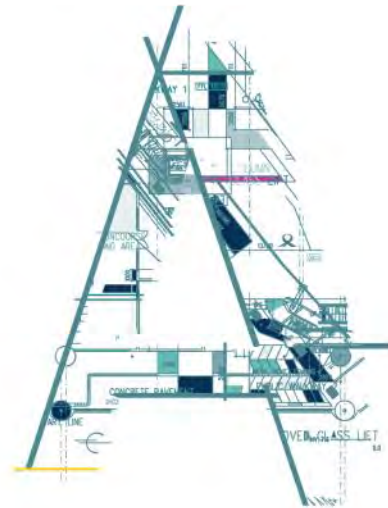


DESIGNING FOR WAYFINDING



The Architecture Sub-group designs and builds transit infrastructure in Singapore. We are also the creators and custodians of architectural and signage design standards, guidelines and criteria which guide the station designers towards a consistent application of our high standards.

The idea for creating a series of easy-to-use handbooks arose out of a perceived need to elucidate and share the basic principles behind the standards and guidelines; the 'why' of what we do.

Designing for Wayfinding is the first in the **RE:** series of handbooks. It is meant to be read by architects, designers and indeed commuters themselves to understand our approach to wayfinding in stations.

RE:think | DESIGNING FOR WAYFINDING

An Initiative of Architecture Sub-group, Land Transport Authority

Editorial Direction

Sushma Goh

Director, Architecture
Infrastructure Design & Engineering Group

Text & Design

Leslie Tan Sheng

Undergraduate, Engineering Product Development
Singapore University of Technology & Design

Editorial Team

Joni Ong

Assistant Chief Specialist
User Experience

Samuel Lim

Assistant Manager
Signage, Architecture

Eileen Goh

Assistant Manager
Art-in-Transit, Architecture

Special Thanks

Tan Swee Lin

Senior Principal Architect

Adrian Du Toit

Senior Principal Architect

Produced in Collaboration with the SUTD-MIT IDC's Design Odyssey Programme

© 2018 Land Transport Authority

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the copyright owners.

Foreword

Since the first 6 MRT stations opened their doors to the public in Singapore in 1987 along the inaugural North South Line, our system has grown multifold in scale and complexity.

From the initial 2 interchange stations of the Compass lines, we now have 26 interchange stations (and counting). Several of the stations are a part of multi-modal transport hubs, incorporating bus interchanges, MRT and LRT stations, taxi stands, private car pickup and drop-off points. These hubs are often integrated and connected with commercial, residential, and office developments.

It is important to remember the human dimension when we are talking about mega-scale developments such as these.

The Land Transport Master Plan 2013 envisions developing a people-centred and community-inclusive transport system with a focus on improving connections, reliability and comfort to better serve the needs of commuters. A key aspect of a commuter-centred transport system is wayfinding – the stations must be designed so as to allow commuters to find their way from the street or adjoining developments to the station, and make their way back out again, without stress, anxiety or confusion.

Wayfinding is often conflated with signage, but it is so much more than that. It is about the design of spaces, the visual cues, lighting and daylight, colours and markers, and many other sensory cues that come together to form a trail of breadcrumbs along the commuters' journey which are used by each person to navigate the increasingly complex world of MRT stations and other public transport infrastructure

The launch of **RE:think – Designing for Wayfinding** marks our first attempt to distil and encapsulate the insights developed over the last 30 years in designing MRT stations in Singapore. Our lessons are both unique and universal at the same time. This handbook illustrates and explains the key guiding principles for the seamless integration of wayfinding when designing Singapore's MRT stations.

Sushma Goh

*Director, Architecture
Land Transport Authority*

How to Use This Book

In recent years, by using Design Thinking tools and processes, we have focused our attention on understanding the needs and aspirations of our commuters. By immersing ourselves in the commuters' experience and observing their behavioural patterns, we gained insights and inspirations that can be translated into infrastructural design and will allow us to move closer to achieving our mission of designing a people-centric public transport system.

Designing for Wayfinding will give you a fresh insight into wayfinding and inspire you to look beyond the perceived boundaries and limitations of public transportation. You will be introduced to the key points of wayfinding within our stations and the associated decision-making that follows, allowing you to design better stations for our commuters. This book is meant to be used in conjunction with existing LTA design guidelines and other relevant regulatory codes and guidelines.

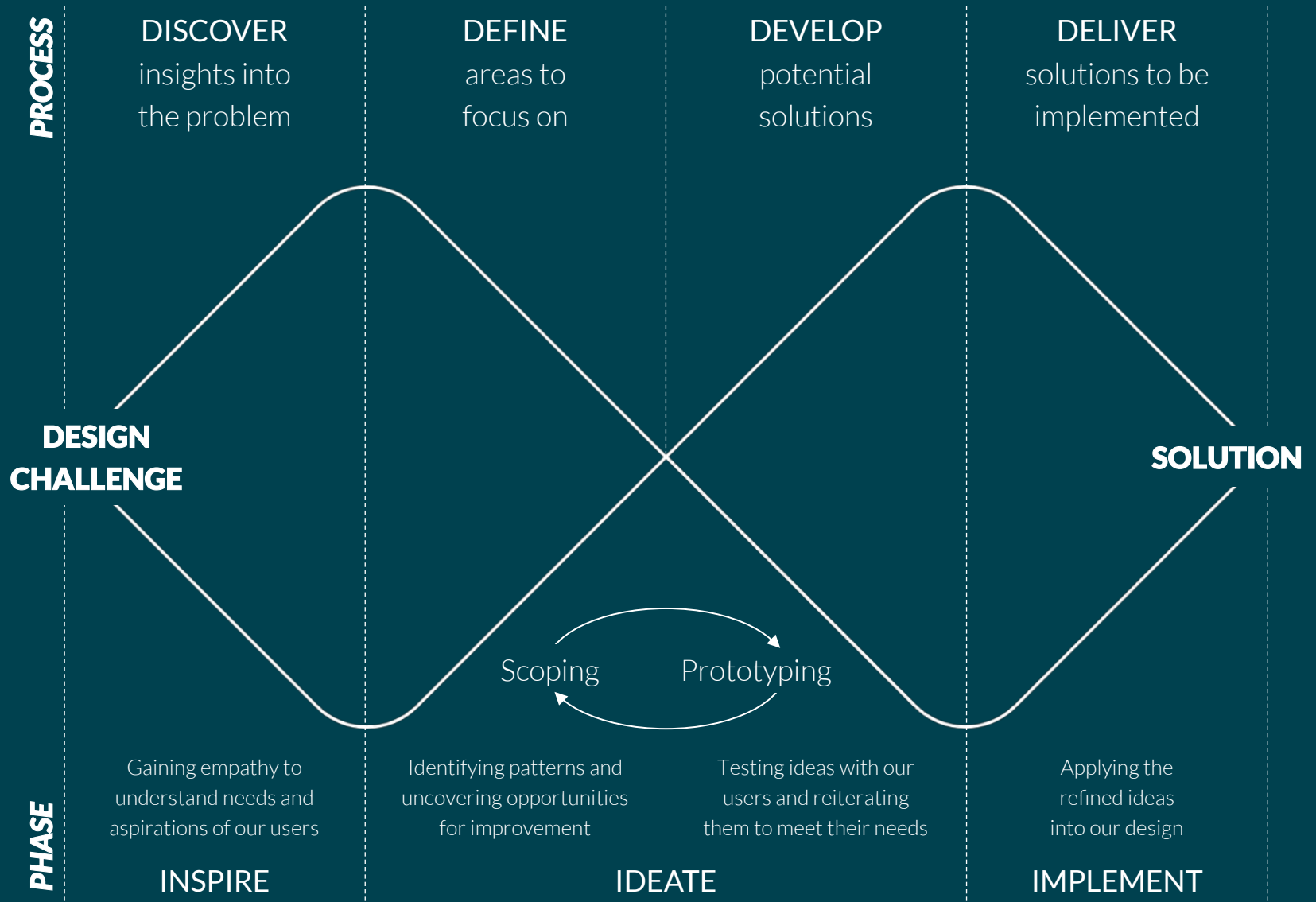
This book will touch on our approach to architectural design, signage systems, Art-in-Transit, and the many other factors which come together to enhance both wayfinding and the identity of our stations, and help create a sense of delight for our commuters and other users of our stations.

We hope this book will inspire our designers to rethink their approach to designing MRT stations, allowing them to discover new insights into user behaviours, and to develop their own trail of breadcrumbs that will guide the commuters in the station.

The **RE:** series can be used by everyone, including:

- **Architects**
- **Designers**
- **Consultants**
- **Commuters**

Design Thinking in Wayfinding



2017 Statistics

Land Area
719.2km²



MRT & LRT
228km



Population
5,600,000



Roads &
Expressways
3500km

*How might we create an
identity for wayfinding in our
Mass Rapid Transit infrastructure?*

Contents

1	Putting Focus on Wayfinding
---	-----------------------------

1.1	What Makes a Station	12
1.2	What is Wayfinding	13
1.3	Wayfinding Within a Station	14
1.4	Elements of Wayfinding	16

2	Developing a People-centric System
---	------------------------------------

2.1	Identifying Key Commuter Needs	36
2.2	Insights from Our Commuters	38
2.3	What Our MRT Should Be	41

3	Reinforcing the Public Transport Identity	
3.1	Humble Beginnings	44
3.2	Transition to a Multi-modal System	45
3.3	Systemwide Visual Identity	46
3.4	Strengthening Our Modal Identity	48
3.5	The Expanding Network	49

4	Maintaining Balance Across the System	
4.1	The Need for Balance	52
4.2	Designing Platforms	54
4.3	Designing Concourses	56
4.4	Designing Entrances	58

1 Putting Focus on Wayfinding

Alongside serving their key role as places for commuting, our stations are increasingly being used as public spaces. In order to deliver a wayfinding-oriented experience, as designers, we must look beyond signage and aesthetics, and delve deeper into understanding how the public perceives and interacts with the spaces, materials, fixtures, components and other elements that make up our stations.

What Makes a Station

Expression



Station identifiers such as the Public Transport mega sign, station markers, and train arrival displays create an impression for commuters entering the transit environment.

Exterior architectural designs that leave a lasting impression aid our commuters in wayfinding along their journey.

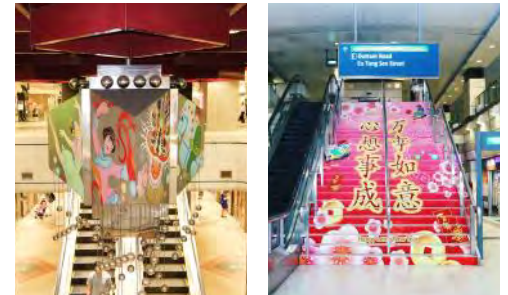
Impression



Architectural features that create patterns on walls, floors and ceilings play a significant role in wayfinding, indirectly leading our commuters in and out of our stations.

Signage within our stations create a distinct visual identity that we can call our own, and something our commuters associate with the MRT.

Delight



Art-in-Transit installations add a splash of colour onto the otherwise monotonous station interiors, acting as place markers that aid commuters in wayfinding during their journey.

Themed Trains & Stations that tie in with the festivities and culture of the surrounding ethnic communities create moments of delight for our commuters.

What is Wayfinding

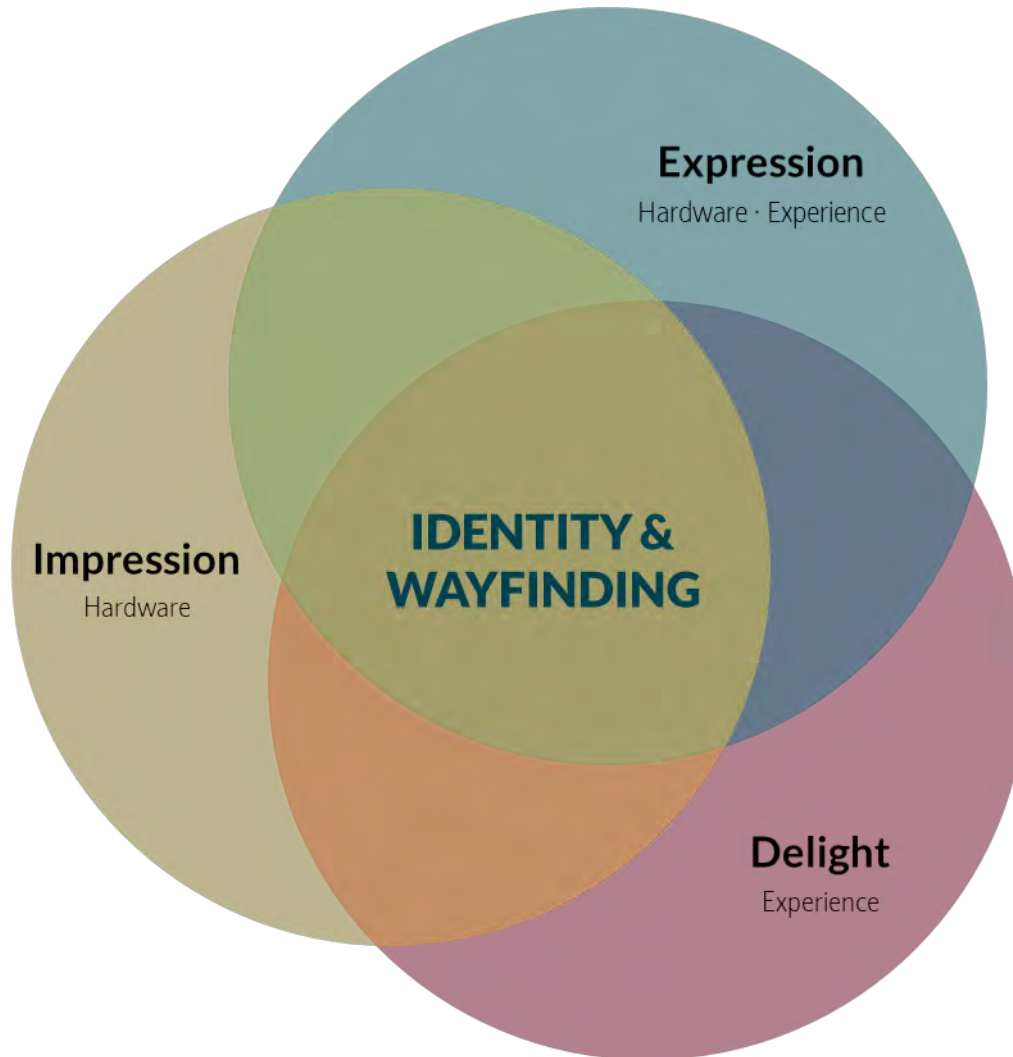
Wayfinding is:

Understanding the key decision-making points in our stations, and the factors that affect and inform our commuters as they find their way towards their destination.

- Using our hardware to create a **good first impression**
- Using hardware and experience to **express the public transport identity**
- Creating the experience to **bring delight to our users**

Only by integrating our hardware with the experience, can we create an intuitive environment that our commuters can easily orientate themselves in.

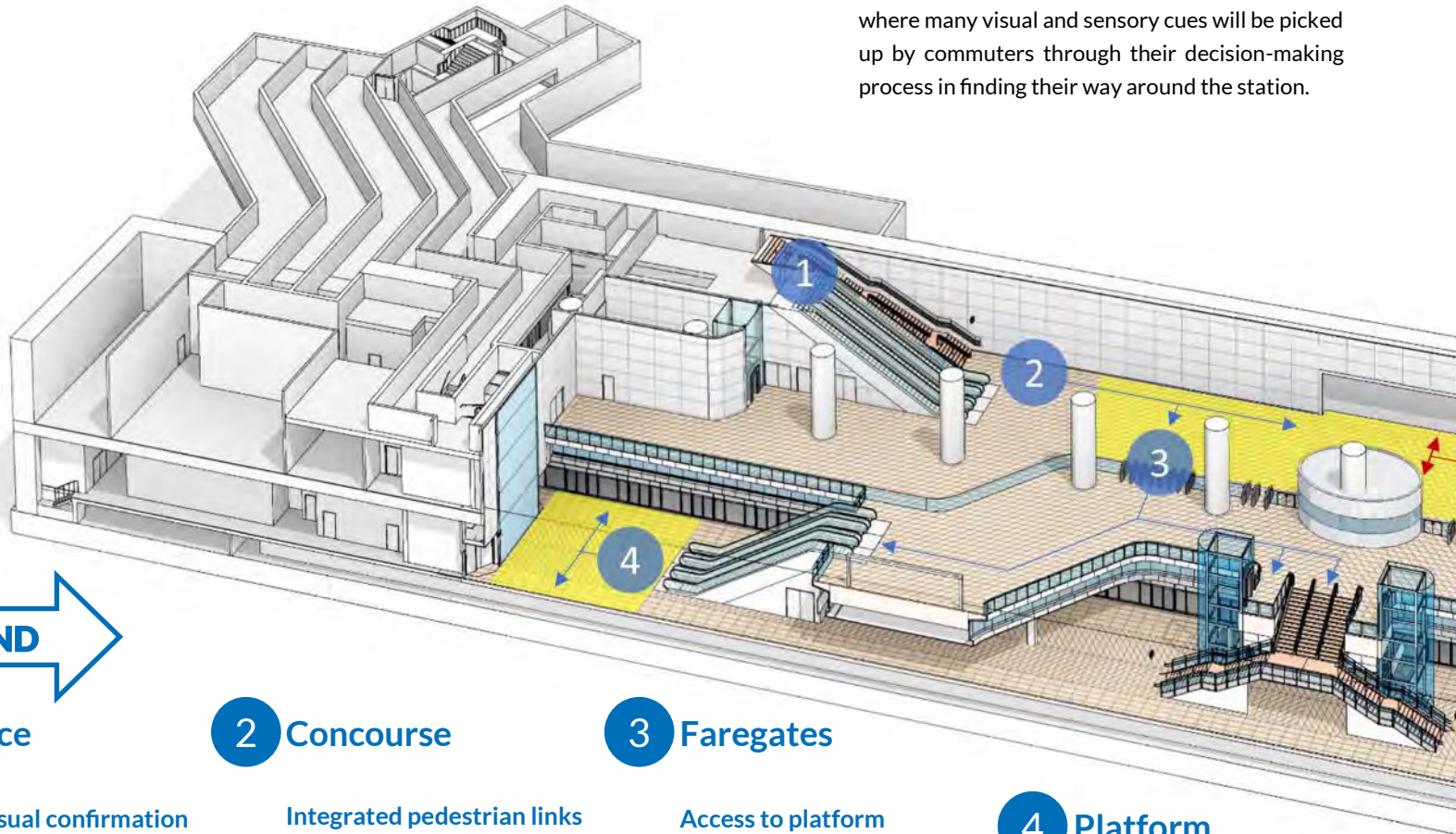
Each and every station is unique, hence it is important to gain empathy and understand our commuters' needs in order to make each and every commute a stress-free and memorable one.



Wayfinding Within a Station

Circulation Areas

Wayfinding is essential in these key activity zones, where many visual and sensory cues will be picked up by commuters through their decision-making process in finding their way around the station.



1 Entrance

Station visual confirmation

- ▶ Public Transport Sign
- ▶ Station marker

Access to concourse

- ▶ Connecting walkways
- Escalators, Lifts & Stairs

2 Concourse

Integrated pedestrian links

Locating station amenities

- ▶ Passenger Service Center
- ▶ Faregates
- ▶ Ticketing/top-up machines
- ▶ Shops & Toilets

3 Faregates

Access to platform

- ▶ Escalators, Lifts & Stairs

Connection to other lines

- ▶ Transfer linkways
- ▶ Platform levels (for stacked/cross-platform interchanges)

4 Platform

Determine direction of travel

- ▶ Overhead travel information
- ▶ System map & route diagrams

1 Platform

Arrival confirmation

- ▶ Signage & Announcements
- ▶ Distinctive architectural features
- ▶ Art-in-Transit

Access to concourse

- ▶ Escalators, Lifts & Stairs

Transfer to other lines

- ▶ Overhead signage
- ▶ Subways

2 Faregates & Concourse

Direction-finding within station

- ▶ Locality maps
- ▶ Station entrances
- ▶ Integrated pedestrian links

Locating station amenities

- ▶ Passenger Service Center
- ▶ Top-up machines & ATMs
- ▶ Shops & Toilets

3 Entrance

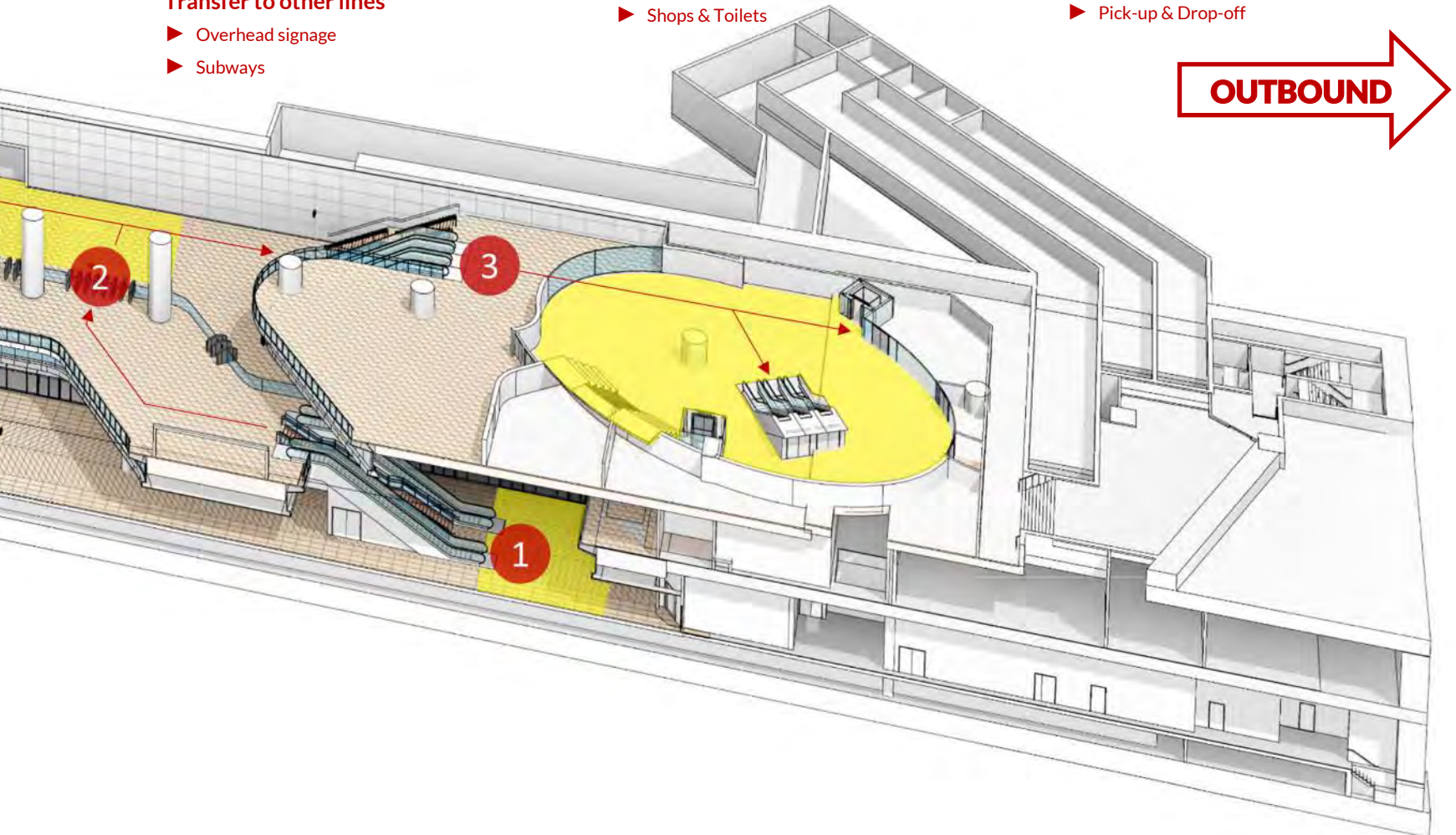
Self-orientation

- ▶ Locality maps
- ▶ Visual confirmation of surroundings

Last mile connections

- ▶ Bus Stop
- ▶ Taxi Stand
- ▶ Pick-up & Drop-off

OUTBOUND



Elements of Wayfinding



By delivering an optimal wayfinding experience in our public transit infrastructure, we can influence the behaviour of the commuters and change their perception of the environment. Generally, wayfinding design can be broken down into 4 key elements –

SPACE, LIGHT, COLOUR, and VISUAL

These wayfinding elements are not mutually exclusive; certain features may cover two or more categories and often these elements complement one another so as to deliver the ideal wayfinding experience.

Over the next few pages, we will take a look at some examples of how others have done it right and how we have approached wayfinding in our Mass Rapid Transit infrastructure.

We will also explore how Art-in-Transit can influence wayfinding across these elements.

SPACE

Space is an important aspect of way-finding, often setting the foundation for the other elements of wayfinding to be implemented.

When a space is designed well, we can cut down on the excessive use of signage that we often see today, allowing commuters to be guided through sightlines, visual cues, and intuition.

Artworks and architectural features can also be incorporated into the space to create a visual identity for the location to aid wayfinding.

WHAT OTHERS HAVE DONE



Changi Airport Terminal 4, Singapore

- Floor layout creates a linear flow, segregating inbound and outbound travellers
- Architectural design that embraces natural curves, enhancing wayfinding
- Artworks to act as landmarks and aid directional flow

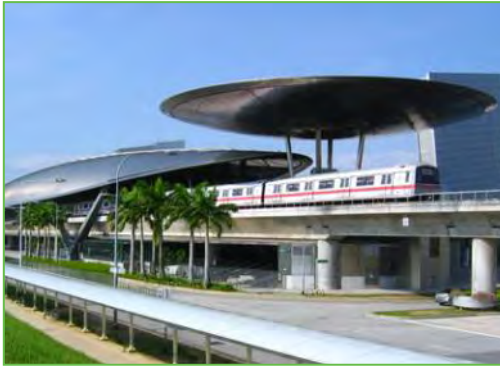
The Star Vista, Singapore

- Spatial design that accommodates efficient crowd movement
- High central atrium allows clear line of sight to surrounding retail and amenities
- Amphitheatre steps at various levels cater to community activities and events



Library@Orchard, Singapore

- Spatial design that caters to the varying needs of the library users
- The Studio, modelled after a design studio, allows for collaboration and interaction
- The Loft provides quiet, comfortable spaces for a good read
- Curved bookshelves and Book Trees promote exploration within the library



CG1 Expo

- Celebration of arrival, reflecting surrounding trade of Singapore Expo & Changi Business Park
- Dynamic roof design that responds to climate
- High void spaces give clear line of sight between platform and concourse
- Large concourse to accommodate efficient crowd movement during peak periods



DT35 Expo

- Public Transport mega sign located at station entrances creates visual identity
- Futuristic design ensures continuity with existing East West Line station



EW7 Eunos

- Pitched roof design and detailed ornaments
- Reflects the culture and heritage of the Malay community in Eunos
- Creates a landmark for the area

Impression

Architectural design of a station can create a unique identity that resonates with our commuters through the years.

Culture and heritage can also be incorporated into the station design to enhance identity and wayfinding.



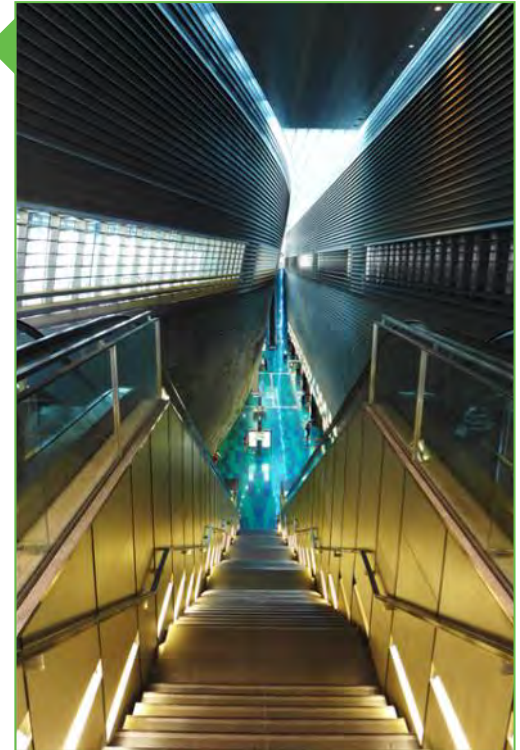
Expression

Well planned spaces not only help to facilitate the movement of crowds around our stations, but also create meeting points and landmarks that our users can relate to during their daily commute.



CC6 Stadium

- Voids completely free of structural elements allow unimpeded views down to the platform from the concourse
- Central skylight creates an attractive day-lit platform and internal environment
- Curved interior and grey cladding reflects the heritage of the old National Stadium



NS24 NE6 CE1 Dhoby Ghaut

- High volume spaces integrated with the mall atrium above allow for clear visual orientation within station
- Light wells provide natural light into transfer concourse and platform
- Art-in-Transit integrated with staggered escalators facilitate crowd movement between lines

Bayfront

DT16 CE1

- Circular motif in the architectural design and lighting
- Creates a natural meeting and decision-making point for commuters



WHAT WE HAVE DONE

NE5 Clarke Quay

- Geographical shape of Singapore River and names of its bridges embedded into station floor
- Architectural features tie in with station's Art-in-Transit installation depicting the heritage of the area



Delight

Internal architectural features and Art-in-Transit installations can greatly enhance the commuting experience and aid in wayfinding.



DT6 King Albert Park

"The Natural History of Singapore's Mythical Botanic Creatures"

- Statues scattered throughout the station promotes exploration within a familiar transit environment
- Becomes a conversation starter for the daily commuter



DT9 Botanic Gardens

"WHAT IS A TREE?"

- Art-in-Transit installations of the Gardens' iconic Tembusu tree in various forms act as destination markers
- Commuters can interact and take photos with the artwork, acting as memory markers



NE7 Little India

- Themed stations and trains with decorations that tie in with national holidays and festivities in the area strengthen the station identity

LIGHT

Light in a built environment consists of mainly artificial light and natural daylight.

Apart from serving functional needs, Light can also be used as an effective visual indicator in wayfinding. When used well, natural daylight can induce a sense of calm and comfort in an otherwise stressful underground environment.

We can explore the use of natural daylight and artificial lighting in key places within our stations, such as towards entrances, faregates and escalators, to enhance wayfinding in and around our stations.

WHAT OTHERS HAVE DONE

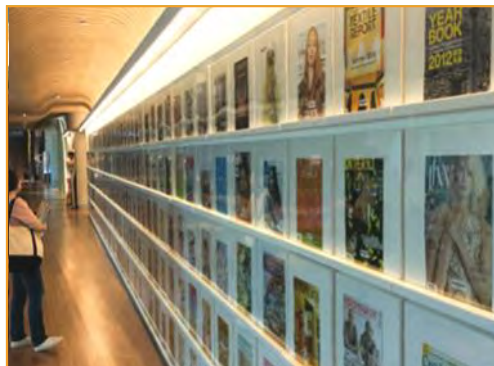
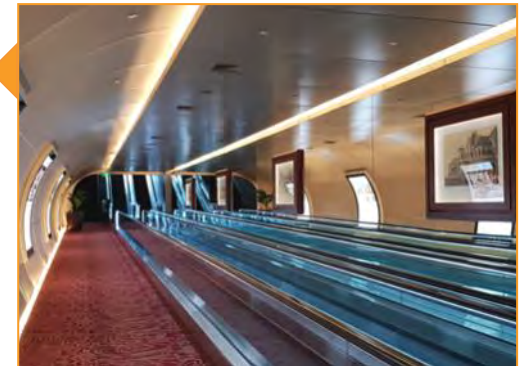


Changi Airport Terminal 3, Singapore

- Natural daylight fills the double volume space, creating an open and welcoming environment
- Adjustable roof panels regulate the amount of sunlight entering into the terminal building, minimizing the reliance on artificial lighting
- Aluminium panels further reflect and diffuse the harsh natural light, increasing traveller's comfort

One Fullerton Underpass, Singapore

- Continuous strips of artificial light along the ceiling and travellers draw attention towards the ends to facilitate wayfinding
- Combined with the carpeted walkways, the lights induce a sense of grandeur and comfort in an otherwise mundane underpass



Library@Orchard, Singapore

- Large floor-to-ceiling windows allow maximum natural light into the space, giving library users a soft and warm welcome
- A continuous strip of light draws attention towards the magazine wall, the centrepiece of the Library's lower level, forming a vibrant backdrop for the space



NS27 CE2 Marina Bay

- Translucent ETFE canopy provides shelter while maximizing natural lighting in station interior
- Iconic entrance acts as a beacon and creates an interesting interface between the park on one end and the CBD on the other

CC2 Bras Basah

- The reflection pool on the roof doubles up as a skylight for the station, with harsh sunlight diffused by the water
- Large sloping walls help to channel natural daylight down to the deep platform levels, creating a clear and direct path for outbound commuters to follow up to the surface
- At street level, the reflection pool also reflects and enhances the civic architecture in the station vicinity, while recessed ventilation shafts and escape staircases allow for unobstructed views

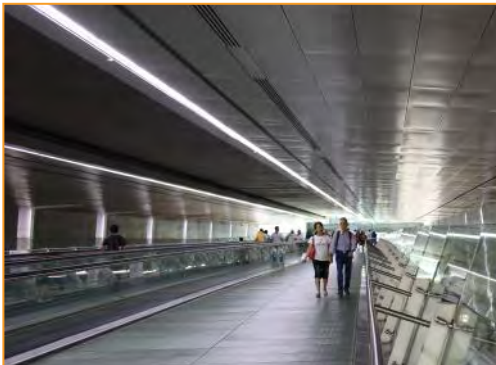
Impression

With proper utilization of space, natural light can be introduced into our station interiors to create an open and welcoming experience for our commuters.



Expression

Deliberate artificial light can be used in tandem with the existing architectural features to create a visual focus that naturally directs commuters towards their destinations.



CC19 DT9 Botanic Gardens

- Well considered light design along the transfer linkway marks the transition from one line to another
- Brightly lit escalators indicate the point of exit from the DTL platform



CG2 Changi Airport

- Illuminated bridge link above the platform lights up the space and draws attention towards both ends
- Light strips and travellators create parallel lines that instil a sense of movement in commuters travelling between terminals

WHAT WE HAVE DONE

LIGHT

DT9 Botanic Gardens

- Orchid imprints on skylights over the entrance cast shadow patterns onto walls and floors during specific times of the day



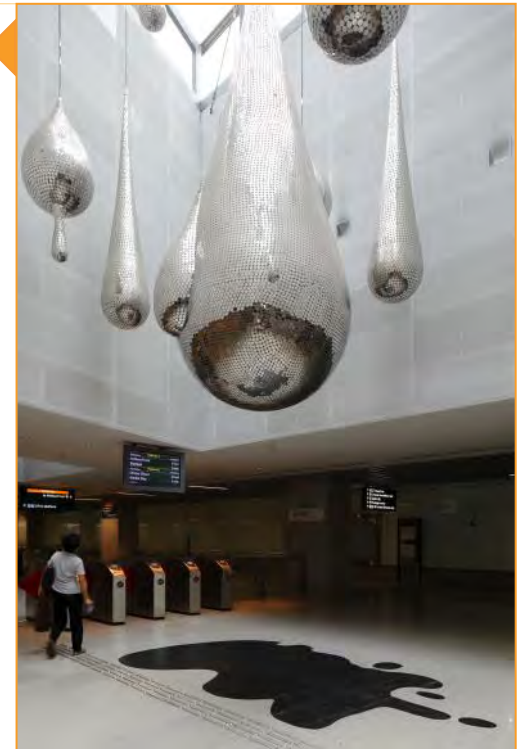
Delight

Well designed and placed natural and artificial light can create moments of delight and relief for the commuter in a crowded station.

These Art-in-Transit installations are complemented and enhanced by the provision of natural daylight, brightening up otherwise mundane internal environments. These works of art thereby become iconic landmarks used by commuters for wayfinding.

DT15 CC4 Promenade

"Dreams in Social Cosmic Odyssey"



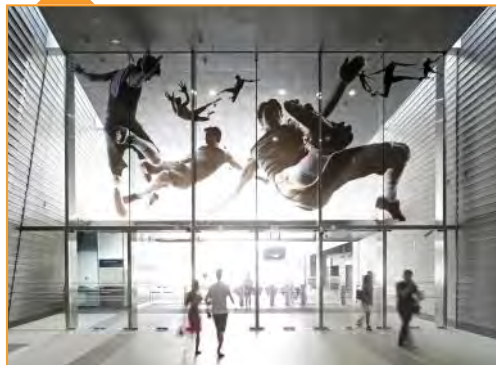
CC23 one-north

"A Visual Narrative of Pandemonic Rhythmic Movement"



CC6 Stadium

"The Perfect Moment"



Colour has been a key aspect of our MRT system since its inception.

The system-wide signage relies substantially on the use of colour, alongside alpha-numeric codes to identify lines and create a visual identity for our transport system.

Strategic use of colour in the station architecture and the artworks under the Art-in-Transit program, can significantly aid orientation and wayfinding, thereby helping to reduce the need of excessive signage and visual clutter within our stations and immediate surroundings.

WHAT OTHERS HAVE DONE



Narita Airport Terminal 3, Japan

- Colour coded pathways to segregate movement between inbound and outbound passengers
- Signs integrated into architecture reduces overhead clutter and cost

Photo by 中岑 范姜 from Flickr,
Licensed under Creative Commons BY-SA 2.0

Ng Teng Fong Hospital, Singapore

- Each block is individually colour-coded, which is reflected in the interior design and building-wide signage to facilitate effective wayfinding



Seattle Public Library, USA

- Bright yellow colour acts as a unique indicator of vertical movement within an otherwise monotonous building

Photo by Jules Antonio from Flickr,
Licensed under Creative Commons BY-SA 2.0

WHAT WE HAVE DONE



NS24 NE6 CE1 Dhoby Ghaut

- Orange walls along the Circle Line concourse enhance line identity within a multi-line interchange

Impression

A consistent colour scheme can often be applied to features within a station, which work in tandem with signage and announcements to give commuters a visual confirmation of their destination.

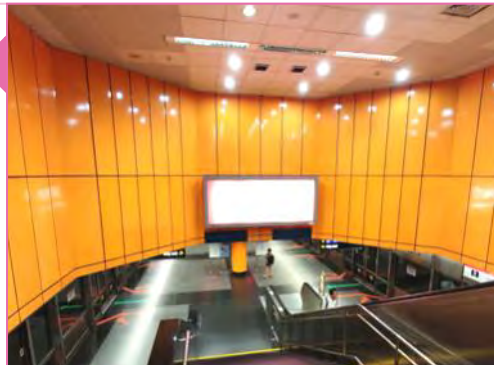
Adjacent stations along the same line have distinct colour schemes to aid in wayfinding.

NS21 Newton

Orange interior (Left)

CC19 Toa Payoh

Yellow interior (Right)



Within a station, Art-in-Transit can be used to reinforce the line colours and palettes as a subtle reference point for commuters within an interchange station.

CC29 HarbourFront

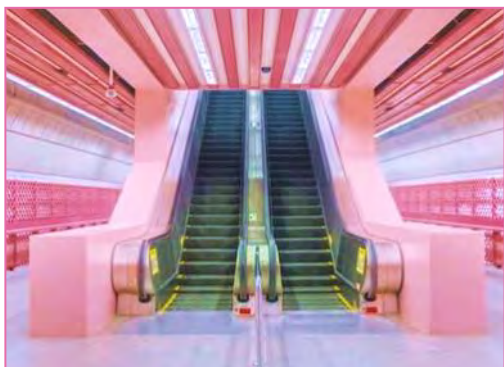
"Commuting Waves" (Left)

NE1 HarbourFront

"Enigmatic Appearances" (Right)

Expression

Colour within architectural and station features can subtly reflect the line and station identity, to create a more intuitive environment for wayfinding.



EW18 Redhill

- Iconic pinkish-red interior is a reflection of the station's name and heritage of the area

CC6 Stadium

- Colour is reflected in the aquamarine blue flooring
- Acts as a unique visual identifier for the station



Colour strips along the platform screen doors and faregates complement existing signage and place an emphasis on the line colour that the commuter is travelling on.



WHAT WE HAVE DONE

CC7 Mountbatten

"Lord Mountbatten Thinks of Pink"

- Art-in-Transit depicting a pink battleship acts as a landmark along the wayfinding journey, while creating curiosity, delight and a unique identity for the station
- The installation also acts as a recorder and storyteller—depicting history of WWII and heritage of the area in a fun and engaging way



Delight

Colours can be incorporated in the Art-in-Transit installations on our lift shafts and walls, adding a splash of colour to the otherwise monotonous station interiors, which serve as visual markers in the commuters' journey.

DT13 Rochor

"Tracing Memories"



CC21 Holland Village

"Holland Beat"



CC20 Farrer Road

"Art Lineage"



VISUAL

Signage and art are key contributors to visual wayfinding within stations.

Like Art, Signage within stations should be carefully curated to display only the essential information, at the correct time and location, in order to not overwhelm our users, which will be counterintuitive to wayfinding.

When signage clutter is reduced, strategically placed and curated artworks can become potent visual markers, enhancing the wayfinding experience for our users.

WHAT OTHERS HAVE DONE



Changi Airport, Singapore

- Large, colour-coded directional signs provide essential information catering to all user groups

Bencoolen Street, Singapore

- Compass showing surrounding landmarks embedded into floor decoration, assisting in directional orientation

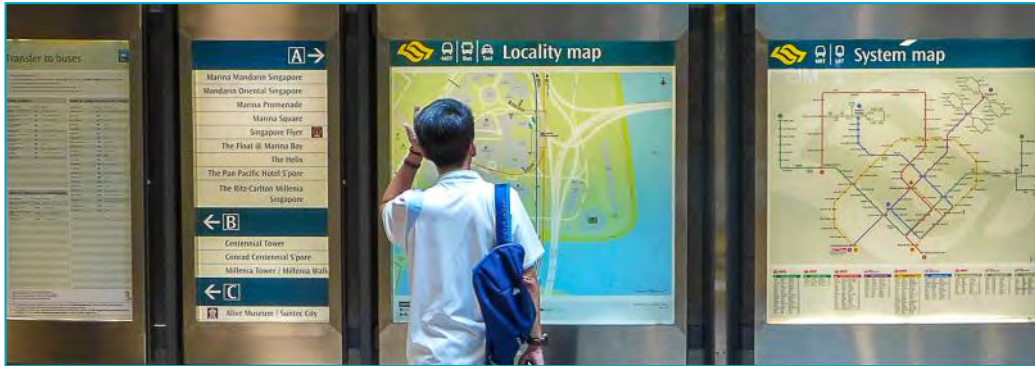


Shibuya Station, Japan

- Large, colour-coded panels reinforce the line colour identity, while working in tandem with overhead signage for wayfinding
- Clear and concise information at a glance facilitates easy orientation within a major transport hub

Photo by Tennen-Gas from Wikimedia Commons,
Licensed under Creative Commons BY-SA 3.0

WHAT WE HAVE DONE



Impression

Signage can be coordinated with our station architecture, providing essential info to our commuters at the various decision-making points.

DT15 CC4 Promenade

- Bulk of travel information consolidated at concourse for efficient wayfinding and decision-making, for both inbound and outbound commuters

DT18 Telok Ayer

- Public Transport mega sign as a main identifier for station entrance
- Station name sign and other distinctive architectural features reinforce the line identity



CG1 Expo

- Directional signs, train arrival displays, and other regulatory signage integrated into a single station structure to reduce visual clutter

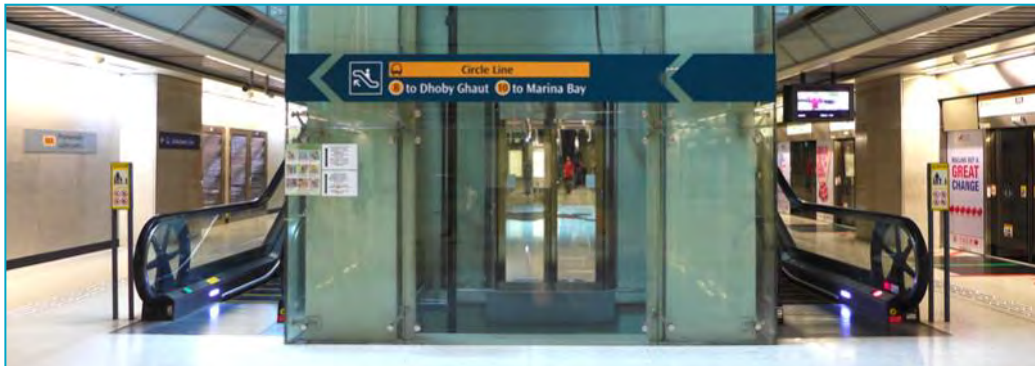


Expression

Existing signage within our stations can be enhanced for a seamless wayfinding experience.

CG2 Changi Airport

- Essential information carries equal visual weightage, catering to both inbound and outbound commuters



DT15 CC4 Promenade

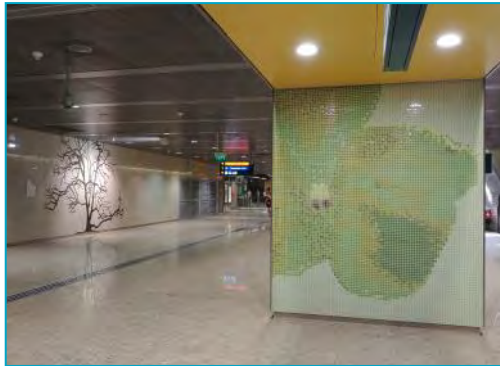
- Essential travel information integrated into lift shaft at key decision-making point for a seamless transfer towards destination

EW16 Outram Park

- Next generation Platform Screen Door signage consolidates travel information at a glance, providing a clean and clutter-free travel experience



WHAT WE HAVE DONE



CC19 DT9 Botanic Gardens

- Architectural features and Art-in-Transit include botanical motifs, complementing each other in creating a unique identity for the station
- The artwork for each line also act as identity markers within an interchange

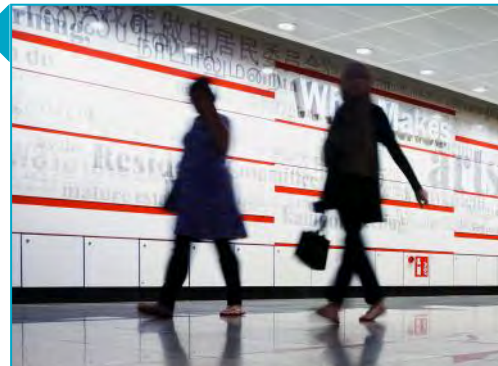
DT9 MacPherson

"Trail of Thoughts"

- Community inspired Art-in-transit acts as a wayfinding device and a diversion for commuters, inspiring them with stories from the residents

DT34 Expo

- Super-graphics embedded into architecture of station concourse, enhancing wayfinding



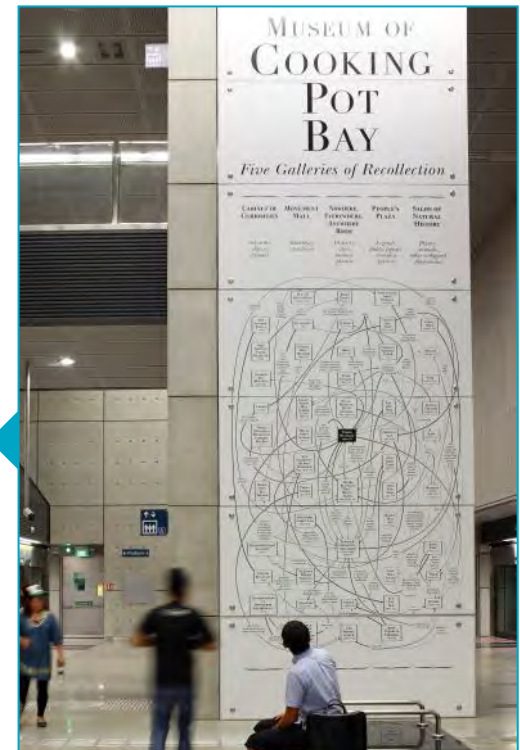
CC28 Telok Blangah

"Notes Towards a Museum of Cooking Pot Bay"

- Art-in-Transit on lift shaft provides an insight into area's history, educating commuters while highlighting key places-of-interest in the vicinity
- The artwork as a beacon directing commuters towards the platform

Delight

Visual information can be incorporated into Art-in-Transit installations and architectural features, complimenting our existing signage for wayfinding.



2 Developing A People-Centric System

As we look at our MRT infrastructure beyond simply serving as a means of transportation, we can identify key user needs and incorporate the Design Thinking methodology into designing our stations, shaping the future of our public transport system into one that fully integrates into our commuters' lives, fulfilling their emotional needs.

Identifying Key Commuter Needs

INBOUND

Entrance



- Station identifiers as visual confirmation



- Clear, barrier-free access to concourse

Concourse



- Clear visual orientation to Passenger Service Center, ticketing machines, faregates, and station amenities



Platform

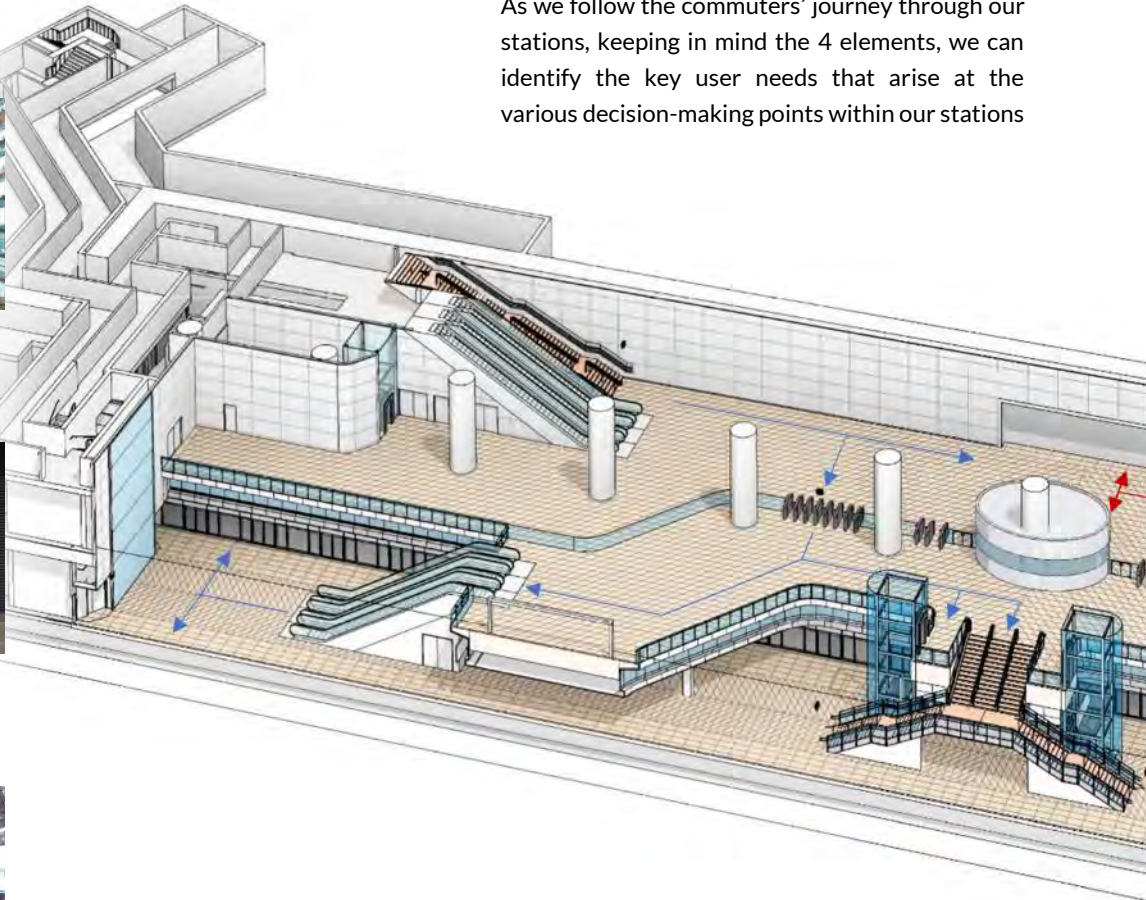


- Clear direction towards intended line of travel in interchange stations



- Well located signage provide orientation to destination station

As we follow the commuters' journey through our stations, keeping in mind the 4 elements, we can identify the key user needs that arise at the various decision-making points within our stations



OUTBOUND

Platform

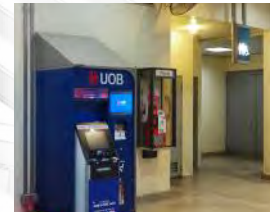


- Station identifiers as arrival confirmation



- Clear orientation to connections and exits

Concourse



- Clear visual orientation to faregates, ATMs, shops and toilets



- Signage and locality map provide direction-finding towards destination

Entrance



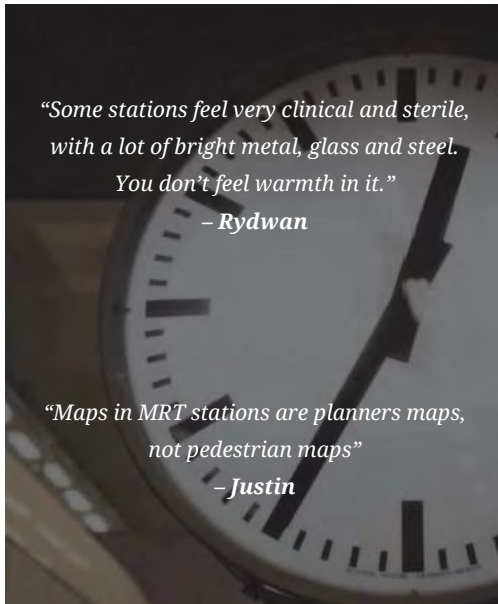
- Integrated underground connections and last mile connectivity provide a stress-free experience



Insights from Our Commuters

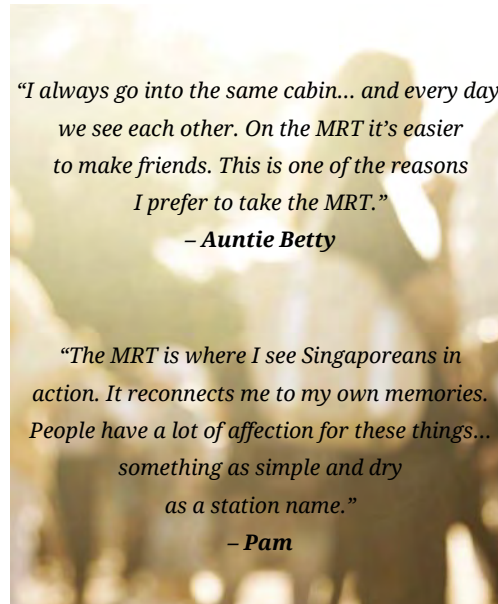
1

We are focused on addressing functional needs, **but people also want us to respond to their emotional needs**



2

Memorable experiences make places meaningful, **but these experiences are happening by coincidence**, rather than by design



3

People appreciate public access to our spaces **but they do not feel a sense of public ownership**



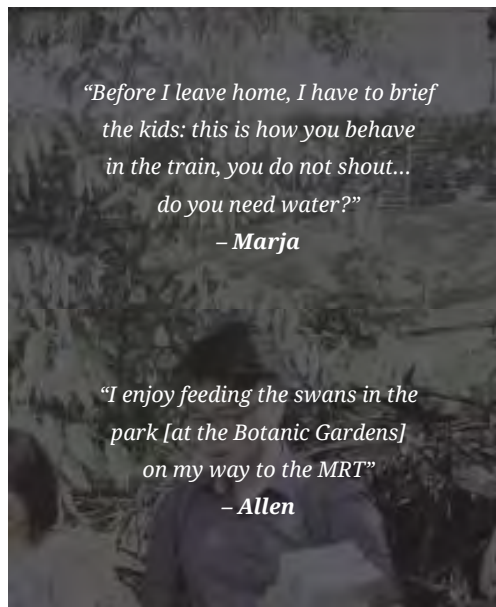
4

We rely on signage to influence behaviour **but social norms are also influenced by spaces, processes and roles**



5

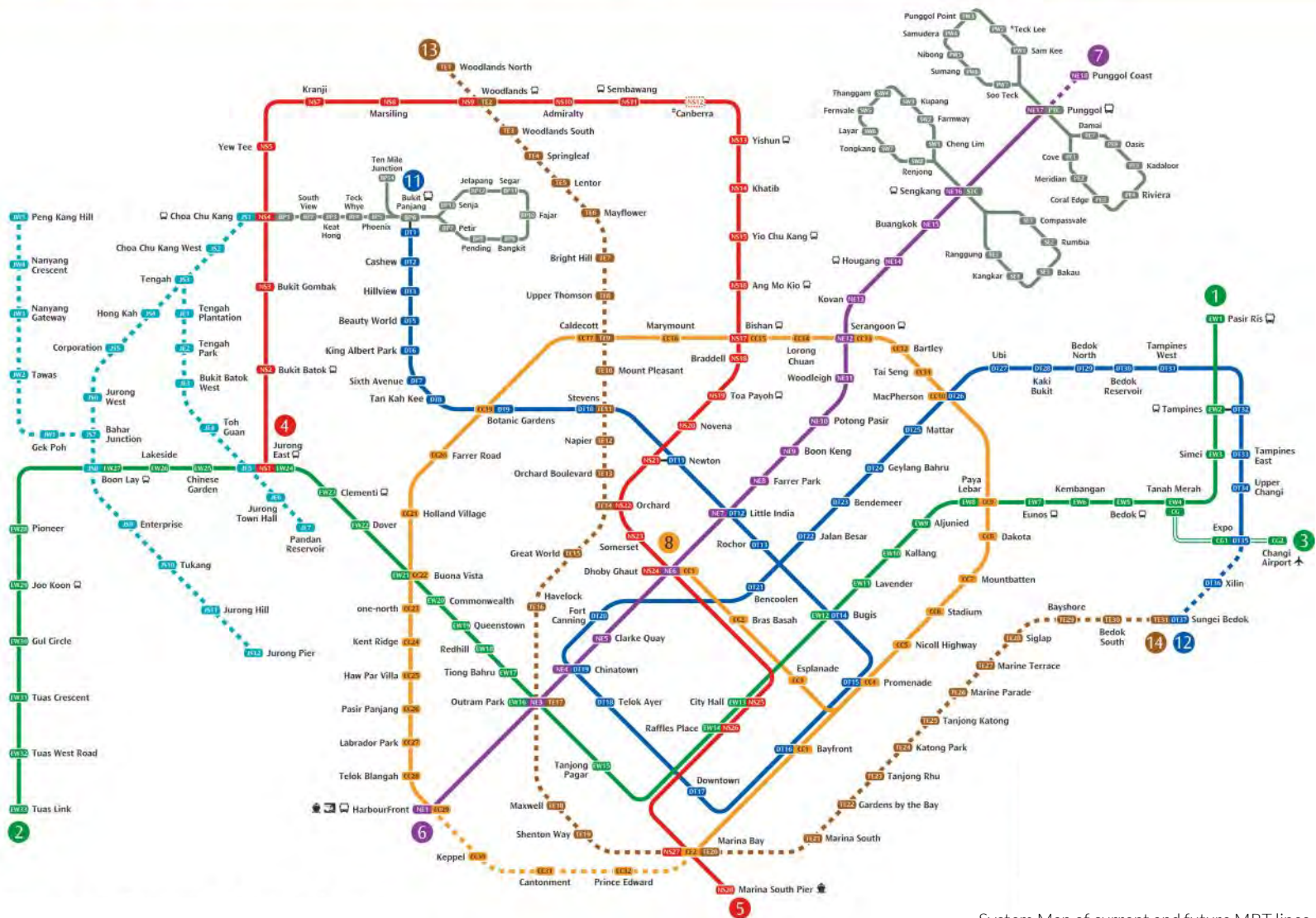
We are focused on the experience inside the station **but the journey extends beyond the station**



6

The MRT is not just a mode of transport but it is **also a part of Singapore's everyday culture**





System Map of current and future MRT lines

Our MRT Should Be One That...



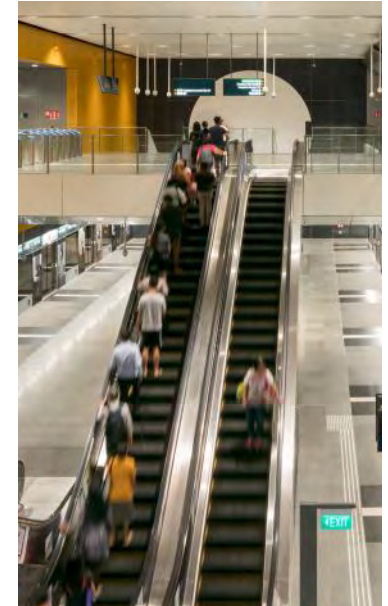
**Goes beyond simply
serving as a mode of
transportation**



**Reinforces Singapore's
identity and culture**



**Becomes the centre of
everyday activities**



**Delivers a wayfinding-
oriented experience**

3 Reinforcing the Public Transport Identity

Over the years, we and our predecessors have constructed a unique identity for our Public Transport, from the architecture, to the chimes and jingles of the announcements, all of which have become deeply ingrained in our Singapore culture. We, as designers of the future, must continue to explore how these uniquely Singaporean qualities inform all new designs and thereby reinforce and consolidate the overall identity of our MRT infrastructure.

Humble Beginnings

In the early 1980s, the plan of an island-wide heavy-rail mass transit system was gazetted by the government with an initial budget of S\$5 billion. Mass Rapid Transit Corporation (MRTC) was subsequently set up to oversee the construction and eventual operation of the system.

The development of an underground MRT line that runs along the Orchard Road shopping belt has resulted in the shopping precinct evolving from being car-centric to pedestrian-centric, opening up avenues for integration of adjacent developments via below-street connections.

This intervention radically transformed the retail landscape in Singapore, one increasingly focused on underground commercial activity and connectivity to transit stations, which often served as key points of entry into the area. Developing a comprehensive underground network that incorporates climate-controlled commercial and circulation spaces, increasing comfort and convenience, therefore became a necessity in Singapore's tropical climate.

Likewise, the extension of the MRT network in the 1990s to Jurong East, Tampines and Woodlands accelerated the development of these regional centres. Today, new lines and stations serve not only to improve connectivity between townships but also create urban spaces and connections that help to bind communities together.



System Map of the original MRT network



Newspaper Article: *The Straits Times*, 12 March 1988

Transition to a Multi-modal System



In the year 2000, the Land Transport Authority (LTA) was formed as a statutory body and subsequently took over the regulation and development of the MRT system. SMRT Corporation was incorporated as a multi-modal operator of trains, buses and taxis, and adopted the original MRT logo. SBS Transit was introduced as a train operator for the North East Line, which commenced operations in 2003.

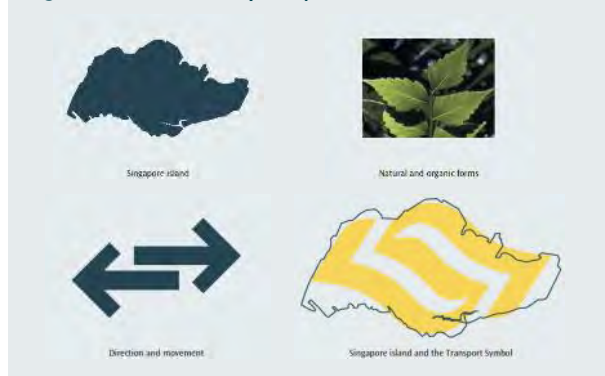
Following the switch to a multi-modal, fully integrated public transport system, it was recognized that a consistent identity was required system-wide. LTA, in consultation with design specialists, proceeded to develop a suite of common identifiers for the system, comprising of the Public Transport Symbol, Mode Identities and graphic components like colours, typefaces, and signage.

The Public Transport Symbol

A common identity symbol to cover trains, buses and taxis was conceived. It was designed as a universal branding symbol to present and promote the transport network for the benefit of all; both operators and commuters.

The design is loosely based on the unique geographical shape of the Singapore island, with an 'organic' style, and hints of directionality and movement. In recent years, it has also been employed as for a tool to facilitate wayfinding in the form of a highly visible external mega sign, which functions as a marker for train stations and bus interchanges.

Origin of the Public Transport Symbol



Systemwide Visual Identity

The identity of the system-wide signage comprises of the fonts, colours, as well as unique alpha-numeric codes.



LTA Identity

The LTA Identity is a custom font designed for and solely used by the LTA. It was designed with a flavour of the South East Asian region and incorporates some of the character of regional scripts.

Designed to meet the unusual multi-dimensional requirements of the original brief – the font had to work in terms of functionality, clarity and overall identity, while at the same time displaying a sensitivity to local context and aesthetics.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890 &.,;,'!?'()/-



Colour

A common set of colours is adopted system-wide for ease of identification, information and wayfinding, providing the commuters with clear visual information.



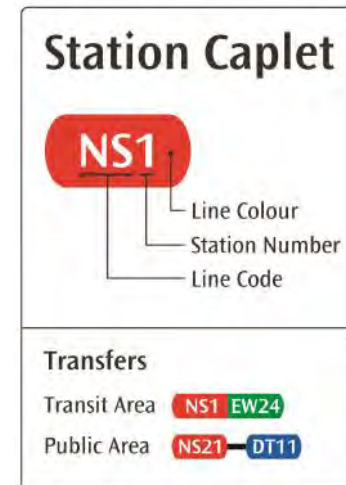
Sun Yellow and Rainforest Green is applied to all signage within stations to maintain a system-wide identity and consistency.



Station Caplet

Each station is assigned a station-specific alpha-numeric code comprising a 2-character Line Code and 2-digit Station Number, encapsulated within a Caplet corresponding to the line colour.

The stations are numbered in a sequential order along each line, with certain numbers reserved for future planned stations along an existing line. Interchange stations are also assigned multiple unique codes corresponding to each line.



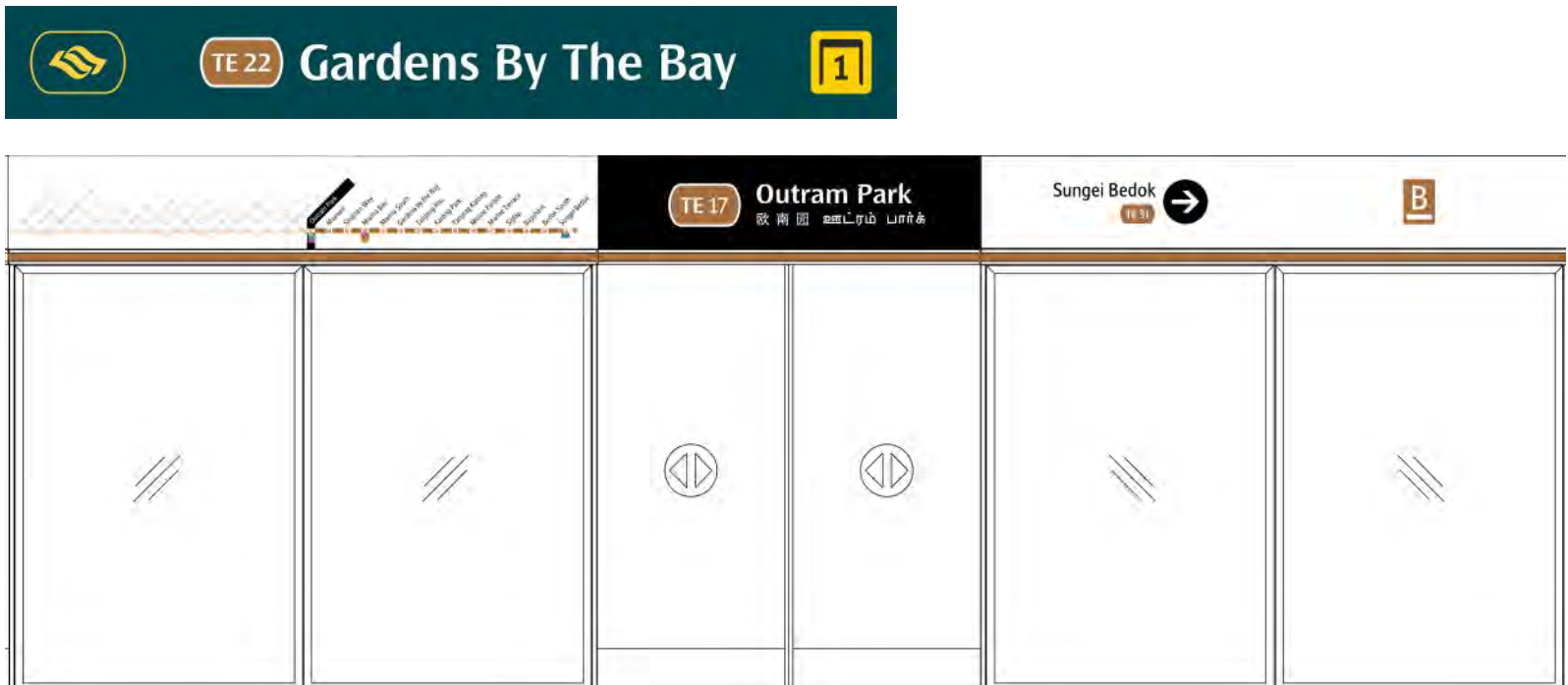
Strengthening Our Modal Identity

LTA is constantly exploring new ways to improve the identity of our public transport system through the observation and recording of commuters' needs and aspirations.



Concept Sketches

For example, one of the efforts to strengthen the modal identity is to integrate the visual identifiers into the system-wide signage.



The Expanding Network

Our transit network needs to continue expanding to cater to the continuous economic and population growth of Singapore. LTA's efforts not only encompass the rail and road network, but also the pedestrian and cycling paths as part of the Walk Cycle Ride initiative.

With population growth and ever-increasing urban densification, today there are even more underground pedestrian walkways and integration with adjacent developments and bus interchanges from our stations, expanding our integrated transit network. Hence, the multi-modal public transport identity becomes a key visual marker to aid the commuters' journey.



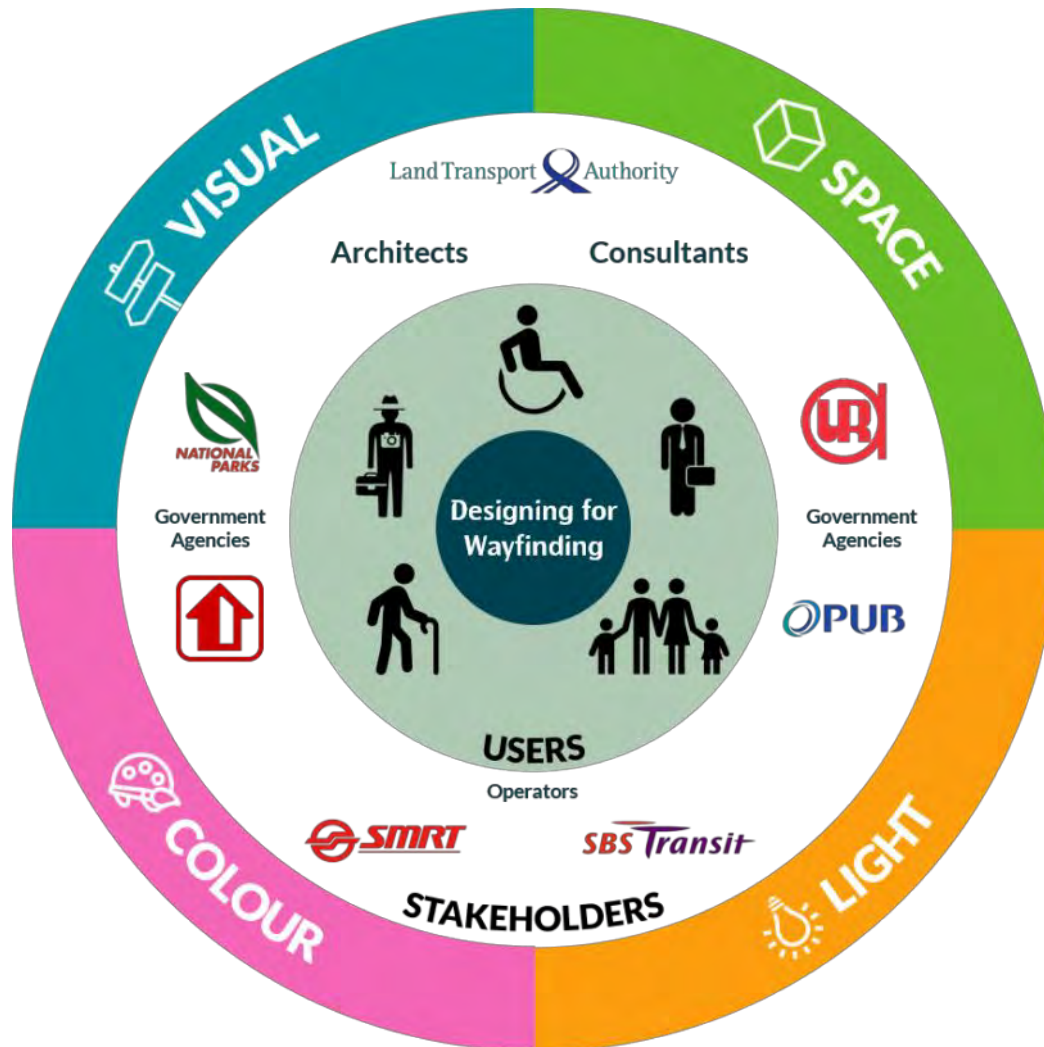
2 LINES
3 INTERCHANGES
PAST

5 MRT LINES
3 LRT SYSTEMS
PRESENT

4 Maintaining **Balance** Across the System

In the process of designing, we must be mindful of the emotional and functional needs of our various stakeholders. By applying universal design principles that complement wayfinding across the entire network, we can create a balanced design language and identity that can be applied to all situations.

The Need for Balance



“It is that shape, colour, or arrangement which facilitates the making of a vividly identified, powerfully structured, highly useful mental image of the environment.”

— Kevin Lynch
‘The Image of the City’

Designing stations is a complex process. The designer needs to consider the exacting technical requirements together with the evolving and often conflicting needs and wants of the myriad stakeholders and strike a delicate balance in order to create a station that can be used by all.

By paying particular attention to **SPACE, LIGHT, COLOUR** and **VISUAL** cues, the stations can be designed as coherent, interesting and indeed delightful spaces which are safe and easy to navigate. The station design can promote a strong sense of identity and engender community ownership.





Designing Platforms



- ▶ Clear spatial orientation
- ▶ High space volume
- ▶ Clear line of sight to concourse
- ▶ Linear flow for inbound and outbound commuters



- ▶ Integrate visual information with existing infrastructure
- ▶ Display essential information for user orientation



- ▶ Integrate line colour and identity into station architecture
- ▶ Art to enhance wayfinding





Designing Concourses



- ▶ Clear orientation to faregates and station platforms
- ▶ Intuitive way out to station entrances
- ▶ Seamless and direct connection to adjacent developments



- ▶ Brighter entrances help to identify way out of station
- ▶ Use different light to identify difference spaces
- ▶ Create a welcoming and inviting environment



- ▶ Essential information at a glance
- ▶ Clear access to station amenities
 - Passenger Service Center
 - Ticketing Machines
 - Faregates
- ▶ Connection to transfer linkways





Designing Entrances



- ▶ Entrances that reflect the public transport identity
- ▶ Spaces to cater to user needs



- ▶ Visual confirmation of the station
- ▶ Street markers that lead towards the station entrance



- ▶ Enhance identity of the community
- ▶ Colours and palettes that subtly reflect the line identity

*“Design is not just what
it looks like and feels like.
Design is how it works.”*

— Steve Jobs



