

Category: Traffic and Public Transport

Project: South East Queensland Accessible Rail Station Maps

What was the challenge?

Queensland Rail's decentralised rail system delivers services across the state's approximately 1.85 million km².

South East Queensland is, at 35,248 km², the most densely populated area of the state. 152 rail stations connect passengers across the South East, from Brisbane, north to the Sunshine Coast, south to the Gold Coast, east to the Airport and Cleveland and west to Ipswich and Rosewood.

Station typologies range in size, infrastructure, age, amenities and accessibility features.

Queensland Rail have embarked on a long term programme, upgrading stations across the state to support equitable access for all users. It was identified that information available to users looking to plan their journey was incomplete or outdated. Details on station layout and provision of key accessibility and functional features – up to 30 for some stations – was inconsistent.

The Client's brief was to design maps that provided accessible information that would equitably assist users with their journey planning.

The maps were foremost designed for viewing online as well as for downloading and printing.

Resolving these challenges would require the development of a graphic system to meet all relevant accessible standards, whilst being simple and flexible enough to be effectively implemented across the network.

What was the solution?

Investigation

A thorough investigation of the project was guided by the Universal Design Principles for Transport. This benchmark guided the design process throughout the project.

Analysis

In the first instance, research into the usability of the current map, as well as analysis of precedents for accessible mapping in Australia and around the world, helped to draw a clear picture of shortfalls, successes and opportunities.

Taking a finer grain approach to the analysis, our focus turned to the identification of critical information and elements to be included in the maps – map approach, map boundaries, orientation, graphic devices, pictograms, colour palette, typography, and map legend.

Strategy

The overarching strategy concentrated on designing a graphic system that responded to the principles of Universal Design. Complex information was to be delivered as a flexible kit of parts that could be applied effectively to capture and communicate a wide range of explicit and implicit information.

Ruthless Simplification

"Flexibility in use" informed the design of a diagrammatic style of mapping, allowing for the simplification of geographic boundaries and road network system to achieve maximum clarity.

Differentiated Elements

"Perceptible Information" allowed to differentiate elements in ways that could be easily recognisable. To achieve this the map approach highlights station platforms, differentiates core zones, car parks, roads, overpass and accessible paths.

Eliminate Unnecessary Complexity

To ensure "simple and intuitive use" the map approach simplifies the infrastructure, urban domain and road footprints. The map orientation was rotated, employing a simplified diagrammatic north up orientation to assist with cognitive mapping.

Consistent use of access colour to highlight important information i.e. core zones and accessible boarding points.

Contrast colour coding for secondary and tertiary layers of information i.e. urban domain parking in grey, all access routes and entry thresholds in orange.

Clearly marked accessible boarding points, key destinations and accessible pathways and direction of travel.

Perceptible information

Perceptible information aims to reduce the visual noise of the urban domain and road network.

Highlighting entry thresholds, platforms at level or otherwise, lift cores, stairs, accessible route and boarding points visually warn users of changes in the physical environment and their journey.

Pictograms were added to existing international standard suite – to ensure readability by a diverse user group.

Typography was interrogated for its suitability, readability and legibility for all users.

Colour contrast and colour blindness tests were undertaken for appropriate levels of luminance contrast. The map achieves CUD compliance after testing for Deuteranopia-Type and Protanopia-Type, the two most common types of colour blindness.

Safe guarding

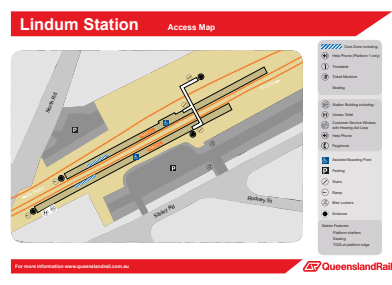
Guided by the Universal Design Principle "Tolerance for error" a graphic device was designed specifically to clearly define the core zone on the platform, which in turn provides a fail-safe feature.

What was the effect?

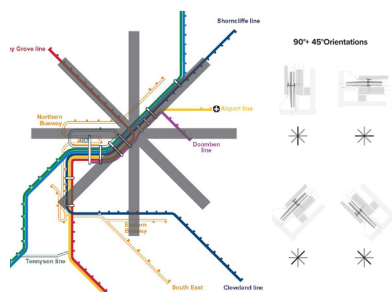
Eliminating unnecessary complexity ensured not only compliance with accessibility requirements, and improved readability of information through an accessibility lens but also provided an improved user experience that was considered from an inclusive and equitable perspective.

The kit of parts approach is currently being applied to regional train stations throughout Queensland. Given the population growths Queensland is experiencing, this provides the rail network with a scalable solution for future works.

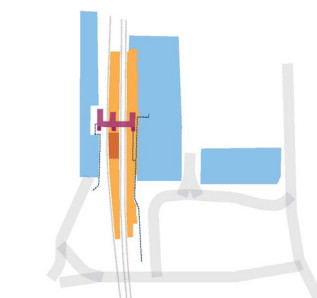
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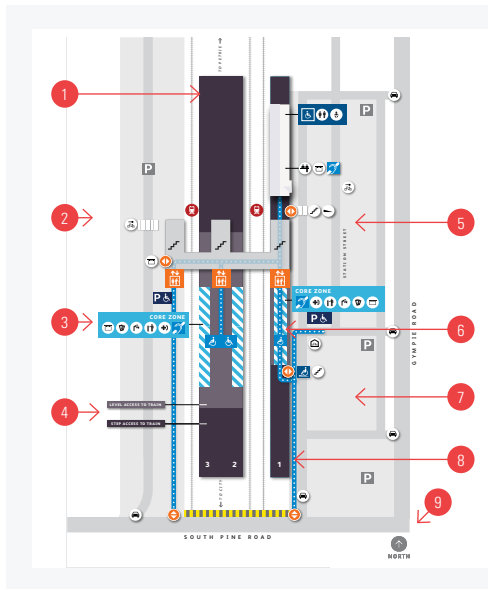
Working with the existing mapping for the accessible overlay.



Simplified orientation – consistent with the physical network orientation, at a simplified 90° and 45°.

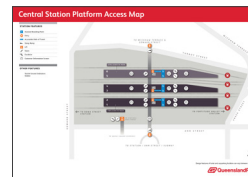


Simplified graphic elements – diagrammatic North up.



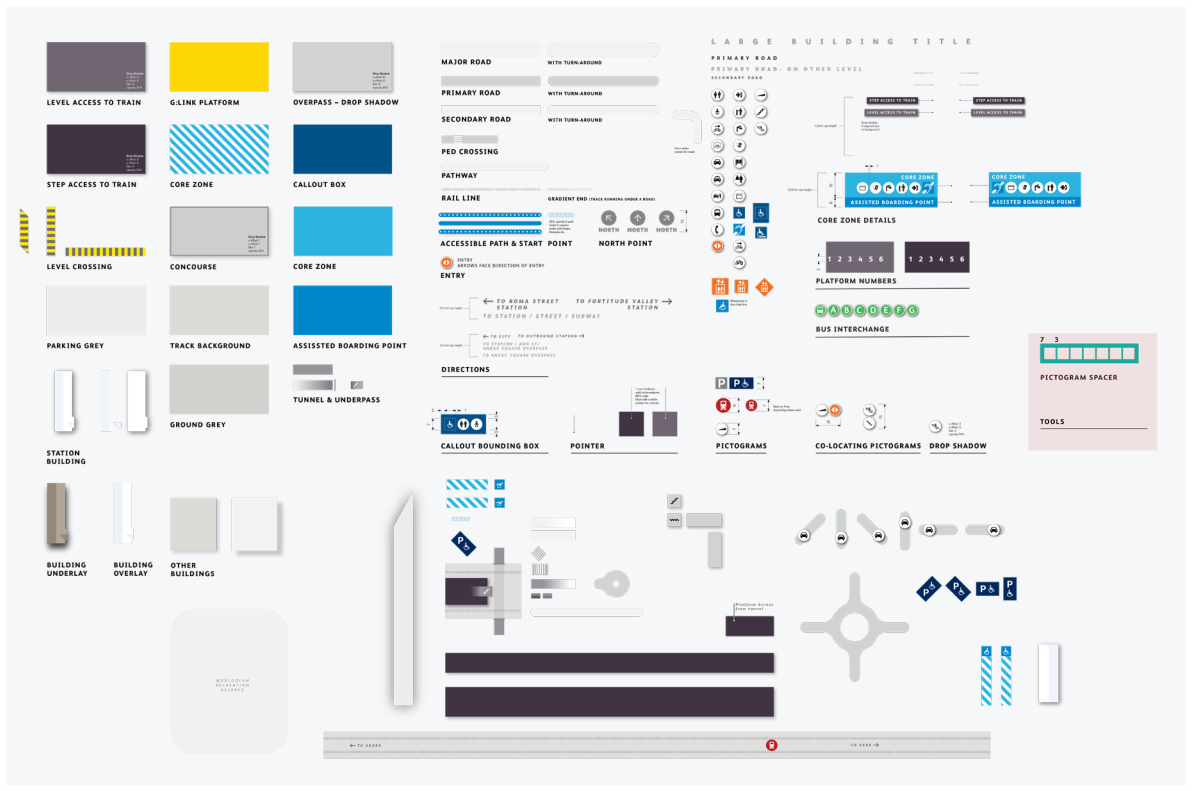
Typically, access related activities, amenities and infrastructure i.e. carparks, platforms, accessible pathways are linked to the accessible blue colour palette.

1. Platform colour → High contrast to differentiate platform from other elements
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9. Major roads form clear geographic boundaries to assist with cognitive mapping.



Strathpine Station Access Map – the graphic system in use.

Final map designs – Central and Beenleigh stations.



Core elements of the flexible kit of parts – graphic system.

Category: Universal Design

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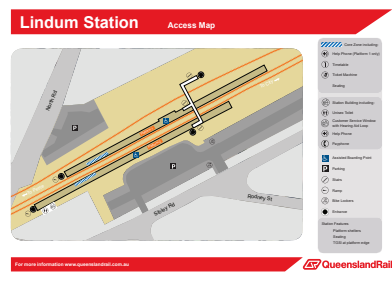
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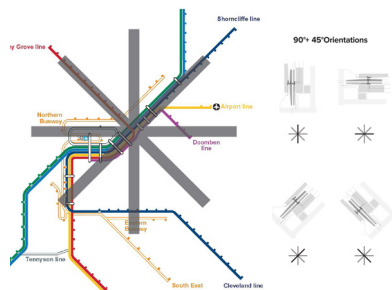
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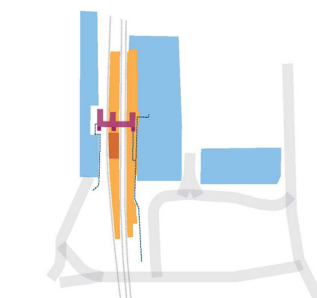
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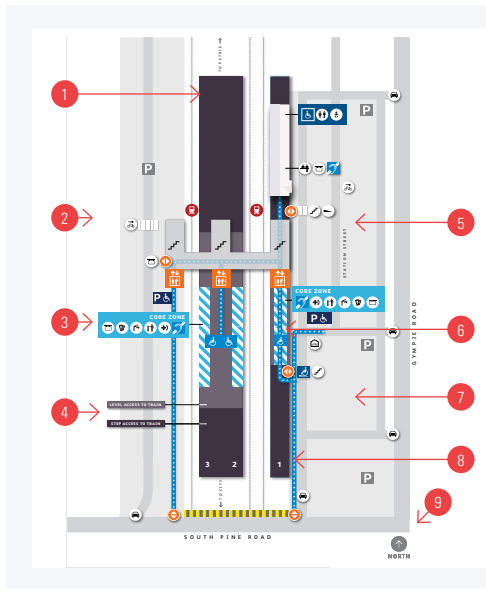
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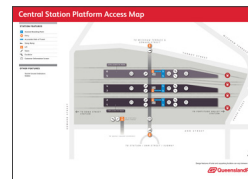
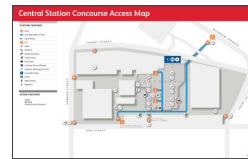
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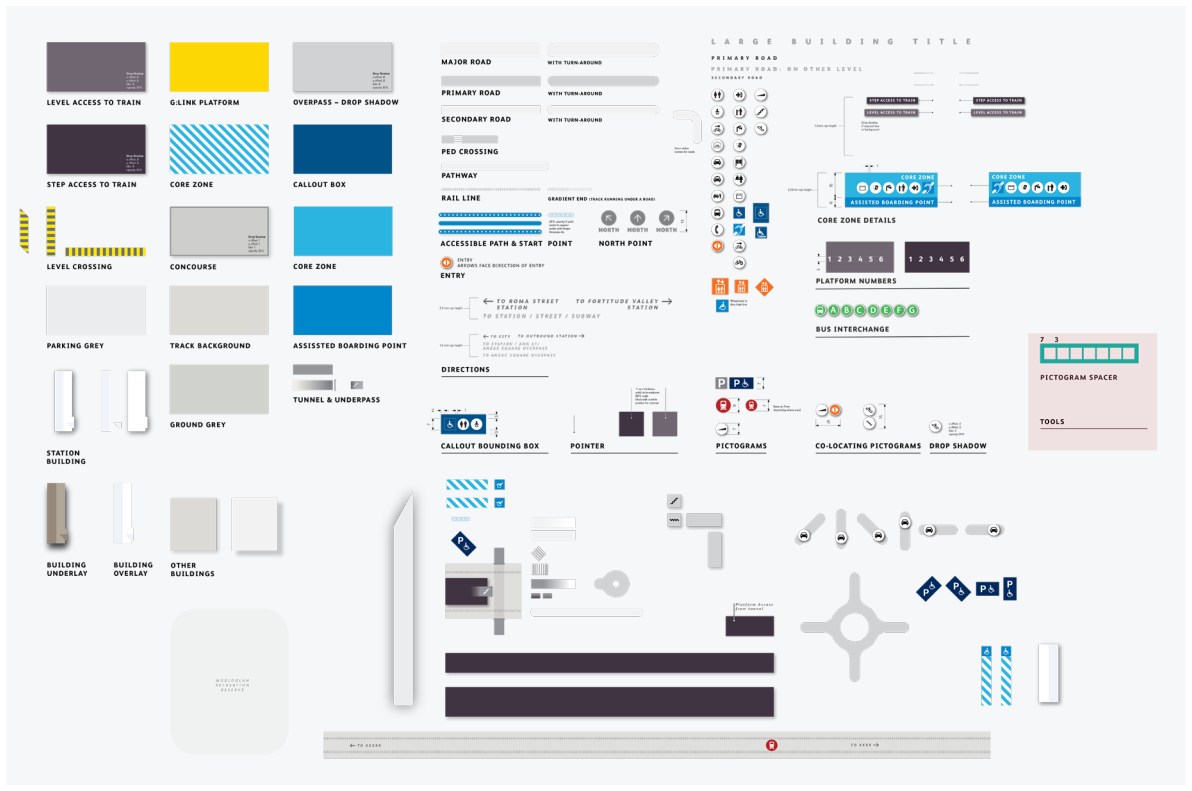
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Category: Wayfinding

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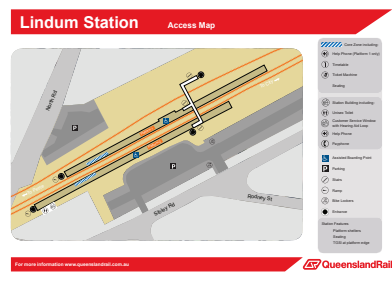
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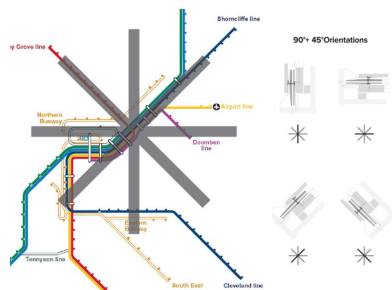
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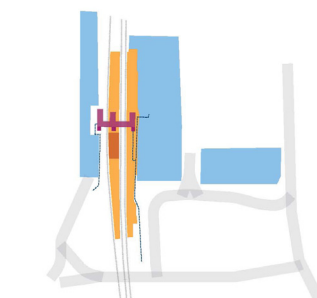
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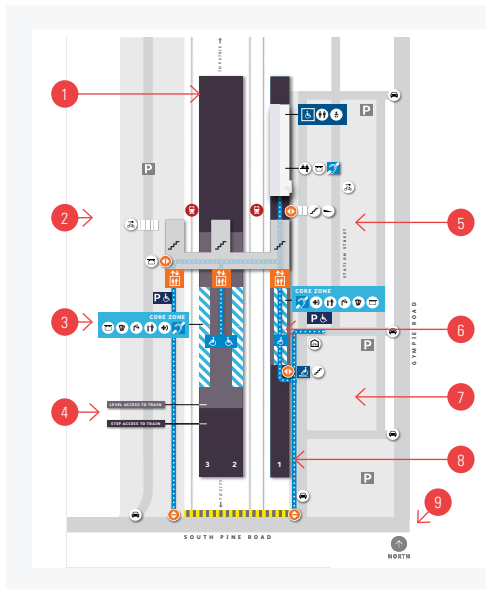
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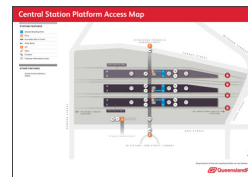
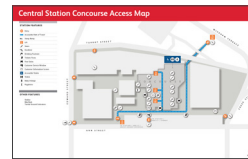


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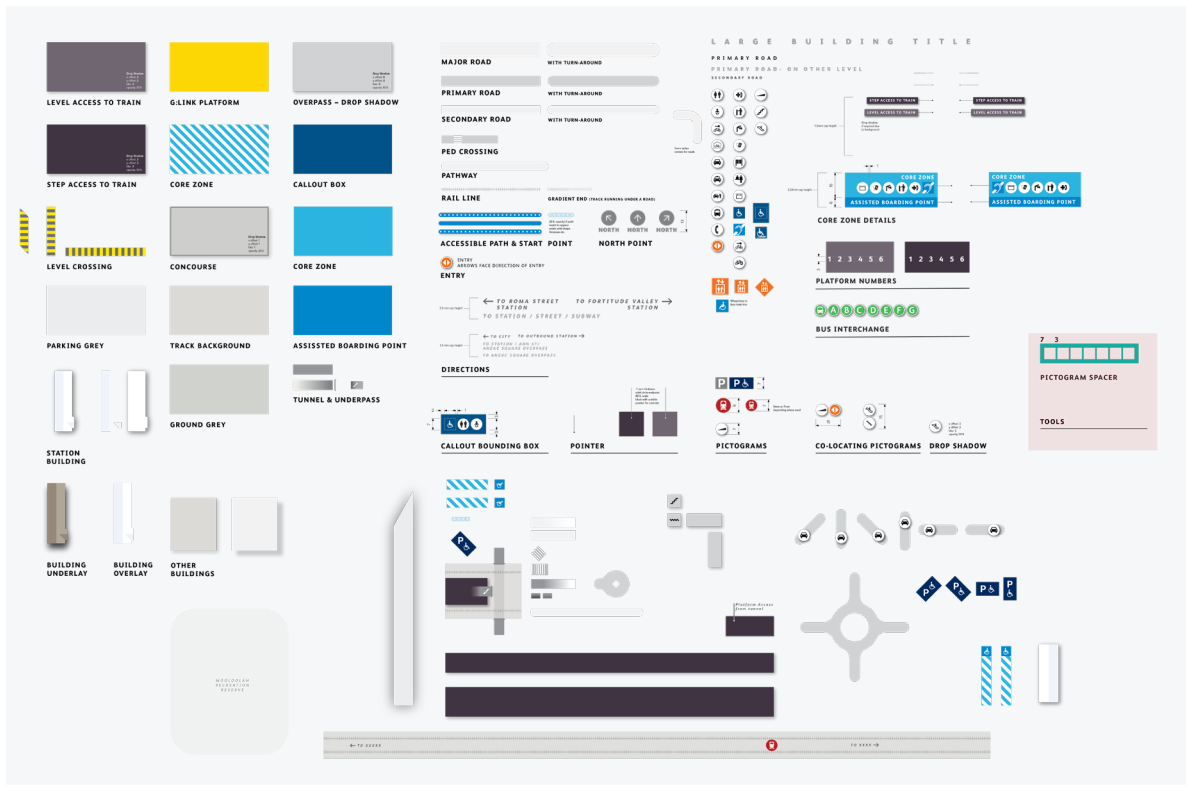
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