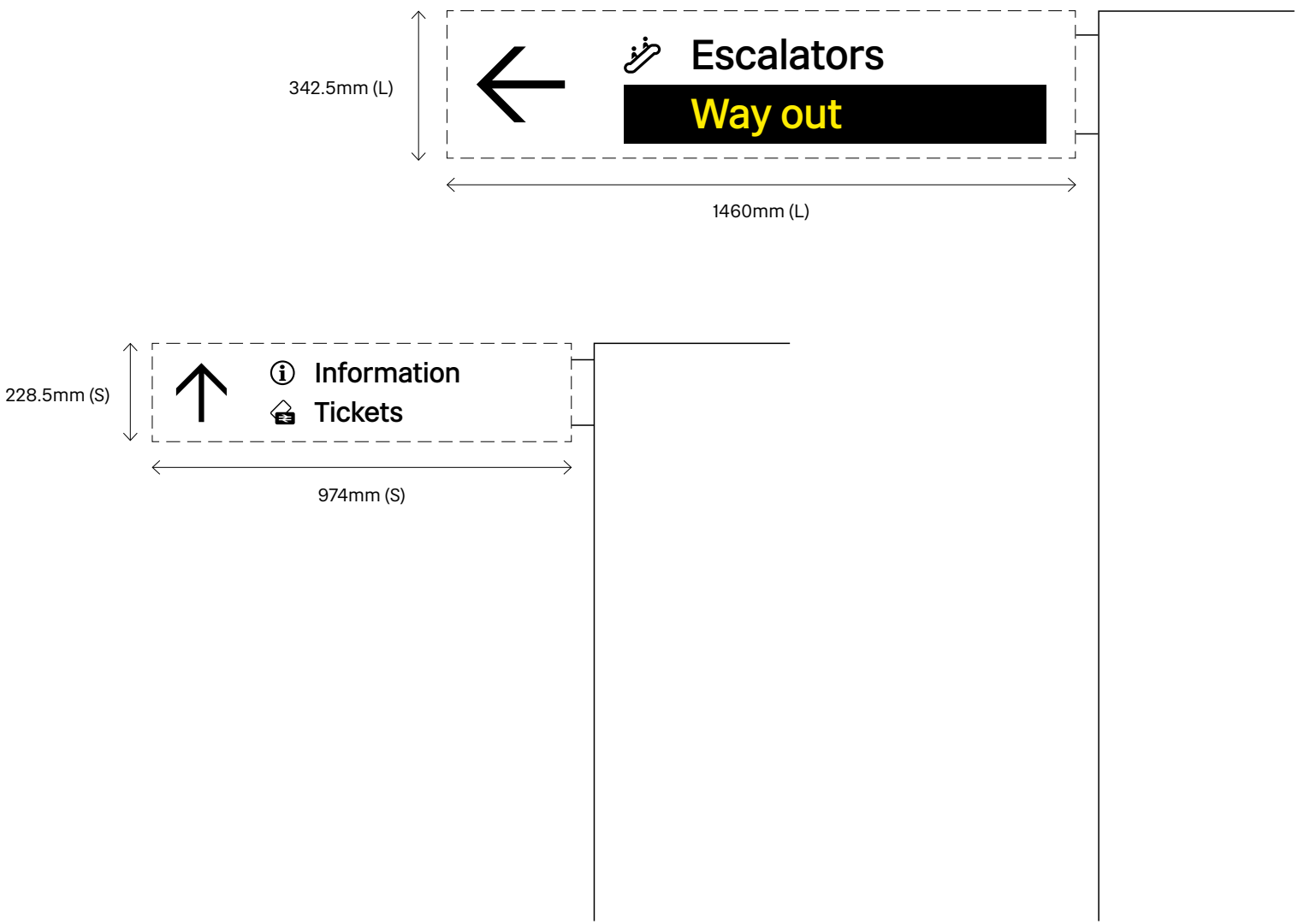
The baseline of the text is aligned with the centre of the arrow as shown here

Margins and Alignment Way Out Sign

Recommended sizing

- Stroke weight arrow: 36.23mm
- Cap-Height text: 200mm
- A minimum headroom clearance of 2.3 metres needs to be maintained at all times

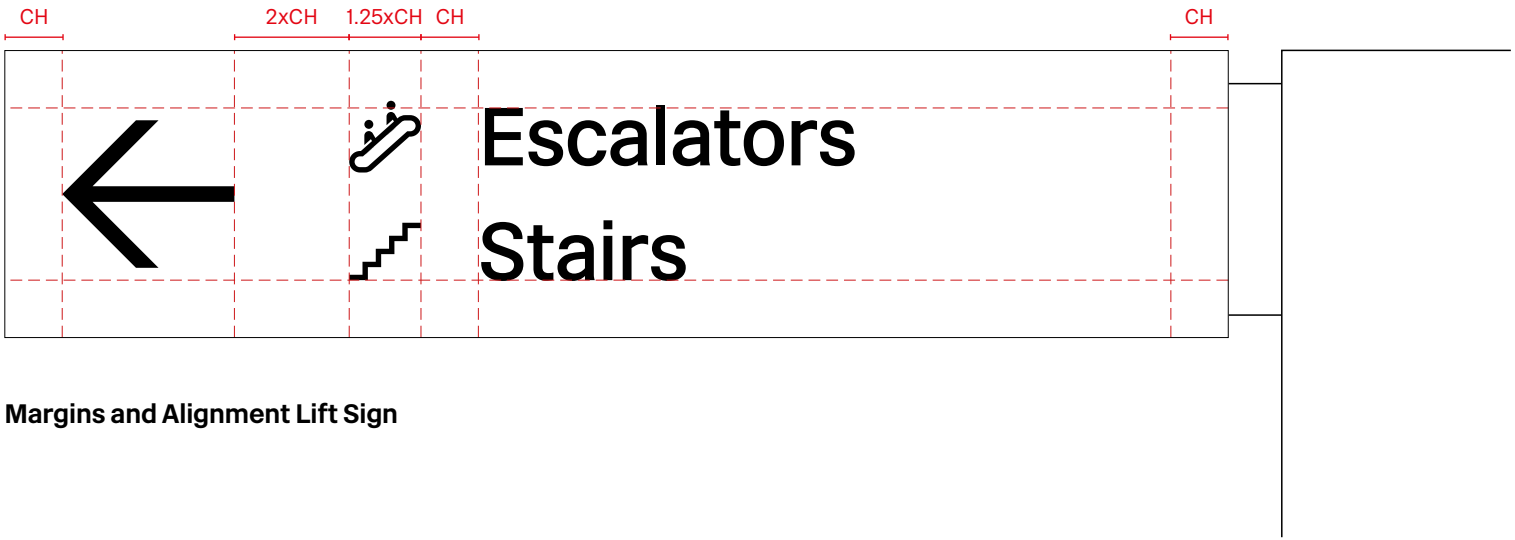
6.7 Projected Signs



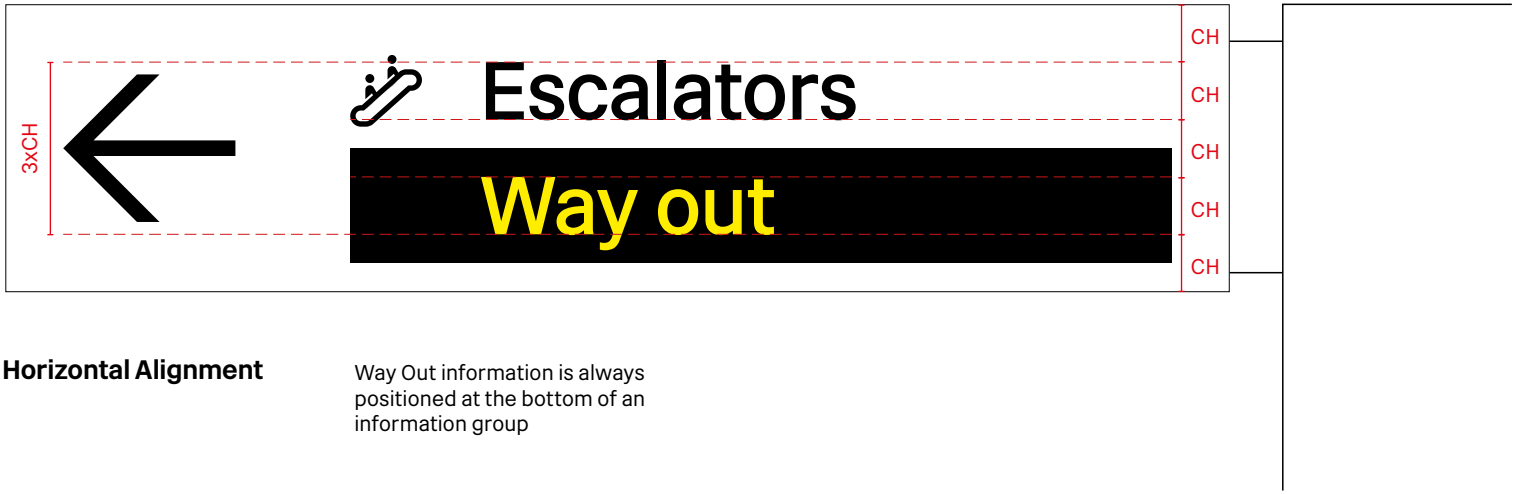
Directions to facilities within the station area can be given using projected signs. Directions to locations outside the station – other than transport interchanges – should not be included. Projected signs are mounted to the edge of a wall and generally only have a maximum of two destinations, combined with a directional arrow. The directional arrow should point outward, away from the wall or upward for straight ahead destinations. The arrow should not point toward the wall.

Recommended sizing (S/L)

- Two different sizes can be used, depending on the viewing distance and the sign location in the station
- A minimum headroom clearance of 2.3 metres needs to be maintained at all times
- Way Out information is always positioned at the bottom of an information group



Margins and Alignment Lift Sign



Horizontal Alignment

Way Out information is always positioned at the bottom of an information group

Recommended Cap-Height (CH)

- Large (L) projected sign: 68.5mm
- Small (S) projected sign: 45.7mm

Recommended stroke weight arrow

- Large (L) projected sign: 18.61mm
- Small (S) projected: 12.41mm

6.8 Wall Mounted Directional Signs

Wall mounted signage is used at strategic points in stations, where suspended or projected signage is not possible. It is not always possible to use wall based signage as some stations may not have visible wall space or may have restrictions regarding attaching signs to walls due to heritage listing or other reasons. Wall based directional signs should not have more than four destinations listed.

Way Out information is always positioned at the bottom of an information group

Way Out information is always positioned at the bottom of an information group

Vertical Alignment

Recommended sizing (L)

- Stroke weight arrow: 36.23mm
- Cap-Height text: 100mm

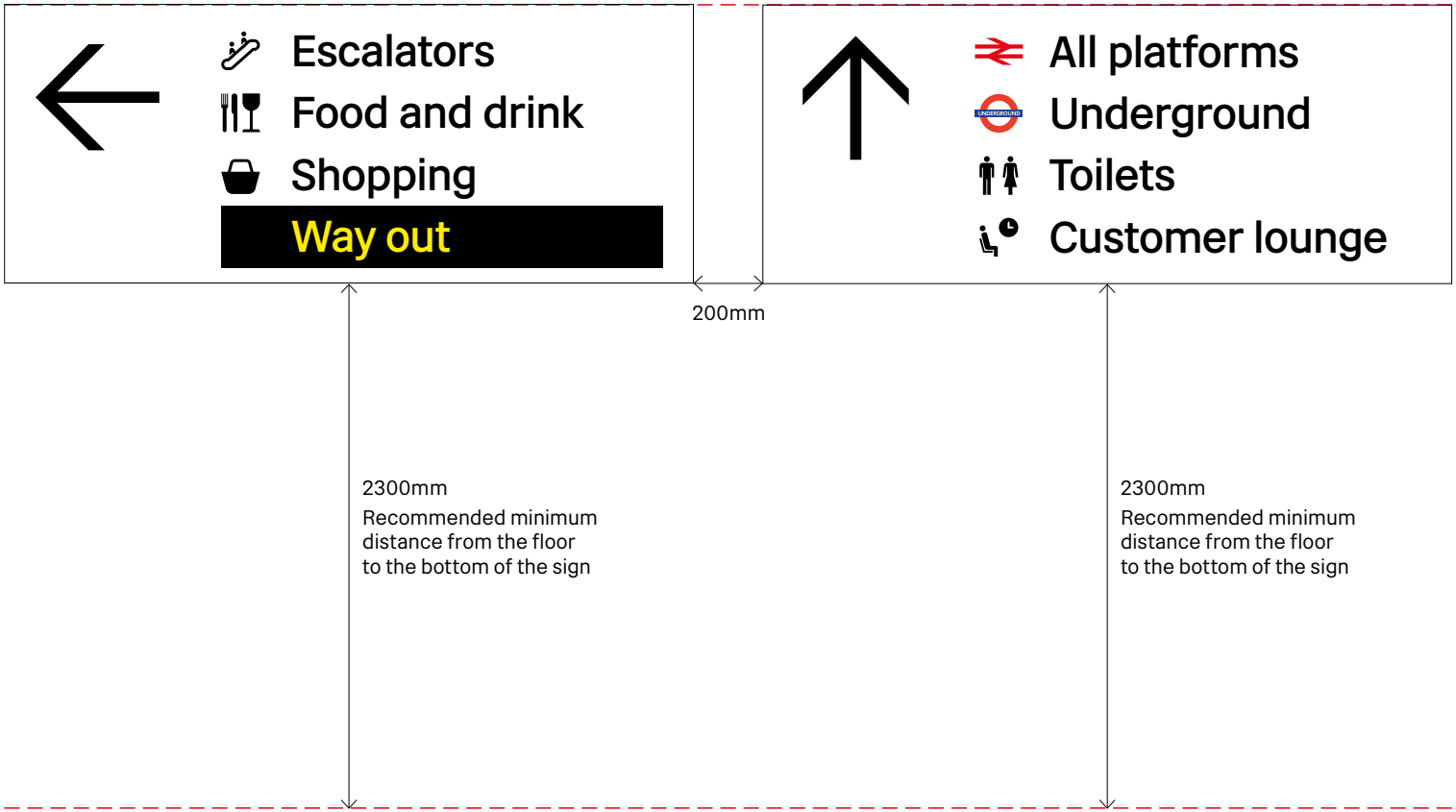
6.8 Wall Mounted Directional Signs

Horizontal Alignment

Smaller alternative size (S)

When wall based directional signs may be viewed from a closer distance, an alternative size can be used for the wayfinding information. The Cap-Height for these signs is 68.5mm.

6.8 Wall Mounted Directional Signs

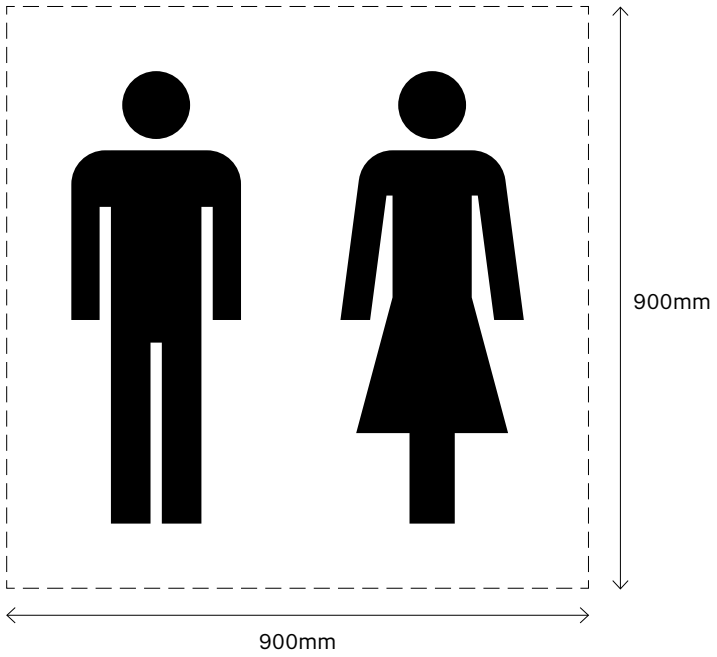


Positioning

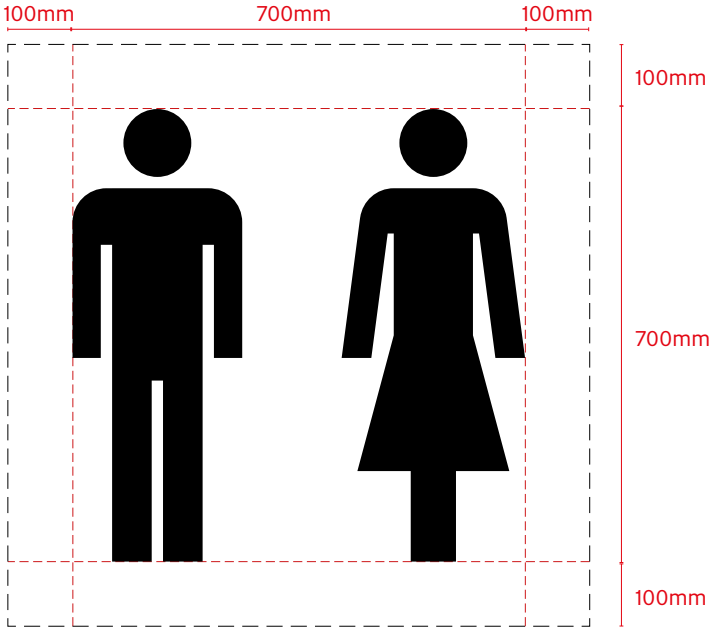
Positioning

- Wall mounted directional signs need to be fixed sufficiently high as not to be obscured by passengers. They should never be placed lower than 1000mm. The recommended distance between the floor and the bottom of the sign is 2300mm
- When multiple signs are placed next to each other, they should be aligned to the top
- The minimum distance between signs is 200mm
- Arrows should not point at each other
- Way Out information is always positioned at the bottom of an information group

6.9 Identification Signs



Toilet Identification Sign

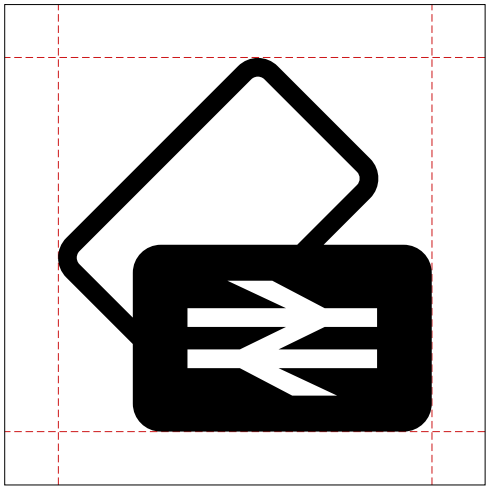


Sizing and Alignment

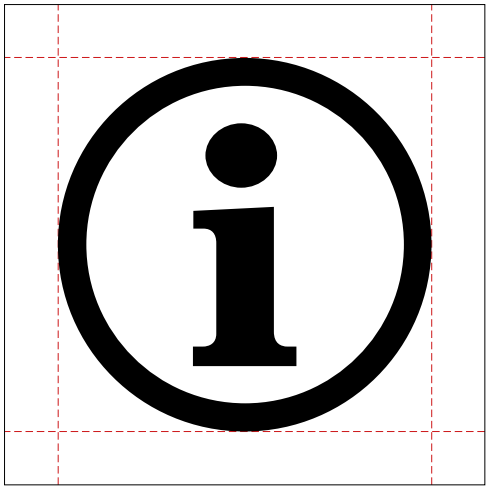
Identification signs indicate the location of facilities in the concourse zone. These signs can be wall mounted or ceiling suspended, depending on the station architecture. The information – confirming that a particular destination has been found – is given by a pictogram. The pictogram needs to be visible from a large distance to allow passengers to find their destination as quickly as possible.

Recommended sizing

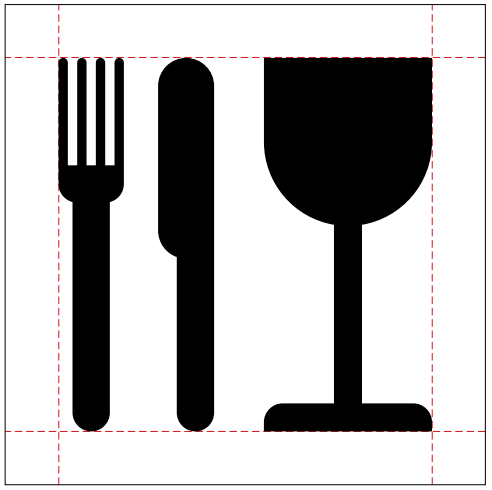
The pictogram has a maximum height and/or width of 700mm. It should be centred horizontally and vertically within the margins of 100mm.



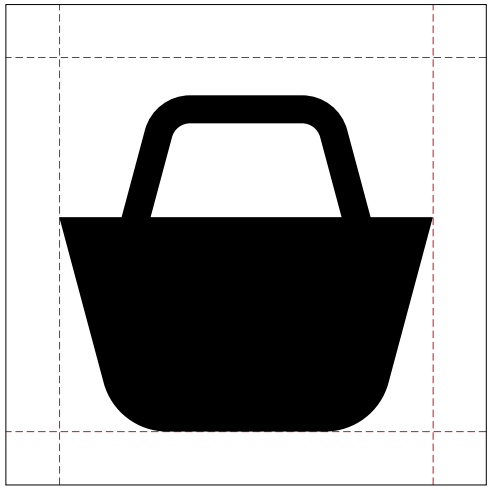
Tickets



Information



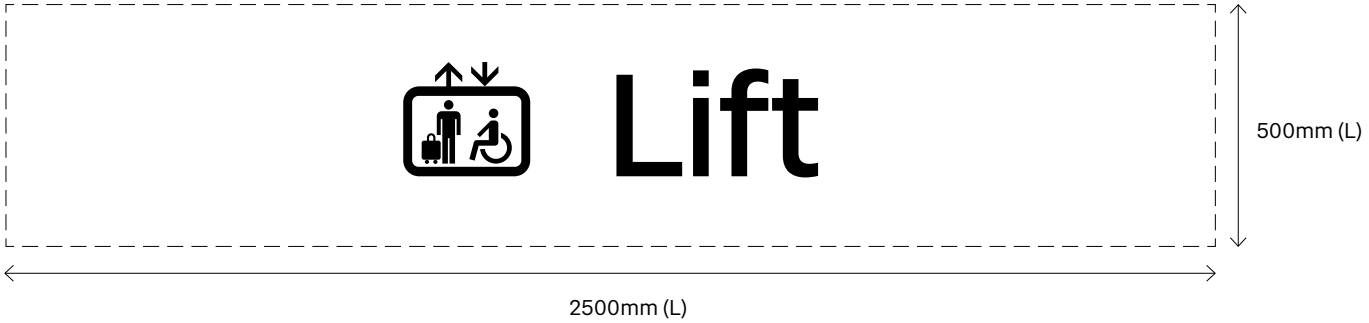
Food and Drink



Shopping

Other Examples of Identification Signs

6.10 Vertical Circulation Signs



Vertical Circulation Lift Sign

Vertical Circulation Stairs Sign

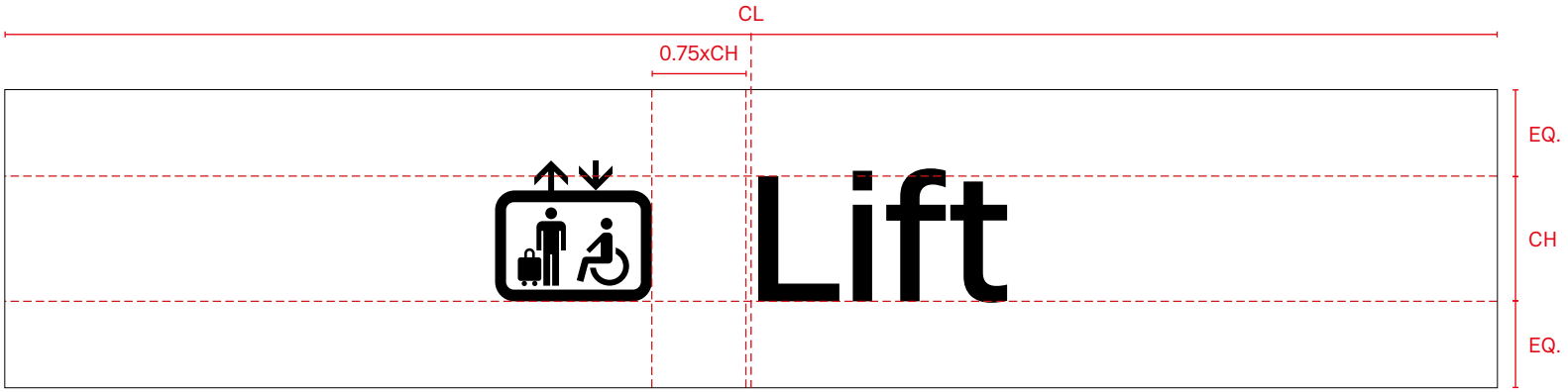
Vertical circulation signs mark the location of lifts, stairs or escalators, identifying facilities travellers can use to make their way up or down to a different level. They use a single overhead panel – wall mounted, suspended or column mounted – with one line of information. The information needs to be visible from a large distance.

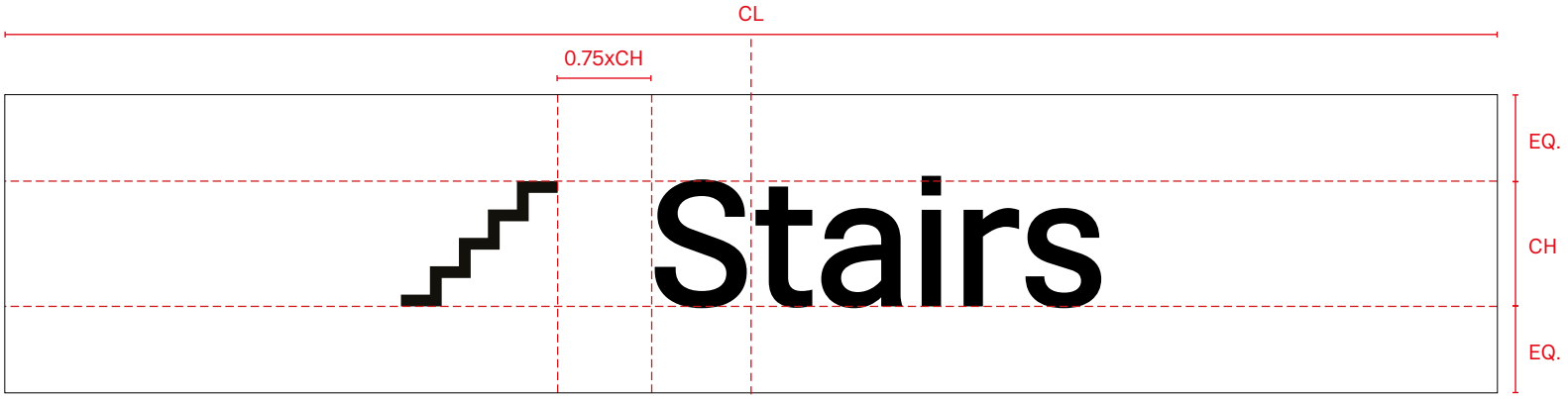
Recommended sizing (L)

- Cap-Height text: 210mm
- The information on the vertical circulation signs is horizontally and vertically centred, with an equal amount of white space top and bottom

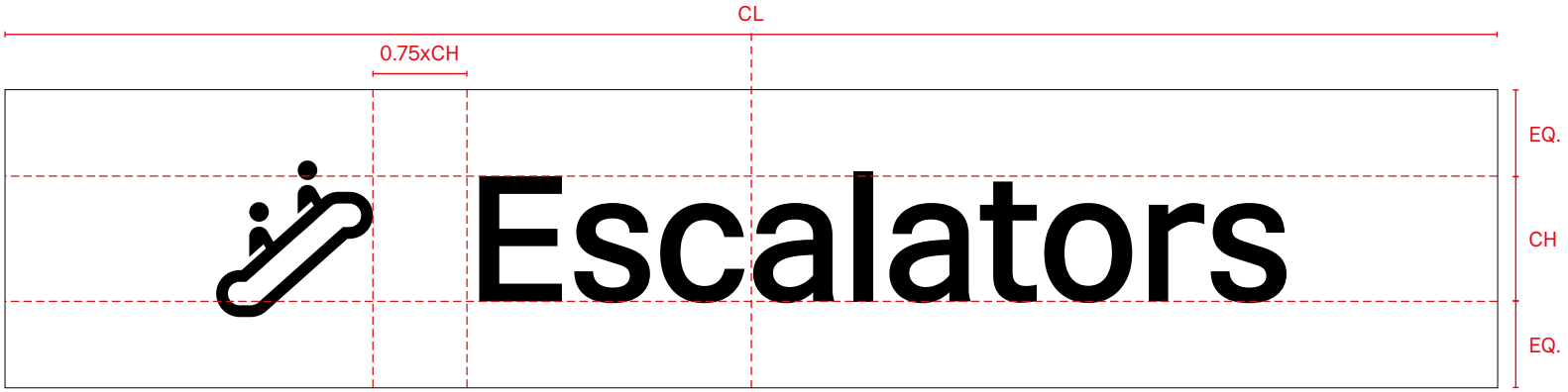
Smaller alternative size (S)

When vertical circulation signs may be viewed from a closer distance, an alternative size can be used. The height for these signs is 300mm. The Cap-Height of the text is 100mm.





Margins and Alignment



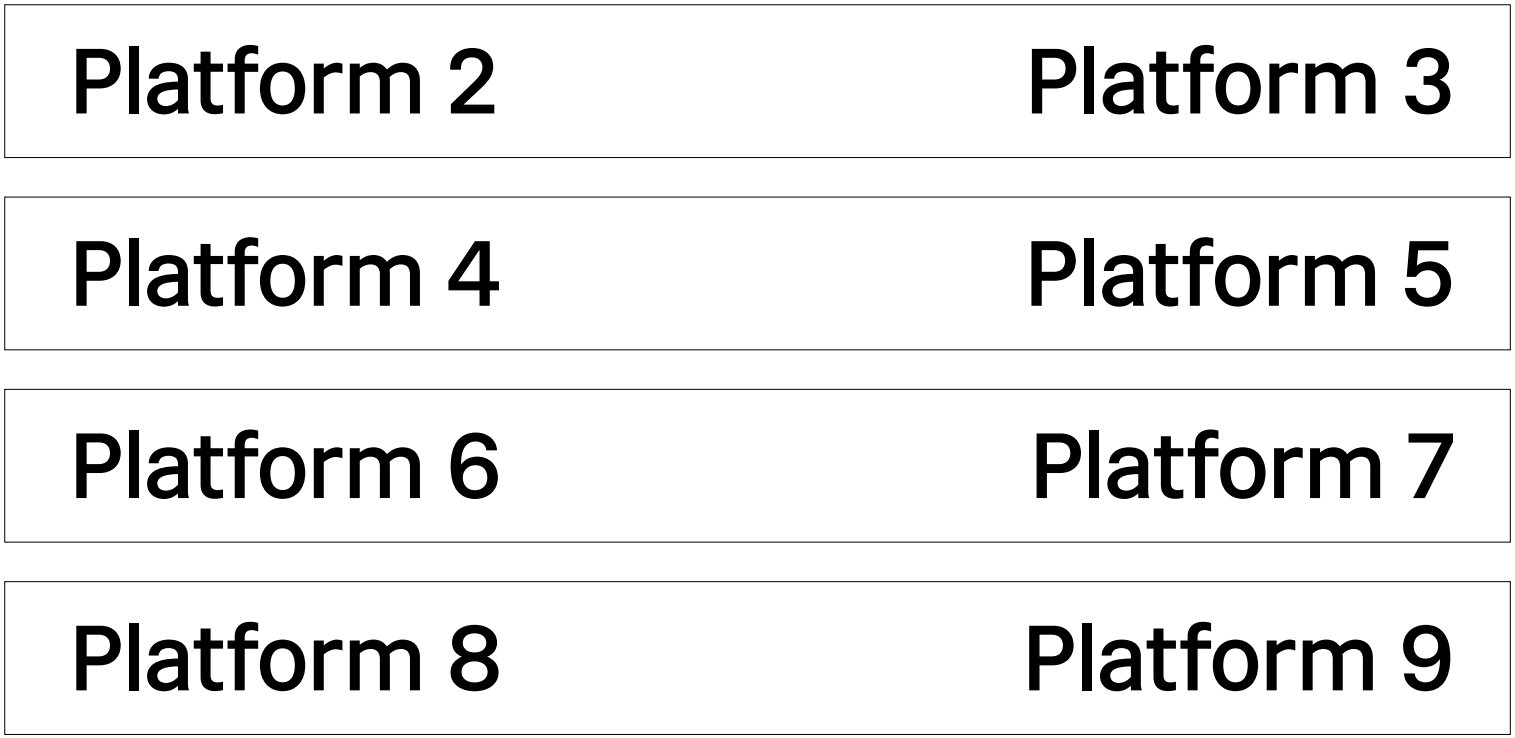
Margins and Alignment

NR Guidance Suite Reference

NR/GN/CIV/200/05
Vertical Circulation Manual


Platforms
2 and 3
Underground
Way out
4 and 5
Information

6.11 Platform Number Signs



Platform Number Signs

Above the entrance of each platform a sign indicates which platform travellers are entering. This overhead sign should face passengers as they approach the ticket gateline. The length and number of platforms identified on these signs may depend on the station architecture. The platform information should be left aligned when the platform is on the left and right aligned when the platform is on the right.

Recommended sizing (L)

The CH of the platform text is 210mm

Smaller alternative size (S)

When platform number signs will be viewed from a closer distance, an alternative size can be used. The height for these signs is 300mm. The CH of the pictograms/text is 100mm.

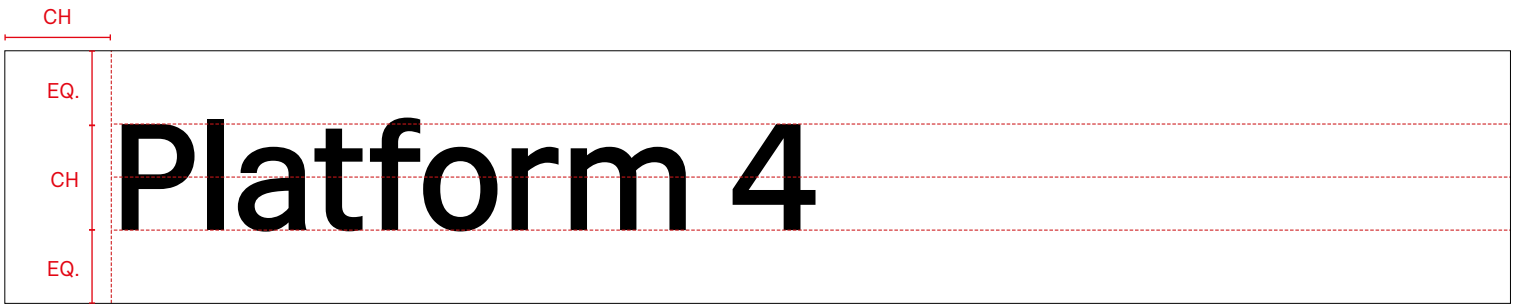
Platform 4

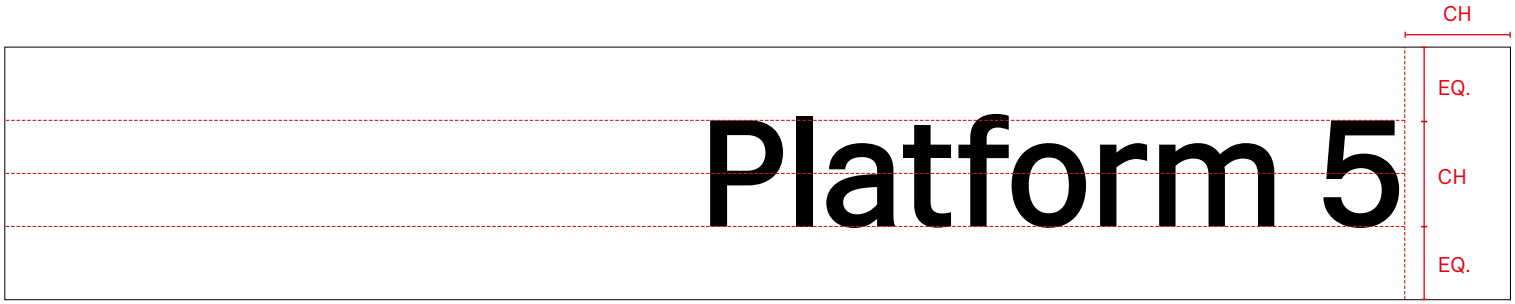
Platform Text Left Aligned

Platform 5

500mm (L) /
300mm (S)

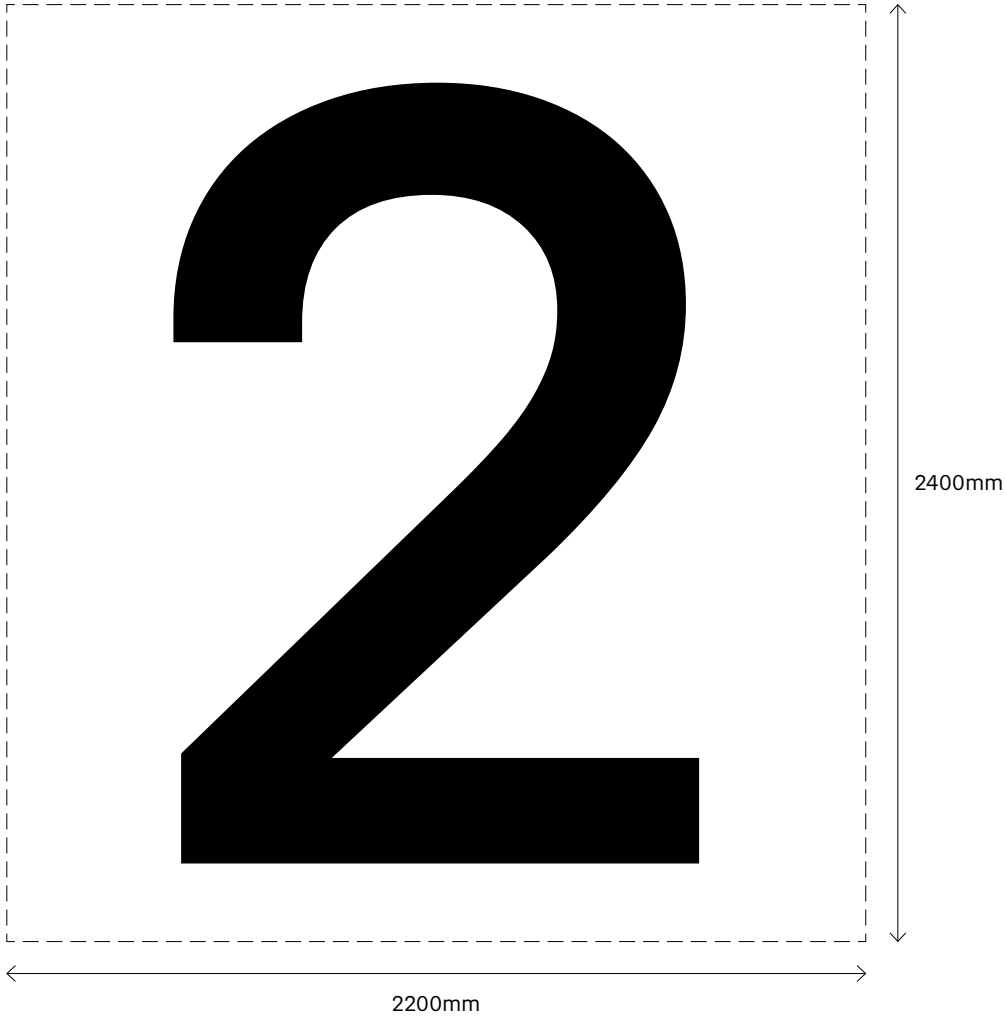
Platform Text Right Aligned





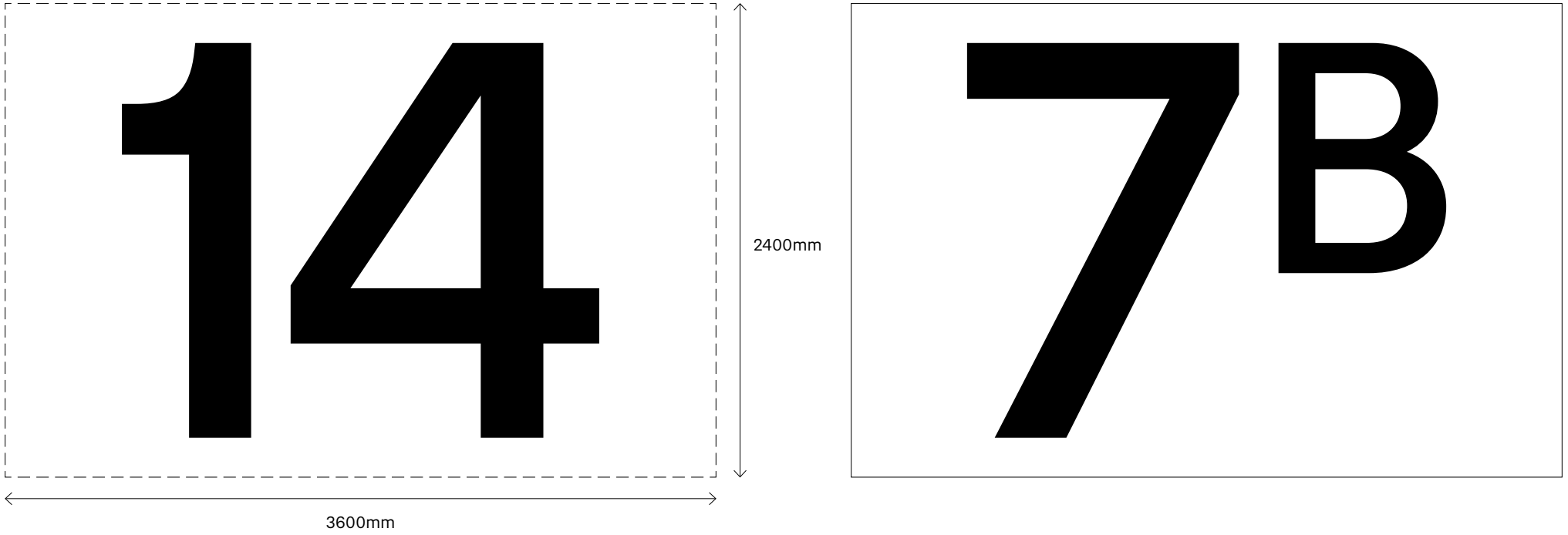
Margins

6.12 Platform Supergraphics



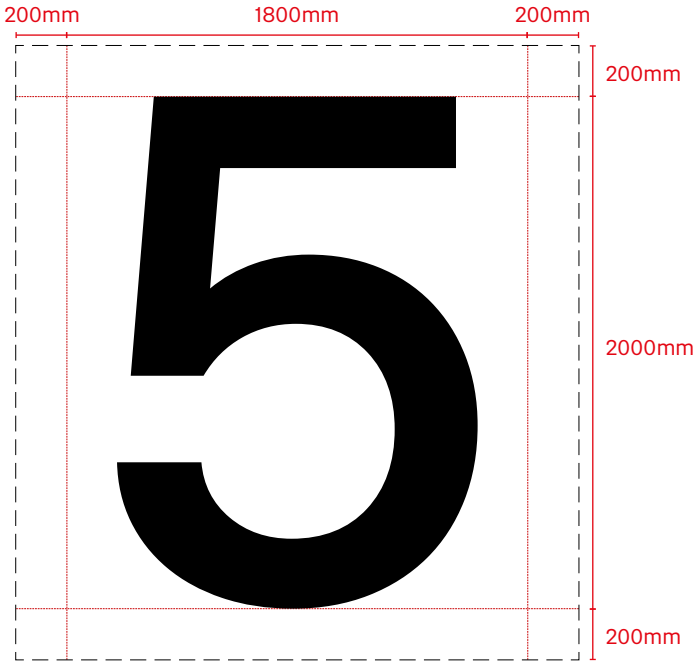
Platform Supergraphic, Single-Digit

Supergraphics are large graphics used in the environment. These can be employed strategically in stations to attract people's attention quickly. Platform numbers should be identified using supergraphics as a supplementary sign to the overhead Platform Number Signs. Supergraphics should be placed on the side return walls leading to platforms so that platforms can be identified quickly and efficiently while traversing through the station.



Platform Supergraphic, Double-Digit

6.12 Platform Supergraphics

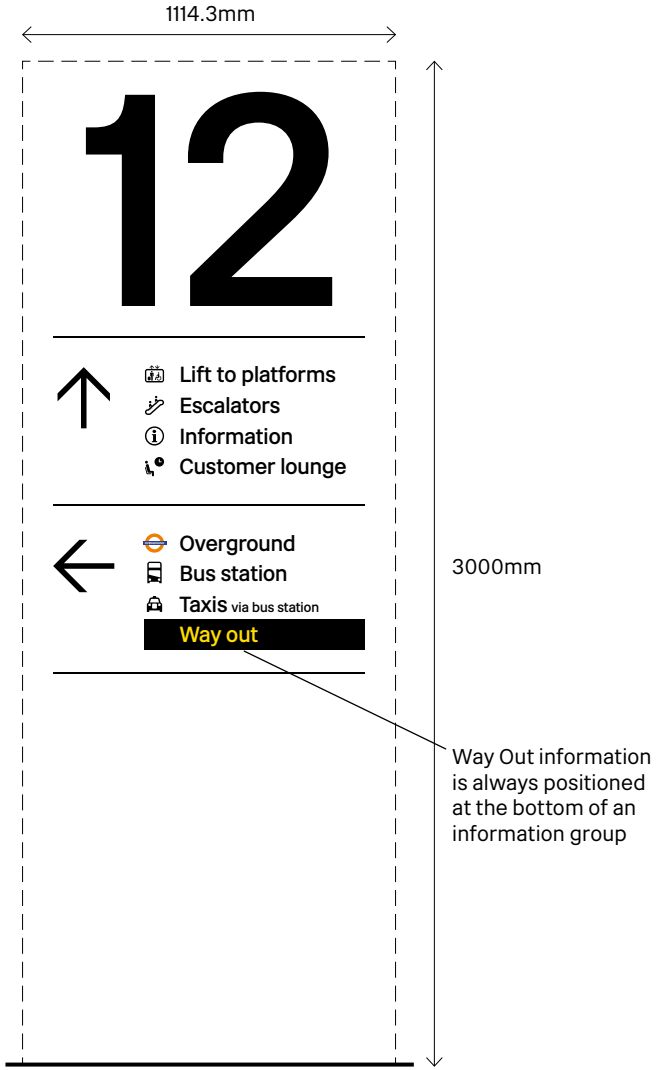


Margins and Alignment

Recommended sizing

The typeface used for these large platform numbers is Rail Alphabet 2 SIGN Medium. The height of the numbers is 2000mm. However, this may vary depending on the architecture of the station where the supergraphics will be placed. The minimum margin around the numbers is 200mm.

6.13 Platform Totem Sign



Platform totems effectively combine platform identification and directional information. When positioned on the platform consideration should be given to their impact on the pedestrian flows. They may not be suitable in situations where the available space is constrained. The platform number is always positioned above the wayfinding information and sized to be visible from the ticket gateline.

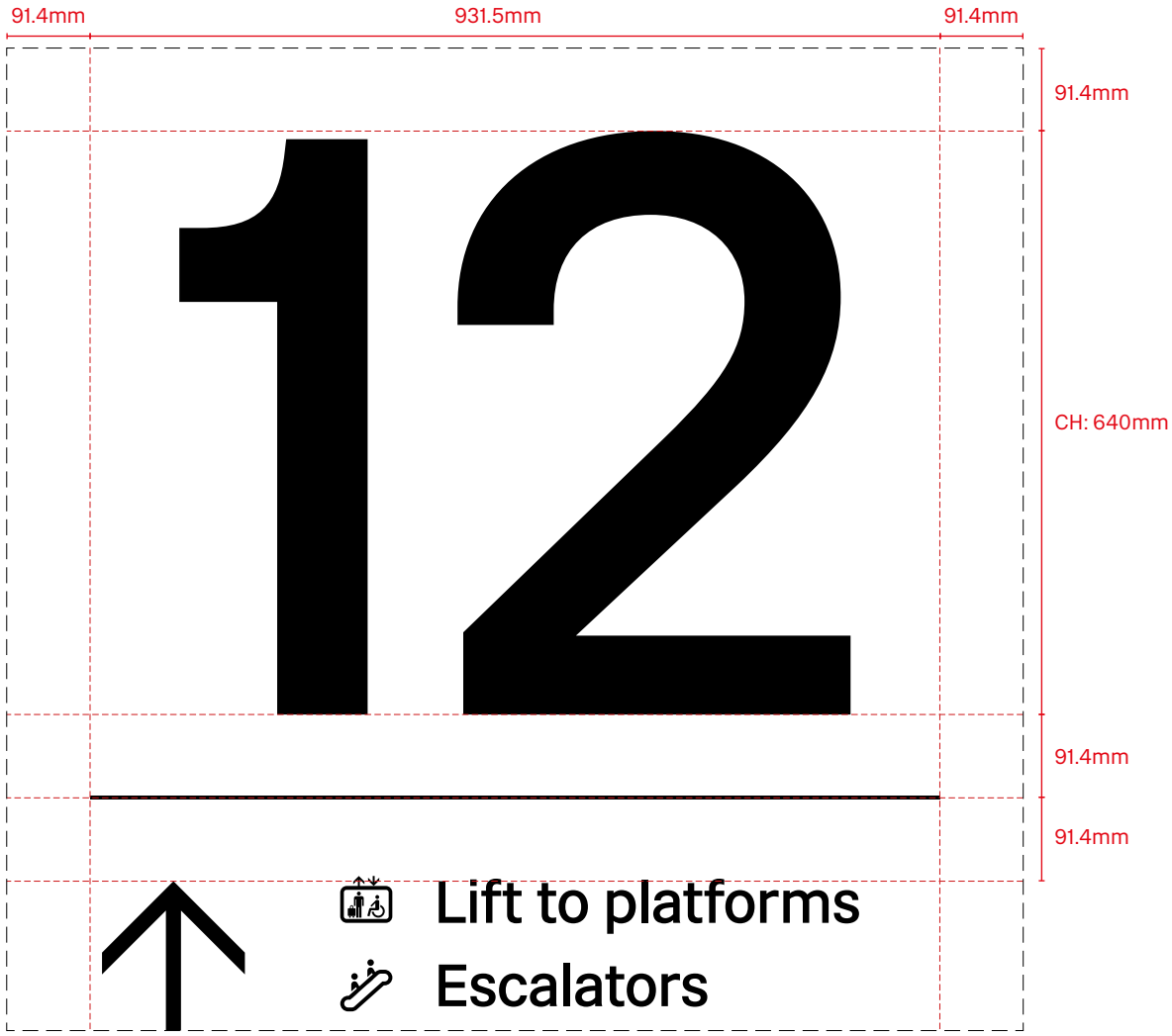
Platform identification

- Typeface: Rail Alphabet 2 SIGN Medium
- Recommended CH: 640mm

Wayfinding information

- The information is grouped by direction, with a maximum of 4 per group. Within each group, the information is organised by importance.
- Recommended CH: 45.7mm
- Stroke weight dividing line: 3.5mm
- Stroke weight arrow: 16.55mm
- Way Out information is always positioned at the bottom of an information group

6.13 Platform Totem Sign

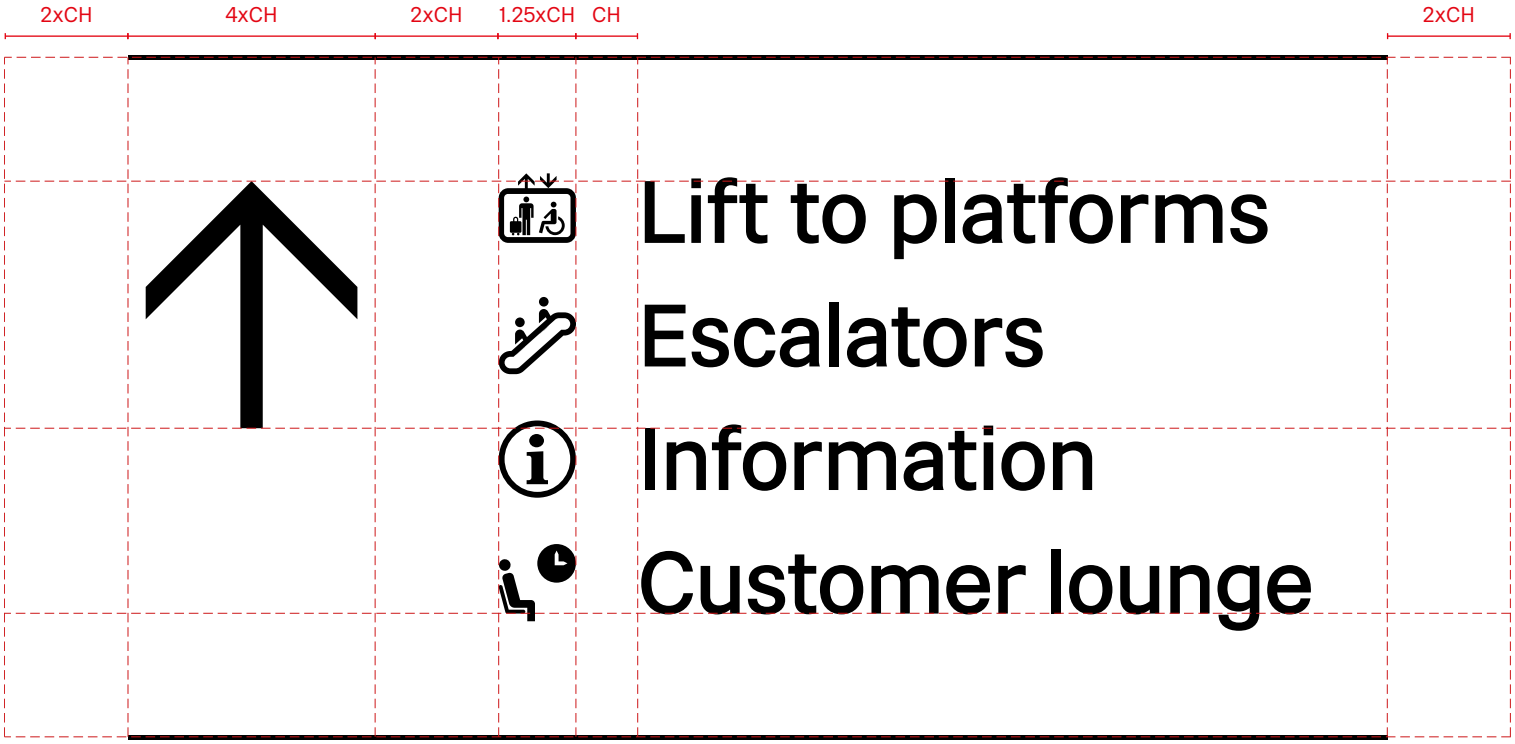


Platform Identification Margins

Recommended sizing

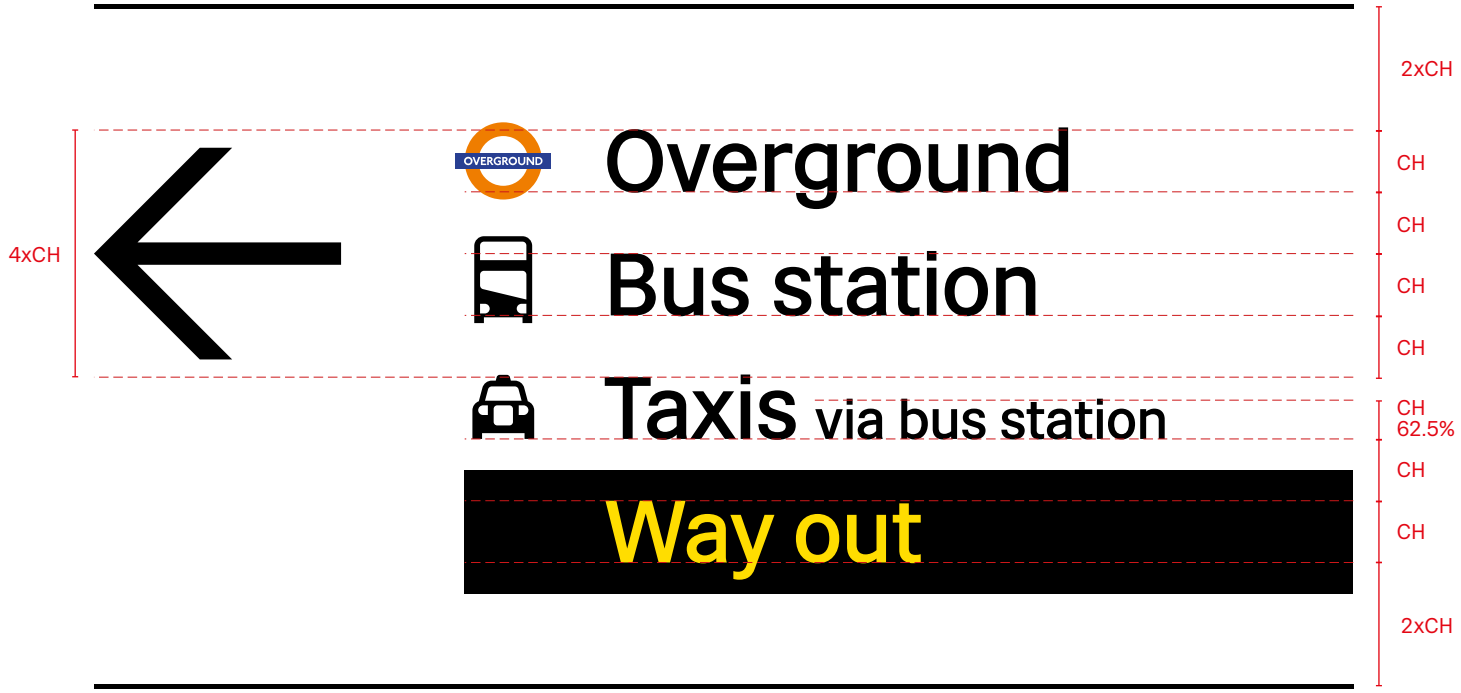
The platform numbers are centred within a space of 931.5mm (width) and 640mm (CH). The surrounding margin is 91.4mm, which is two times the CH of the wayfinding information on this totem.

6.13 Platform Totem Sign



Wayfinding Information Margins

6.13 Platform Totem Sign

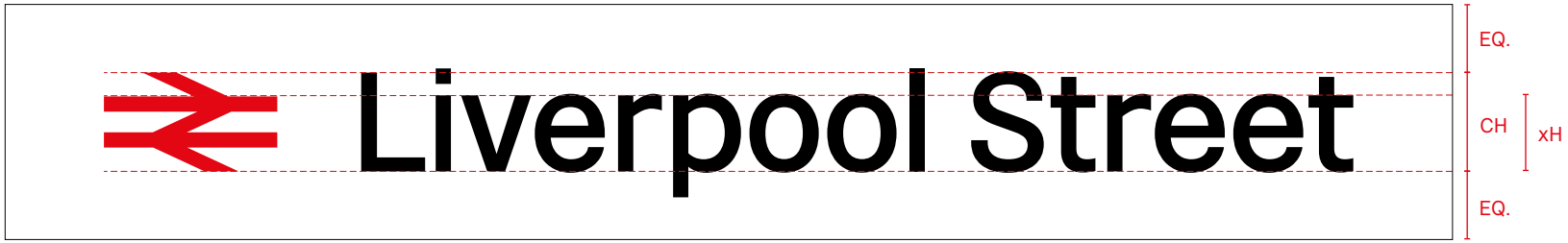


Leading Wayfinding Information

6.14 Station Identifier on Platforms

Liverpool Street Platform Identifier

Station identifier signs are used along the platforms at regular intervals. The interval will be defined by the platform function, length and configuration, with signs spaced on through platforms such that they can be visible from any position on a train. They can be wall, ceiling or pole mounted, depending on the station's architecture.



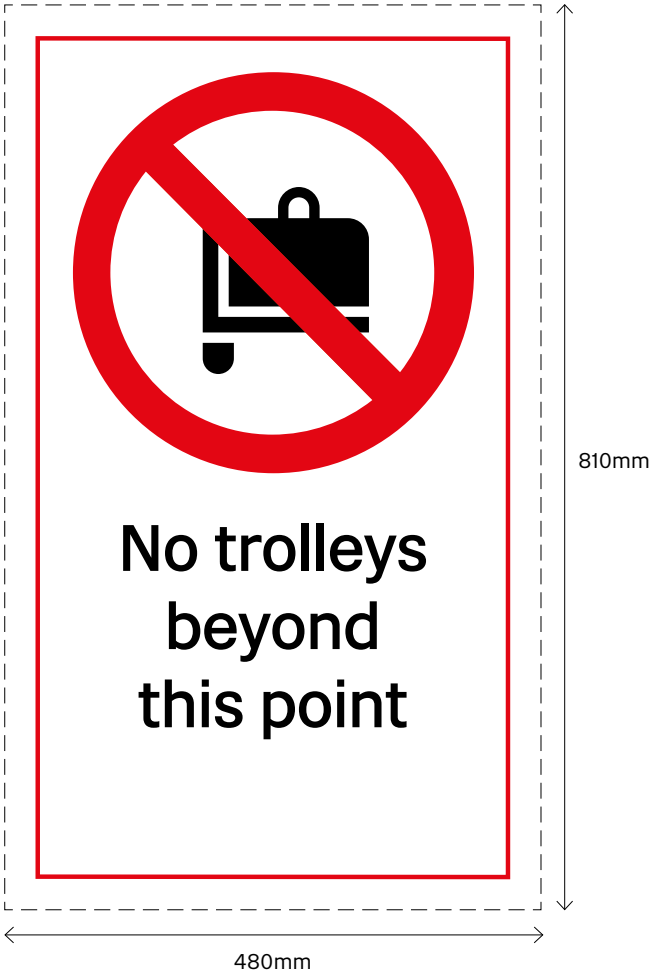
Liverpool Street Platform Identifier

Recommended sizing

The Cap-Height (CH) of the information on the station identifiers is 210mm. The typeface used is Rail Alphabet 2 SIGN Medium.

6.15 Regulatory and Prohibition Signs

No Smoking Sign



No Trolleys Sign

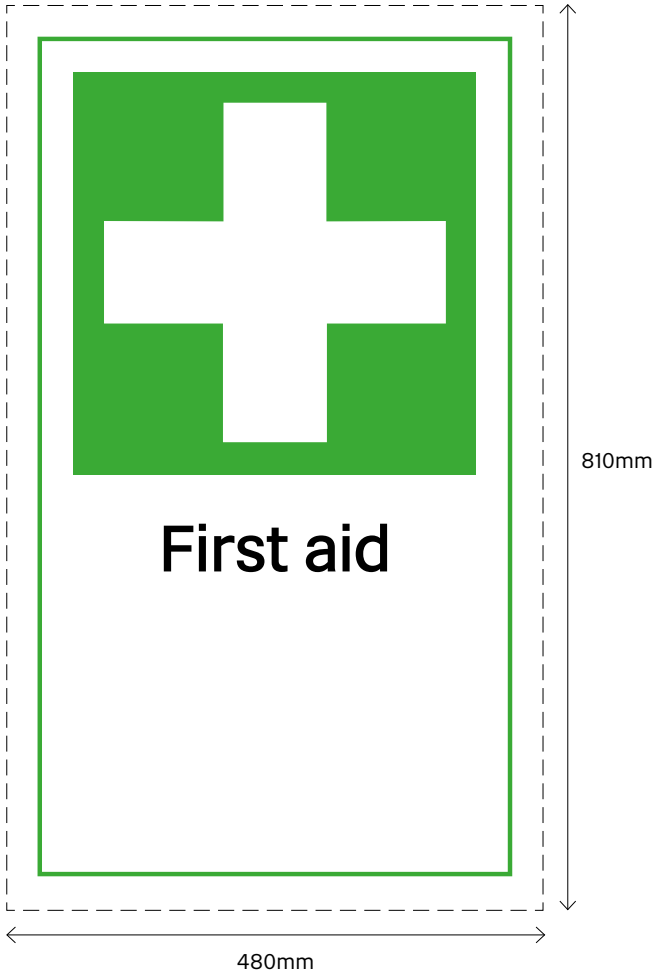
In addition to wayfinding signage, regulatory signage warns passengers of restricted access, hazards, rules and regulations. This type of signage is designed to align with the same visual system as the wayfinding signage, but should stand out as having an authoritative tone. Regulatory signs are for example: emergency exit; keep clear; caution; do not enter; no smoking; staff only and mobility access signs.

Recommended sizing

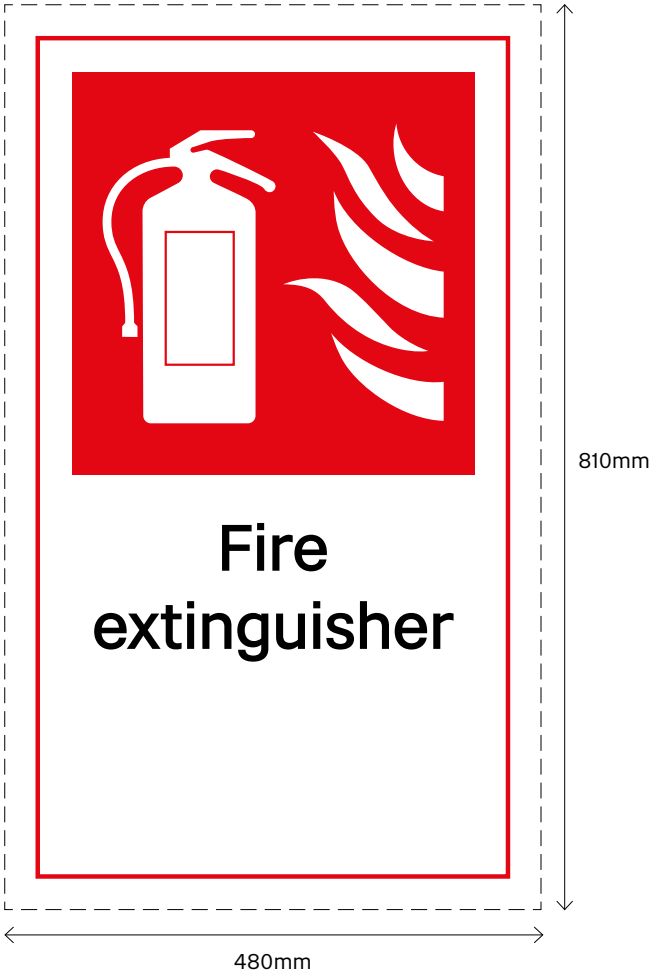
The typeface used for these signs is Rail Alphabet 2 SIGN Medium. The Cap-Height (CH) is 41mm in this example. Depending on the sign and the information needed, the Cap-Height can slightly vary. However, it is important that all text is positioned within the allocated space of 360x300mm and is centred vertically.

Margins and Alignment

6.16 Fire and Life Safety Signs



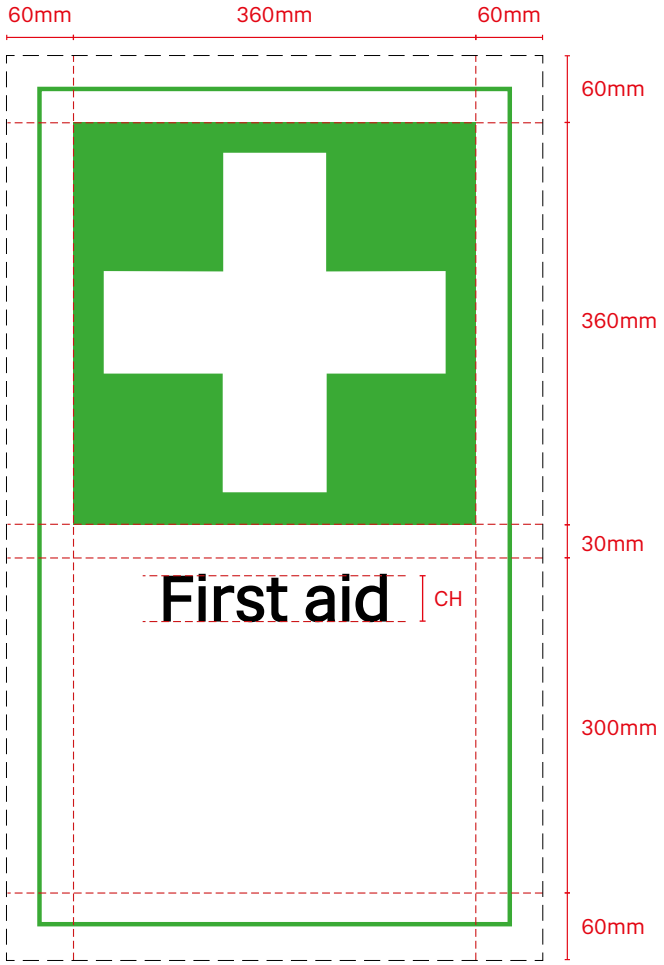
First Aid Sign



Fire Extinguisher Sign

Fire and life safety signs provide information or instructions about health and safety. International symbols for fire and life safety are usually shown in red and green. The colours of these signs are not to be used elsewhere in the wayfinding signage colour palette. They convey safety and emergency information on signage. All signs should carry the correct pictogram with the appropriate text. Other wayfinding should never obstruct safety and emergency information.

The colour of the First Aid sign is Pantone 3405C. For more information on statutory signage, please refer to document BS 5499.

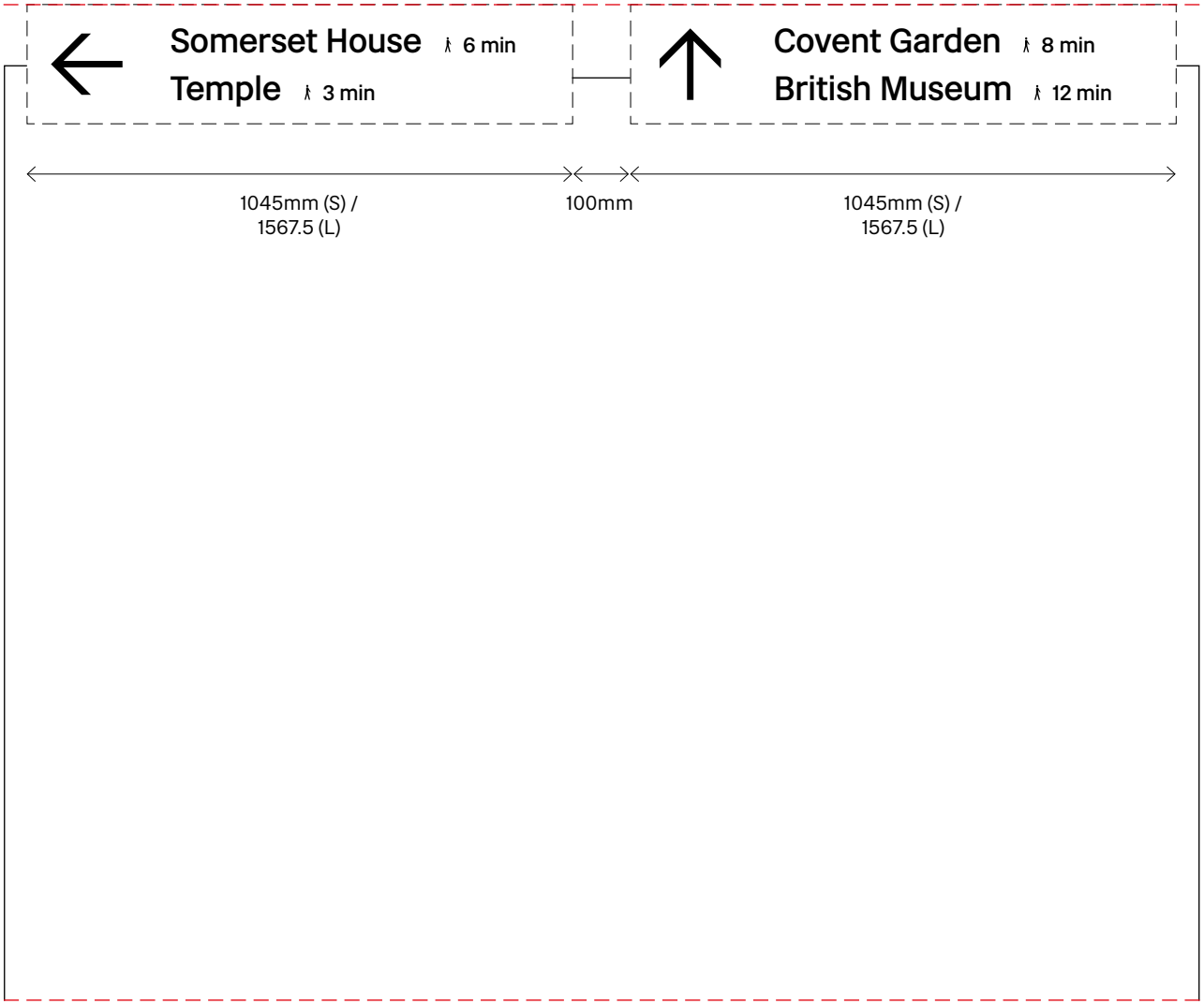


Recommended sizing

The typeface used for these signs is Rail Alphabet 2 SIGN Medium. The Cap-Height (CH) is 41mm in this example. Depending on the sign and the information needed, the Cap-Height can slightly vary. However, it is important that all text is positioned within the allocated space of 360x300mm and is centred vertically.

Margins and Alignment

6.17 Local Area Signs

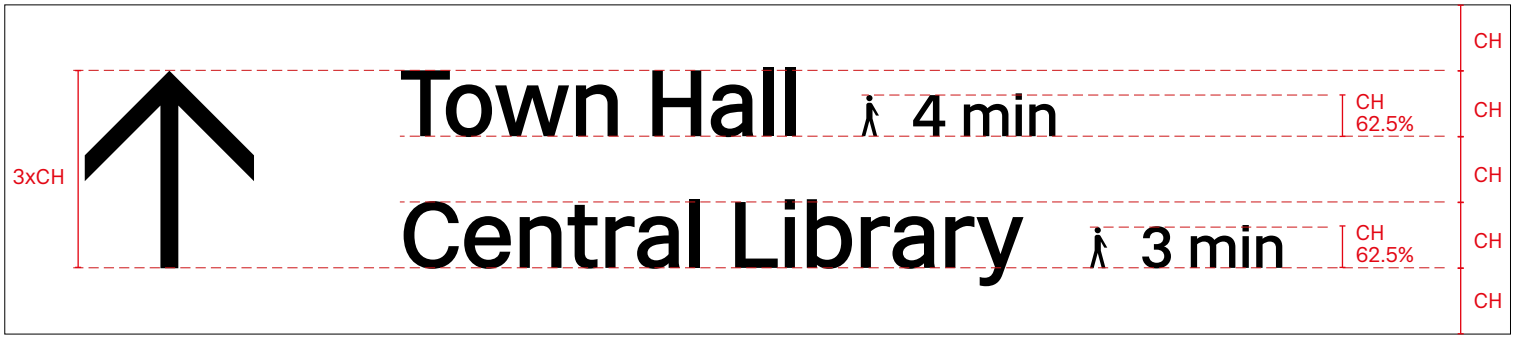


Passengers may require information about local destinations before exiting a train station. At the exit to the station, local area signs can be positioned above relevant exits. The information on these signs should be directional, with arrows pointing to popular tourist areas and attractions. These signs should be mounted over the exit. Further information may be provided on city maps outside the station.

Positioning

- A minimum headroom clearance of 2.3 metres needs to be maintained at all times
- When multiple signs are placed next to each other, they should be aligned to the top
- The minimum distance between signs is 100mm
- Arrows should not point at each other

Vertical Alignment



Horizontal Alignment

Recommended sizing (S)

— Cap-Height (CH): 45.7mm
— Stroke weight arrow: 12.41mm

Larger alternative size (L)

— Cap-Height (CH): 68.5mm
— Stroke weight arrow: 18.61mm

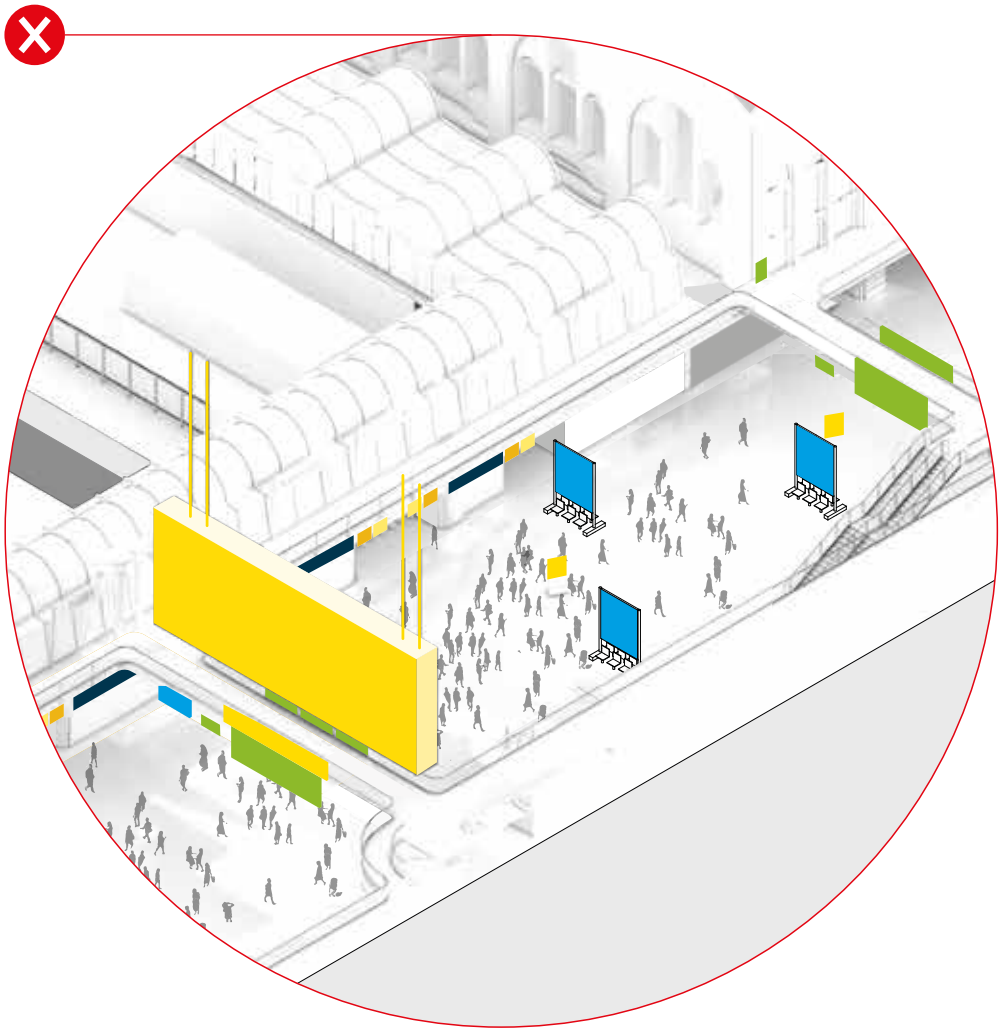

LAURA ASHLEY
12:07

7

Wayfinding Design Guidance

Integration with Other Systems

7.1 Advertising, Retail and Customer Information



Cluttered Signage

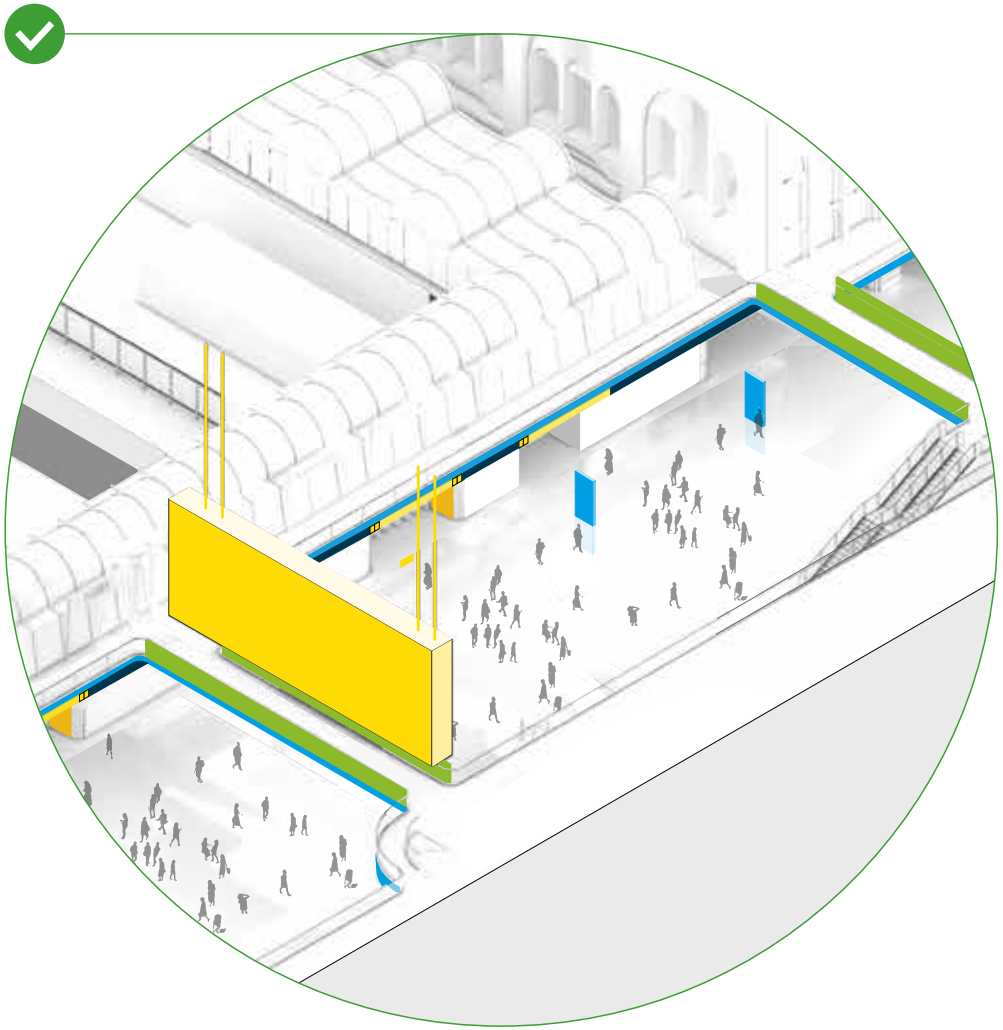
- Customer Information Screen
- Advertising
- Wayfinding
- Retail signage

Advertising materials, including posters, banners, mobile units and exhibition stands, present a potential conflict with wayfinding. Digital advertising material particularly with moving images can be distracting to many people with impairments and can be problematic for people who are neurodiverse. To check wayfinding is not compromised, a balance should be struck between maintaining the legibility of concourses and providing opportunities for retailers. Wayfinding signage should always take visual priority over other signs, and its view should always remain unobstructed from key decision points. Advertising cannot be combined with wayfinding on the same sign. Advertisements should not be placed in positions where they will visually obstruct, obscure, or distract from, station wayfinding or signage. Any adjacent advertising should have a reasonable level of illuminance in relation to station wayfinding.

Visual clutter

A key issue impairing the usability of stations from a passenger's perspective is visual clutter. Standing on the concourse, passengers are bombarded with signs and messages from all angles with no easily discernible hierarchy or consistency.

7.1 Advertising, Retail and Customer Information



Aligned Signage

- Customer Information Screen
- Advertising
- Wayfinding
- Retail signage

Aligned bands of information

The proposed solution of fluid visual bands of information helps to reduce clutter and create greater visual impact. Easily distinguishable levels for wayfinding, CIS, retail and advertising elements will increase the usability of the station and improve the passenger experience. Moreover, through consistent signage and by creating a strong visual identity, the wayfinding can stand out more than it does at present.

1. Customer Information Screen
2. Advertising
3. Wayfinding
4. Retail signage

7.2 Onward Transportation Information

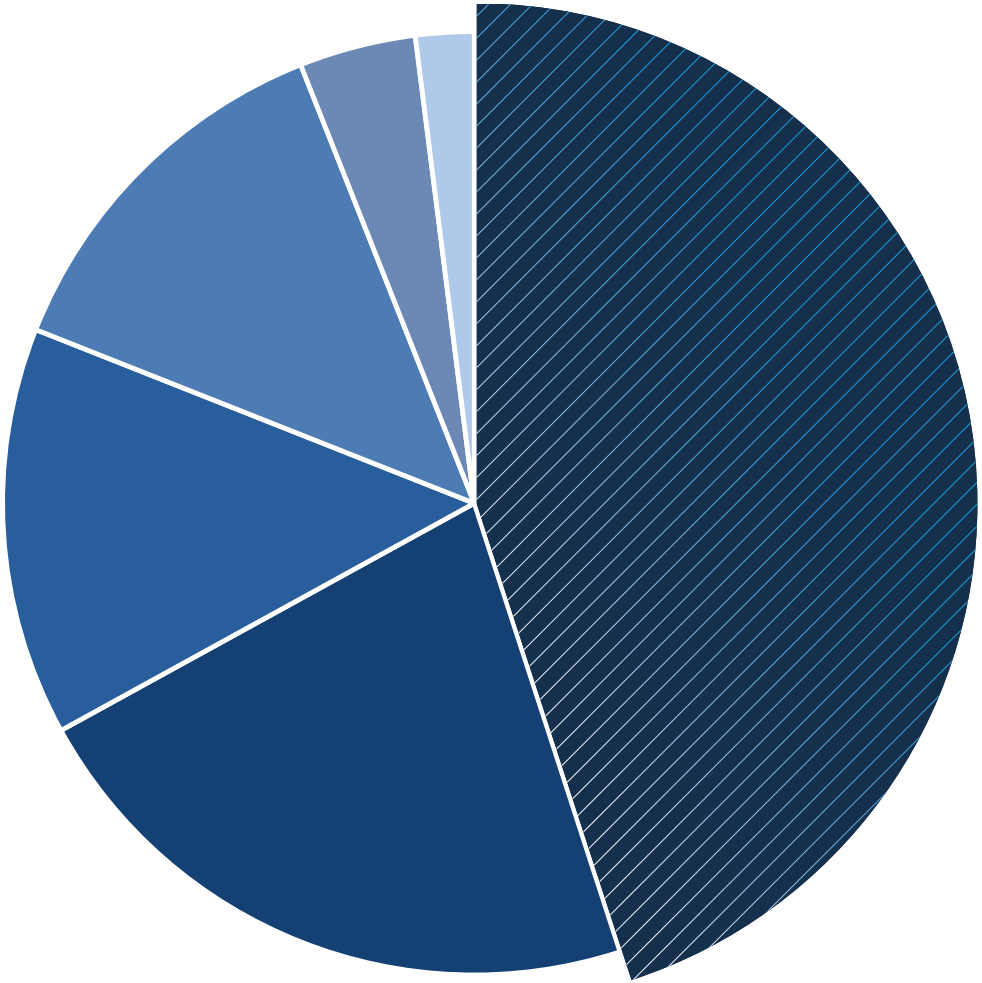


Fig 7.2. Diagram showing typical ratio split of onward travel mode from rail stations.

The mode of transport that is most dominant at each station will vary depending upon its location. In many cases, the default choice of transport for travel to and from rail stations is by car. 58% of CO2 emissions in Britain come from cars, and each year this figure continues to rise. Therefore, it is beneficial to encourage staff and passengers to use sustainable forms of transportation and become less dependent on cars.

Operators

Operators produce printed timetables and route maps. These are available from company offices, Travel Centres, or can be ordered online from bus and tram company websites.

For further reading on sustainable transport interchanges, please refer to Network Rail Inclusive Design Guidance NR/GN/CIV/300/04.

Interchange signage

Clear and easy to follow signage through the station, directing passengers from train to bus, is becoming more commonplace.

Local Councils / Public Transport Executives

Most Councils and Public Transport Executives (PTEs) normally have detailed public transport information available on their websites.

Timetable displays

Local authorities and local bus operators provide timetable information about bus services at most local bus stops.

Posters

Many local authorities and/or bus operators supply National Rail stations with timetable literature and/or posters about local bus services.

7.2 Onward Transportation Information

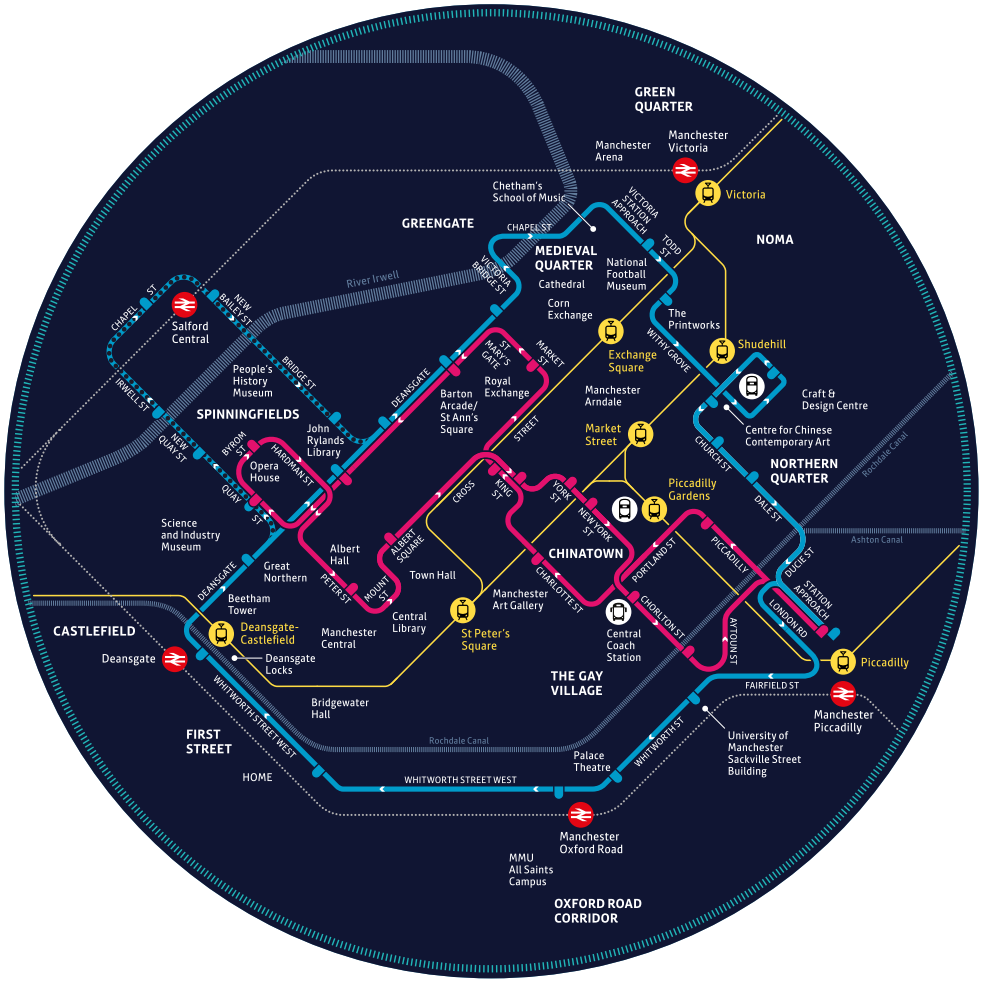


Fig 7.2.1 Great Manchester Connected Wayfinding 2018. Public Transport Map, by Spaceagency.

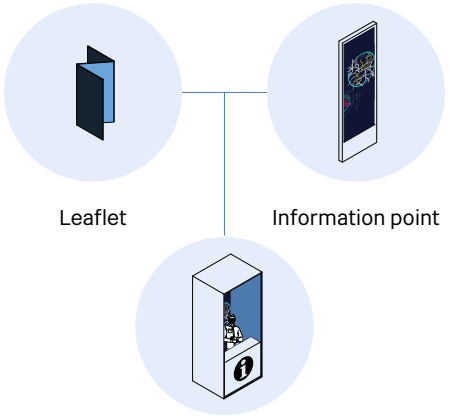
Public Transport Connections

Free bus services

- Route 1 & stop
- Route 2 & stop
- Direction of travel
- Route 2 peak time only

Fare payable

- National Rail
- Metrolink tram
- Bus station
- Coach station



Very few rail passenger journeys actually start or finish at rail stations. Passengers live and work elsewhere and need to travel to and from rail stations by other forms of transport. Railway stations are therefore interchanges, where passengers change between various modes of transport, not just start or finish train journeys.

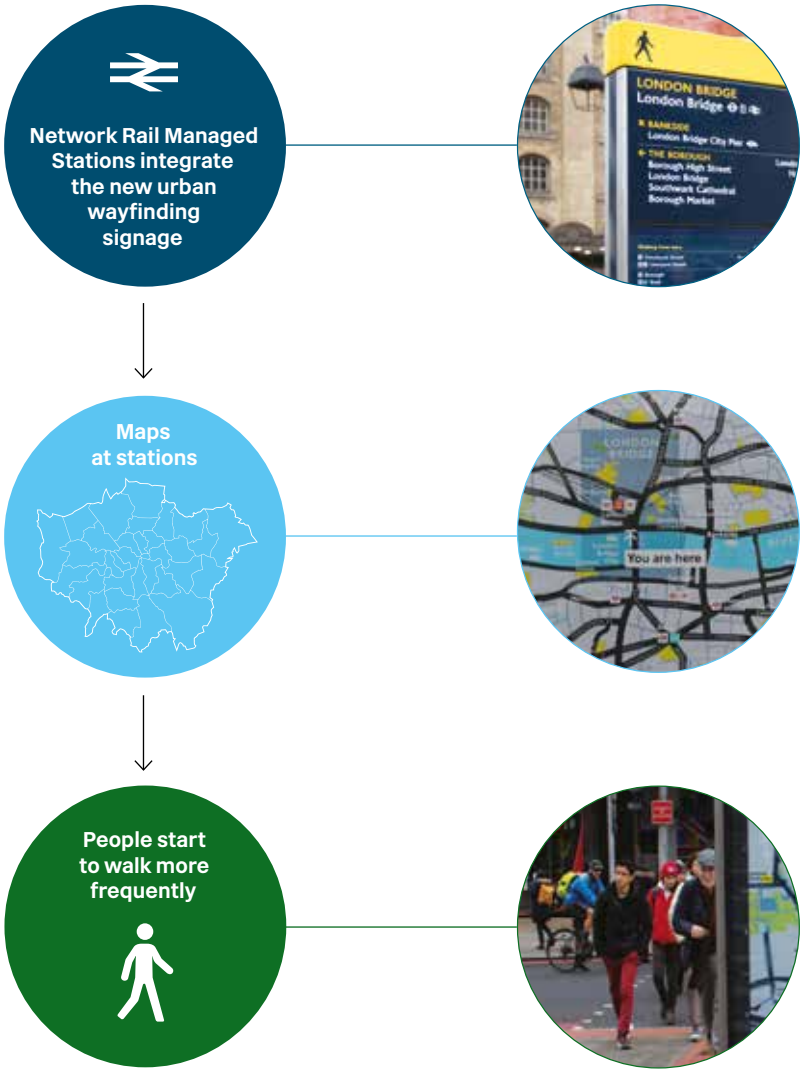
Passenger research has shown that across Britain 45% of National Rail passengers walk to the station. Therefore, over half of them use another form of transport (bus, bike, car or taxi) to get to the station.

Onward transportation information

The onward transportation map above is an example of an in-station guide which visitors can use when looking for further information on public transport options. Visitor information desks should provide information on onward transportation and further (repeated) information such as bus times should be placed by the exits and bus stops. Additionally, onward transport information should include train times, car rentals and taxi points.

7.3 Urban Wayfinding Systems

> Signage is not the only means people use to find their way from A to B. Landmarks, public art, lighting, urban landscaping and urban planning all play their part in encouraging legibility and defining London's key characteristics, such as the river Thames, underpasses, tunnels and alleyways. On-line information, from TfL's journey planner and the AA website to visitlondon.com, are becoming increasingly popular means of planning routes before setting out. Printed maps and some on-street wayfinding kiosks are also part of the present mix. Most of these information sources were not designed specifically for pedestrians, but all have important lessons for developing a customer-led approach to pedestrian wayfinding in London.
>
> *Legible London*



When passengers alight from the train and are new to a city, they may be in need of wayfinding information. By integrating urban walking maps directly into the station environment, visitors can plan their journey, find the most appropriate form of onward transportation and potentially be encouraged to walk, which is a sustainable mode of transport.

Example of In-Station Urban Wayfinding Integration

7.4 Station Security and Operations

Exterior or interior signage should not block or obstruct any CCTV inside the station environment.

Emergency Do Not Enter (EDNE) signage are located at the entrances of stations. These signs are lit and emit a sound when turned on. They should not be blocked by any other signage.

The fixing of Station Wayfinding should be in accordance with the DfT Security in the Design of Stations requirements.

For guidance on compliance contact Network Rail Group Security via email: groupsecurity@networkrail.co.uk

Standards Reference

Security In the Design Of Stations (2018)
SIDOS

It is important that wayfinding signage does not obstruct other types of signage and devices used for station security and operations. Security in the Design of Stations (SIDOS) should be consulted in relation to security requirements and their interaction with the signage scheme. Signage and other wayfinding installations should comply with SIDOS in the same manner as any other Station or key asset locations, paying particular attention to compliance with:

Design Measures section 7.24 – 7.26; Fixtures and Fittings setting 7.27 – 7.31; and SIDOS Annex D – Blast Protection Requirements.

Careful consideration should be given to assuring that signage does not add to fragmentation, for example through tethering.

Security cameras and Emergency Do Not Enter (EDNE) signs are installed for passenger safety and protection. Security cameras are placed inside and outside stations and run twenty-four hours a day. EDNE signs are installed at the entrances of stations in order to alert visitors when not to enter the station during an emergency situation.

7.5 Digital Signage

Network Rail's digital signage is currently not fully integrated with the other wayfinding elements in the station environment. Moving forward, it is important that digital signage is implemented according to the NR Wayfinding Design Guidance, using the correct typography, alignment, scale and colour palette.

Please refer to NR/L2/TEL/30114, Specification for the Maintenance of CIS control equipment, for additional information on CIS screens.

Digital signage is increasingly used for station wayfinding and should be gradually integrated with other wayfinding elements. The benefits of using digital wayfinding include the flexibility to reconfigure wayfinding messaging, the seamless combination of customer information with wayfinding and the ease of connecting wayfinding information with the Network Rail customer information database. As the provision of digital information in spaces becomes more prevalent, screen usability factors should be considered.

Digital screens, particularly touch screens, can be inaccessible to people with vision impairments and may be inaccessible to wheelchair users and people of short stature if the touch area is out of reach. New technologies allow the usable portion of a touchscreen to be interactively lowered to suit the height of the user. This allows people of different heights and in wheelchairs to customise the working area to their height, if configured properly.
These digital touchpoints can also include audio output and the ability to increase font size and screen contrast.
It is important that digital advertising is not combined with the wayfinding information, and is always visually separated.

7.6 Future Technology

PAS 6463 *Design for the mind Neurodiversity and the built environment* places greater emphasis on the development of new wayfinding solutions that may benefit station users who require different ways of accessing journey and facility information.

Numerous techniques that allow wayfinding systems to be accessible for all have been utilised and are being developed around the world. Some examples of the latest initiatives are shown below. While digital wayfinding has an important role to play, it cannot be relied upon as the only method for finding your way. To future proof stations, new technologies should be considered at an early stage when developing the wayfinding strategy and applications.

Future technology

Different devices, such as smart phones, tablets and sat-navs have become commonplace – and in some instances have largely replaced previous devices, such as paper maps, or pushed them into a niche existence. Further technological development is inevitable. The trend towards more integrated devices – heading towards wearables, such as the Apple watch, or mixed and augmented reality (AR) concepts including Google Glass or Microsoft's HoloLens – is likely to continue over the foreseeable future. Additionally to wayfinding, personal digital devices offer added benefits, such as counting of visitors, advertisement and customer identification, which make them attractive for operators of key destinations.

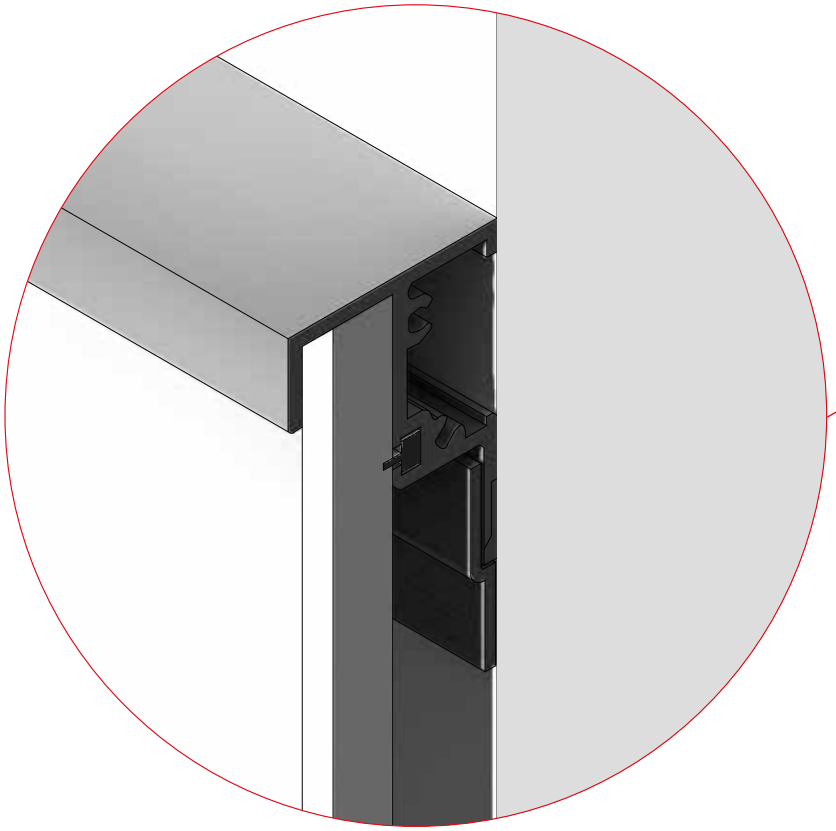
iBeacon

iBeacons can be used to provide information for people with hearing impairments (as well as other travellers). iBeacons are a small, inexpensive product that can be integrated into wayfinding. They transmit a signal to a person's smartphone or other wearable technology that can provide a description of the information on an adjacent sign or even of the surrounding environment.

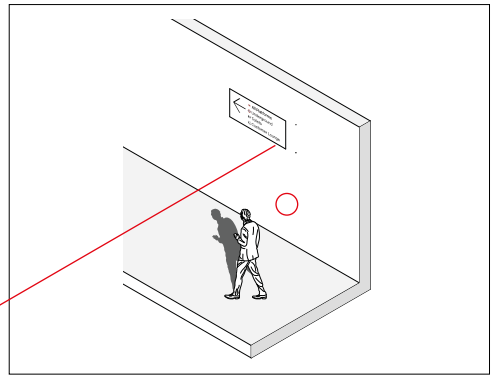
Next generation

Next generation wayfinding research and development focuses on user experience. Augmented reality is technology that allows for a digitally enhanced view of the world, connecting the user with an informational content overlay on the environment. With the camera and sensors in a smartphone, or with a holographic glass running on Intel Core processors, AR adds layers of digital information – videos, photos, sounds – directly onto the world around us.

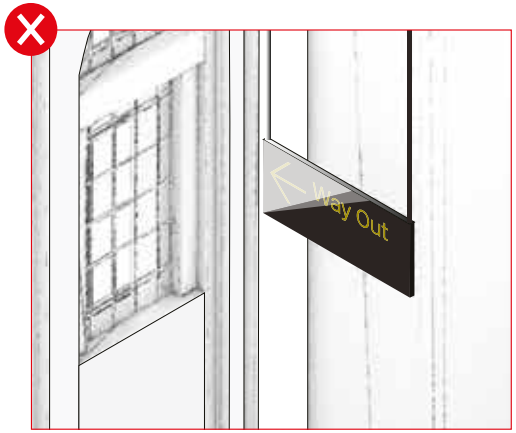
7.7 Illumination



Detail of an Illuminated Sign



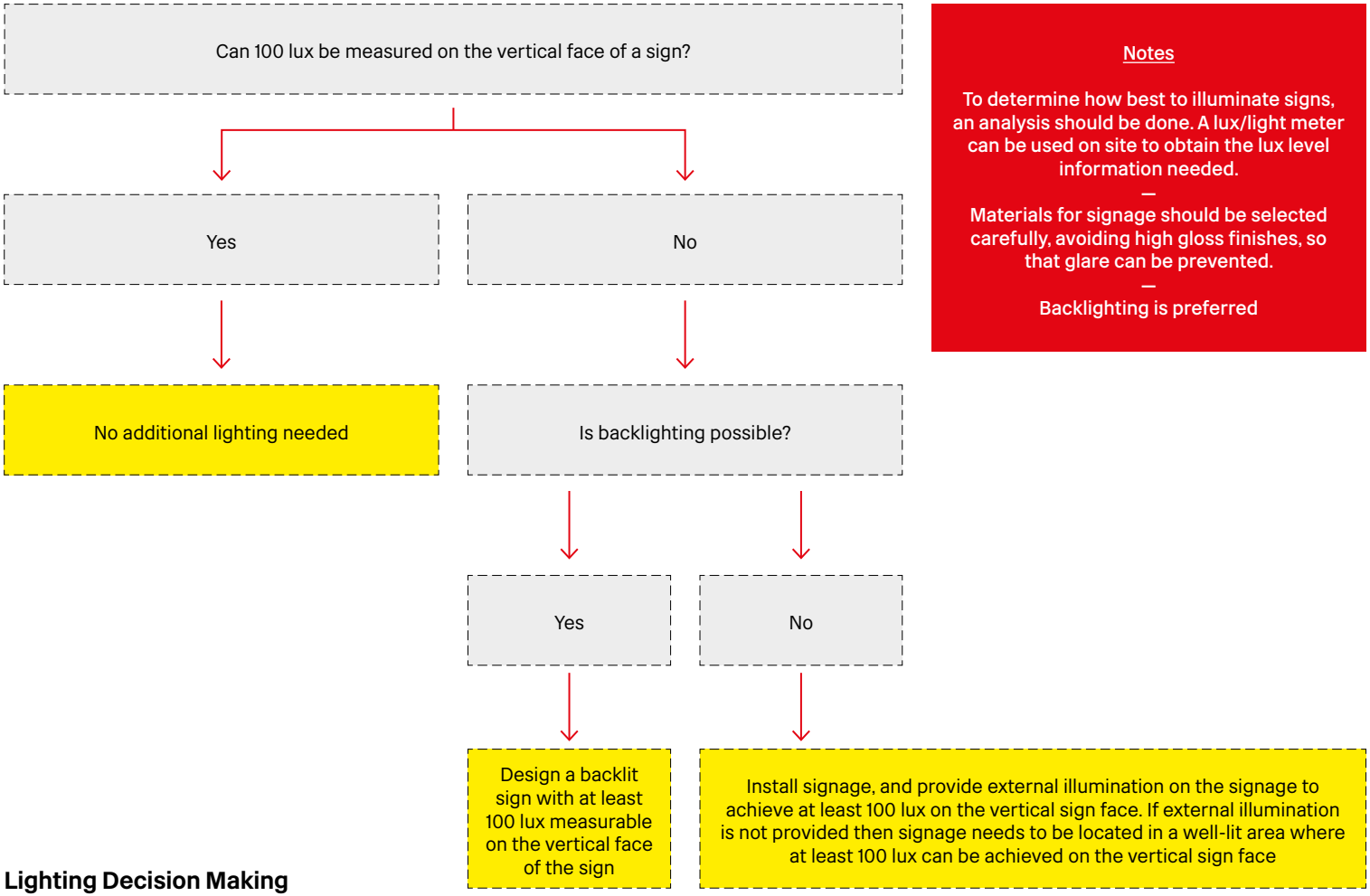
All electrical feeds to illuminated signs should be as discreet as possible, and any conduit should be buried beneath the wall finish entering the sign through the back.



Glare should always be prevented

Great care should be taken when positioning lighting in relation to signage in station areas. This is particularly important where energy-saving downlighters are adopted as the primary lighting source, as this can leave areas of the ceiling in relative darkness.
All illuminated signs should have a luminance of 100 lux with a maximum variation
in luminance of 10% across the face of the sign. Additional lighting should be provided if this can't be achieved.
Where possible, signs should not be attached close to lighting fittings so as to cast shadows on wall areas.

PROCESS TO DETERMINE APPROPRIATE METHOD TO PROVIDE SUFFICIENT ILLUMINATION FOR SIGNAGE



Notes

To determine how best to illuminate signs, an analysis should be done. A lux/light meter can be used on site to obtain the lux level information needed.

—

Materials for signage should be selected carefully, avoiding high gloss finishes, so that glare can be prevented.

—

Backlighting is preferred

Lighting Decision Making

For full details of electrical requirements for signs please refer to RSSB standard for Lighting at Stations (RIS-7702-INS).

Wayfinding Design Manual
Technical Guidance

8

Visualisation 0.1 London
Liverpool Street

8.1 Introduction

Enhanced Technical Guidance
To further enhance the Design Guidelines, Network Rail Technical Authority has developed a baseline product design for wayfinding signage which goes beyond the dimensional graphic design.

This technical guidance is intentionally more detailed than previous versions to assure project, design and implementation teams have clear principles to follow for the production of signage - with form, detail and materiality fixed so there is consistency in presentation and update ability.

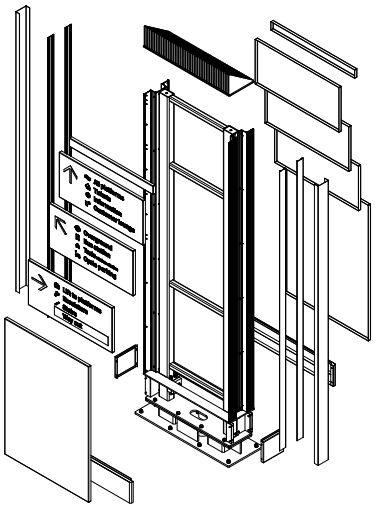
This document illustrates new instances of signage, however the product design has been developed to accommodate suitable existing structures that can be renewed using core components from the design.

The communication of this level of detail assures a durable standard system that can be re-used and evolved to fit our various station environments and controls :

- **Look and Feel**
- **Materiality and Finish**
- **Product Construction**
- **Product Update Ability**
- **Performance Specification**

The following section should be read in conjunction with all other relevant sections of this document.

Image 8.1 cutaway section through Totem



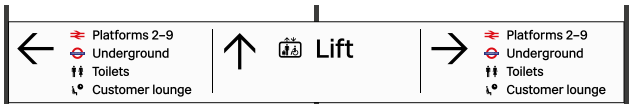
Extrusion	EXT01	EXT01	EXT02	EXT01	EXT02	EXT01	EXT01	EXT01	EXT01	EXT02	EXT02
Function/ Graphic \ Product Type	Suspended Small (SUS)	Suspended Large (SUL)	Suspended Digital (SUD)	Wall Mounted (WAM)	Wall Mounted Digital (WAD)	Projecting Small (PRS)	Projecting Large (PRL)	Post Small (POS)	Post Large (POL)	Post Digital (POD)	Totems (TOP)
Station Name (STAT_NAM)		STAT_NAM_(SUL)		STAT_NAM_(WAM)				STAT_NAM_(POS)	STAT_NAM_(POL)		
Totems (TOT)											TOT_(TOR)
Perimeter Ribbon (PER_RIB)	PER_RIB (SUS)	PER_RIB_ (SUL)	PER_RIB_ (SUD)	PER_RIB_ (WAM)	PER_RIB_ (WAD)					PER_RIB_ (POD)	
Small Directional (SML_DIR)	SML_DIR_(SUS)	SML_DIR_(SUL)	SML_DIR_(SUD)	SML_DIR_(WAM)	SML_DIR_(WAD)	SML_DIR_(PRS)	SML_DIR_(PRL)	SML_DIR_(POS)	SML_DIR_(POL)	SML_DIR_(POD)	
Large Directional (LRG_DIR)	LRG_DIR_(SUS)	LRG_DIR_ (SUL)	LRG_DIR_(SUD)	LRG_DIR_ (WAM)	LRG_DIR_ (WAD)		LRG_DIR_(PRL)	LRG_DIR_ (POS)	LRG_DIR_ (POL)	LRG_DIR_ (POD)	
Identification (ID)	ID_ (SUS)			ID_(WAM)		ID_(PRS)	ID_(PRL)	ID_(POS)			
Vertical Circulation (VIR_C)	VIR_C_(SUS)			VIR_C_(WAM)				VIR_C_(POS)	VIR_C_(POL)		
Small Slimline Directional (SML_SDIR)	SML_SDIR_ (SUS)			SML_SDIR_(WAM)		SML_SDIR_ (PRS)		SML_SDIR_(POS)			
Large Slimline Directional (LRG_SDIR)	LRG_SDIR_ (SUS)			LRG_SDIR_ (WAM)			LRG_SDIR_ (PRL)				
Large Platform Number (LRG_PLT_NUM)	LRG_PLT_NUM_ (SUS)	LRG_PLT_NUM_ (SUL)	LRG_PLT_NUM_ (SUD)	LRG_PLT_NUM_ (WAM)	LRG_PLT_NUM_ (WAD)			LRG_PLT_NUM_ (POS)	LRG_PLT_NUM_ (POL)	LRG_PLT_NUM_ (POD)	
Small Platform Number (SML_PLT_NUM)	SML_PLT_NUM_ (SUS)			SML_PLT_NUM_ (WAM)				SML_PLT_NUM_ (POS)	SML_PLT_NUM_ (POL)		
Platform Supergraphics (SUG)				PLT_S_(WAM)							
Platform Totem Signs (PLT_TOT)											PLT_TOT_(TOP)
Platform Station Identifier (PLT_SI)	PLT_SI_(SUS)	PLT_SI_(SUL)		PLT_SI_(WAM)				PLT_SI_(POS)	PLT_SI_(POL)		

Table 8.2 Application Matrix

Sign Family & Product Application Matrix

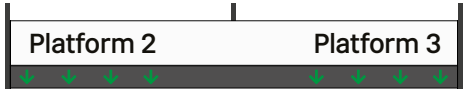
The sign family described in Section 6 details all basic key planning, functional and graphic aspects of the design.

The Application Matrix in Table 8.2 on this page demonstrates how these are mapped to the appropriate product types featured in this Section.



Suspended Large (SUL)

Suspended Small (SUS)

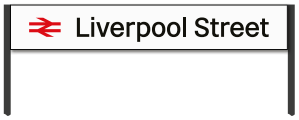


Suspended Digital (SUD)

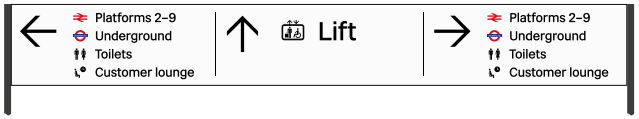
Wall Mounted (WAM)

Projecting Small (PRS)

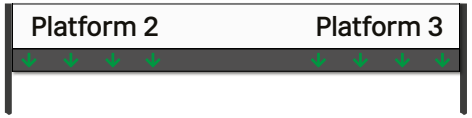
Projecting Large (PRL)



Post Small (POS)



Post Large (POL)



Post Digital (POD)

Wall Mounted Digital (WAD)

Supergraphic (SUG)

Totem Platform(TOP)

Totem Routing(TOR)

Product Types
Network Rail's wayfinding signage family consists of a range of suspended, post-mounted and wall-mounted perimeter, projecting, supergraphic, digital and totem based product types as shown on this page. These products and associated material specifications should be used to achieve a high level of consistency and durability of signs across the network.

A summary of each product type available is provided in this section. Each can be adapted to suit location-specific wayfinding requirements together with graphic layout options.

These options, and a construction summary for each individual type, is further detailed in the following pages.

It is highly recommended that the layout and installation of signage is undertaken by signage designers and suppliers registered under the Directory of the Sign Design Society.

Image 8.2 Product Types

Image 8.3.1 London Liverpool Street

8.3 Design Overview

Image 8.3.2 London Liverpool Street

Design in Context
The design is shown here in context, demonstrating how the three dimensional products, look and feel compliments the wayfinding graphic design.

Great care should always be exercised in the location and orientation of signage to avoid any localised reflective glare from panels.

NOTE: These images are presented as visualisations until real physical examples and photography can be shared. The visualisation on this page therefore does not represent a real world or proposed installation, and is purposefully over-provisioned with signage and advertising products to illustrate location options.

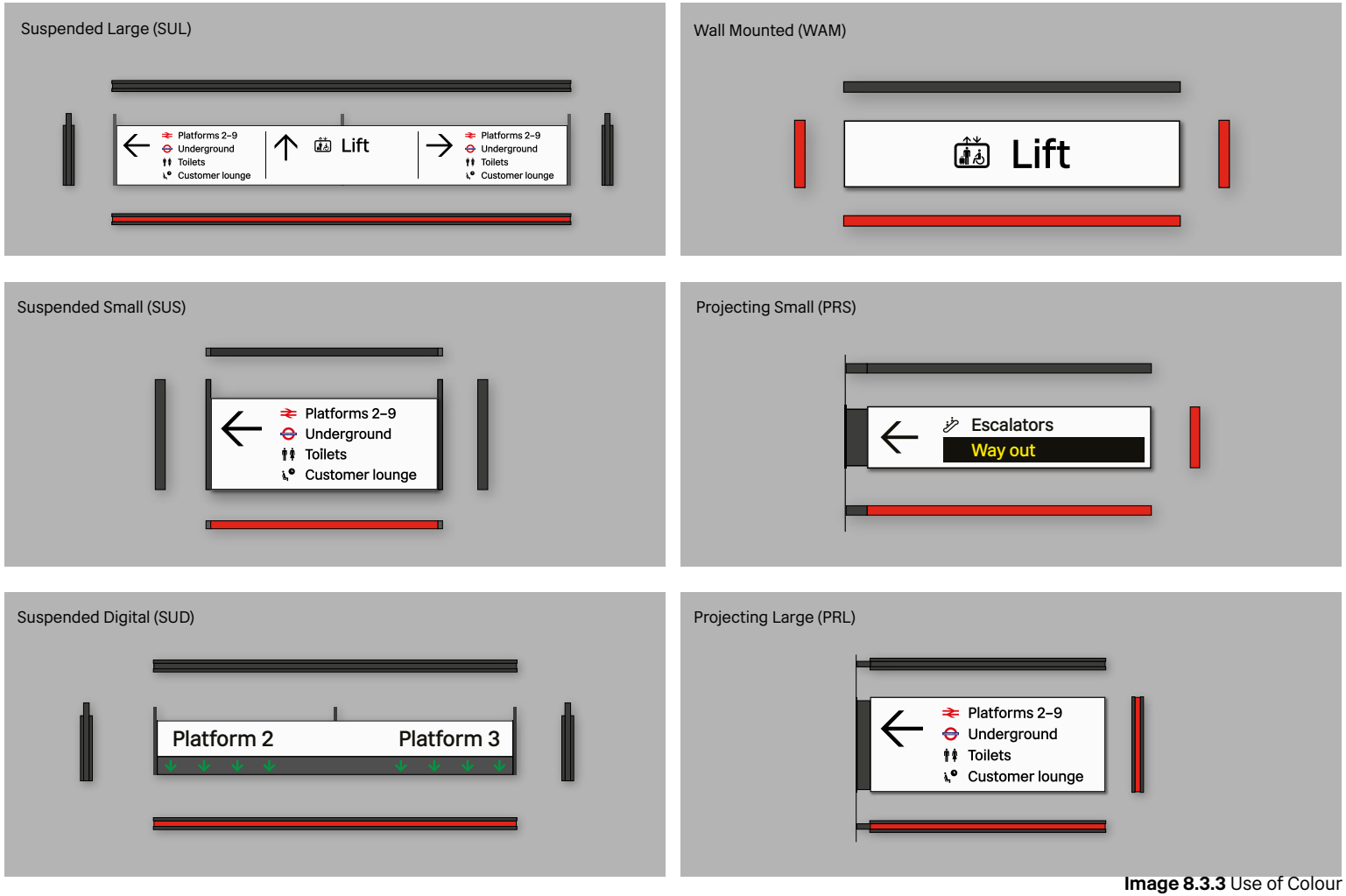


Image 8.3.3 Use of Colour

Use of Colour

The use of colour and finish is detailed here. A contrasting framing colour of black or red may be used where contrast is desired against a background.

Red may be used as an accent colour that increases the visibility of the sign in certain station environments. However particular attention should be paid to the use of red, and to which surface it is consistently applied.

- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

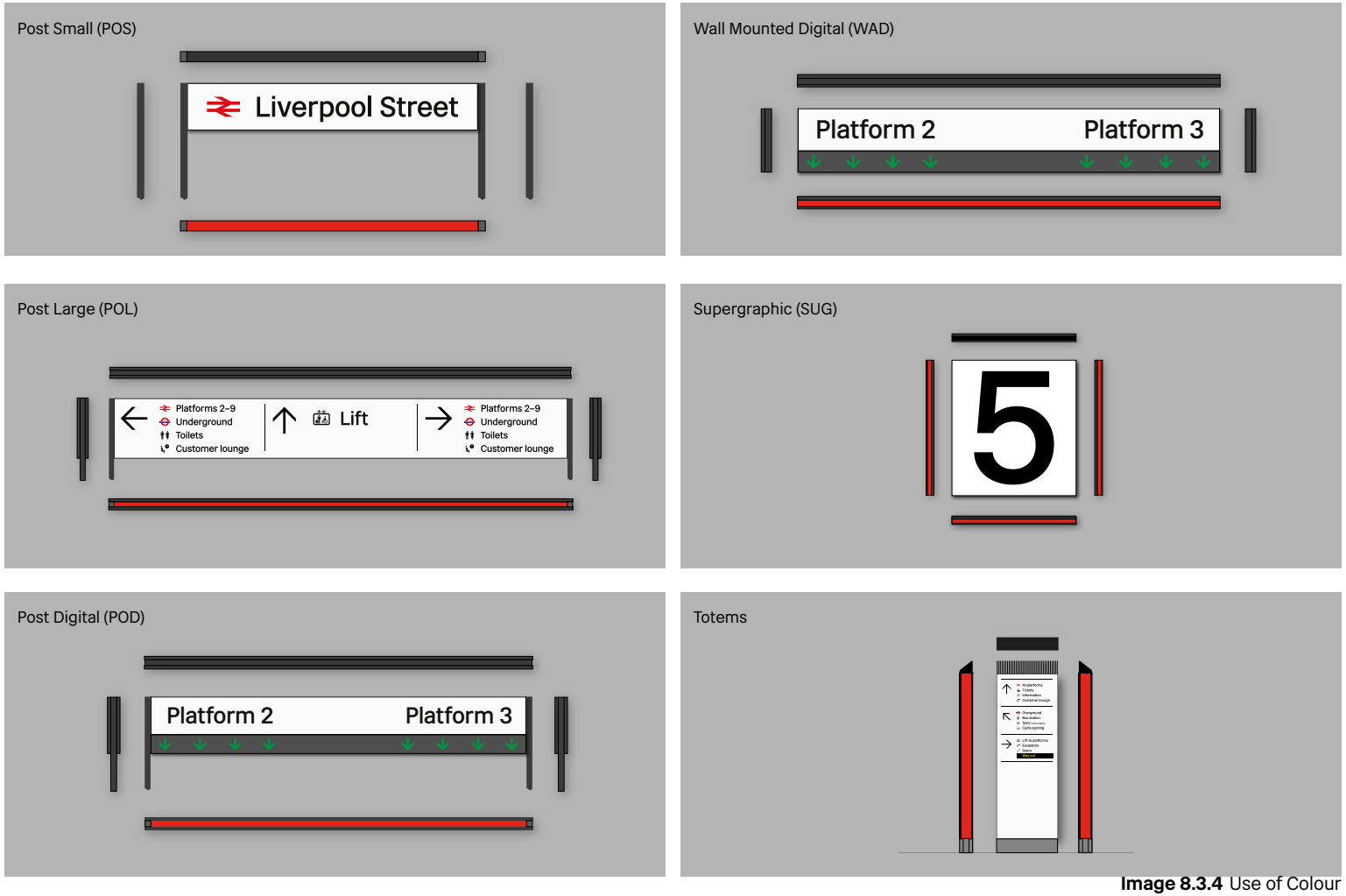


Image 8.3.4 Use of Colour

Use of Colour

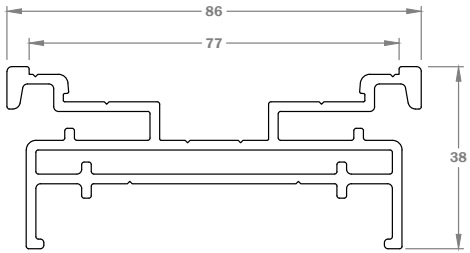
Durability and colour clash should be carefully considered when using colours. If in doubt, use as few colours as possible and avoid colours which may conflict with safety signs.

Maintenance should also be considered when specifying colours. Using several may increase renewal costs, and may prove difficult to match or repeat.

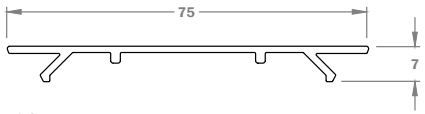
Some colours (such as red and green) may fade in bright sunlight, and therefore sign location should be carefully considered.

- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

8.3 Design Overview



EXT01



EXT03

Construction Type 1
Utilising aluminium extrusion EXT01 products can be single or double sided, and able to carry various sizes of wayfinding panels.

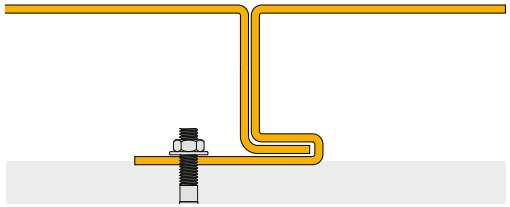
Wayfinding panels are secure yet easy to update, EXT03 is a removable cap that conceals all fixings and ultimately gives access to the internal parts.

EXT03 is also used to vary the colour of surfaces as required.

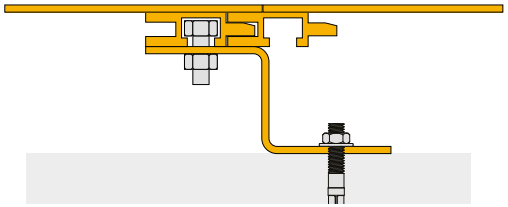
8.3 Design Overview

Construction Type 1
Suitable for a variety of installation scenarios : wall mounted, suspended, projected and post mounted. Combining with additional fabricated frames and structures increases the flexibility of application. Joins between wayfinding panels are preferred as simple butt joins, however other solutions are acceptable if panel spans require.

Extreme Panel Spans

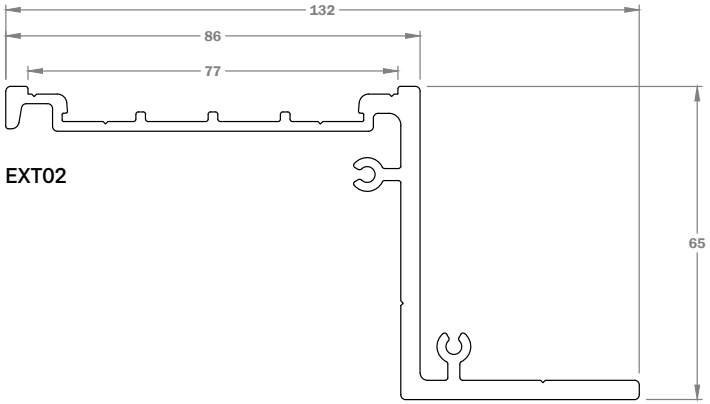


Large Panel Spans

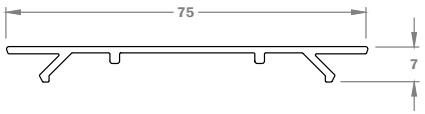


Small Panel Spans

8.3 Design Overview



EXT02



EXT03

Construction Type 2
Utilising aluminium extrusion EXT02 can support primary wayfinding but also accommodate integration with other systems such as internal illumination, digital displays, cameras, signal boosters, speakers etc.

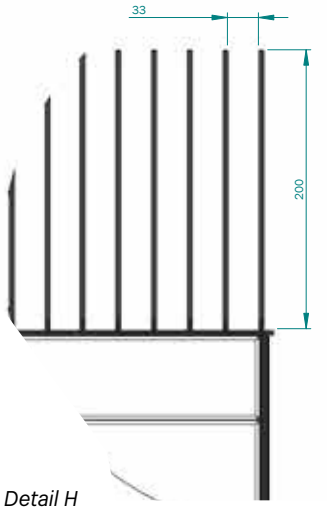
Wayfinding panels are secure yet easy to update, EXT03 is a removable cap that conceals all fixings and ultimately gives access to the internal parts.

EXT03 is also used to vary the colour of surfaces as required.

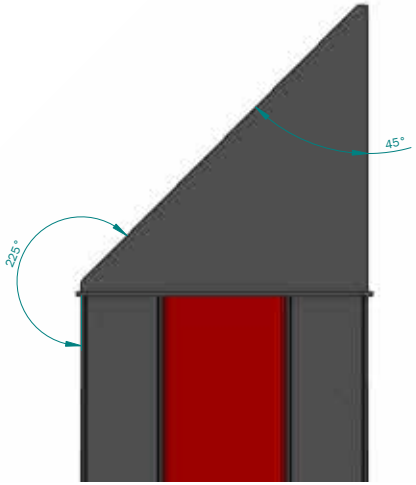
Image 8.3.4 Extrusion EXT02 Examples

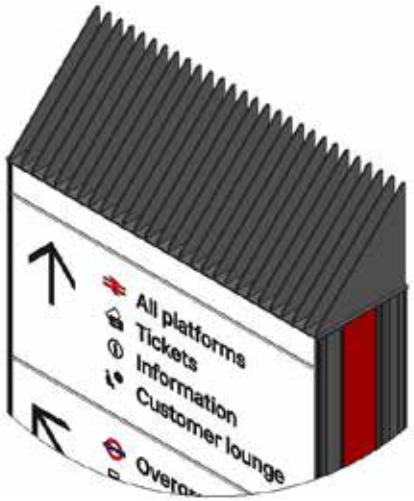
Construction Type 2
Though larger overall than Type 1 and able to combine with more significant internal framing and structures to create the Totem product types, it is still able to be used in similar installation scenarios: wall mounted, suspended, projected and post mounted.

Type 1 and Type 2 can also be used together in a single product when required.



Detail H





Integrated Bird Deterrent
Totems feature an integrated bird deterrent at the top which is of sloped fin profile or comb design, and is finished in a consistent colour with the sign framing.

This is removable for cleaning and future replacement as required.

The spacing of the fins and the angle are to be consistent with the noted illustration here. The angle of the slope has been designed in accordance with existing models and the spacing of the fins are equivalent to off the shelf bird spikes as noted in the Non Integrated solution.

Integrated Bird Deterrent

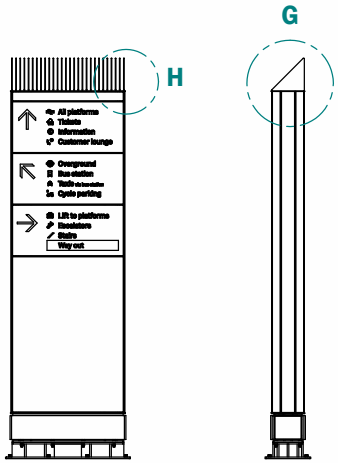
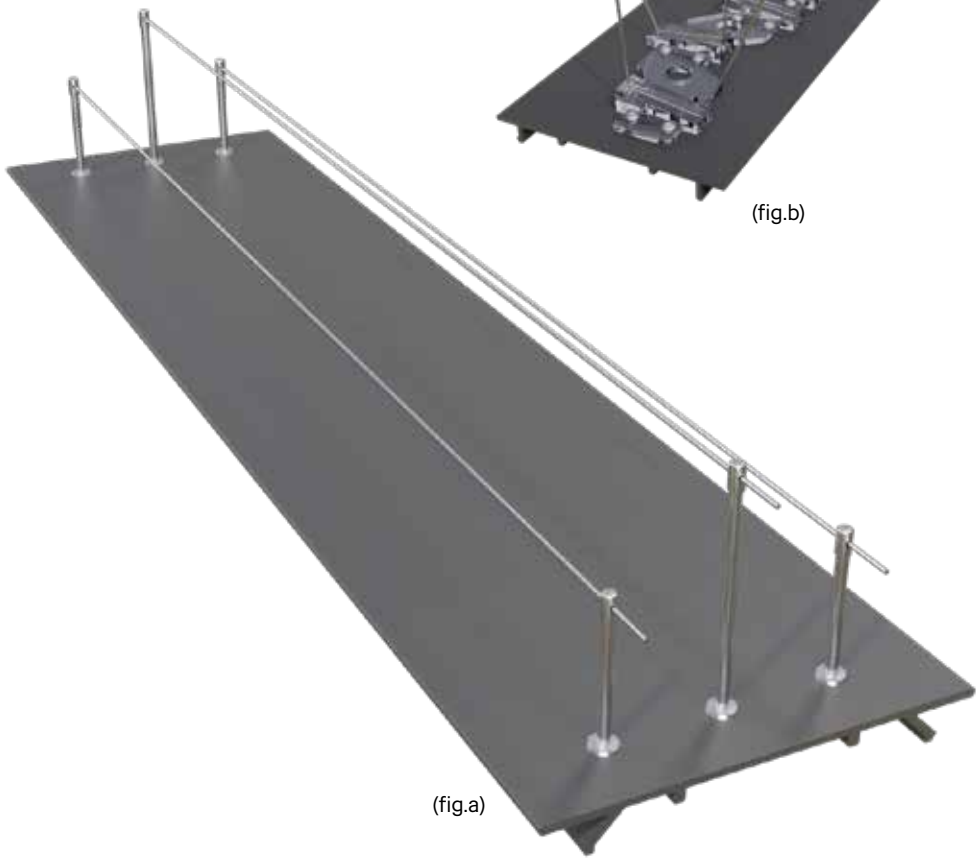
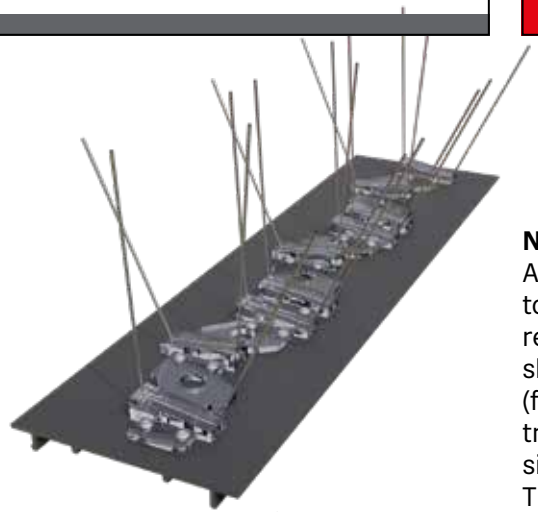


Image 8.3.5 Integrated Bird Deterrent Comb Profile Option

8.3 Design Overview



(fig.a)



(fig.b)

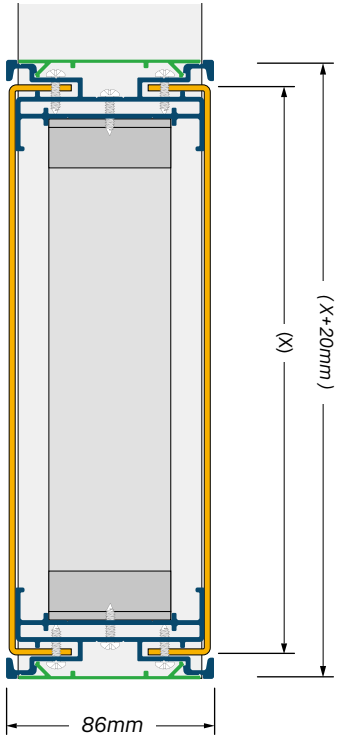
Non-Integrated Bird Deterrent
An off the shelf solution can be applied to any of the sign types shown. We would recommend a similar product to that shown here with a mounted wire system (fig.a), alternately in some cases the traditional spikes can be used on smaller signs(fig.b).
The visual impact and visibility of the bird spikes should be kept to a minimum and where possible either clear or matching components
should be used.

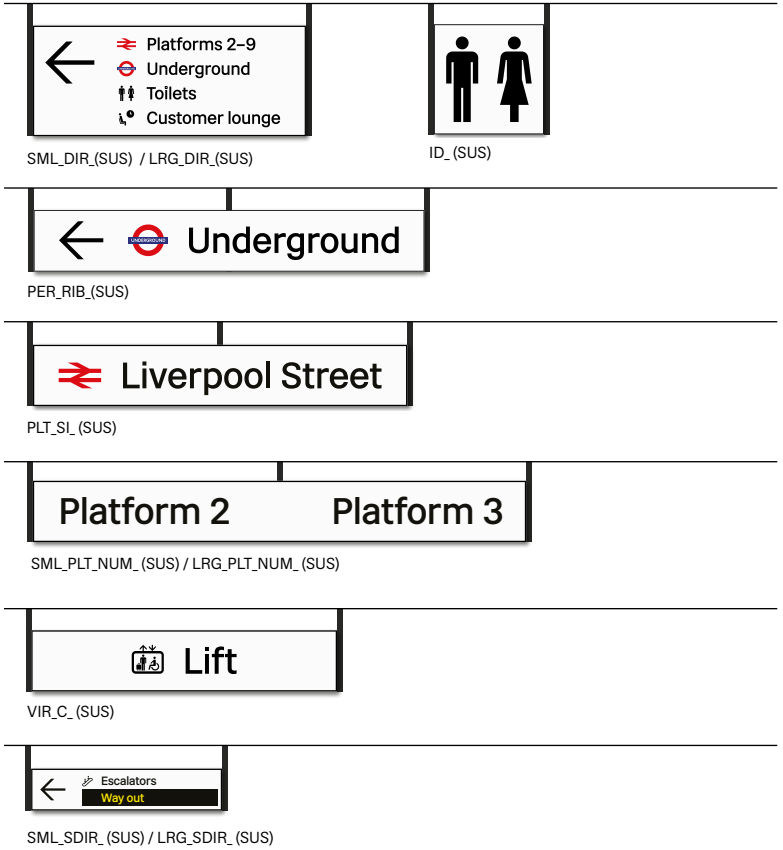
Both of the extrusion profiles allow for mechanical fixings of bird deterrents into the removable cap component which can be removed for the purpose of cleaning or replacement.

Non-Integrated Bird Deterrent

Image 8.3.6 Non-Integrated Bird Deterrent Wires and Spikes Options

8.4 Suspended Small (SUS)





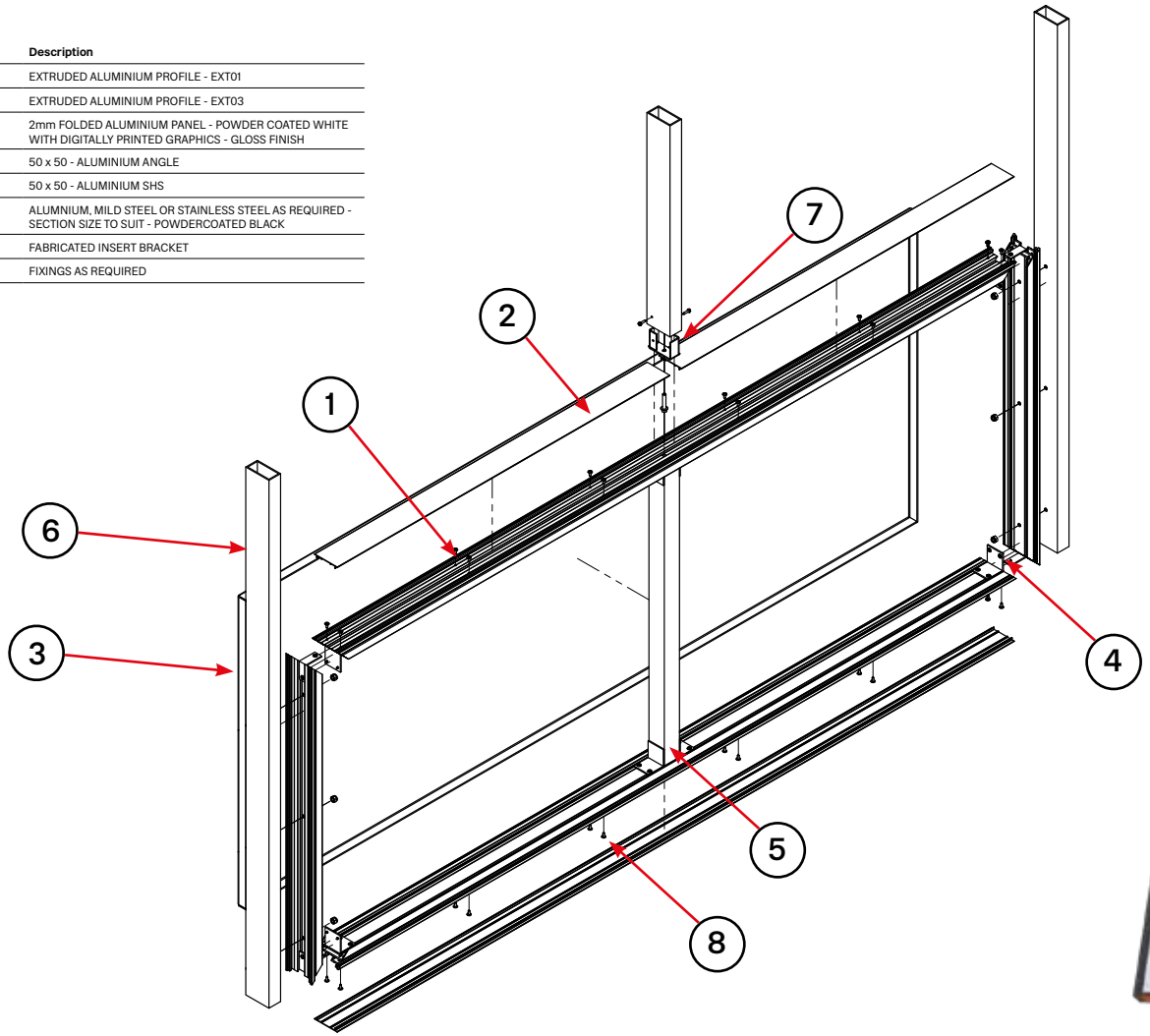
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Station Name / Perimeter Ribbon / Small Directional /Large Directional / Identification / Vertical Circulation / Small Slimline Directional / Large Slimline Directional / Small Platform Number / Large Platform Number / Platform Station Identifier.

8.4 Suspended Small (SUS)

Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL BRACE	50 x 50 - ALUMINIUM SHS
6	DROPS	ALUMNIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDERCOATED BLACK
7	DROP BRACKET	FABRICATED INSERT BRACKET
8	FIXINGS	FIXINGS AS REQUIRED

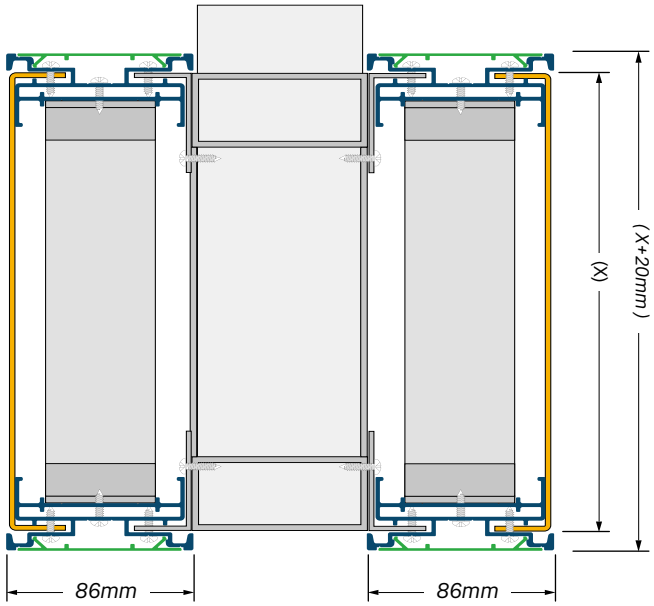


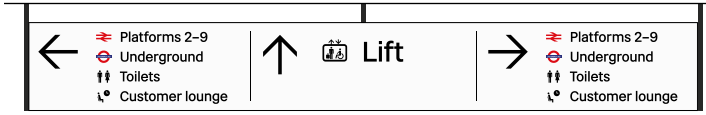
Suspended Small Signs.
The small suspended sign can be both single and double sided. It can have an integrated internal frame for extra strength and has no visible fixings around the sign itself.

The removable caps to the top and bottom of the sign are not mitred and terminate directly into the right / left suspension drop. The drop should sit within the track to the right and left of the internal extrusion profile.

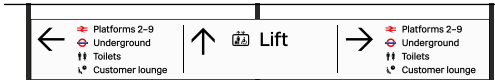
Use non integrated
Bird deterrent

8.4 Suspended Large (SUL)

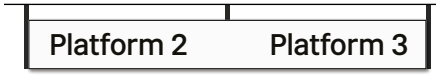




LRG_DIR_(SUL)

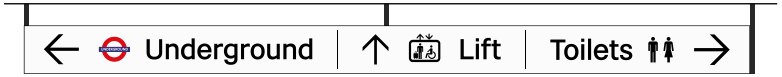


SML_DIR_(SUL)



SML_PLT_NUM_ (SUL) / LRG_PLT_NUM_ (SUL)

PLT_SI_ (SUL)



PER_RIB_(SUL)

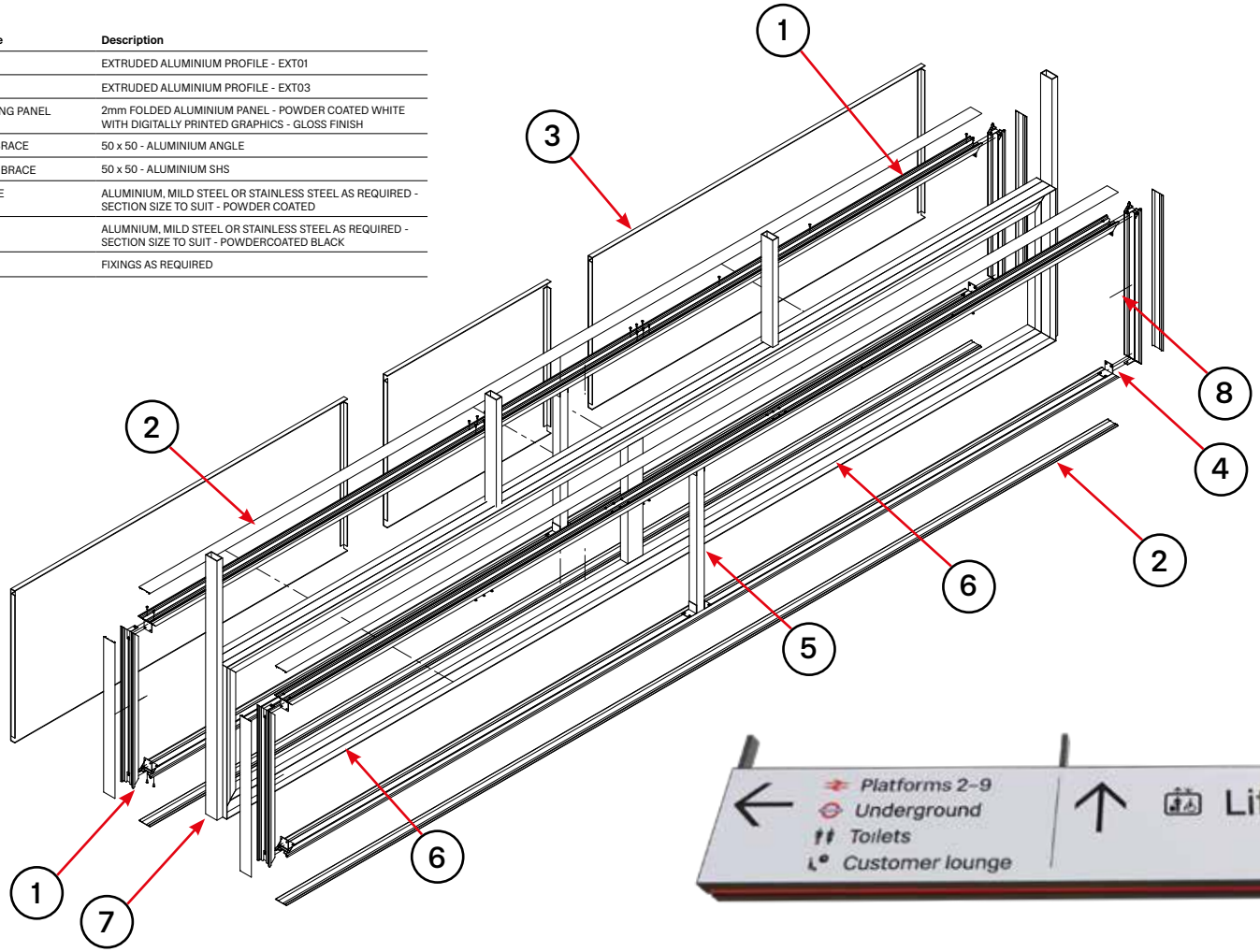
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Station Name / Perimeter Ribbon / Small Directional /Large Directional / Small Platform Number / Large Platform Number / Platform Station Identifier.

8.4 Suspended Large (SUL)

Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL BRACE	50 x 50 - ALUMINIUM SHS
6	SUBFRAME	ALUMINIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDER COATED
7	DROPS	ALUMNIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDERCOATED BLACK
8	FIXINGS	FIXINGS AS REQUIRED

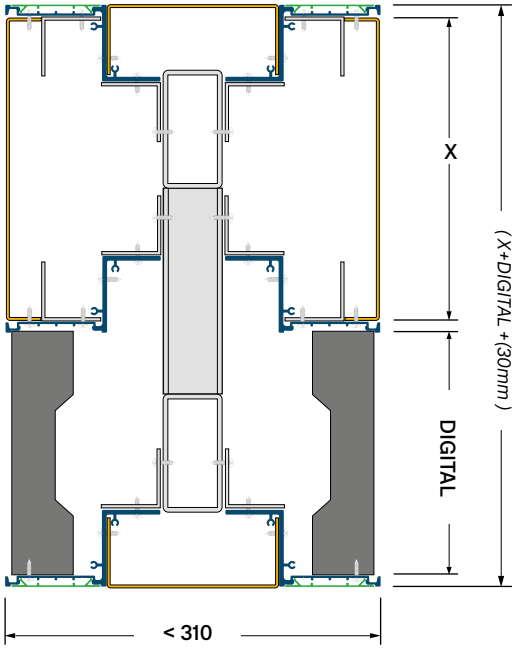


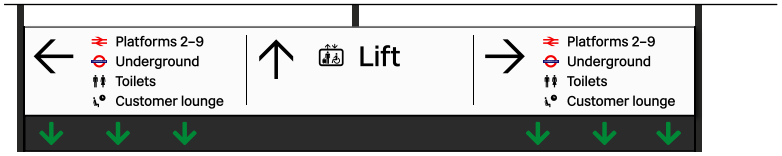
Suspended Large Signs.
When a suspended sign is required and the practical implications of either the size or location require more significant internal structure, the larger suspended product should be used.

The construction allows for an internal frame of multiple materials and can suit almost any size of section required.

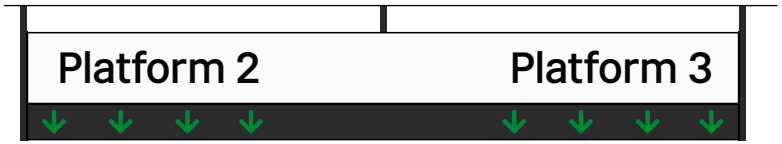
Use non integrated
Bird deterrent

8.4 Suspended Digital (SUD)





LRG_DIR_ (SUD)



LRG_PLT_NUM_(SUD)

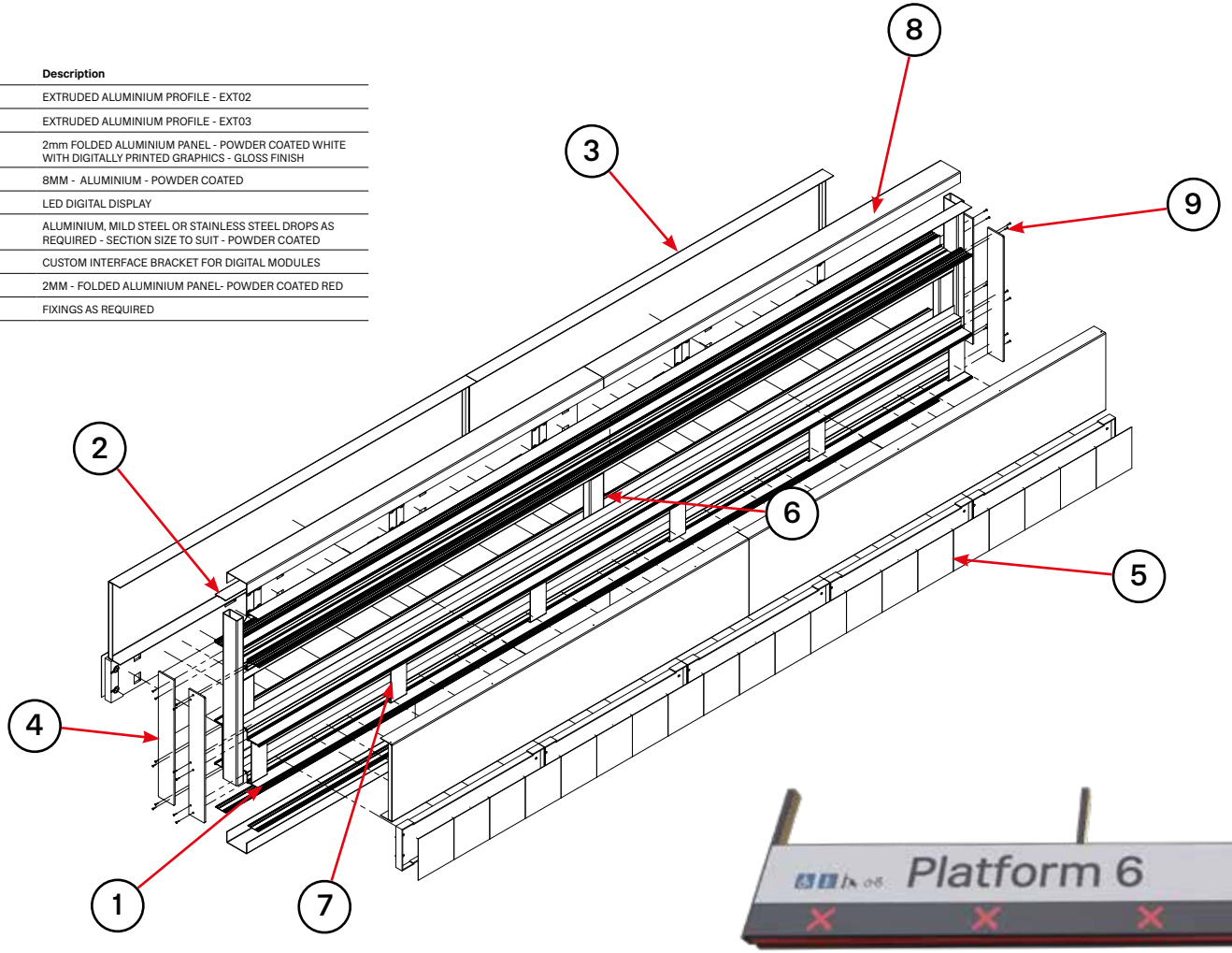
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT02
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Perimeter Ribbon / Small Directional /Large Directional / Large Platform Number.

8.4 Suspended Digital (SUD)

Part No.	Part Name	Description
1	EXT02	EXTRUDED ALUMINIUM PROFILE - EXT02
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	END CAP	8MM - ALUMINIUM - POWDER COATED
5	DIGITAL DISPLAY	LED DIGITAL DISPLAY
6	SUBFRAME	ALUMINIUM, MILD STEEL OR STAINLESS STEEL DROPS AS REQUIRED - SECTION SIZE TO SUIT - POWDER COATED
7	BRACKET	CUSTOM INTERFACE BRACKET FOR DIGITAL MODULES
8	INFILL	2MM - FOLDED ALUMINIUM PANEL- POWDER COATED RED
9	FIXINGS	FIXINGS AS REQUIRED

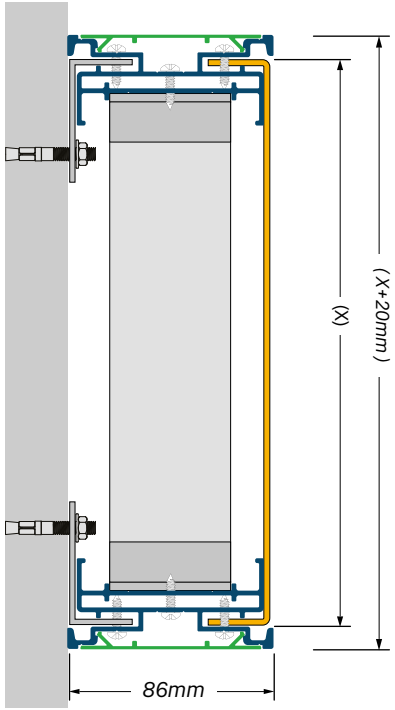


Suspended Digital Signs.
When a suspended sign is required to have other integrated systems such as digital display the type 2 construction should be used.

The construction allows for an internal frame of multiple materials and can suit almost any size of section required.

Use non integrated
Bird deterrent

8.4 Wall Mounted (WAM)



SML_DIR_(WAM) / LRG_DIR_(WAM)

ID_(WAM)

SML_DIR_(WAM) / LRG_DIR_(WAM)

SUG_(WAM)

PER_RIB_(WAM)

SML_PLT_NUM_(WAM) / LRG_PLT_NUM_(WAM)

STAT_NAM_(WAM)

VIR_C_(WAM)

SML_SDIR_(WAM) / LRG_SDIR_(WAM)

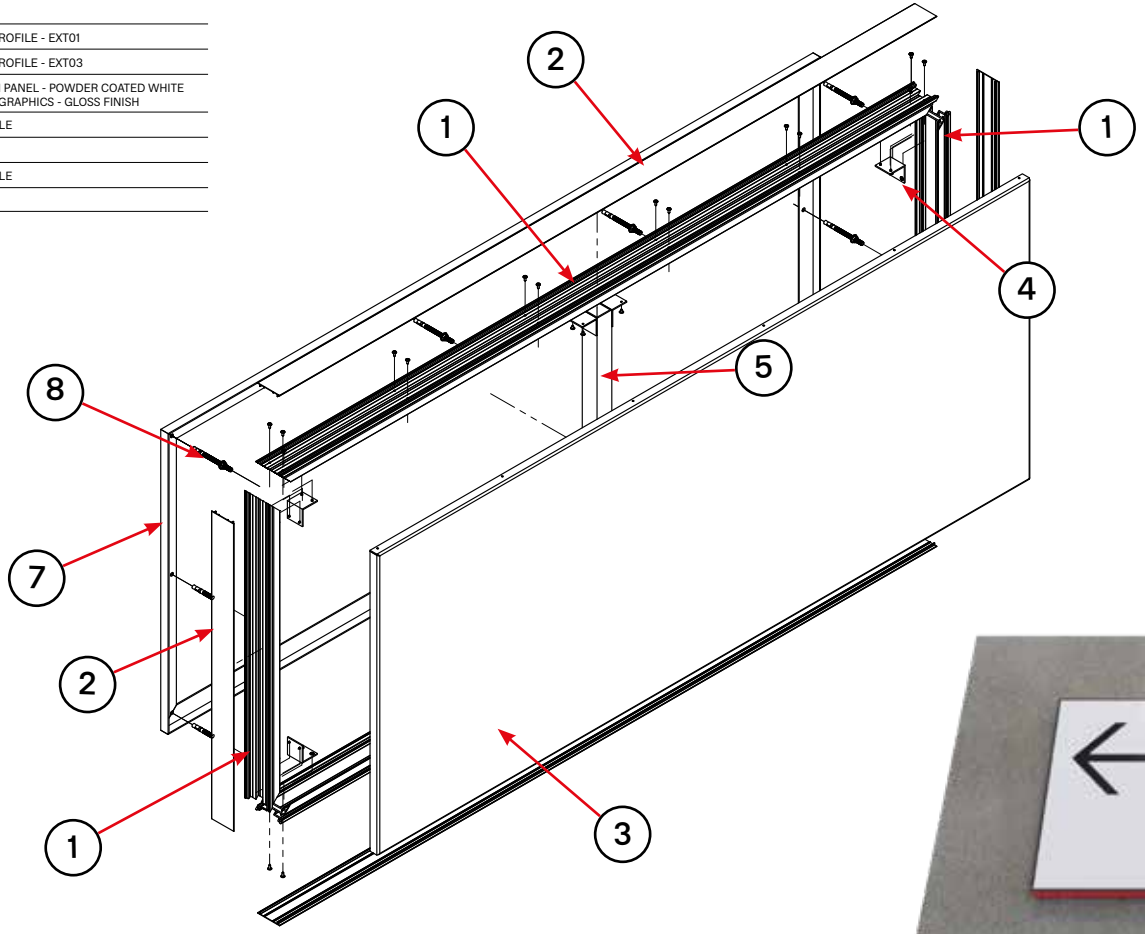
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Station Name / Perimeter Ribbon / Small Directional /Large Directional / Identification / Vertical Circulation / Small Slimline Directional / Large Slimline Directional / Small Platform Number / Large Platform Number / Platform / Platform Station Identifier.

8.4 Wall Mounted (WAM)

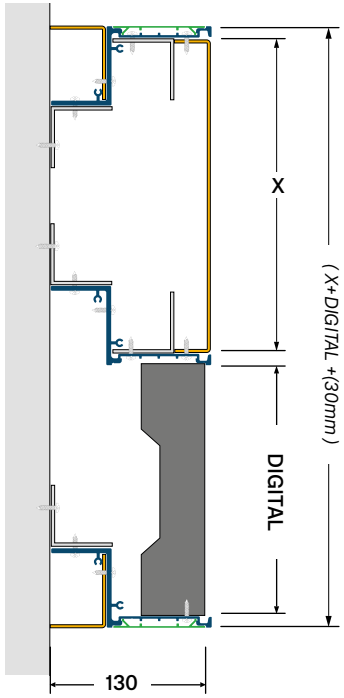
Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL BRACE	50 x 50 - ALUMINIUM SHS
7	WALL FRAME	50 x 50 - ALUMINIUM ANGLE
8	FIXINGS	FIXINGS AS REQUIRED



Wall Mounted Signs.
The basic wall mounted sign allows for the common application of small and large sizes but also extends to create longer frieze type applications.

Use non integrated
Bird deterrent

8.4 Digital Wall Mounted (WAD)



LRG_PLT_NUM_(WAD)

LRG_DIR(WAD)

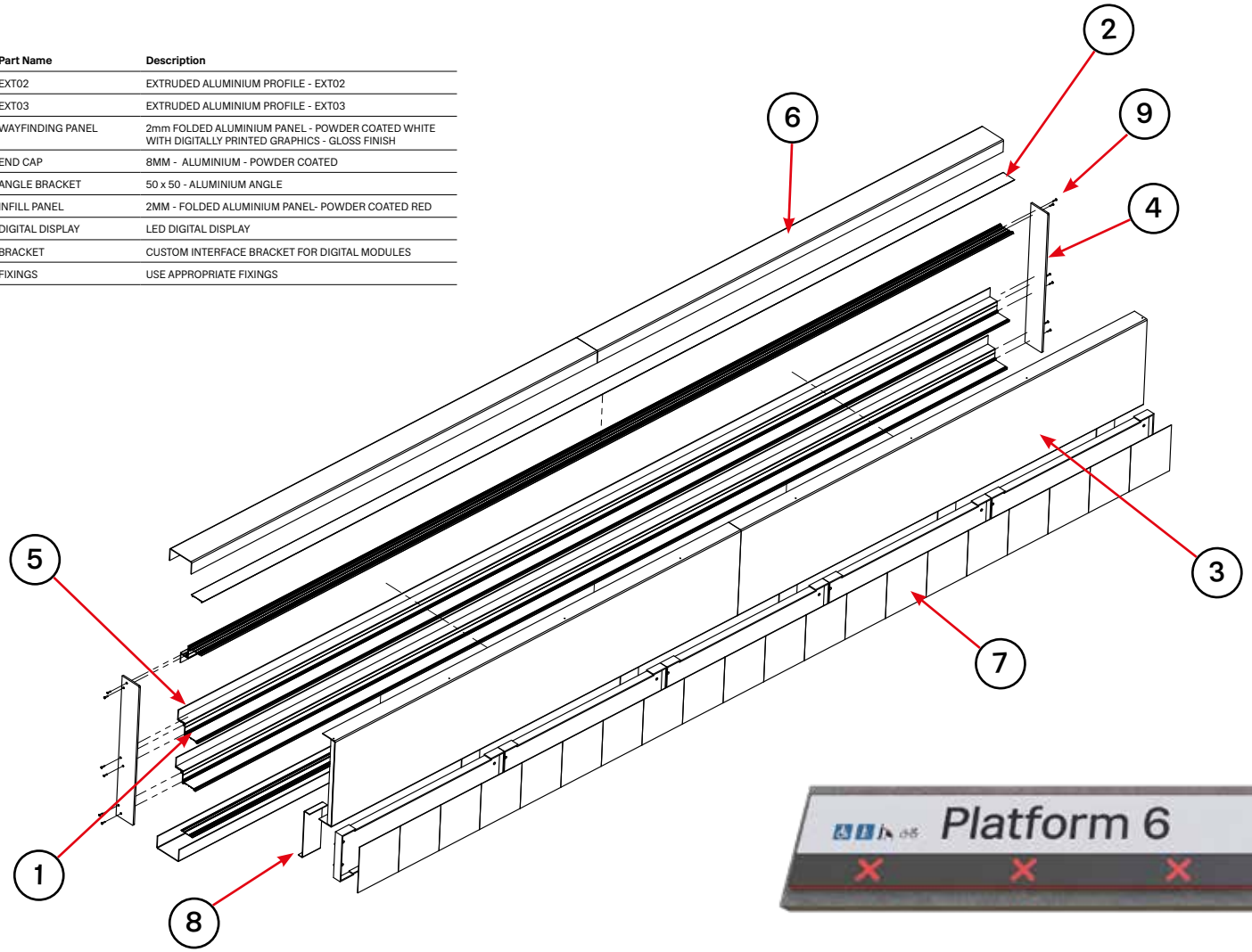
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT02
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Perimeter Ribbon / Small Directional /Large Directional / Large Platform Number.

8.4 Digital Wall Mounted (WAD)

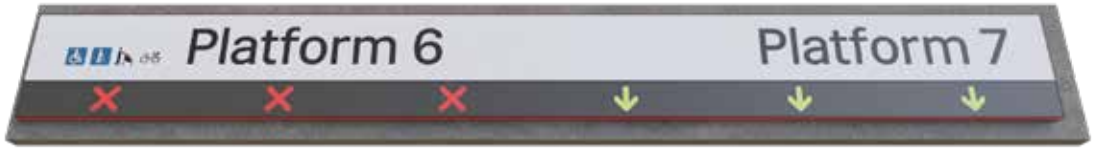
Part No.	Part Name	Description
1	EXT02	EXTRUDED ALUMINIUM PROFILE - EXT02
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	END CAP	8MM - ALUMINIUM - POWDER COATED
5	ANGLE BRACKET	50 x 50 - ALUMINIUM ANGLE
6	INFILL PANEL	2MM - FOLDED ALUMINIUM PANEL- POWDER COATED RED
7	DIGITAL DISPLAY	LED DIGITAL DISPLAY
8	BRACKET	CUSTOM INTERFACE BRACKET FOR DIGITAL MODULES
9	FIXINGS	USE APPROPRIATE FIXINGS



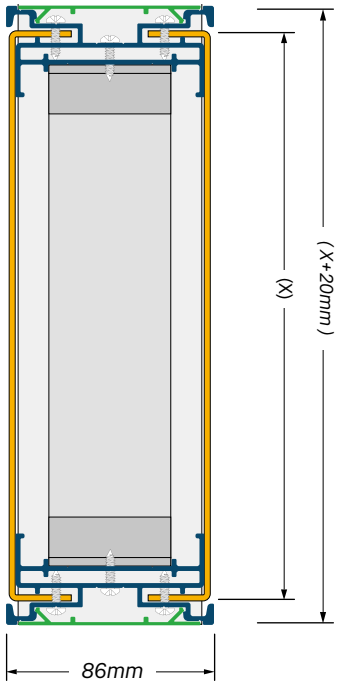
Digital Wall Mounted.
When a wall mounted sign is required to have other integrated systems such as digital display the type 2 construction should be used.

The type 2 construction shown here is no mitred at the corners, instead it is terminated at each end by a 8mm aluminium plate.

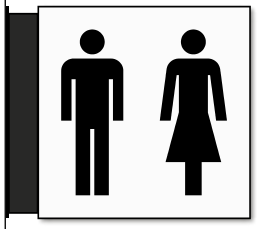
Use non integrated
Bird deterrent



8.4 Projecting Small (PRS)



SML_DIR_(PRS)



ID_(PRS)

LRG_SDIR_(PRS)

SML_SDIR_(PRS)

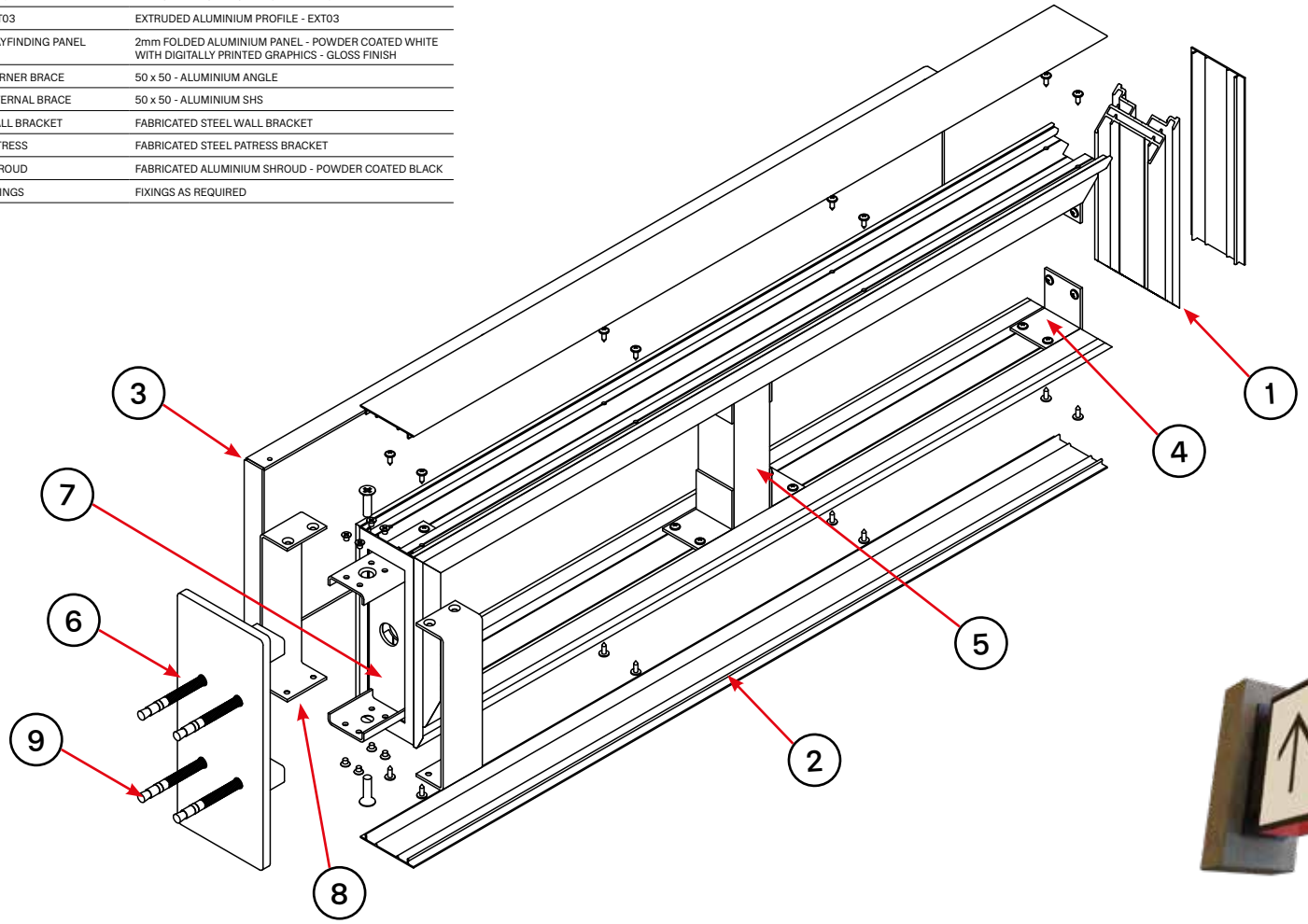
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Small Directional / Identification / Small Slimline Directional / Large Slimline Directional.

8.4 Projecting Small (PRS)

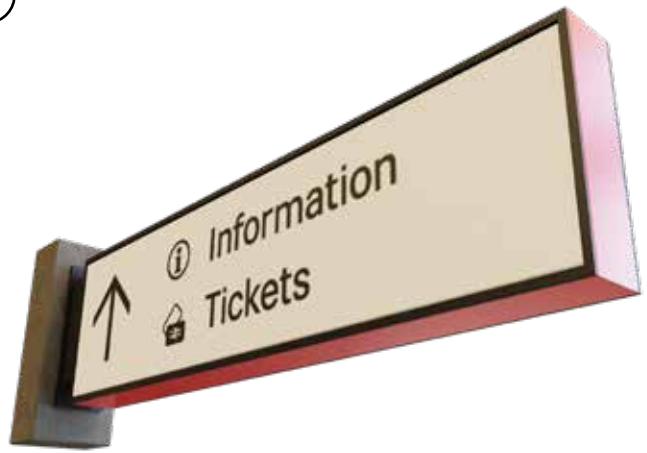
Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL BRACE	50 x 50 - ALUMINIUM SHS
6	WALL BRACKET	FABRICATED STEEL WALL BRACKET
7	PATRESS	FABRICATED STEEL PATRESS BRACKET
8	SHROUD	FABRICATED ALUMINIUM SHROUD - POWDER COATED BLACK
9	FIXINGS	FIXINGS AS REQUIRED



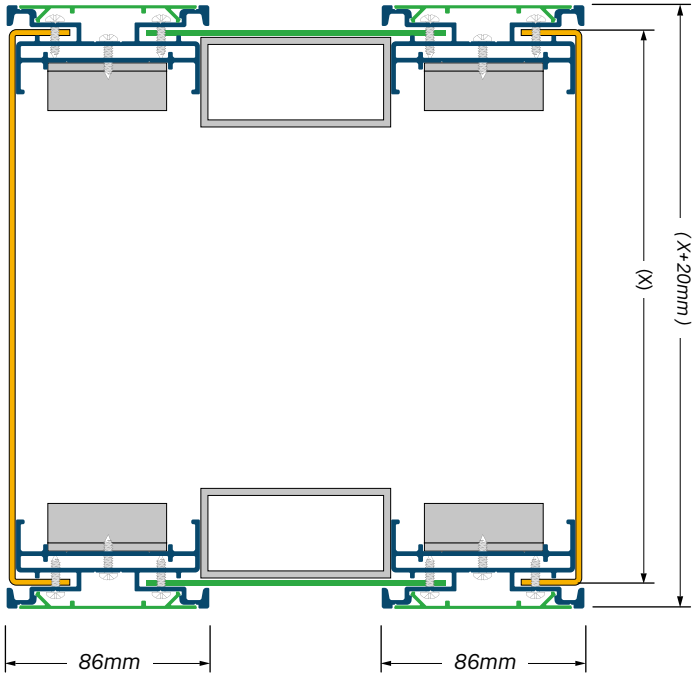
Projection Signs Small.
The small projecting sign can be both single and double sided. It can have an integrated internal frame for extra strength and has no visible fixings in the sign itself.

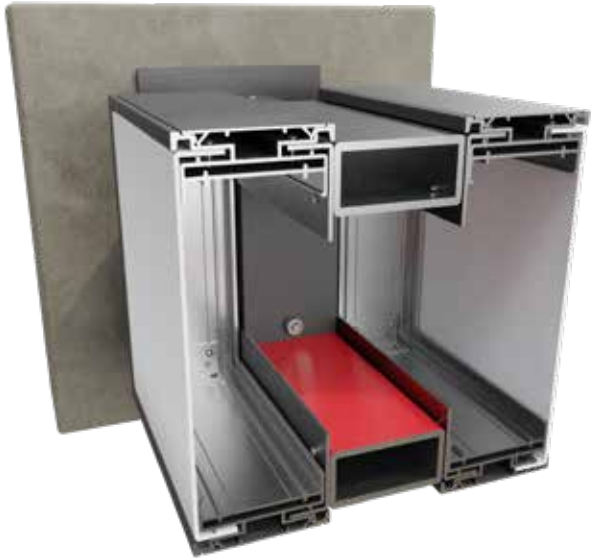
The connection bracket and shroud at the wall side integrates with the inside of the EXT01 profile providing a neat finish.

Use non integrated
Bird deterrent

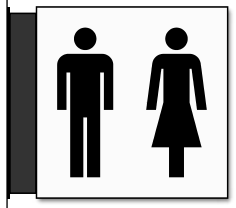


8.4 Projecting Large (PRL)





SML_DIR_(PRL)



ID_(PRL)

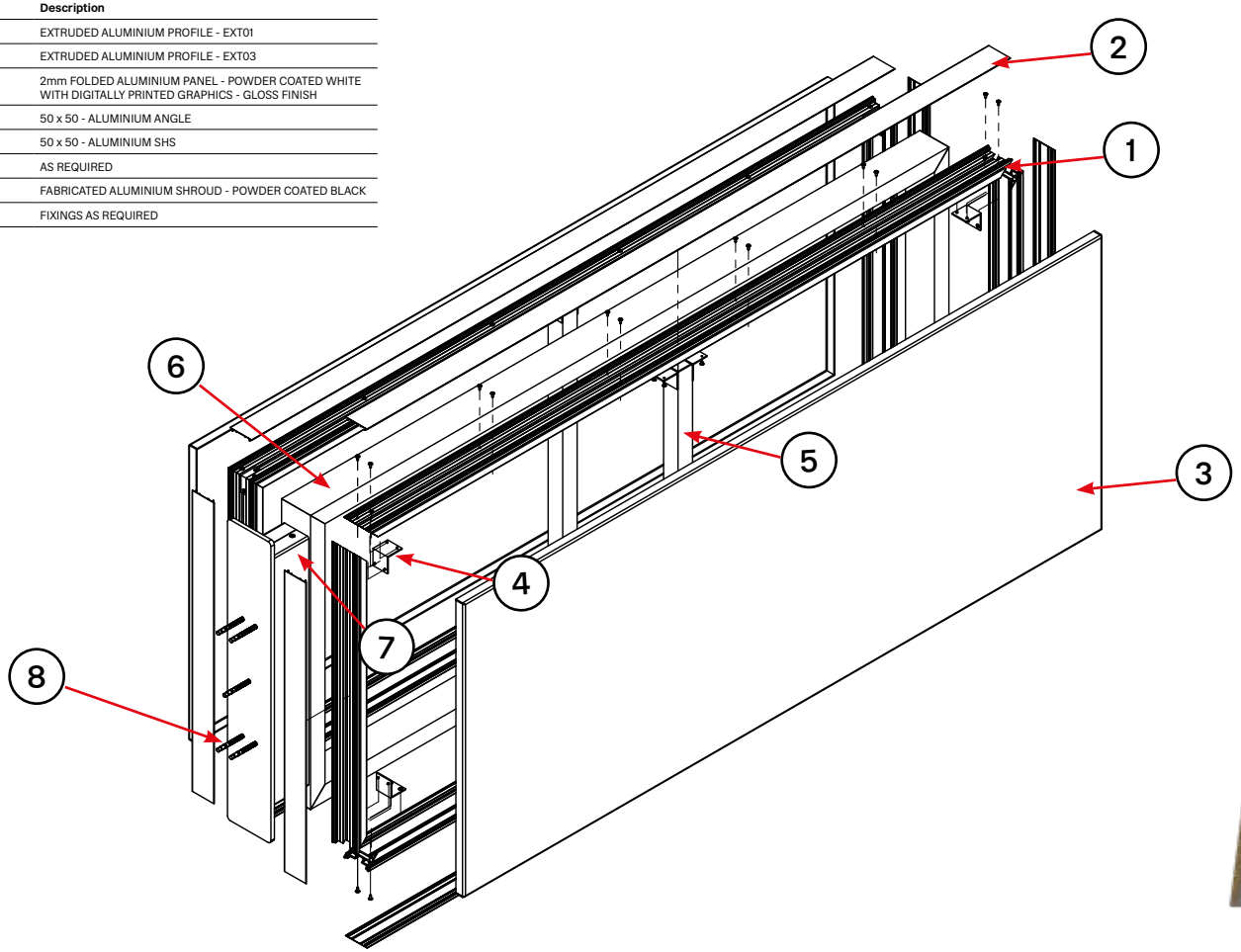
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Small Directional /Large Directional / Identification / Large Slimline Directional.

8.4 Projecting Large (PRL)

Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL BRACE	50 x 50 - ALUMINIUM SHS
6	SUB FRAME	AS REQUIRED
7	SHROUD	FABRICATED ALUMINIUM SHROUD - POWDER COATED BLACK
8	FIXINGS	FIXINGS AS REQUIRED

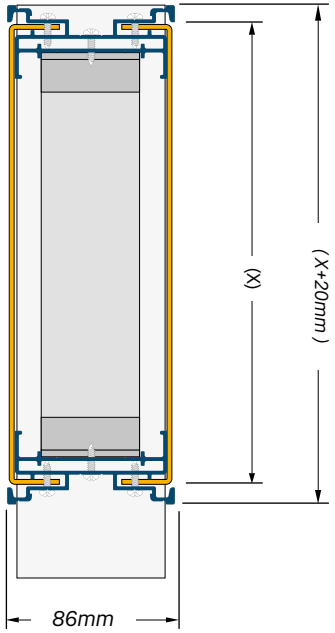


Projection Signs Large.
When a projecting sign is required and the practical implications of either the size or location require more significant internal structure, the type 1 construction can be used in combination with a central frame.

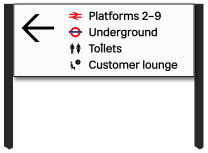
The construction allows for an internal frame of multiple materials and can suit almost any size of section required.

Use non integrated
Bird deterrent

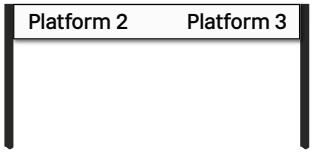
8.4 Post Small (POS)



LRG_DIR_(POS)



SML_DIR_(POS)

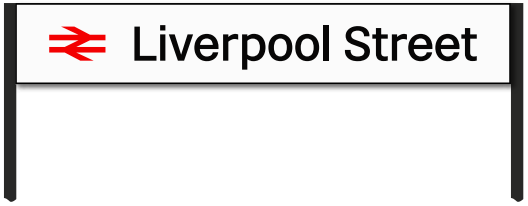


SML_PLT_NUM_(POS)

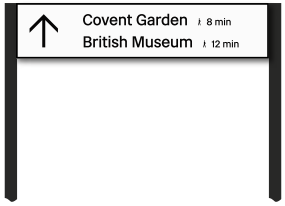
ID_(POS)

VIR_C_(POS)

PER_RIB_(POS)



PLT_SI_(POS)



SML_SDIR_(POS)

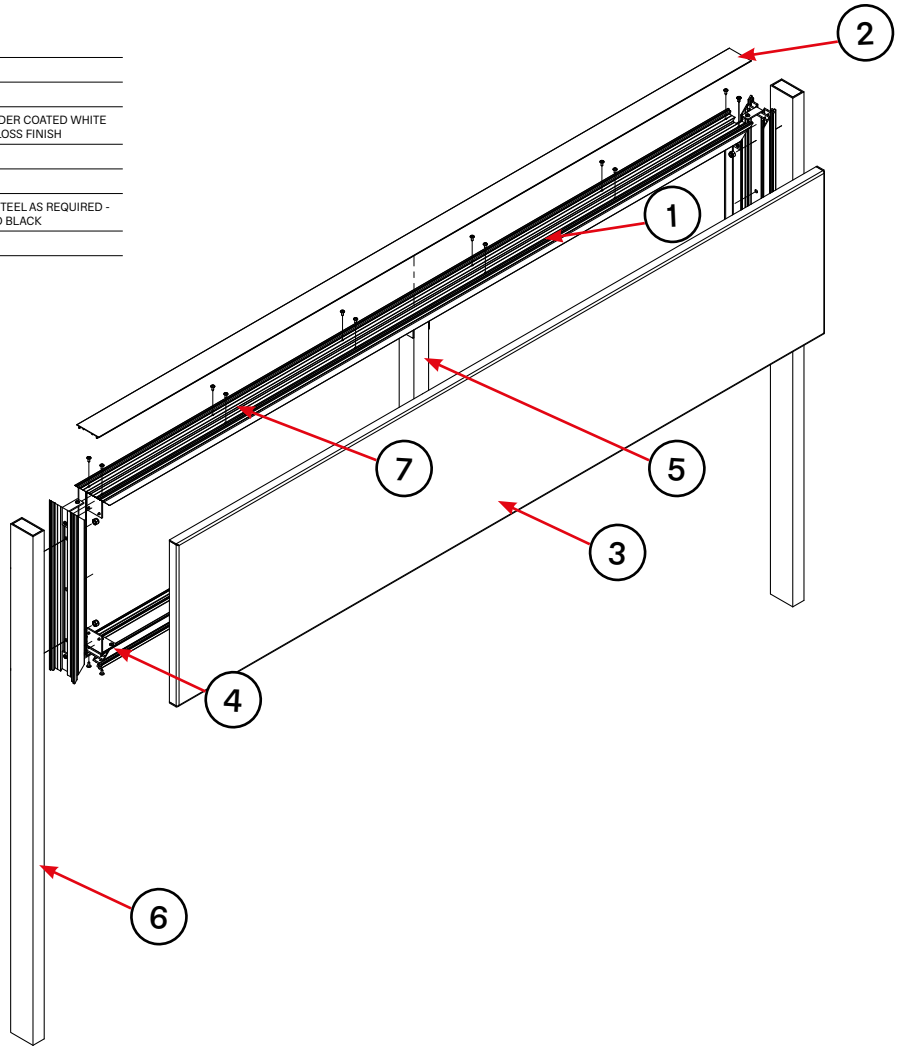
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Station Name / Small Directional /Large Directional / Identification / Vertical Circulation / Small Slimline Directional / Small Platform Number / Large Platform Number / Platform Station Identifier.

8.4 Post Small (POS)

Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL FRAME	50 x 50 - ALUMINIUM SHS
6	POSTS	ALUMNIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDERCOATED BLACK
7	FIXINGS	FIXINGS AS REQUIRED

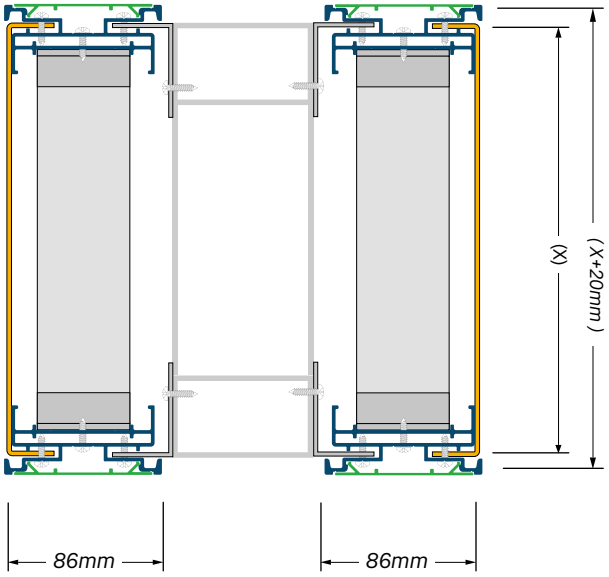


Post Small Signs.
The small post mounted sign can be both single and double sided. It can have an integrated internal frame for extra strength and has no visible fixings around the sign itself.

The removable caps to the top and bottom of the sign are not mitred and terminate directly into the right / left suspension drop. The drop should sit within the track to the right and left of the internal extrusion profile.

Use non integrated
Bird deterrent

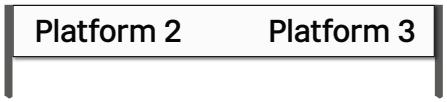
8.4 Post Large (POL)



LRG_DIR_(POL)

SML_DIR_(POL)

PER_RIB_(POL)



PLT_NUM_(POL)

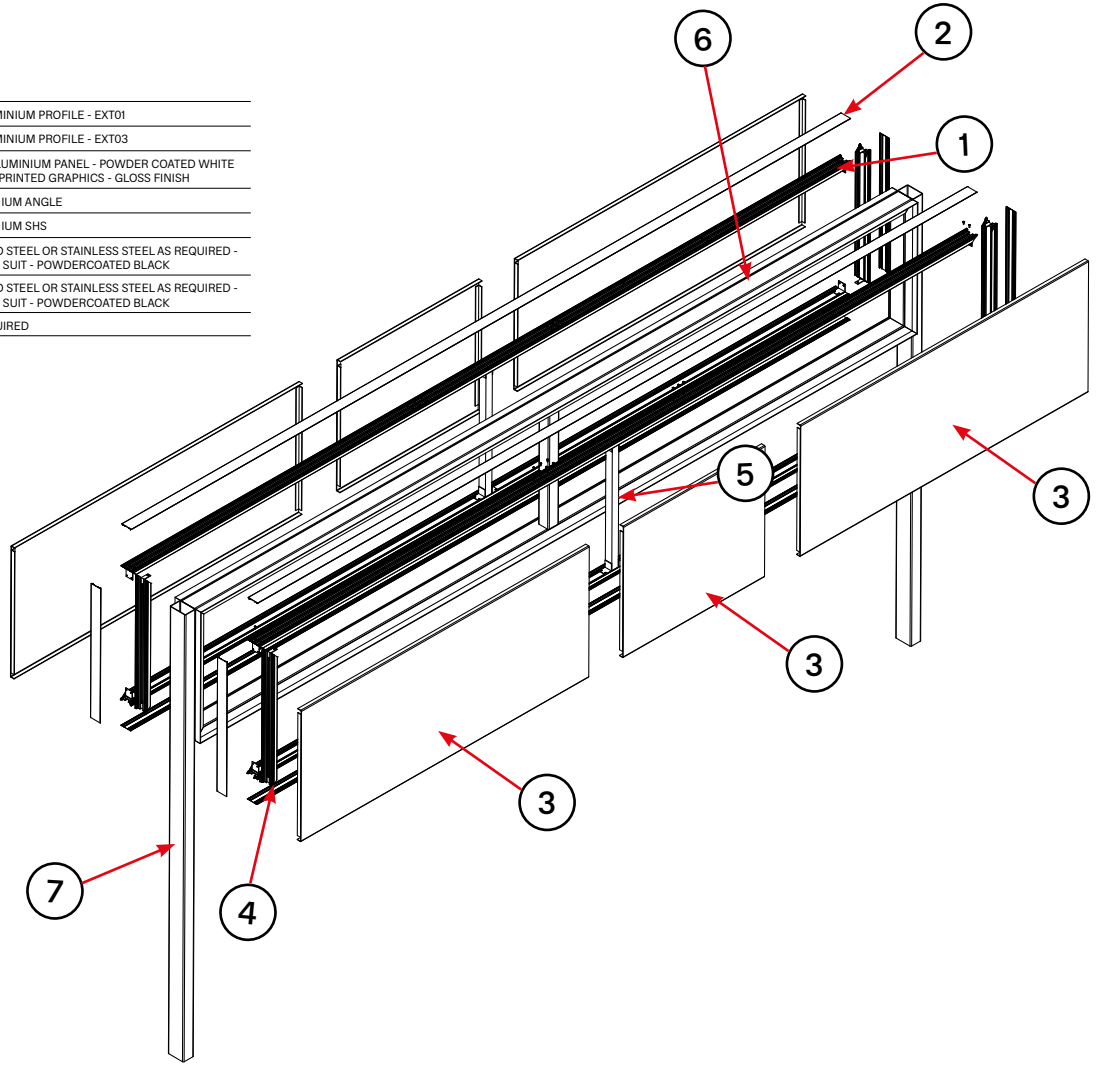
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT01
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Station Name / Small Directional /Large Directional / Vertical Circulation / Small Platform Number / Large Platform Number / Platform Station Identifier.

8.4 Post Large (POL)

Part No.	Part Name	Description
1	EXT01	EXTRUDED ALUMINIUM PROFILE - EXT01
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	CORNER BRACE	50 x 50 - ALUMINIUM ANGLE
5	INTERNAL FRAME	50 x 50 - ALUMINIUM SHS
6	SUBFRAME	ALUMNIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDERCOATED BLACK
7	POSTS	ALUMNIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDERCOATED BLACK
8	FIXINGS	FIXINGS AS REQUIRED

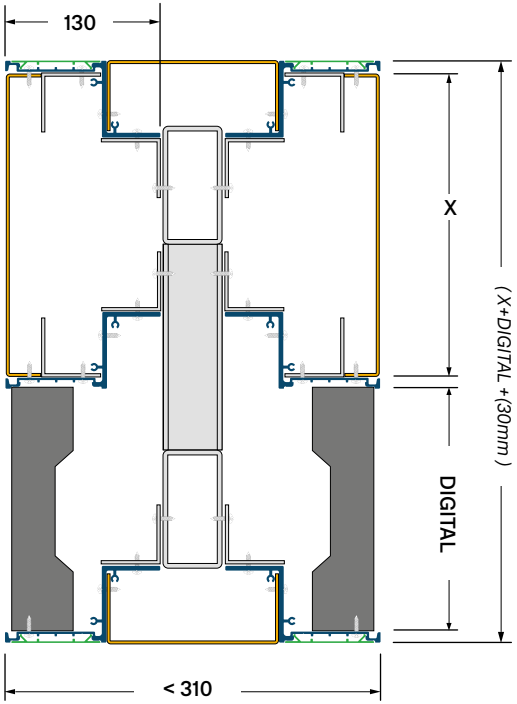


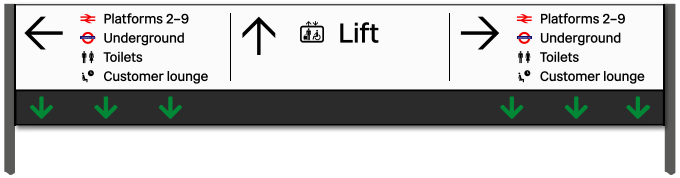
Post Large Signs.
When a post mounted sign is required and the practical implications of either the size or location require more significant internal structure, the type 1 construction can be used in combination with a central frame.

The construction allows for an internal frame of multiple materials and can suit almost any size of section required.

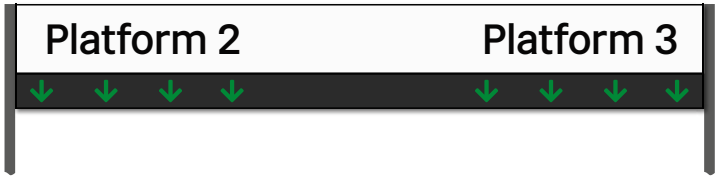
Use non integrated
Bird deterrent

8.4 Post Digital (POD)





SML_DIR_(POD) / LRG_DIR_(POD)



LRG_PLT_NUM(POD)

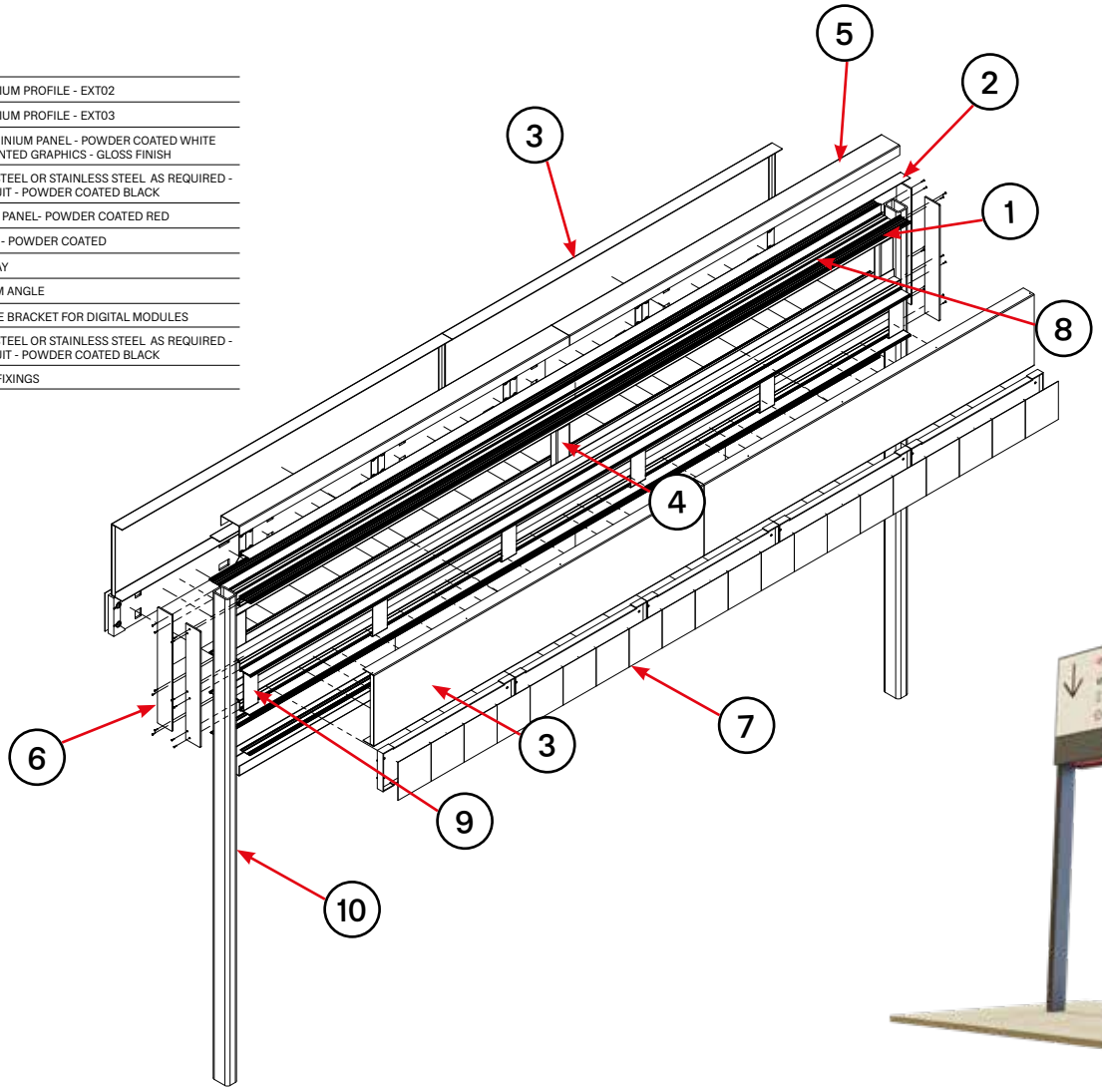
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT02
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Perimeter Ribbon / Small Directional /Large Directional / Large Platform Number.

8.4 Post Digital (POD)

Part No.	Part Name	Description
1	EXT02	EXTRUDED ALUMINIUM PROFILE - EXT02
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS - GLOSS FINISH
4	SUBFRAME	ALUMINIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDER COATED BLACK
5	INFILL PANEL	2MM - FOLDED ALU PANEL- POWDER COATED RED
6	END CAP	8MM - ALUMINIUM - POWDER COATED
7	DIGITAL DISPLAY	LED DIGITAL DISPLAY
8	ANGLE BRACKET	50 x 50 - ALUMINIUM ANGLE
9	BRACKET	CUSTOM INTERFACE BRACKET FOR DIGITAL MODULES
10	POSTS	ALUMINIUM, MILD STEEL OR STAINLESS STEEL AS REQUIRED - SECTION SIZE TO SUIT - POWDER COATED BLACK
11	FIXINGS	USE APPROPRIATE FIXINGS

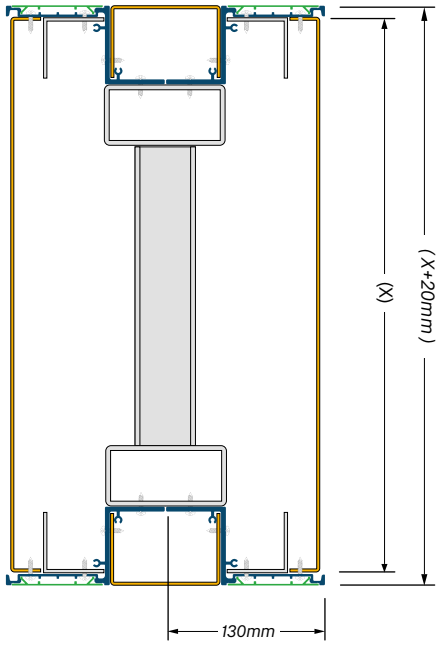


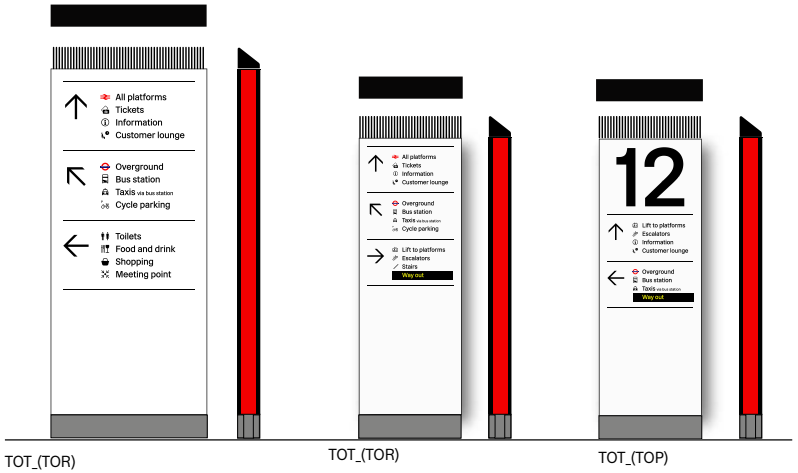
Post Digital
When a post mounted sign is required to have other integrated systems such as digital display the type 2 construction should be used.

The construction allows for an internal frame of multiple materials and can suit almost any size of section required.

Use non integrated
Bird deterrent

8.4 Totem (TOR) (TOP)





Integrated Bird Deterrent

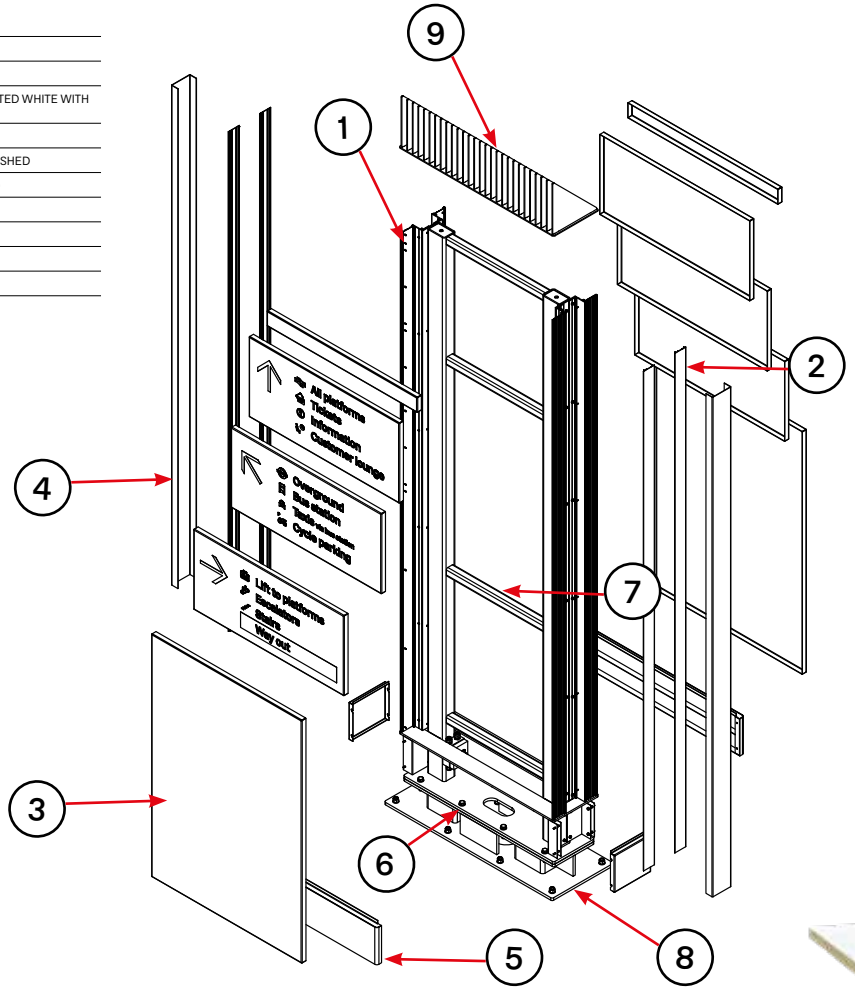
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT02
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Route Totems / Platform Totems

8.4 Totem (TOR) (TOP)

Part No.	Part Name	Description
1	EXT02	EXTRUDED ALUMINIUM PROFILE - EXT02
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS
4	INFILL	2mm FOLDED ALUMINIUM POWDERCOATED RED
5	SHROUD	2mm 316 GRADE STAINLESS STEEL - 240 GRIT BRUSHED
6	BUMP RAIL	10mm - 316 STAINLESS STEEL - 240 GRIT BRUSHED
7	MAIN STEELWORK	S355 STEEL - HOT DIP GALVANIZED
8	LOWER BASE PLATE	S355 STEEL - HOT DIP GALVANIZED
9	BIRD DETERRENT	6mm ALUMINIUM - POWDERCOATED BLACK
10	FIXINGS	FIXINGS AS REQUIRED



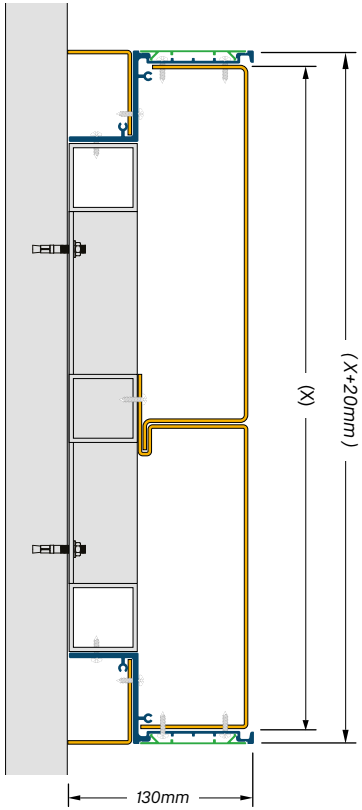
Totem Various

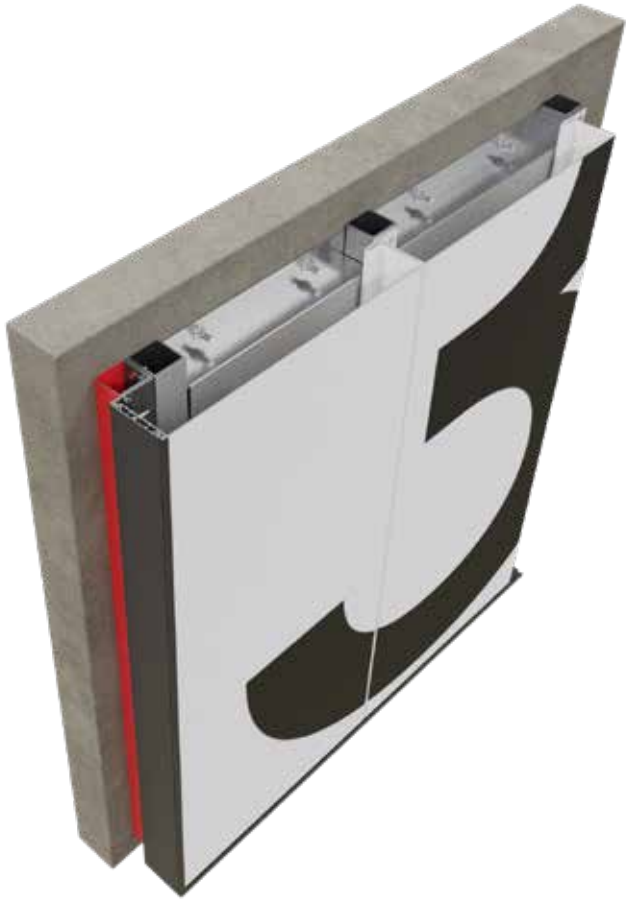
The various Wayfinding Totems utilise the type 2 construction. This allows for an internal frame of galvanised mild steel and can suit almost any size of section required.

Trolley protection is provided by the integrated stainless steel shroud and bump rail at the base which is of a robust design. The bird deterrent to the top is a sloped fin design.

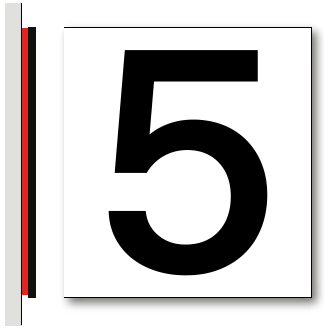
Use integrated
Bird deterrent

8.4 Supergraphic (SUG)





SUG_(WAM)



SUG_(WAM)

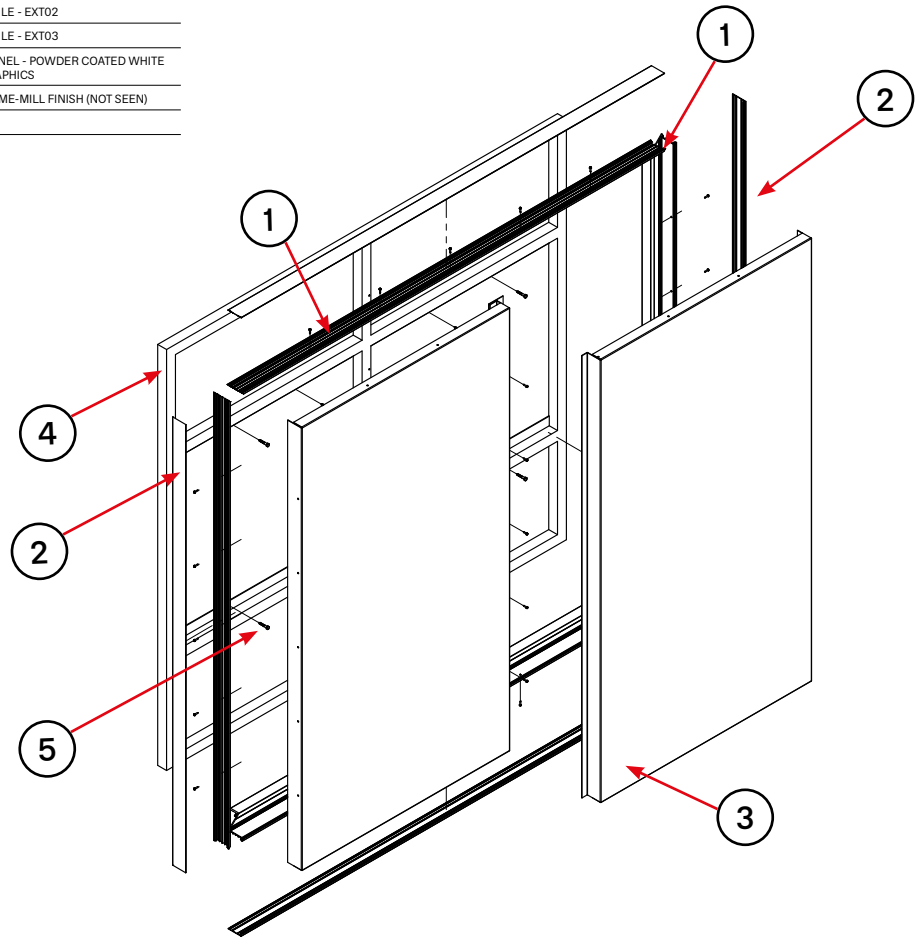
(X) Determining Size
Noted on the section above the panel size (X) is dependent on the graphic variant. These are set out in section 6 “Sign Family” inclusive of wayfinding panel sizes and graphic spacings. The relationship of panel size to overall sign size is shown above.

- Wayfinding Panel
- EXT02
- EXT03
- RAL 9016 (WF Panel)
- RAL 9005 (30% Gloss)
- RAL 3020 (30% Gloss)

This specification includes:
Supergraphics

8.4 Supergraphic (SUG)

Part No.	Part Name	Description
1	EXT02	EXTRUDED ALUMINIUM PROFILE - EXT02
2	EXT03	EXTRUDED ALUMINIUM PROFILE - EXT03
3	WAYFINDING PANEL	2mm FOLDED ALUMINIUM PANEL - POWDER COATED WHITE WITH DIGITALLY PRINTED GRAPHICS
4	FRAME	FABRICTAED ALUMINIUM FRAME-MILL FINISH (NOT SEEN)
5	FIXINGS	FIXINGS AS REQUIRED



Supergraphic Signs.
Construction type 2 is indicated here as the primary solution for Supergraphics, consideration though should be given to size and if construction type 1 suits it can be used. Sign type also included in (WAM) Specification.

Use non integrated
Bird deterrent

8.5 Installation Reference

General Installation Notes
Site inspections should be carried out prior to installation to verify correct locations, all architectural details, mounting conditions and dimensions.

All installations should be plumb and level, at the correct heights specified, and securely mounted with theft-resistant fixings. Signs should be located in the correct position and orientation as indicated on installation drawings. Copies of the drawings should be submitted as part of Engineering and Architectural Design assurance under standard NR/L2/CIV/003.

Indicative Suspension Examples
The indicative Installation examples shown here are not specific to any station, environment or fixing condition and are intended for reference only.

Each installation will need to carefully consider the ability of the substrate/ foundations to withstand all forces applied by the signage system, and any constrictions that may subsequently affect the signage design itself.

8.6 Performance Overview

General Notes
This document and following text provides general guidance only in the form of a baseline product design.

On a project specific basis, the contractor has responsibility to complete the design using materials, components, construction and installation methods such that the product is suitable and safe for it's purpose and location throughout its service life including ; design, (pre) manufacture, storage, transport, installation, maintenance and removal.

To complete the design the contractor where appropriate should have visited site and familiarised themselves with all relevant site conditions and location related matters.

Installation examples shown are not specific to any station, environment or fixing condition and are intended for reference only.

Products should comply with all relevant British Standards EN/ISO codes of practice as appropriate.

Products should be accurately and neatly fabricated, assembled and erected.

To minimise site work, as much assembly as possible should be carried out off site.

Early coordination with other interfaces is encouraged.

Contractor Drawings & Information
Contractor drawing Information should support Engineering and Architectural Design assurance under standard NR/L2/CIV/003.

Drawings for approval should be comprehensive to allow review and approval to take place. This includes detail in relation to materials, construction, proposed methods of support and installation.

Prior to manufacture, physical samples of products or core components, such as the wayfinding panel may be requested by NR to establish material quality and finish are acceptable.

Fixings & Connections
Primary connections to backgrounds, floor, ceilings, ground etc, are the contractor's responsibility. contractors should check that selection of fixings and methods are suitable and safe for their intended purpose and location.

Fixings used in assembly of products are contractor's responsibility. Contractors should check the selection of fixings, methods and quantity are suitable and safe for their intended purpose and location.

All fixings should be suitable for in use performance in respect of strength and type. They should be fitted to an appropriate torque and remain secure and be suitable for all loads imposed.

Fixings subject to loosening due to loadings/ movement/ vibration should be provided with extra security as required using locking nuts, washers etc. Adhesives and bonding tapes to be treated with care.

Structural Performance
This document provides the headline criteria and loading zones for each product. All final installations should, as a minimum comply, with these. On a project specific basis this may be superseded by a different set of structural performance criteria.

It is both the designer and installation contractors' responsibility to assure the correct fixing of all signs, fixings and supporting structures, in all instances. The appropriate specification of fixings is to be proposed in all construction drawings in accordance with the instance requirement of that specific sign.

It is the installation contractor's responsibility to assure the correct specification of fixing is used, or identical equivalents. Where the design and installation roles are performed by a single contractor, it is the responsibility of that single contractor to assure that both of these criteria are met.

For the purpose of useful circulation of indicative construction design of each sign type, indicative fixings should be specified but labelled as such and not presumed to qualify as appropriate for any specific instance of installation

8.6 Performance Overview

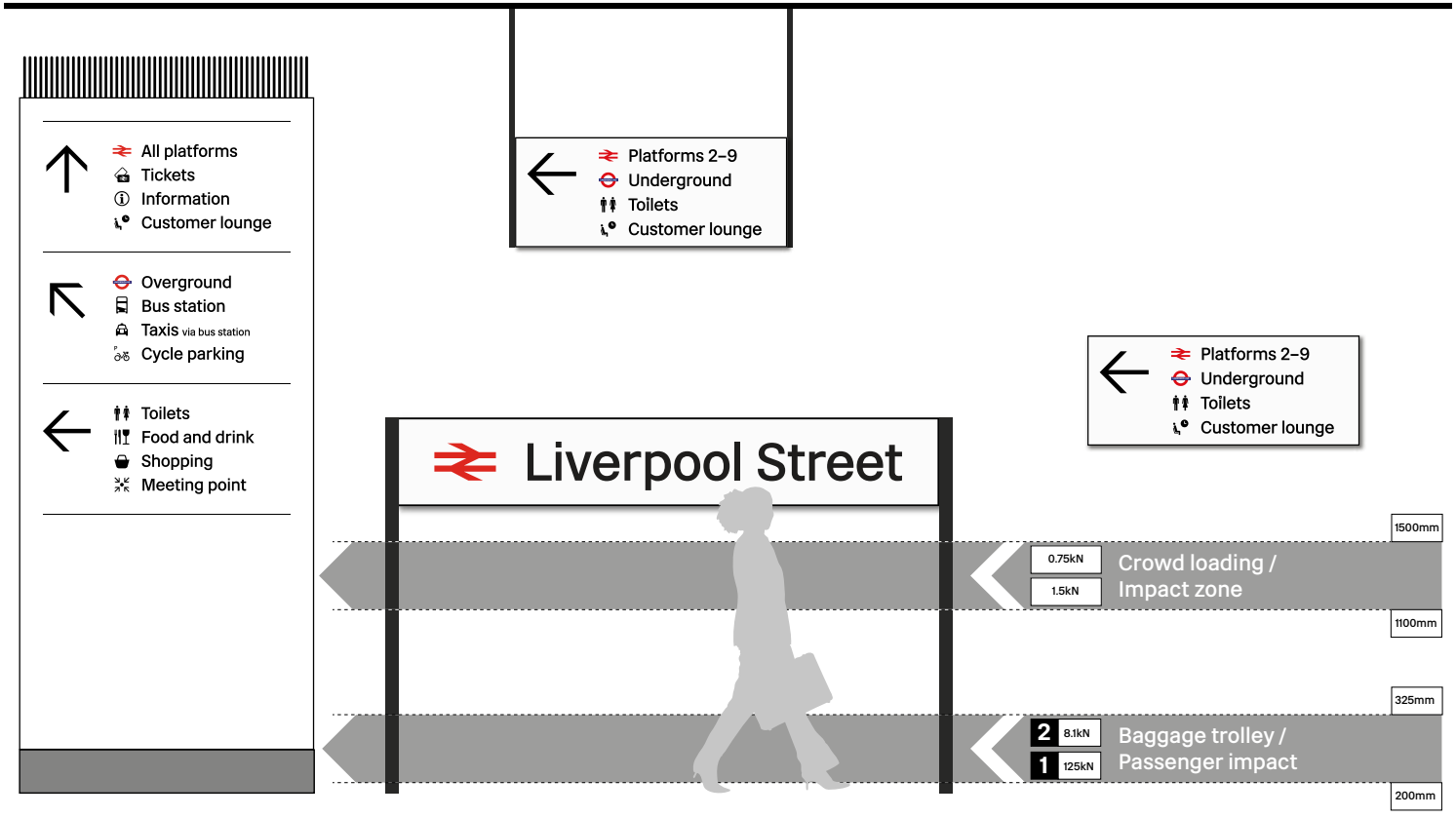


Image 0.9 structural impact zones

NR/L2/CIV/003 Form D (Architectural and Layout Acceptance) should be used for design assurance to address station Wayfinding and Navigation Form G (a combined approval in principle and design check) in order to demonstrate loading conditions are satisfactory. The Form D should document the rationale for both positioning of signs and their content.

The structural performance and calculations for all products and their fixings should take account of loadings as applicable to the project and location. All loadings are to be reviewed on a project specific basis.Loadings to be provided by the NR project team and agreement of suitable assessment with the contractor.

Additional loading conditions :

External wind pressure *-Check against specific station and project criteria.*

Internal wind pressure *-Check against specific station and project criteria.*

Bomb Blast Main Station *-Check against specific station and project criteria.*

Bomb Blast Regional Station *-Check against specific station and project criteria.*

For all signage that sits below 350mm, allowance should be made for the inclusion of a barrier that adheres to one or both of the below conditions. Within larger stations, where small electric vehicles may be in use, the barrier should fit the requirements of condition 1 & 2. For smaller stations where electric vehicles are not in use, the barrier should fit the requirements of condition 2 only.

1. Passenger Vehicle Impact Barrier

Should resist impact and damage due to an electric vehicle with an all up mass including passengers of 1250kg at an over-speed velocity prior to impact of 4.47m per sec (10 mph).

Allow for a total displacement of 100mm plus the displacement of the barrier system, where this is designed to absorb impact energy by lateral displacement.

Withstand an impact load applied at the centre line of the barrier level set 200mm above finished floor level.

A 90 degree angle of incidence should be used at abrupt changes in direction normal to the flow. The horizontal force normal to a continuous line of barrier or wall should be taken to be uniformly distributed over a 1000 mm length. For freestanding elements including bollards, the impact load should be treated asa concentrated load.

A 45 degree angle of incidence should be used in all other locations.

For a rigid barrier, 90 degree angle of incidence the force should be taken as 125 kN, a 45 degree angle of incidence the force should be taken as 7.7 kN. Derivations for angle of incident load for less than 90 degrees.

2. Trolley Barrier

Should resist impact by a 50kg mass at a velocity prior to impact of 1.8 m per sec (4 mph) with an angle of incidence of 90 degrees between trolley and barrier.

Allow for a total displacement of 10mm, plus the displacement of the barrier system, where this is designed to absorb impact energy by lateral displacement.

Withstand the impact load applied at an engagement height of either, (a) 200 mm above finished floor level when adopting the standard height (200 mm) barrier rail product with the rail set away from the surface being protected, or, (b) 325 mm above finished floor level for all other situations.

For a rigid barrier, the force should be taken as 8.1 kN.

8.6 Performance Overview

Materials Overview
This baseline product design indicated in this document has been developed to make best use of repeating components across the product family.

This has resulted in a minimal materials and process list which enable fabrication of the core product.

Interfaces with stations buildings and other structures will extend the core material list.

It is the contractors responsibility to check all materials are designed, constructed and installed to meet the design and service life of the product, including the requirements of treating dissimilar materials appropriately.

Aluminium
Aluminium sheet should be of a suitable grade for fabrication, forming and structural performance. Profiles and sections should be 6000 series. Consideration should be given to RICS SKA External Signage MD29 and the use of 4000 series aluminium.

Stainless Steel
Stainless steel should be low carbon chromium nickel austenitic steel type 304 or 316 grade.

Exposed surfaces should be 316 grade 240 grit brushed, with grain direction indicated by drawings.

Mild Steel
Mild steel sections and materials utilised in the design should be of a thickness and grade appropriate to meet the loading requirements of the structure and the project. All section protections and finishes should be suitable for exterior architectural applications.

Powder Coating
Powder coating should be or equivalent to Interpon D1036 grade and should be suitable for exterior architectural applications.

Wayfinding Panel
Substrate should be aluminium with all graphics acheived by digital printing. Inks used should be rapid cure and emit no or minimal volatile organic compounds (VOC) during printing and curing. Processing should require no special ventilation or environmental equipment.

All wayfinding panels should have the following general properties : 10 year exterior life, high resolution legible printing, weather resistant and colour fast satin-gloss finish, high durability - offering ease of cleaning, but resistance to vandalism, acids, alkalis & salt spray.

Printed PVC / Non PVC films and over-laminates should not be used, either as a permanent or temporary solution. Panels should be replaced.

Fixings
All fixings should be suitable for in use performance in respect of strength and type. Fixings should be A2 grade stainless steel as standard and A4 for marine environments. Heads should be tamper resistant.

RICS SKA Environmental Assesment
The following extract from SKA External Signage MD29 outlines expected sustainability performance from materials likely to feature in the core product and its connections .

Products are required to meet at least one of the following criteria:

- are reused;

If new, all components are manufactured with a recycled content of at least:

- aluminium extrusion – 44%
- aluminium sheet – 73%
- steel section – 60%
- steel sheet – 60%
- stainless Steel – 75%
- glass – 10%

If new have a BES6001 'Good' rating or better; or
If new, have a Cradle-to-Cradle Gold or Platinum certification.

8.6 Performance Overview

Design & Service Life
The design life for signage products is 10 years. No physical, appearance or structural deterioration should occur within this period.

The service life for products is 20 years. Subject to agreed maintenance, no physical or structural deterioration should occur within this period.

Any servicing, maintenance or conditions required to meet this requirement should be detailed by the contractor and approved by the NR project team.

Design Life ; the period of use required for a component, device, or system to perform within its specified parameters.

Service Life ; the period of time which a component, device, or system is expected to perform within its specified parameters without excessive expenditure required in terms of operation, maintenance or repair of a component of the construction.

Primary components ; have a predicted service life not less than the design life of the element being specified without the need for maintenance, other than regular cleaning.

Secondary components ; may require replacement during the design life of the product, these should be capable of easy and cost effective replacement.

Standards & Testing
Materials & finished products should comply with all relevant British Standards EN/ISO codes of practice as appropriate.

As well as all standards in relation to materials and finished products, the following specific standards should be applied :

BS BS 559:2009 - Specification for the design and construction of signs

LU 1-085 - Fire Safety Performance of materials (Sub Surface station applications only)

Specific Guidance for Aluminium Wayfinding Panel Coatings and Graphic Decoration
Contractors should be able to provide independently certified test data to demonstrate compliance with the desired design life.

Alternatively, contractors should include for relevant testing and approval prior to installation.

Examples of previous projects where similar design and process have been used to meet the design life can also be submitted for review.

The criteria listed in Table 8.6.1 may be considered in assessing the suitability of the Aluminium Wayfinding Panel coating and graphic decoration method.

Parameter	Min Standard / Testing	Pass Criteria
Mechanical Properties		
Adhesion	ISO 2409 - 2mm crosshatch	Gt:0
Cupping	ISO 1520	4mm
Hardness	ISO2815	Minimum 80
Flexibility	ISO1519: 2011	5mm
Scratch	BS EN ISO 1518-1:2011	4Kg
Impact Resistance	BS 3900-E7:1974	5Kg cm (N)
Environmental & Durability		
Salt Spray	ISO 7273	Max 2mm creep from scribe 500 hours
Humidity	BS 3900-F2:1973	no blistering 1000hrs
Sulphur Dioxide	ISO 3231	no blistering, creep < 1mm from scribe 24 cycles
Permeability	EN12206-5.10	no defects 2 hours
Chemical Resistance	ASTM 5402-19	4 or 5 on scale, generally good resistance
Mortar Resistance	EN 12206-1 2004	No effect 24 hours
Accelerated Weathering	ISO 16474-2 Method A	After 1000 Hours 50% Gloss retention Colour retention as Qual-Class 1
Natural Weathering	ISO2810	After 1 year 50% Gloss retention Colour retention as Qual-Class 1

Table 8.6.1 Material properties

Document References

Wayfinding Design Guidance

Appendix A - Document References

Appendix A
Document References

Books
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C - Sign Planning, Layout Specifications: Specific Signs 9. 1st ed. BAA Airports Limited.

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Matters, T. (2019). Legible London. [online] Transport for London. Available at: https://tfl.gov.uk/info-for/boroughs/legible-london [Accessed 8 Feb. 2019].

Further Reading

Design Guidelines
NR/GN/CIV/100/02 – Station Design Guidance
NR/GN/CIV/200/05 - Vertical Circulation
NR/GN/CIV/300/04 – Inclusive Design Guidance

Sign Design Guide – A guide to Inclusive Signage. Sign Design Society

London Underground Signs Manual – Issue 4

Wayfinding at Stations: A Good Practice Guide RSSB T321 (2006)

British Standards
BS 8300-1-2018 Design of an Accessible and Inclusive Built Environment – External

BS 8300-2-2018 Design of an Accessible and Inclusive Built Environment – Internal

National Standards
Design Standards for Accessible Railway Stations – A joint Code of Practice
by the Department for Transport and Transport Scotland

Inclusive Mobility – A guide to best practice on access to pedestrian and transport infrastructure (DfT)

Guidance on the Use of Tactile Paving Surfaces (DfT)

SIDOS -Security In the Design Of Stations (DfT)


Escalators
Food and drink
Shopping
Way out
10
Middlesbrough
High Street

Acknowledgements

B

Wayfinding Design Guidance
Appendix B - Acknowledgements

Appendix B
Acknowledgements

Image Credits

Network Rail
8 (Manchester Piccadilly), 17 (London Bridge),
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2 (King's Cross), 12 (King's Cross),
14 (King's Cross), 22 (Manchester Piccadilly),
34 (Birmingham New Street)
124 (King's Cross)

Ralph Hodgson
110 (Liverpool Street)

Others
120 Google Glass (www.siliconbeat.com)
120 Apple Watch (www.techradar.com.uk)
121 Dispositivo Beacon (es.wikipedia.org)
121 Next Generation Technology: Aihong, L.

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Customer lounge

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