DESIGN
PLAYB⬢⬢K

A framework for designing
Resilient, Sustainable, and Endearing Places
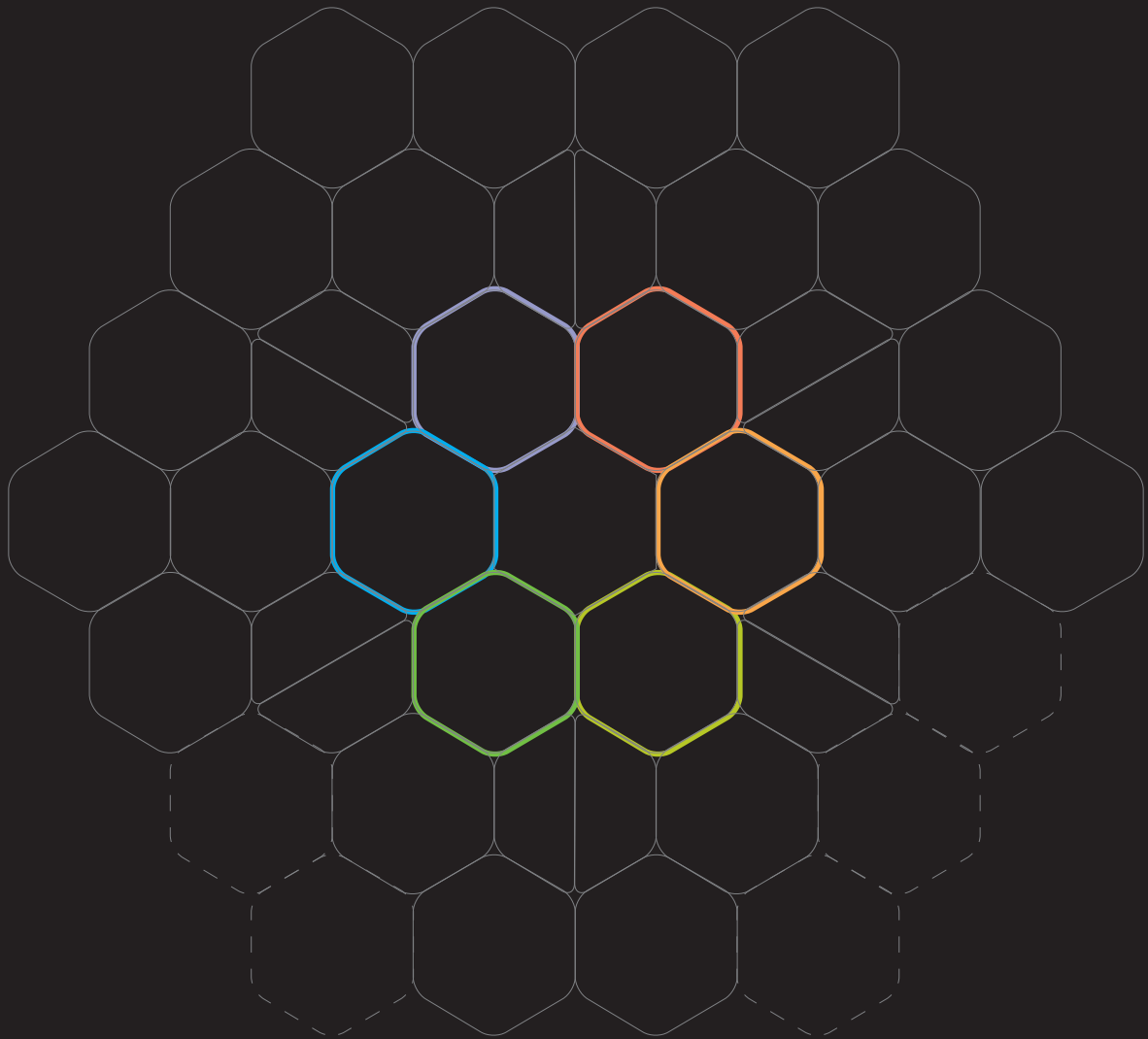
SAA

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Foreword

Foreword

"Our world is entering an age of chaos." These were the sombre remarks of United Nations Secretary-General Antonio Guterres in his speech to the General Assembly at the start of 2024. Indeed, war is being waged on all fronts — against political systems, communities, and nature. In demonstrations of their commitment to change, governments have signed agreements and treaties ranging from the UN Charter, the 2030 Agenda for Sustainable Development and, to the Paris Agreement for climate change.

These documents hold the answer for *what* needs to be done. Yet, *how* we can meet present needs, while safeguarding the future in these times of unknown challenges, is a question that demands further investigation.

In his speech, Mr. Guterres concluded: "Peace builds." As the bedrock of progress, peace is a collective responsibility. Architects have the agency to shape societies — from the way people live to how communities interact with one another. Rethinking the architectural practice and how we design can lead to more inclusive, equitable, peaceful, and sustainable futures, resilient to crisis, and endearing for all.

Over the years, architectural design has witnessed a transition from simplicity to complexity. Once rooted in a keen awareness of specific problems to solve, architecture now grapples with a spectrum of global issues: climate crises, geopolitical tensions, and the looming shadows of pandemics. In this web of uncertainties, we confront the sobering reality that the limits of our understanding have expanded, leaving us in the realm of unknowns.

Amidst these uncertainties, a resounding call emerges for designers to embrace a role of unprecedented significance. The act of creation, an enduring force shaping our world, beckons us to wield a greater influence in steering global development in the right direction. Now, more than ever, designers find themselves as architects of transformative change, with the potential to sculpt the contours of the future.

The **Design Playbook** is our way of equipping our designers with tools to respond to this uncertainty and evolving landscape. The Playbook is anchored by 3 pillars: Resilience, Sustainability, and Endearment.

The Design Playbook is anchored by **Resilience, Sustainability, and Endearment**. Design prompts serve as tangible guides to create a "visual design brief" tailored to each project and acting as a compass through its lifespan.

These pillars serve as tangible guides, housing design prompts that propel the creative process. This approach provides design teams with a 'visual design brief,' tailored to each project and acting as a compass throughout its lifespan.

The structure and framework of the Design Playbook taps on the principles of biomimicry. Drawing inspiration from the designs of nature, the honeycomb of hexagons, reminiscent of nature's adaptability, allows for responsiveness and relevance in the face of a changing global situation.

As a responsive toolkit, the playbook enables designers to distill the dynamic needs of each project and embark on a journey that pushes traditional boundaries. Design ideas are sharpened as they are evaluated in levels, ensuring the right focus for each contribution to the design solutions. Beyond the realm of new projects, the Design Playbook is invaluable in evaluating existing structures, uncovering opportunities for enhancements and improvements.

Within the pages that follow, we embark on a journey into the heart of a cautiously optimistic revolution — a journey that challenges norms while embracing the uncertainties of tomorrow. This tool extends an invitation to explore the transformative power encapsulated within the Design Playbook and, by extension, within the hands of every designer, where hope is our compass and creativity is our map.

Michael Leong
Senior Executive Director, SAA Architects

Introduction
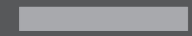
Wicked Problems of our Times

Who the Playbook is for

Why use this Playbook

Wicked Problems of our Times

The Volatile, Uncertain, Complex, and Ambiguous (VUCA) global conditions of today call upon the Architecture, Engineering, Construction (AEC) sector, planners, and policymakers to come together to address critical urban issues in the built environment. We now face the inevitable triad of wicked problems of our times:

01 The global nature-climate crisis
02 Drastic population shifts
03 Increased mega urbanisation

Communities are greatly impacted by nature, the speed and magnitude of climate change shocks, and socioeconomic disruptions in dense urban environments. Some urban disruptors include catastrophic events such as pandemics, climate disasters, terror threats, and operational disruptions.

The dramatic growth of an ageing population puts an unsustainable strain on resources, where the increase in population numbers may not match the rise in quality of life. Increased life expectancies, when not matched with quality healthcare and urban environments that support independent living and ageing-in-place, would cause a strain on cities.

Cities and urban activities are responsible for nearly 75% of global carbon emissions. Urban heat islands often cause 10-15°C higher temperatures in cities than their rural surroundings. With 70% of the world's population projected to be living in cities by 2050, the climate crisis will be further exacerbated if we do not rethink how our cities and built environment are designed now.

Developments today need to withstand shocks and disruptions, complex urban transport conditions, and changing urban demographics. Building resilience into our designs therefore must encompass urban design, socio-communal, mobility, economic, and environmental factors.

Multi-functional and multi-programmed integrated urban typologies centred on urban connectivity, commerce, and communities can significantly support the urban development and sustainability goals of cities looking towards economic models of growth through intensified employment, housing, and productivity. The creation of well-networked urban developments enhances the viability of cities and towns, leveraging key attractions within each place to sustain mutual growth across regions.

Agglomerating essential services and critical amenities, and increasing accessibility to live-work-play spaces within walkable and manageable distances, make for happier cities and better places. Planning, designing, and implementing such developments require multi-disciplinary teams to innovate and collaborate, while navigating multiple moving parts in hard infrastructure and soft aspects of communities.

Who the Playbook is for

This playbook proposes an inter-disciplinary framework for architects, urban designers, engineering, and construction consultants to engage with developer clients and public agencies. It presents a global view of the complex and interconnected urban infrastructure, and the diverse stakeholders that are part of this ecosystem. It allows the entire team to co-create with one another and customise a specific design brief that details the unique needs of the development at that time, and is suggestive of a roadmap that could lead the team closer towards achieving this cohesive vision.

Why Use this Playbook

This playbook presents an urban whole systems approach, taking on a broader sustainability lens, projecting a resilient future that not only maintains communities but also creates endearing places where lives are lived. The tools offered here, referred to as enablers and represented in different hexagons, provide some principles for designers and consultants to understand, observe, and ideate fresh approaches to designing resilient, sustainable, and endearing designs, wherever they are.

About the Framework

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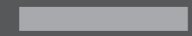
3 Values | 6 Qualities | 25 Enablers

Towards Resilient, Sustainable, and Endearing Designs

How to Use the Playbook

3 Values

Underpinning *why* cities need to be planned and designed to be liveable, lovable, and future–proofed

6 Qualities

Defining *what* characteristics great cities possess that attract talent and enable communities to thrive

25 Enablers

Demonstrating *how* these qualities can be achieved, by focusing on diverse aspects that empower cities and people

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Resilient

The capacity of a city's systems, businesses, institutions, communities, and individuals to survive, adapt, and grow, regardless of chronic stresses and acute shocks.

Resilient Systems
Operational and legal frameworks that enable the urban environment to function well on a day-to-day basis and to pre-empt shocks and crises.

- Agility
- Capacity
- Facilities management
- Smart technologies
- Partnerships

Resilient Spaces
Potential within spaces to transform and respond to changing external circumstances.

- Adaptability
- Wayfinding
- Defensible spaces
- Innovation

Sustainable

The ability to meet our own needs without compromising the potential of future generations to meet their own needs.

Sustainable Value
Measurement of benefits related to increasing the longevity and sustainability of buildings, products, and operations.

- Efficiency
- Clean energy
- Heritage
- Place capital

Sustainable Ecology
Relationships and vital connections between living organisms, including humans and the physical environment.

- Green urbanism
- Green & blue
- Lifestyles

Endearing

A quality that ties communities together, inspiring feelings of delight, joy, and affection, even in times of crises, into the future.

Endearing People
Members of society that come together to form communities that work towards a greater whole.

- Quality life and well-being
- Sensorial delight
- Active programming
- Community ownership
- Urban vitality

Endearing Places
Spaces that become places when people form memorable experiences and build relationships over time.

- Identity
- Inclusive
- Public spaces
- Street life

01 Resilient

Urban resilience is the capacity of a city's systems, businesses, institutions, communities, and individuals to survive, adapt, and grow, no matter what chronic stresses and acute shocks they experience.

WHY RESILIENT?

The built (urban) environment depreciates and degenerates over time if left without intentional intervention. Dynamic flexibility needs to be integrated into the design process for resilience to be built, both into the design of physical spaces as well as the operational systems that eventually manage the places.

Urban resilience helps to future-proof the infrastructure and built environment of our cities against natural obsolescence and decay, as well as the shocks and resets that pandemics cause. Planning and designing for resilient urban futures require tackling challenges and creating solutions in a place-based, integrated, risk-aware, and forward-looking manner. It needs to not only facilitate functionality for the stakeholders, but also increase the economic viability with sustainable profits for the owners in its operations, to anticipate and withstand any chronic unprecedented stresses.

RESILIENT SYSTEMS
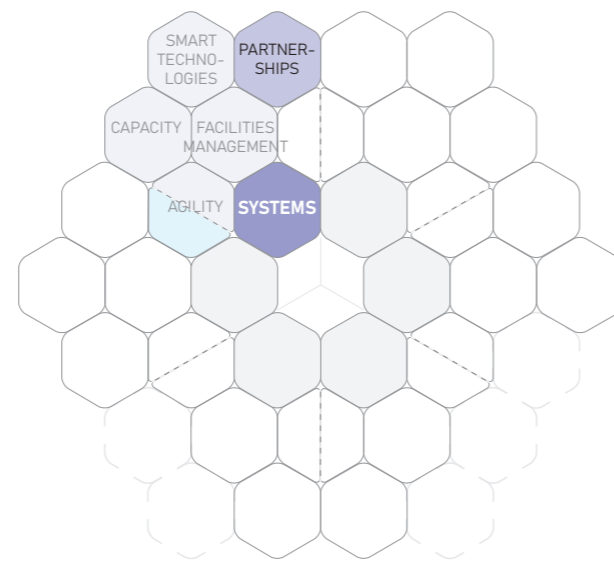
Resilient systems are based on the operational and legal frameworks that allow the urban environment to function well on a day-to-day basis and to pre-empt shocks and crises. Such systems require:

Agility for the development to stay active for a prolonged period.

Capacity to resist, withstand, recover from, and exploit change.

Facilities management that is effective, ensuring smooth continuous operations in times of crises and breakdowns.

Smart technologies integrated into a built environment that actively sense the dynamic needs of the population, where data informs the processes of the frameworks.

Partnerships that balance everyone's needs, to build spatial, social, and operational capacity.

RESILIENT SPACES
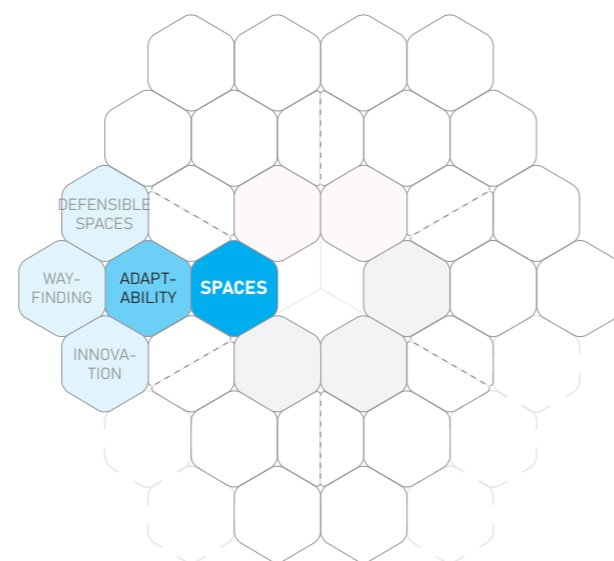
Resilient spaces hold the potential to become endearing places when people form strong social bonds, interactions, and memories within their communities, attaching meaning to urban spaces over time. Such spaces are characterised by:

Adaptability — enabling buildings and places to meet the changing needs and demand of population shifts and the built environment, enduring long periods of time, extending its lifespan.

Wayfinding within complex urban environments, that is safe and easy for communities and people of all ages and abilities to navigate daily routines, allowing independent living for all.

Defensible spaces that integrate pre-emptive contingencies into spaces when crises happen.

Innovation that pushes communities forward, allowing them to thrive even in the face of adversity.

02 Sustainable

Sustainability means meeting our own needs without compromising the ability of future generations to meet theirs. It goes beyond environmentalism to integrate social and economic resources, balancing the concerns of social equity with economic development and safeguarding our natural environment.

WHY SUSTAINABLE?

As the pace of urbanisation turns fast on its head, there is an increasing need for our urban developments to be sustainable. Euclidean concepts of mono-functional and isolated planning zones result in unsustainable urban sprawl.

On the contrary, sustainable urban developments generate economic growth and prosperity alongside societal well-being without exhausting our limited natural resources. Balancing the diverse needs and priorities of multiple stakeholders amidst environmental concerns is a challenge constrained by the physical boundaries of land. Planners and designers therefore have to ensure that the built urban environment optimises land while ensuring business viability and building social capital.

SUSTAINABLE VALUE
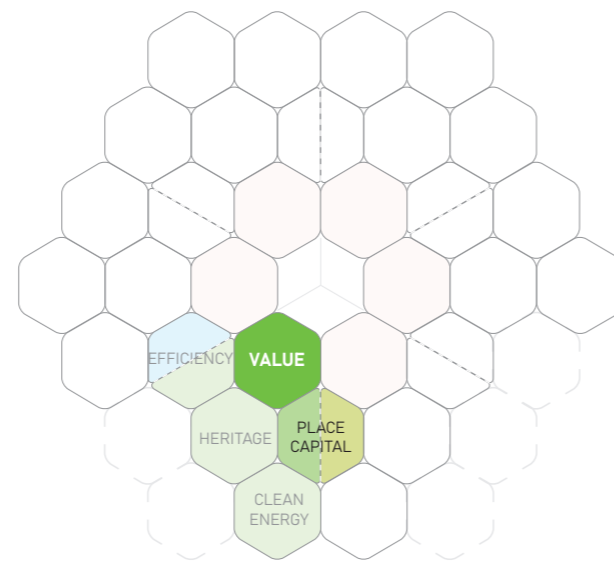
Sustainable economic value is critical to enhancing the longevity of benefits generated from a certain building, product, or set of operations. A long-term vision that balances the costs incurred today, with the potential value that could be generated in the future, creates a sustainable value chain from the start to end of the life cycle of our urban and natural environments.

Efficiency increases the effectiveness of resource in our cities, reducing the carbon footprint and harmful impact of our cities on the environment.

Place capital is the shared wealth of the people that is built upon a common cultural identity, contributing to social cohesion which goes beyond economic development.

Clean energy maximises our available resources for future generations.

Heritage retains the intangible relationships that people form with places, building character into cities. It remains relevant to future communities, and mitigates the tensions that arise between urbanisation and conservation.

SUSTAINABLE ECOLOGY
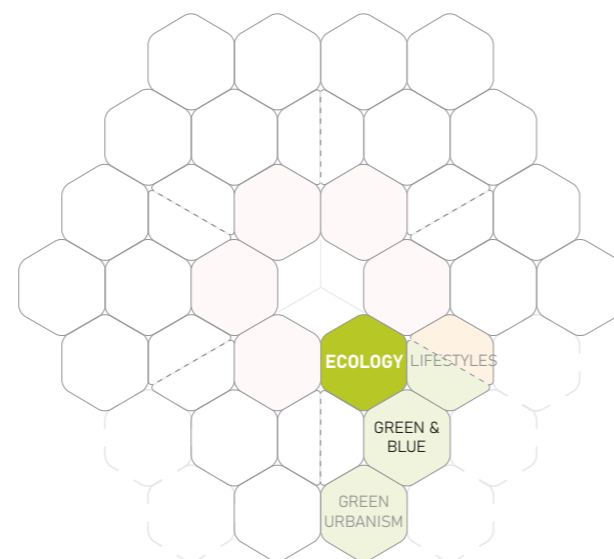
While cities occupy merely 2% of the Earth's surface, they are the biggest drivers of our climate crisis. They are estimated to be accountable for 75% of global carbon emissions, with transport and buildings amongst the top contributors. 25 megacities alone are responsible for 52% of greenhouse gas emissions.

Green Urbanism is a strategy towards achieving sustainable urban developments and making cities greener.

Green & Blue networks integrate a multitude of connections to nature in our urban settings, allowing communities to enjoy the many benefits that nature brings, along with the conveniences of city living.

Lifestyles that are healthy, affordable, and easy contribute to healthier people and happier cities.

03 Endearing

Endearing urban elements soften the hard edges of urban and built developments, bringing an emotional dimension into hard infrastructure.

WHY ENDEARING?

Happiness has a positive correlation with resilience. Imbuing lovable elements into cities increases a population's resilience in the face of adversity and crisis. Cities were first built to be liveable. However, with globalisation and urbanisation fast changing our urbanscapes, making cities more human and lovable is essential for happier and more resilient citizens.

Endearing urban elements harmonise people with the places they interact with, bringing communities together with human connections. Social sustainability creates successful great places that understand the needs of the people, safeguarding the well-being of communities. As places develop a stronger sense of identity, people feel a stronger sense of belonging to the places they live in.

ENDEARING PLACES
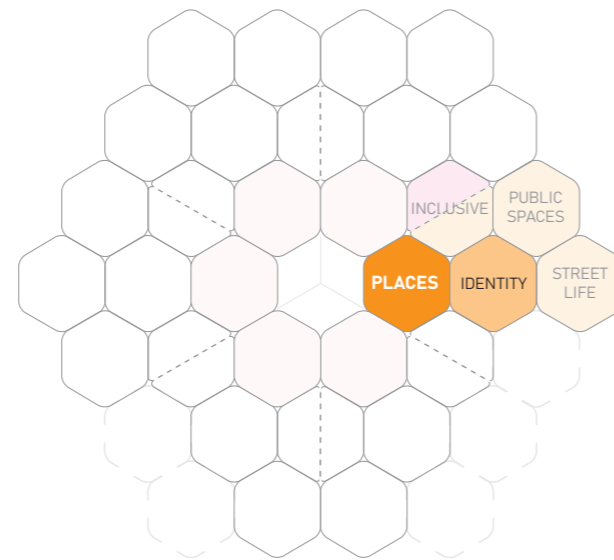
While a space is abstract and devoid of meaning as a location, great urban places can be magnets that attract a community, functioning as a meaningful gravitational centre for its users and residents.

Identities that people can identify with as a collective build strong communities. Culture, and the identities born from it, amalgamates experiences uniquely shaped through the interactions between people and a specific place, through the space of time.

Street life holds the key to thriving communities, integrating human activities with everyday social interactions.

Public spaces connecting people to transit, urban amenities, and daily life, ensure that resources and opportunities are within easy, walkable, and equitable access for everyone.

Inclusivity in cities caters to the needs of every individual, creating caring communities, which in turn builds social resilience in the city.

ENDEARING PEOPLE
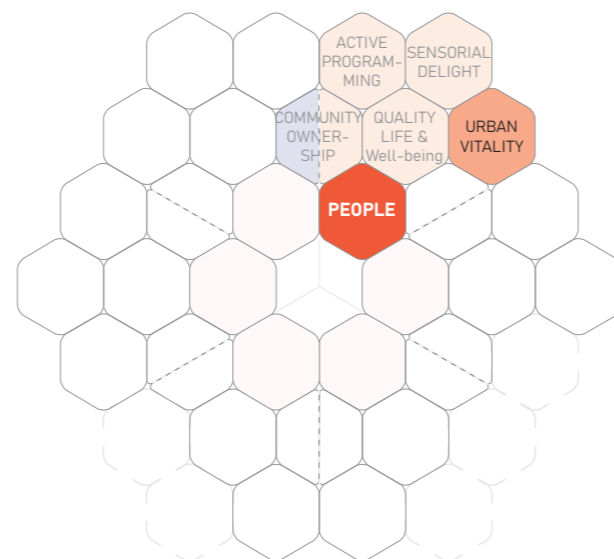
Cities are built for people. Connecting people to great places sets the stage for vibrant social moments and thriving economic transactions, building cities that are not just liveable but also lovable.

Quality life and well-being enable independent living for individuals, setting the stage for complete communities that care for each other.

Sensorial delight brings joy to the mundanity of everyday routines.

Urban vitality makes high-density living lovable, giving a bustling sense of place that attracts people.

Community ownership is what makes people feel a sense of belonging. Great places are made by communities through a collaborative process of contributing to the design of a place.

Active programming, along with placemaking, goes hand-in-hand with co-creation and the involvement of people in the design of the places that they live in, and want to live in.

How to Use the Playbook

The playbook is intended as a personalised yardstick that guides the team as a collective to evaluate how the design evolves through different design stages, beginning with the co-creation of a collective vision for the initial design brief that guides the design process.

The hexagonal shape of the enablers allows for the discovery and addition of more enablers. It opens up opportunities where the team can define and discuss new enablers that could enhance future designs with challenges yet to be known.

The success metrics are unique to each development. The level of ideal measurement each development aspires towards, is specific to each individual project. This measure of success does not come from satisfying as many enablers and its relevant elements at the highest level. It is instead an inward process of looking at how each development can reach its own ideal and improve itself over time.

01 Identify Your Enablers

Every project is unique. The playbook offers a holistic overview of essential enablers to how a Resilient, Sustainable, and Endearing development can be achieved.

1. Begin the design exercise with an initial scan of the 6 qualities and 25 enablers.

2. Highlight relevant enablers to formulate an initial design brief.

3 Values
6 Qualities
25 Enablers

SMART TECHNOLOGIES · PARTNERSHIPS · ACTIVE PROGRAMMING · SENSORIAL DELIGHT
CAPACITY · FACILITIES MANAGEMENT · COMMUNITY OWNERSHIP · QUALITY LIFE & Well-being · URBAN VITALITY
DEFENSIBLE SPACES · AGILITY · SYSTEMS · PEOPLE · INCLUSIVE · PUBLIC SPACES
WAYFINDING · ADAPTABILITY · SPACES · RESILIENT · ENDEARING · PLACES · IDENTITY · STREET LIFE
INNOVATION · EFFICIENCY · VALUE · SUSTAINABLE · ECOLOGY · LIFESTYLES
HERITAGE · PLACE CAPITAL · GREEN & BLUE
CLEAN ENERGY · GREEN URBANISM

Creating a Collective Vision

A detailed understanding and selection of elements for each enabler put together a collective bespoke ideal and vision at the start of the design process. This provides a visual "sanity check" that the team should refer to throughout the reiterative design process, to assess if the design is achieving what it had set out to do.

This vision can also be revisited — and re-evaluated — as a response to new conditions should there be a change of circumstances (such as a pandemic situation, or new climatic and political considerations) during the design process. New enablers relevant to a particular project may also be added.
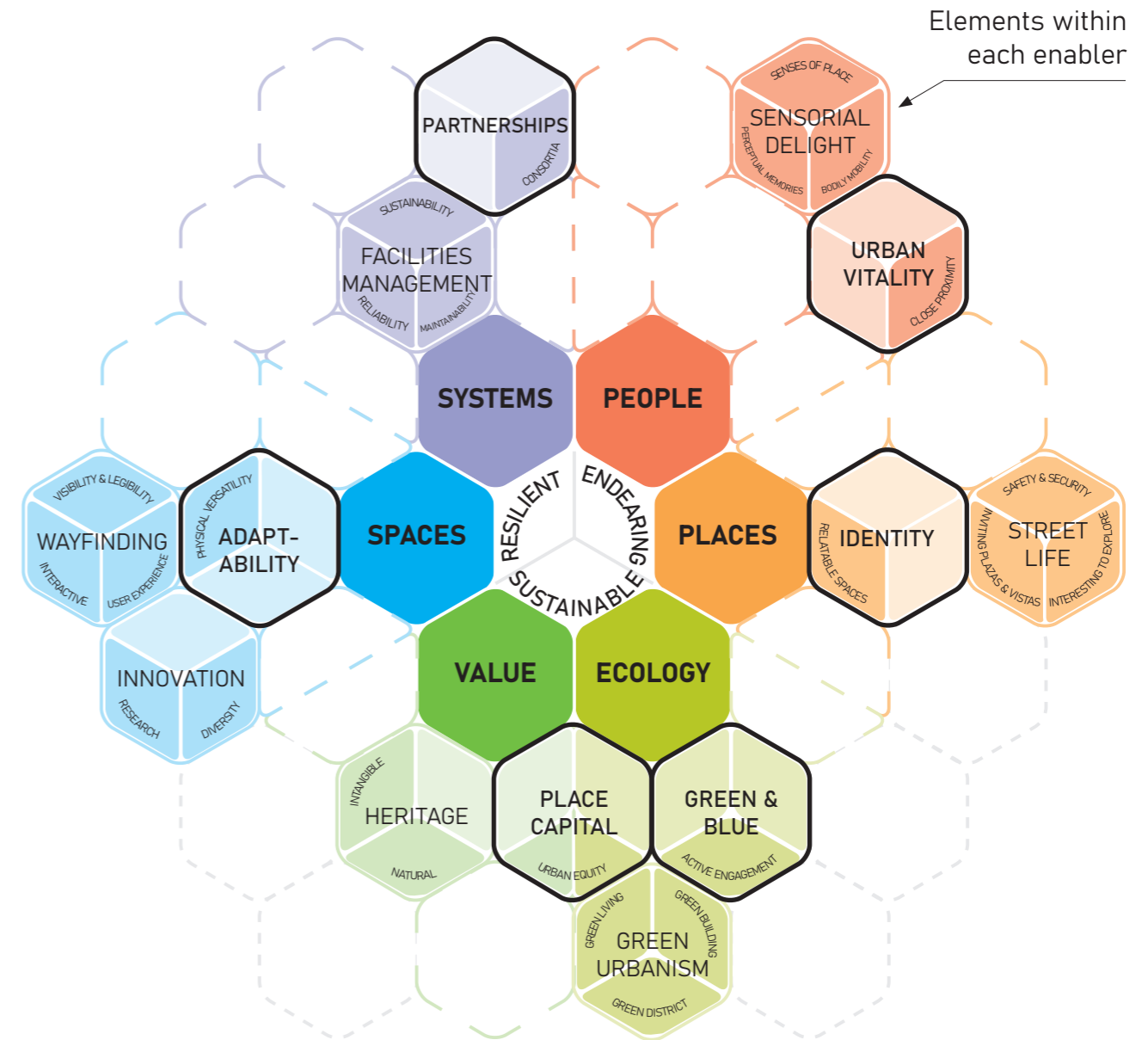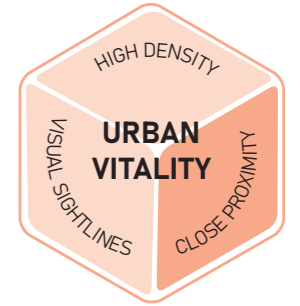
02 Understand the Elements in the Enablers

Each enabler contains 3 to 6 elements with strategic design tools to guide the application of the enablers. Design prompts are embedded within each element. The solutions are non-prescriptive, leaving room for the team to tailor design questions and innovate new solutions for different projects.

1. Deep dive into each of the elements.

2. Select applicable elements to develop suitable design strategies.

3. Enjoy the process!

Elements within each enabler

Designing with the Playbook

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Designing with the Playbook

In this chapter, we will first introduce an enabler from each of the 6 qualities. One element from each enabler will then be introduced, providing the context for responses to a specific design question each project addresses. Projects selected are illustrative of how enablers and hence elements can be applied in the design process.

6 Qualities

RESILIENT SYSTEMS

RESILIENT SPACES

SUSTAINABLE VALUE

SUSTAINABLE ECOLOGY

ENDEARING PLACES

ENDEARING PEOPLE

6 Selected Enablers

1 Element Each

PARTNER-SHIPS
PUBLIC-PRIVATE
COMMUNITY & USERS
CONSORTIA

ADAPT-ABILITY
PHYSICAL VERSATILITY
FLEXIBLE PLANNING
CAPACITY

PLACE CAPITAL
REGIONAL CATCHMENT
REAL ESTATE VALUE
URBAN EQUITY

GREEN & BLUE
INTERPRETIVE LESSON
PASSIVE CONNECTIONS
ACTIVE ENGAGEMENT

IDENTITY
UNIQUE PROGRAMMING
RELATABLE SPACES
SOCIAL SIGNIFICANCE

URBAN VITALITY
HIGH DENSITY
VISUAL SIGHTLINES
CLOSE PROXIMITY
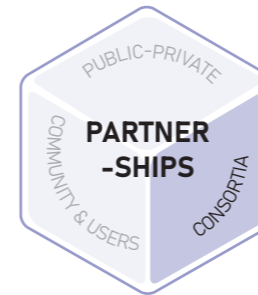
Featured Projects

Enabler: Partnerships
Element: Consortia
Project Feature: Changi Airport Terminal 4
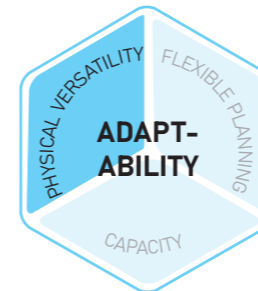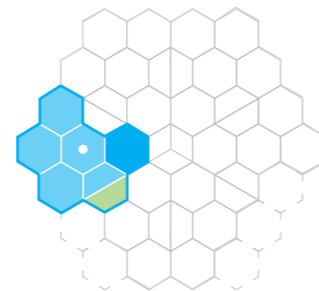
Enabler: Adaptability
Element: Physical Versatility
Project Feature: JTC Space@Tuas
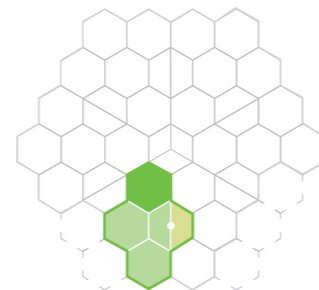
Enabler: Place Capital
Element: Urban Equity
Project Feature: Northpoint City
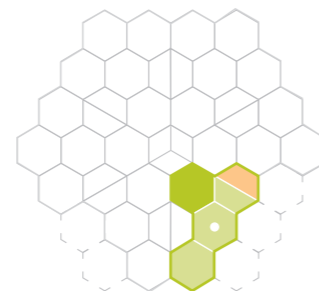
Enabler: Green & Blue
Element: Active Engagement
Project Feature:
Woodlands Health Campus
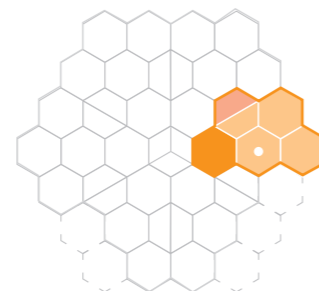
Enabler: Identity
Element: Relatable Spaces
Project Feature: City Gate

Enabler: Urban Vitality
Element: Close Proximity
Project Feature:
Eastlink I & II @ Canberra

01 Partnerships

Partnerships are not built overnight and require consistent communication. Structured engagement frameworks **balance all stakeholders' needs** from the start till the end of the design process, resulting in more people–centric designs.

Designing as a collective with strong partnerships enables a team to explore optimistic potential.

Large-scale urban infrastructures within cities often involve multiple and cross-sector stakeholders, from multi-disciplinary consortia with cross-sector stakeholders to public agencies with private developers, to community and users such as tenants, advocacy groups, and property management teams.

Each stakeholder has varying levels of capacity to influence the development at different design stages, from conceptualisation to the management of the facility after realisation. Formal frameworks of collaboration between **public governmental agencies and private developers** drive new funding resources that help empower private developers, prompting place management initiatives, building ownership towards a place in the long run.

Tensions may arise in negotiating conflicting interests between different groups of stakeholders within **multi-disciplinary consortia teams**, and can result in perceived lack of trust amongst different stakeholders, resulting in ineffective communication in convincing either parties to put the greater vision before individual interests. Partnerships are not built overnight, and regular engagement within a proper framework is essential for all parties to come together to resolve differences and build trust over time.

Communities and end users, such as facility operators, sometimes have the least influence in the design and management of a place — often receiving a development that may not fulfill their needs upon its completion, due to the lack of involvement in the initial design planning process. Bringing all parties to the table right from the beginning and balancing their needs gives rise to a more well-rounded design at the end.
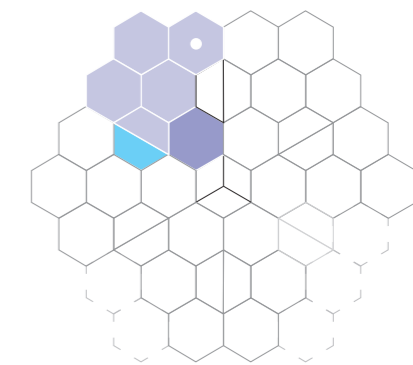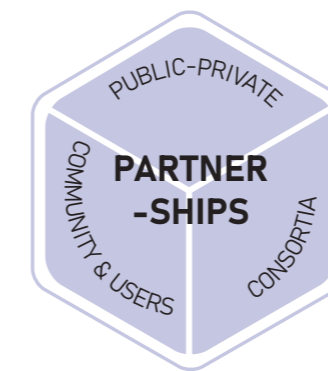
3 Elements:

01 Public–Private:
Public-private partnerships require open, inclusive, and data-driven processes of realisation to convince and align all stakeholders. It requires:
+   **An open and inclusive planning process**
+   **Using facts and data to make a convincing case to engage with the community, and**
+   **An implementation process with clear strategies that turn visions into goals**

02 Consortia:
Multi-disciplinary consortia teams need to foster a collective spirit within the team while also understanding the needs of the users — designing with them and for them. It is important to:
+   **Build strong relations within the team**
+   **Identify important needs of different stakeholders early**
+   **Empower leadership to negotiate differing needs**

03 Community & Users:
Active, often, and effective engagement with the end users throughout the process of design ensures that their needs will be met. Designers and policymakers need to take the initiative to:
+   **Approach end users from the onset, avoiding governmental jargon in communications to ensure that even the layman understands**
+   **Involve end users in defining, designing, and placemaking public spaces**
+   **Sustain conversations and communicate updates on a regular basis**
+   **Handle intangible aspects with sensitivity**
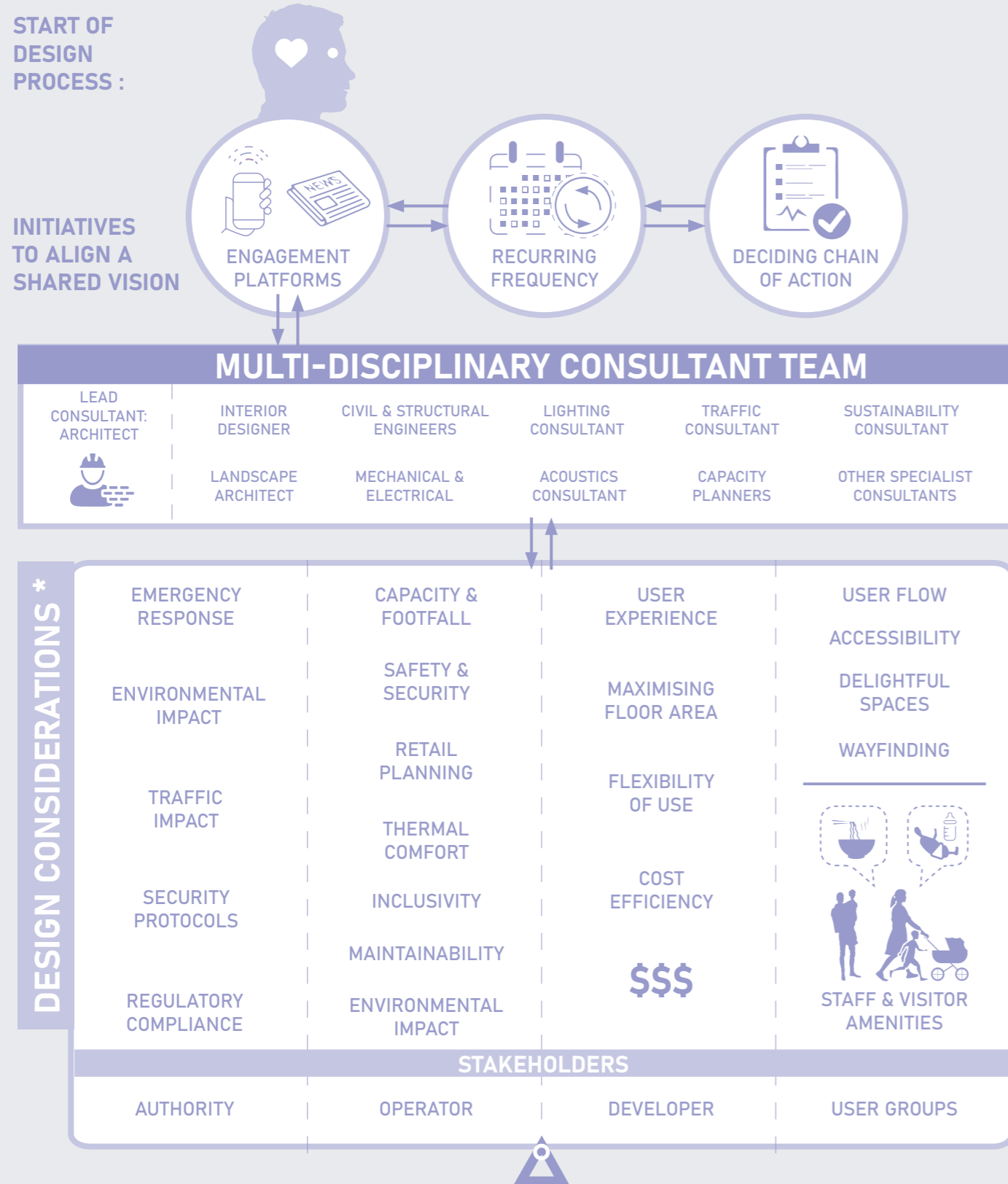
Partnerships

Effective communication and healthy engagement between different stakeholders to foster and solidify partnerships for a smooth process of realisation

The element of **[Consortia]** will be explored in the next page.

Consortia

Bringing together diverse groups in a multi-disciplinary consultant team

START OF DESIGN PROCESS :

INITIATIVES TO ALIGN A SHARED VISION

ENGAGEMENT PLATFORMS

RECURRING FREQUENCY

DECIDING CHAIN OF ACTION

MULTI-DISCIPLINARY CONSULTANT TEAM

LEAD CONSULTANT: ARCHITECT	INTERIOR DESIGNER	CIVIL & STRUCTURAL ENGINEERS	LIGHTING CONSULTANT	TRAFFIC CONSULTANT	SUSTAINABILITY CONSULTANT
	LANDSCAPE ARCHITECT	MECHANICAL & ELECTRICAL	ACOUSTICS CONSULTANT	CAPACITY PLANNERS	OTHER SPECIALIST CONSULTANTS

DESIGN CONSIDERATIONS *

EMERGENCY RESPONSE	CAPACITY & FOOTFALL	USER EXPERIENCE	USER FLOW
			ACCESSIBILITY
ENVIRONMENTAL IMPACT	SAFETY & SECURITY	MAXIMISING FLOOR AREA	DELIGHTFUL SPACES
	RETAIL PLANNING		WAYFINDING
TRAFFIC IMPACT	THERMAL COMFORT	FLEXIBILITY OF USE	
SECURITY PROTOCOLS	INCLUSIVITY	COST EFFICIENCY	
	MAINTAINABILITY		
REGULATORY COMPLIANCE	ENVIRONMENTAL IMPACT	$$$	STAFF & VISITOR AMENITIES

STAKEHOLDERS

AUTHORITY	OPERATOR	DEVELOPER	USER GROUPS

* The design considerations here illustrate the many considerations during the design process and are not exhaustive.

Consortia

A consortia may take the form of a multi-disciplinary team that helps drive a trusting partnership and collaboration for complex projects, capable of adapting to diverse requirements and challenges from design conceptualisation to realisation.

Negotiating the diverse interests of different stakeholders within a multi-disciplinary consortia to align a shared vision is crucial for a development's success. It requires:

1. A process of co-creation that tables the unique needs of all stakeholders — from eventual facility operators to end-users.

2. A deep understanding of the complexity of differing technical challenges, to ultimately integrate differing technical requirements into the overall design.

3. Strong leadership with the ability to harnesses the expertise that individuals bring to the team — developing trust and driving collaboration, with appropriate accountability that ensures all parties fulfil their responsibilities.

4. Initiatives and platforms that allow all stakeholders to articulate their independent visions, and enable the design of a common vision as a collective, that can be translated into tangible solutions within the architecture.

PUBLIC-PRIVATE
COMMUNITY & USERS
PARTNER-SHIPS
CONSORTIA

Featured Project

Changi Airport Terminal 4

Singapore

PARTNER-SHIPS
CONSORTIA

Open dialogues within an integrated design process helps multi–disciplinary teams leverage on diverse expertise as a collective, creating an environment that fosters innovation and encourages creative solutions to complex challenges.

Awards
—

BCA Universal Design Mark Award, 2018 — Platinum

President's Design Award, 2018 — Design of the Year

Singapore Good Design Mark, 2018 — Platinum

WAN Awards, 2018 — Finalist

BCA Construction Productivity Award, 2019 — Platinum (Institutional & Others Buildings)

Featured Project
—

Changi Airport Terminal 4

Singapore

PARTNER-SHIPS
CONSORTIA

CONSORTIA
—

How can a team of multi-disciplinary specialists align the needs of all stakeholders while creating an international benchmark for air travel?

Singapore Changi Airport's passenger terminals have a longstanding reputation of having the highest standards of service. When Changi Terminal 4 (T4) was conceived to replace the existing Budget Terminal, Changi Airport Group (CAG) set an even higher aspiration to build "a terminal like no other".

Multi-disciplinary expertise for complex buildings
—

Airports are highly complex buildings that require the integration of specialised knowledge across multiple diverse technical aspects. Crafting a passenger-centric experience is a delicate balance between aesthetic design, robust airport operations, security, and commercial sustainability integrated into its architecture. SAA led the multi-disciplinary consultant team (MDT), in collaboration with Benoy as the concept designer, to innovate and deliver a world-class airport terminal experience — from concept to realisation.

Integrating a spectrum of specific technical knowledge
—

Within the MDT structure, an architect is assigned to a different specialist consultant to fully understand the spectrum of technical requirements. This equips them with specific knowledge to deconflict any clashes with the architectural elements of the design, for an integrated solution.

Inclusive framework of interactive collaboration
—

A culture of inclusivity and collaboration that encouraged interactions amongst consultants as equals engendered a cohesive team spirit. With over ten different consultant disciplines involved in a singular building, having a designated shared meeting space in close proximity to T4, was especially crucial in facilitating frequent intensive discussions between the CAG project team, MDT, the contractor, and their specialists. This enabled the team to coordinate and resolve issues efficiently and complete the terminal in an unprecedented construction period of under 3 years.

Involving the operator at the onset enabling immediate feedback loop
—

Onboarding the operator at the design stage pulled together key user groups, such as airport operations, facilities management, commercial, passenger experience, security, and users to develop a comprehensive brief of requirements. CAG, as an operator, gave valuable insights on ideas that they tried, tested, and worked in other terminals they are managing and operating concurrently. This enabled the MDT team to develop bespoke technical solutions, delivering a total passenger experience.

Synergising an endearing experience
—

Strong relationships between CAG and the specialist MDT team were critical, ensuring that the various design concepts were realised in the final execution. Communication was key to surface, discuss, resolve, and collectively innovate solutions as a team, for a "theatre of experience".

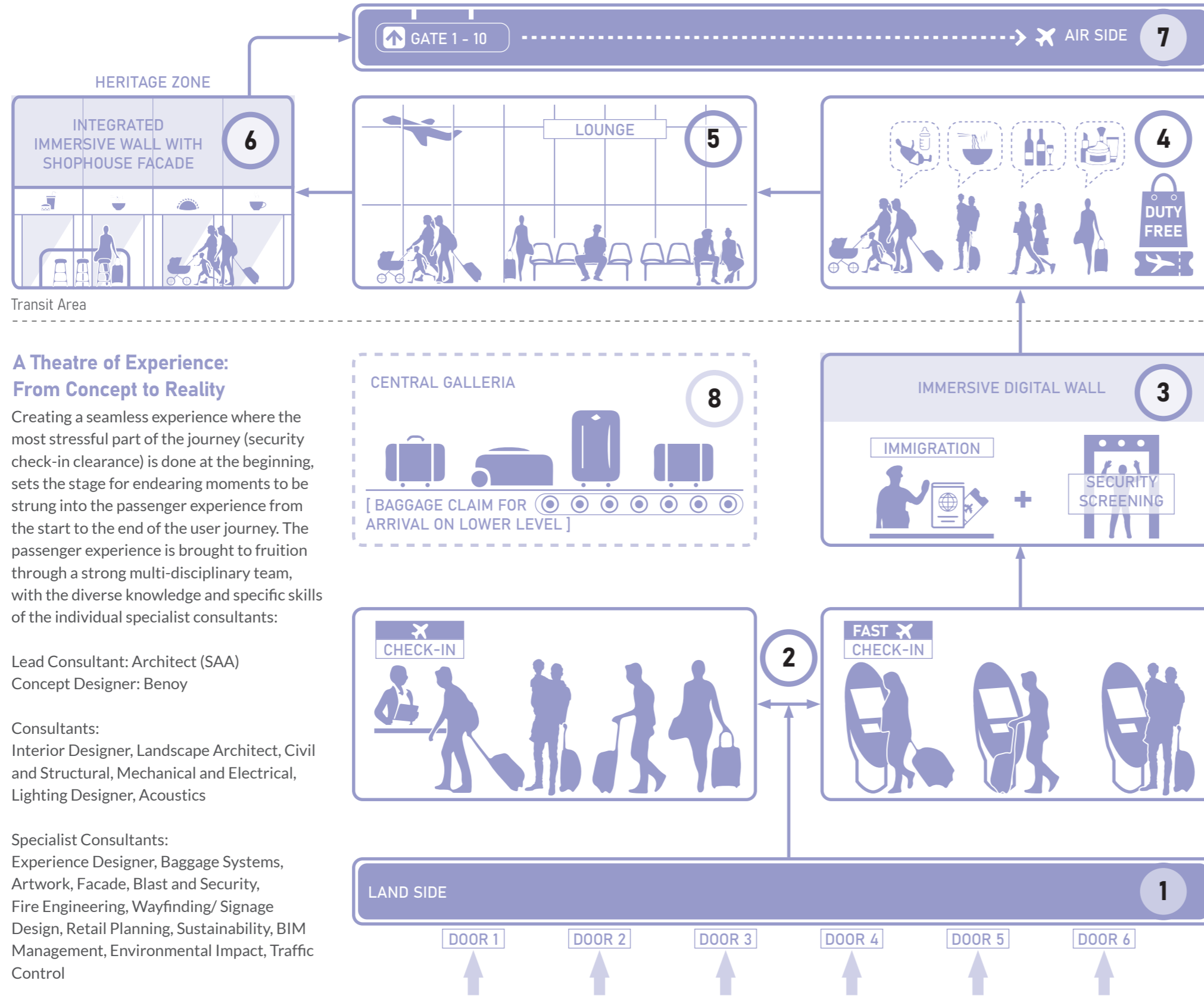- Element of [Consortia] in enabler of [Partnerships]

Featured Project
—

Changi Airport Terminal 4

Singapore

Terminal 4's departure user journey through the "theatre of experience" in T4

GATE 1 - 10 ✈ AIR SIDE **7**

HERITAGE ZONE

INTEGRATED IMMERSIVE WALL WITH SHOPHOUSE FACADE **6**

LOUNGE **5**

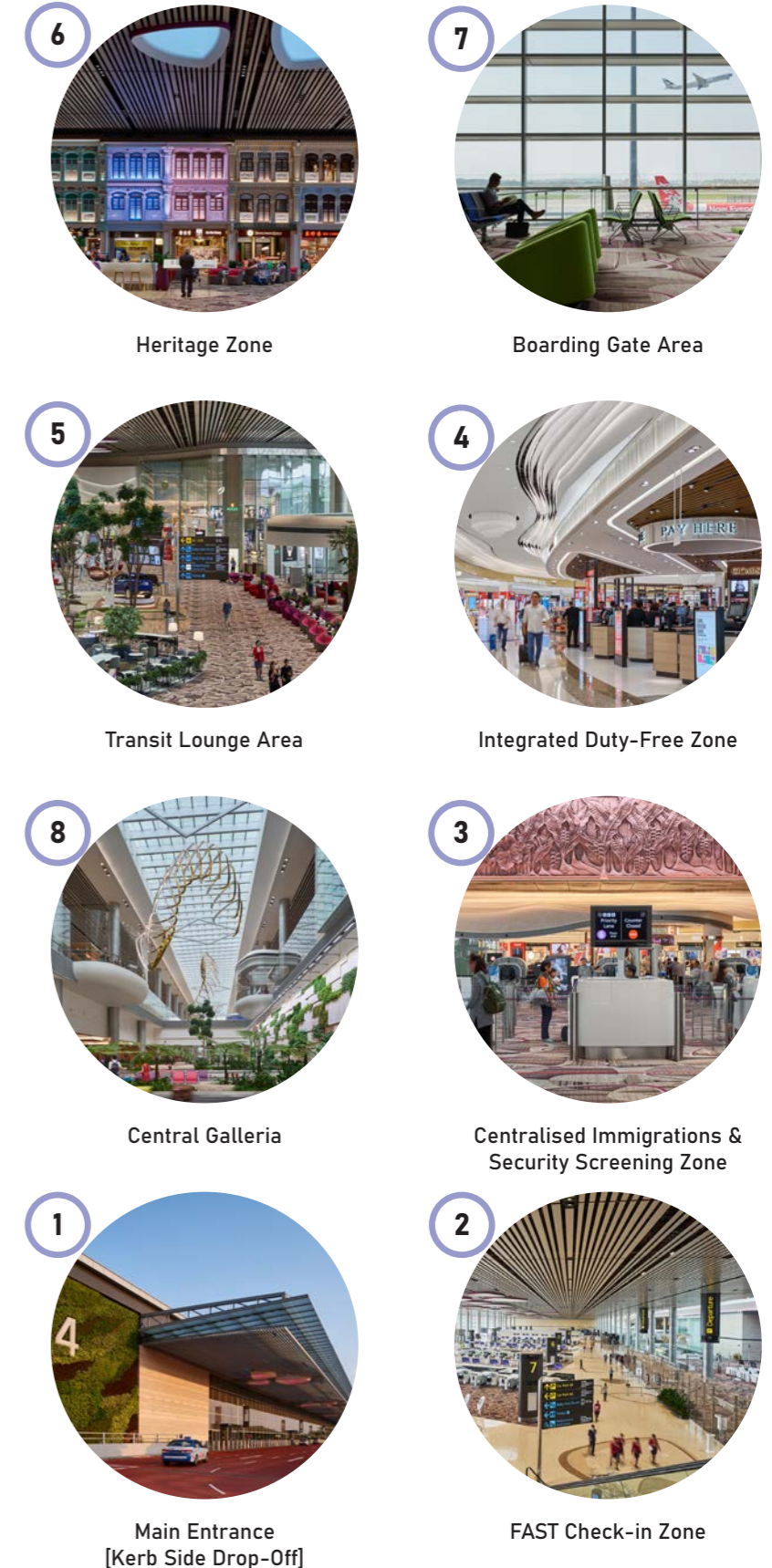DUTY FREE **4**

Transit Area

A Theatre of Experience:
From Concept to Reality

Creating a seamless experience where the most stressful part of the journey (security check-in clearance) is done at the beginning, sets the stage for endearing moments to be strung into the passenger experience from the start to the end of the user journey. The passenger experience is brought to fruition through a strong multi-disciplinary team, with the diverse knowledge and specific skills of the individual specialist consultants:

Lead Consultant: Architect (SAA)
Concept Designer: Benoy

Consultants:
Interior Designer, Landscape Architect, Civil and Structural, Mechanical and Electrical, Lighting Designer, Acoustics

Specialist Consultants:
Experience Designer, Baggage Systems, Artwork, Facade, Blast and Security, Fire Engineering, Wayfinding/ Signage Design, Retail Planning, Sustainability, BIM Management, Environmental Impact, Traffic Control

CENTRAL GALLERIA **8**

[BAGGAGE CLAIM FOR ARRIVAL ON LOWER LEVEL]

IMMERSIVE DIGITAL WALL **3**

IMMIGRATION + SECURITY SCREENING

CHECK-IN **2** FAST CHECK-IN

LAND SIDE **1**

DOOR 1 DOOR 2 DOOR 3 DOOR 4 DOOR 5 DOOR 6

6 Heritage Zone

7 Boarding Gate Area

5 Transit Lounge Area

4 Integrated Duty-Free Zone

8 Central Galleria

3 Centralised Immigrations & Security Screening Zone

1 Main Entrance [Kerb Side Drop-Off]

2 FAST Check-in Zone

T4 pioneered the airport's **Fast and Seamless Travel (FAST) system**, with automated check-ins verified through facial recognition technology, made possible through the collaboration of different stakeholders

A stress-free experience going through immigration checks, without compromising security. An experience enhanced by an **immersive wall**
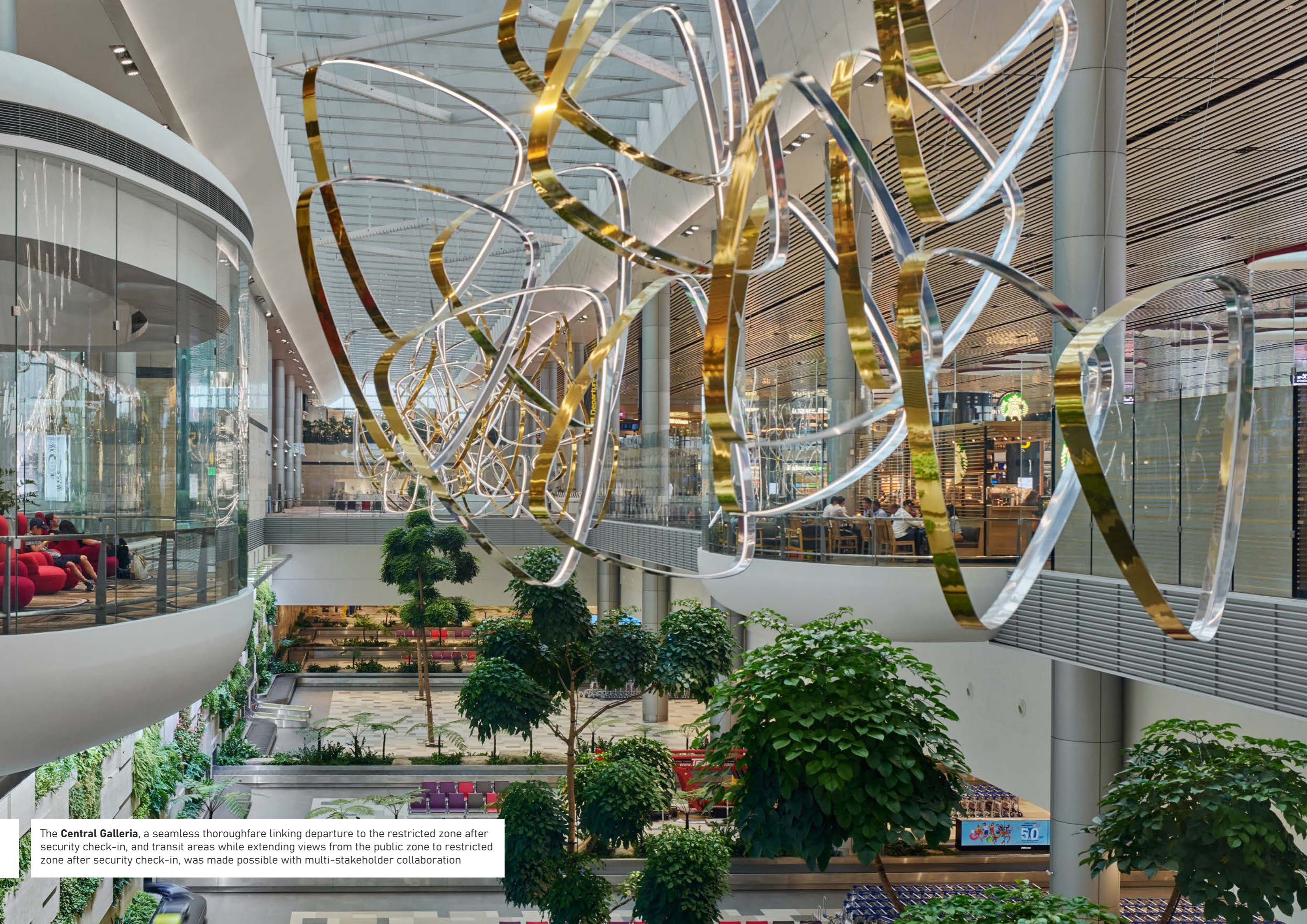
The **Central Galleria**, a seamless thoroughfare linking departure to the restricted zone after security check-in, and transit areas while extending views from the public zone to restricted zone after security check-in, was made possible with multi-stakeholder collaboration

02 Adaptability

Adaptable approaches in urban and architectural design **open possibilities** for more diverse and organic urban structures that respond to today's shifting demands. These extend the life of buildings and spaces.

Timeless designs are adaptable to unknown futures.

The ability to adjust to shifting demands of different situations to sustain continuous operation with minimal impact on the community during change and crises builds resilience into our urban environment. Adaptability in urban designs adds value by extending the functional economic life of buildings and public spaces.

An adaptive approach of **flexible planning** moves away from fixating predefined outcomes, allowing urban environments to be more elastic and flexible in reacting to shifts and changing demands in the long run. It generates 'possibility spaces' within which urban structures can take shape and the development process can unfold.

Having the **capacity** to adapt increases opportunities and maximises possibilities during times of reorganisation and renewal. Integrating spatial, operational and social capacity ensures cities are able to adapt to changing demands of the community over time.

Physical versatility enables existing structures to be modified and converted for new uses. Within buildings, spatial layouts and designs with careful selection of materials enable easy dismantling and amalgamation of spaces. This allows spaces to be sub-divided and amalgamated to form smaller or larger spaces, in response to changes such as location of flagship stores along routes with high footfall traffic.

On an urban scale, old buildings and infrastructures past their prime could be converted or redeveloped to become a unified masterplan celebrating heritage and character. Resilient spaces are adaptive to changing economic needs.
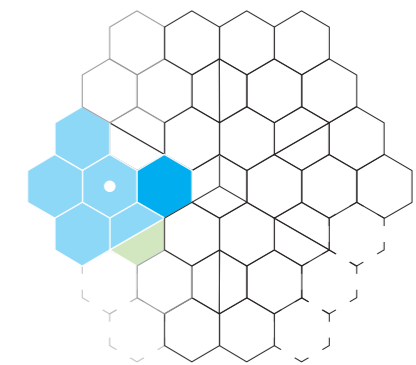
3 Elements:

01 Flexible Planning:
Open and flexible planning frameworks enable future growth and cities to rebuild in crisis through:
+   **Responsive and active sensing of built environments that anticipate programmatic, energy demands, or environmental shifts**
+   **Processes where open negotiations for amalgamations of available adjacent land for development is possible**
+   **Planning and policy flexibilities that are receptive to adaptations, e.g., repurposing of land, etc.**

02 Capacity:
The availability of spatial buffers gives rise to opportunities and potential for growth by having:
+   **Spatial capacity that buffers for increased loads**
+   **Operational capacity through agile transitions with minimal disruption and down time**
+   **Social capacity by strengthening the place value of public spaces in the interim**

03 Physical Versatility:
Design and construction methods that allow for easy modification, re-use, and re-purposing of spaces for diverse programmatic needs by:
+   **Co-locating multiple uses to optimise the capacity of a space and to accomodate diverse needs**
+   **Designing spaces that facilitate sharing practices that encourage more flexible uses**
+   **Incorporating modular designs connected to common infrastructural services, enabling diverse spatial configurations within a structural framework**

Adaptability

Ability to continuously alter and 'rebuild' in the face of change. This is enabled by a flexible planning environment, along with spatial, social, and operational capacity and physical versatility to adapt to changes.

Physical Versatility

Shared spaces and resources connected to modular designs enable ease of conversion when needed

SHARED SPACES & RESOURCES

EASE OF CONVERSION
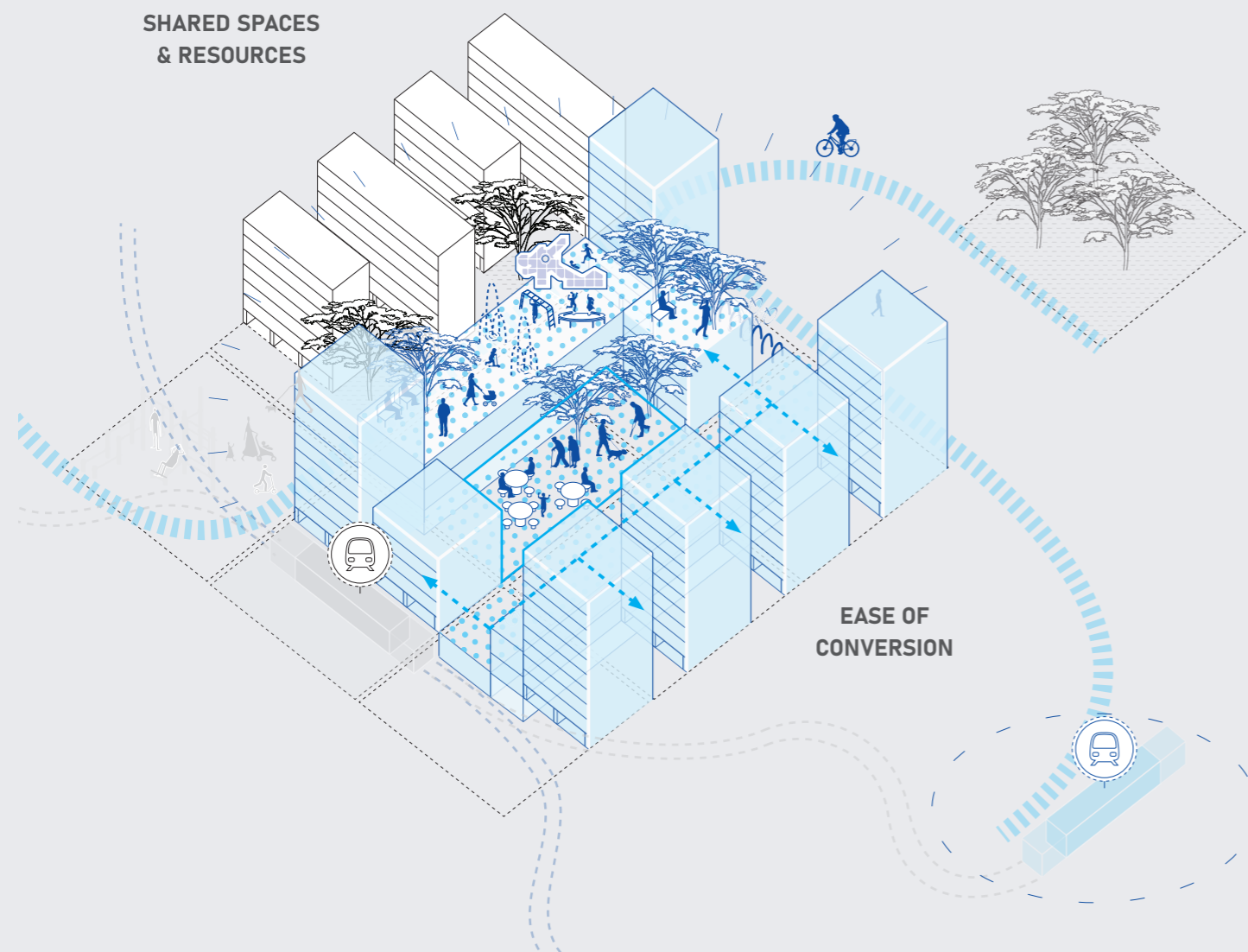
Physical Versatility

Physical versatility facilitates diverse spatial configurations through the physical lifespan of a building. Developments designed with physical versatility enable the businesses that are housed within to be agile in their operations — maximising economic functions with minimal downtime in times of crises, strengthening the longevity and resilience of cities.

1. Co-locating multiple functions within a development, with a common pool of shared resources and spaces that cater to diverse uses and users, optimises idle capacity.

2. Designing to facilitate sharing practices encourages versatile and flexible uses. Allowing businesses of diverse scales to tap on shared resources at low initial costs minimises the need to rent larger floor areas, should such service spaces be subsumed in the individual spaces.

3. Connecting modules which are scalable, flexible, and adept in changing programmatic needs to common shared services, ensure that essential mechanical and electrical needs are met in diverse spatial configurations.

Designs that consider diverse programmatic and maintenance needs result in spaces that are versatile for varied uses and users.
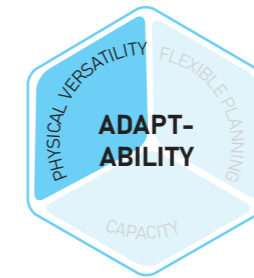
PHYSICAL VERSATILITY · FLEXIBLE PLANNING · **ADAPT-ABILITY** · CAPACITY

Featured Project
—

JTC Space @ Tuas
Singapore

Current global trends call for the seamless integration of industries into the urban landscape to optimise synergies. Revitalising mono-functional industrial buildings with multi-use functions inject diversity, vibrancy, multi-functionality, and adaptability.

Awards
—

Singapore Good Design Mark, 2016 — Gold

BCA BIM Award, 2017 — Gold Plus

BCA Green Mark Award, 2017 — Platinum

Featured Project
—

JTC Space @ Tuas

Singapore

PHYSICAL VERSATILITY
—

How can we design an adaptable typology that responds to different programmatic needs of diverse uses?

JTC Space@Tuas is JTC's first integrated development that caters to both MNCs and SMEs from a diverse range of industries including oil and gas, precision engineering, and general manufacturing.

Diverse range with mixed uses
—

The development includes modules with various spatial configurations for different industries, an integrated workers dormitory, recreational spaces, as well as an amenities centre.

Customisable spatial configurations, enabling synergies
—

Traditionally, factories have specific typologies that respond to the industries' spatial needs.
- Landed factories: Heavy manufacturing, oil and gas industries
- Ramp-up factories: Precision engineering industries
- Flatted factories: General and light manufacturing industries

Materials have to be transported from one factory to another along the manufacturing process, resulting in inefficiencies. Co-locating 36 ramp-up and 95 flatted factories built atop 7 land-based factories enables integration, collaboration, and synergies within and across the manufacturing value chain with diverse spatial configurations.

Shared services centralised for convenience
—

The modular nature of the factories serviced by a central services and facilities spine, creates a new prototype that consolidates different manufacturing processes in the same location. Companies can customise different configurations of landed, ramp-up, or flatted factory typologies, for quicker adaptations to shifts in demand of industrial and programmatic needs and lesser downtime. The flexibility of the floor plates on the ground floor allows units to partition the spaces if needed. Integrating the workers' dormitories above the factories offers companies the convenience of locating their workers in close proximity, reducing overhead costs with shared resources and services.

Layering spatial and social capacity with landscape
—

Green spaces are essential for the well-being of people. Integrating landscapes with opportunities for social activities builds social capacity, which is especially crucial for the community of dormitory workers who are live-in residents in this larger integrated development. Landscaping is woven into common areas such as corridors, lift lobbies, and recreational rooms. Central courtyard spaces are also landscaped to serve as relaxing community spaces.

- Element of **[Physical Versatility]** in enabler of **[Adaptability]**

Featured Project
—

JTC Space @ Tuas
Singapore

DIVERSE FACTORY TYPOLOGIES

3

Flatted Factory

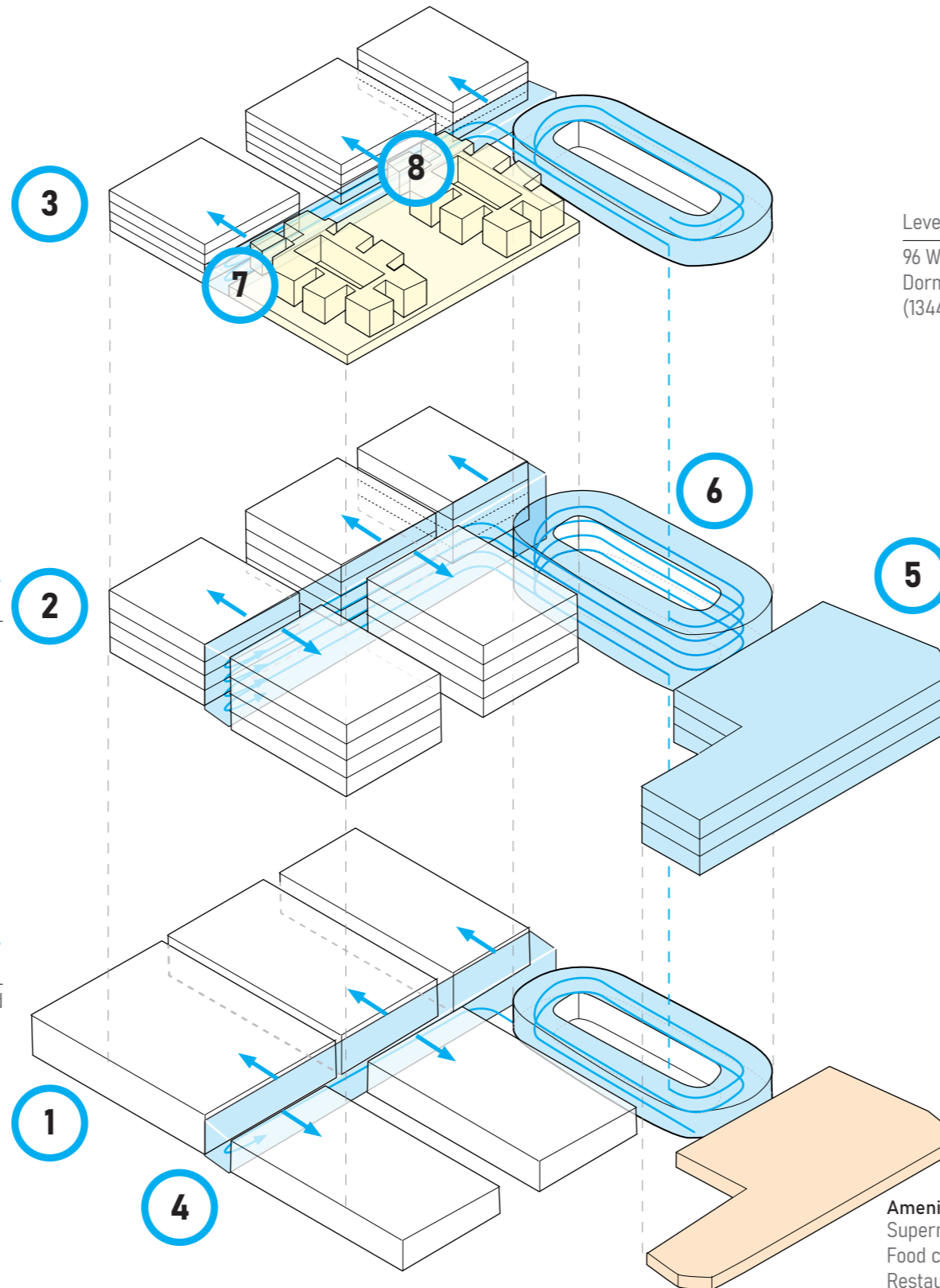**2**

Ramp-up Factory

1

Land-based Factory

Levels 6 – 9
116 Flatted Factories
3

Levels 2 – 5
36 Ramp-up Factories
2

Ground Level
7 Land-based Factories

Level 8 – 10
96 Worker's Dormitory (1344 beds)

7

Worker's Dormitory

8

Central Courtyard

6

Heavy Vehicular Loop Ramp Serving Level 2 – 7

5

4 Floors Heavy Vehicle Parking Above Amenities Centre

4

Common Central Spine / Ramp

Amenities Centre:
Supermarket, Food court, Clinic, Restaurant, etc.

SHARED SPACES AND RESOURCES:

A common central spine connected to a heavy vehicular loop ramp serves levels 2 to 7. With a designated U-turn bay on each level and loading on either side of the driveway, factories on either side of the spine can easily tap on the central services and facilities, along with easy heavy vehicular access. The modular nature of the factories allows for diverse spatial configurations specific to the needs of the different typologies. Co-locating the worker's dormitories, furnished with sports and recreational facilities as well as an amenities centre, ensures that the workers' needs are met in close proximity to their workplace.

Heavy Vehicular Loop Ramp & Parking + Central Service Spine

Amenities Centre (Open to Public)

Workers' Dormitory

Various Factory Typologies

ADAPT-ABILITY
PHYSICAL VERSATILITY

Co-locating 36 ramp-up, 95 flatted factories atop 7 land-based factories enables integration and collaboration within the manufacturing value chain, where flexible floor plates on the ground floor allow for division and adaptations when needed

A facade cladding that blends the facade of different factory use types with a continuous rhythm that wraps around each block, creating a **coherent whole** for a diversity of mixed-use factories

03 Place Capital

Great places are inclusive, diverse, and actively created by the people, connecting communities to a common identity. This repository of **shared wealth** of both built and natural spaces is an equaliser that enhances the quality of life for all.

A great place enriches the vitality of the public realm, prioritises equity, and is also lovable.

Place capital refers to both tangible and intangible assets that contribute to creating a successful place. It has been defined as the shared wealth of both built and natural forms, amidst the public realm. It can be seen as one of society's means of generating sustainable economic growth for communities.

Cities present the opportunity where various wealth generators can be agglomerated through the co-location of many diverse programmes and stakeholders around transit nodes. The wealth and capital of a place is a perceived value that varies according to how "invested" each stakeholder feels in a place, with different considerations that could raise or lower a place's **real estate value**. Balancing and integrating the uniquely different needs of diverse stakeholders with lovable features in an urban place, helps to increase the draw of a place as it caters to a wider and more diverse population.

Connecting people across multiple urban scales through transit nodes of inter-modal connectivity increases the **regional catchment** of a place. This ensures that urban amenities are within reach through public transportation for the masses.

Integrating public places with diverse activities, and improving connectivity to its larger vicinity, levels the playing field in a city. It functions as an equaliser that ensures everyone, regardless of social status, has access to resources and opportunities, improving **urban equity**. Enabling accessibility to a place adds vibrancy, naturally generating economic potential. Legible urban qualities that define a sense of arrival with an urban backdrop and a public plaza, defines the authentic experience that people seek. This increases the allure of a place, and how the place comes to be valued by the people in the long run.

PLACE CAPITAL
REGIONAL CATCHMENT · REAL ESTATE VALUE · URBAN EQUITY
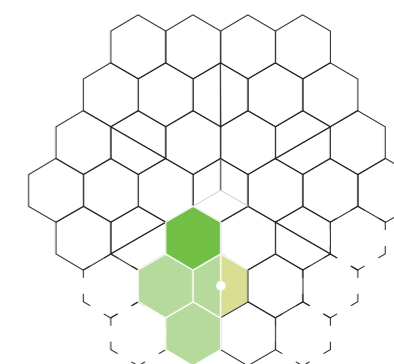
3 Elements :

01 Real Estate Value:
The value of a place is measured differently by different stakeholders. It is an aggregation of several factors relating to the:
+ Value of land, often times raised when there is a mix of different programmes co-located in relation to significant transit nodes
+ Quality of design that balances specialist consultants' knowledge and management of mega-multi-talented teams
+ Potential generation of income through avenues such as the brand and image of the development and low maintenance costs due to quality designs

02 Regional Catchment:
Connecting across multiple urban scales attracts both revisiting and new visitors through:
+ Transit nodes with inter-modal connectivity, bridging regional and city connections
+ Strong hubs and image of a city that continuously and meaningfully engages long-term residents and vistors alike in an area

03 Urban Equity:
Ensures that lovable features of urban places are equitably enjoyed by all in the community. It entails:
+ Considering how new developments can benefit existing users in the larger vicinity
+ Legible urban qualities that enable old and new users to navigate around a place
+ Incorporating the history and heritage of a place to curate authentic experiences

Place Capital

A lovable place experienced in moments and cherished by all; balancing the perceived value of real estate unique to different stakeholders; extending its catchment to be equitable and inclusive for all.

The element of **[Urban Equity]** will be explored in the next page.

Urban Equity

Integrating land use, infrastructure, and amenities with legible urban qualities help users navigate familiar and new urban environments

CONNECTION TO NATURE

TO SEE & BE SEEN

SENSE OF ARRIVAL

URBAN BACKDROP

ART & HERITAGE

AUTHENTIC EXPERIENCES
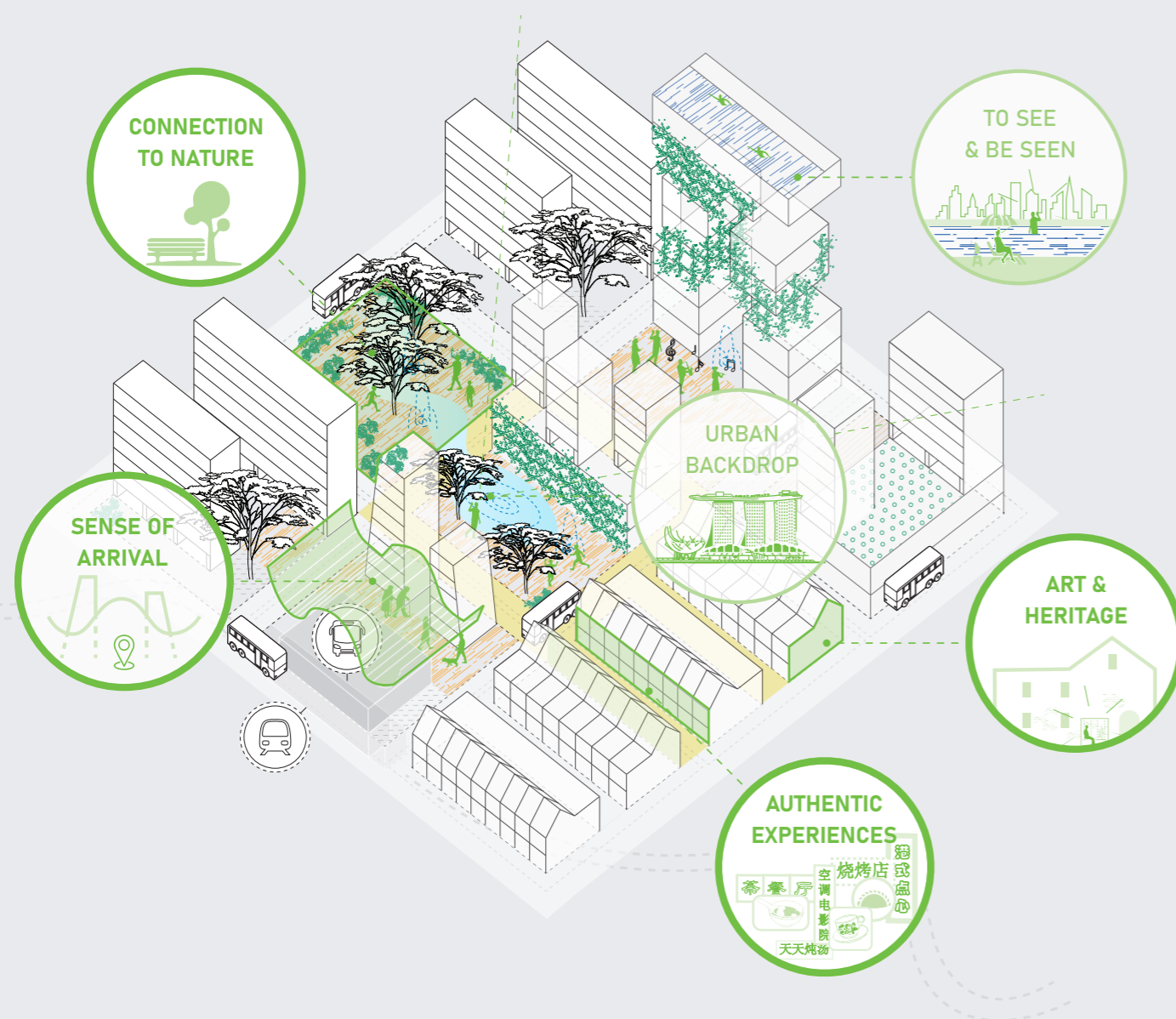
Urban Equity

An equitable city integrates land use, infrastructure, and urban amenities — connecting everyone to great places and diverse experiences, ensuring that everyone has equal opportunities to resources in the public realm. Great places bring vibrancy and continuous footfall essential for businesses and communities to thrive. As cities progress and new buildings emerge, older existing developments need to stay relevant.

1. New developments need to provide for its new users, and also ensure that it considers and benefits existing communities in the larger urban vicinity.

2. Legible urban qualities help orientate old and new users — connecting them to great places, nature, and essential urban amenities. Public places with a welcoming and inclusive sense of arrival invite communities to gather.

3. Incorporating the history and heritage of a place with authenticity creates an identity that existing communities can identify with. This keeps people from leaving, retaining native vibrancy that helps to attract new users, extending the place's catchment and liveliness.

Designing great places to be at, with something for everyone, gives people a reason to visit such places, generating a self-fulfilling cycle of vibrancy that fosters a sense of belonging amongst existing and new users. Fusing new futures with existing histories enriches urban landscapes with authentic experiences.

PLACE CAPITAL

REGIONAL CATCHMENT   REAL ESTATE VALUE

URBAN EQUITY

Featured Project
—

Northpoint City

Singapore

PLACE
CAPITAL

Great spaces often encompass the hopes and dreams of a community. When purposefully designed, these evoke a sense of pride and encapsulate the genius loci of the place.

Awards
—

SILA Commercial & Industrial Landscape, 2019 — Silver

LIAS Awards of Excellence, Implementation, 2019 —
Residential: Gold | Non-Residential (Bronze)

BCA Construction Excellence Award, 2020

IES Illumination Award, 2021 — Merit

FIABCI World Prix d'Excellence Award, 2022 —
Residential Mid-Rise: World Gold Winner, Retail:
World Silver Winner

CREDAWARD, 2023 —
Silver, Comprehensive Commercial Project Category

Featured Project

Northpoint City

Singapore

<div style="text-align:right">PLACE CAPITAL
URBAN EQUITY</div>

URBAN EQUITY

How can we create great places that are accessible, relatable, inclusive, and equitable for all?

Northpoint City (NPC) is an extension and refurbishment of Northpoint Shopping Centre (also completed by SAA in 1992), forming an integrated mixed-use development in Yishun.

Rejuvenating the old, with new uses

A seamless retail loop connects the new NPC and existing Yishun MRT. A community loop enhances seamless mobility by linking the mall with an integrated bus interchange, town centre, town square, and town garden. Integrating transit, retail, and public amenities (Nee Soon Central Community Club, Yishun Public Library) with new residents of North Park Residences condominium, extends vibrancy and convenience to the existing wider Yishun community.

Green Necklace — activities for all

Anchored in Yishun Town Garden, a green necklace structures the programmes and activities across the development. Its changing nature shifts from a garden path with quiet study nooks along the community centre, to a lush green facade along the podium and towers, culminating in a rooftop public space with 24/7 public access and diverse amenities for the young and old. The lush greenery within the facade mediates urban heat, providing a greener and healthier environment for residents within NPC and its vicinity. The green necklace offers active lifestyles for all, from activities amidst nature to quiet spots of relaxation in shade.

Heritage as part of daily living

In 2007, Yishun was 1 of the 3 heartland towns that underwent the "Remaking Our Heartland" rejuvenation plans. This is part of Singapore's Housing Development Board's (HDB) efforts to renew estates to meet changing needs of the community and create distinctive identities. Heritage markers on the floor of the town square tell the stories and legacy of Yishun's historical past. Bringing communities together amidst daily activities from zumba to children's play, the town square weaves heritage and identity into spaces of daily routines.

A common identity endearing all ages, and identifiable by all

A large flowing canopy signage unifies both the old and new wings of NPC and integrates the bus stop to form a distinct identity, marking a sense of arrival. As new uses are integrated and accesibiilty is enhanced for the larger community in Yishun, NPC's identity continues to evolve and be refreshed. A strong sense of place with activities for everyone, and places that draw people to gather, helps NPC stay relevant for both old and new users, and endears itself to residents of all ages.
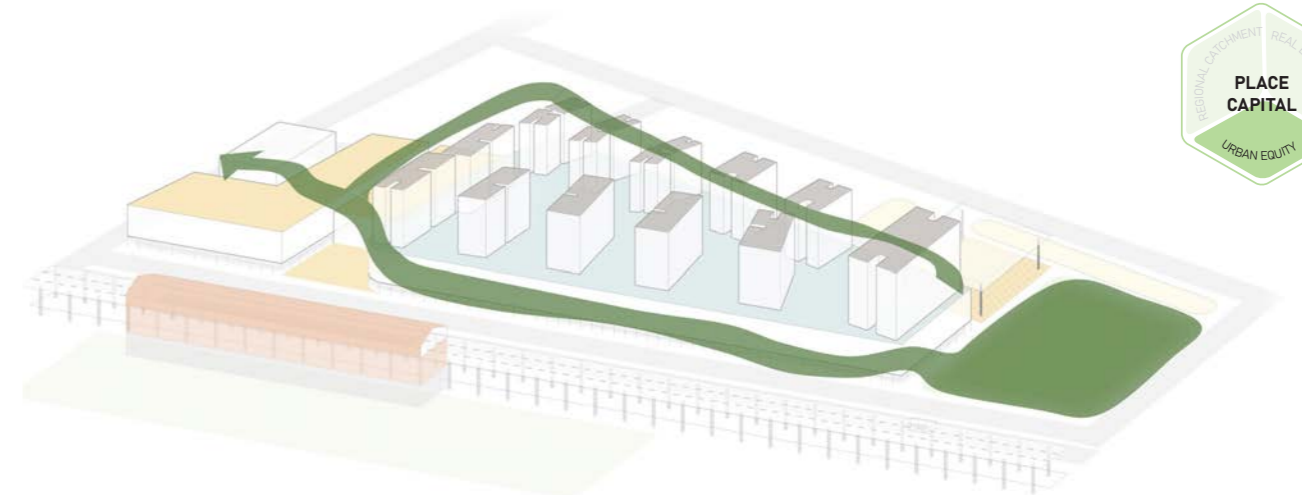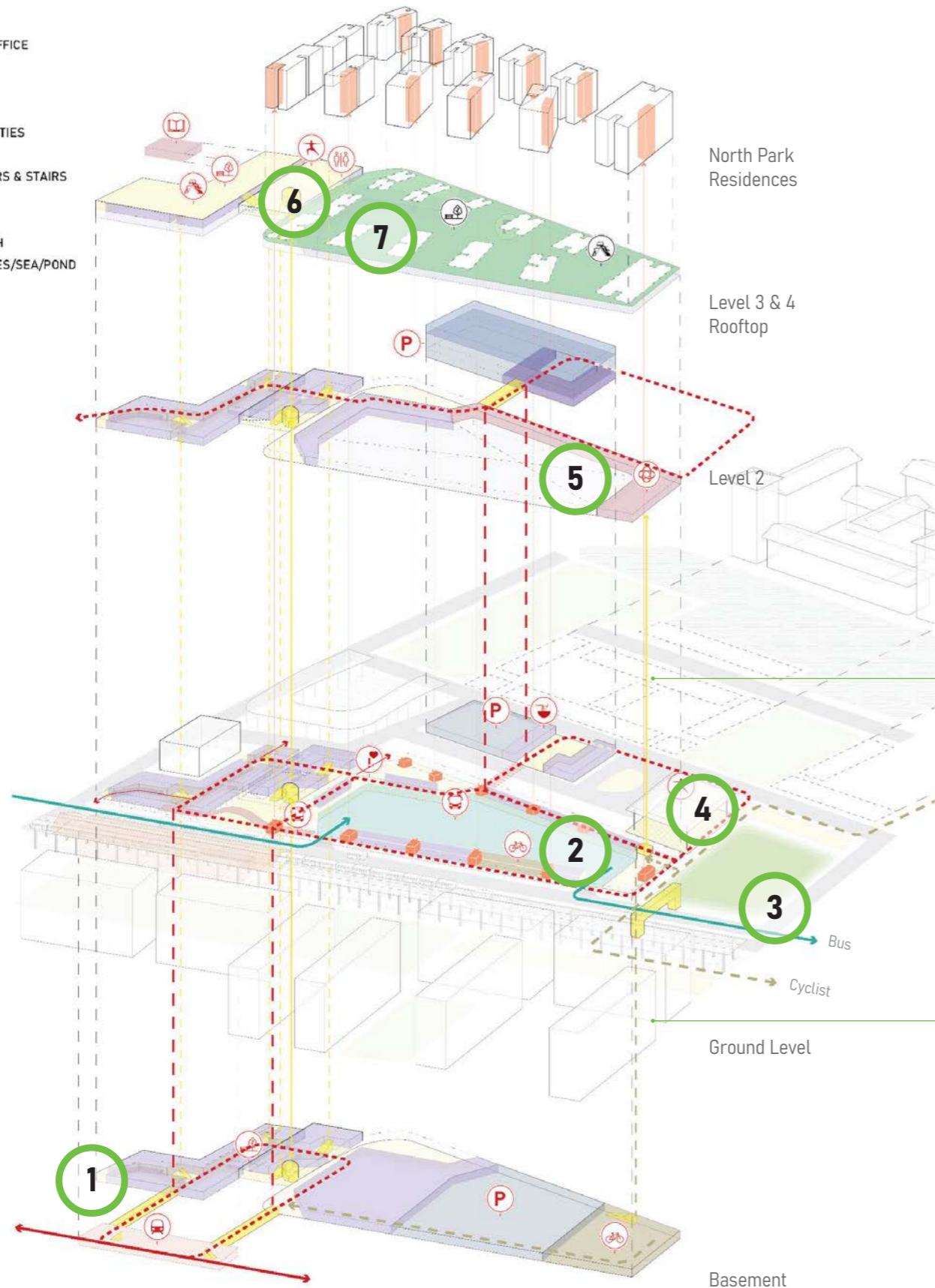
- Element of **[Urban Equity]** in enabler of **[Place Capital]**

Featured Project
—

Northpoint City

Singapore

COMMERCIAL OFFICE
RESIDENTIAL
RETAIL/SHOPS
TRANSIT
COMMON AMENITIES
CIRCULATION
LIFT ESCALATORS & STAIRS
CAR PARK
BICYCLE PARK
PARK AND SUCH
WATER FEATURES/SEA/POND

North Park
Residences

Level 3 & 4
Rooftop

Level 2

Bus

Cyclist

Ground Level

Basement

A GREEN NECKLACE OF CHANGING NATURE; DIFFERENT VIEWS FOR DIFFERENT ACTIVITIES:
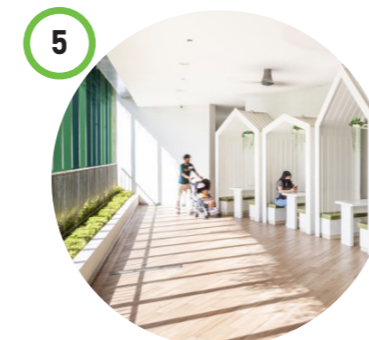
5 Nee Soon Central
Community Centre

6 Rooftop garden with
24/7 access

7 Rooftop taichi plaza

2 Cycling Path

3 Yishun Town Garden

4 Yishun Town Square

1 Central Courtyard

Bridging access for the older areas of the Yishun town centre (middle right), with connectivity to new public amenities in NPC and the MRT (upper left), strung together by a green necklace that draws from the Town Garden (foreground)

A lush **green necklace** of changing nature, shifting into a garden path with quiet study nooks along the community centre, offers the parent a relaxing walk to the childcare centre while providing a quiet spot of relaxation for the student

A **large flowing canopy** unifies the old and new wings of Northpoint City, creating a sense of arrival, and acts as a distinct visual marker from the MRT station

04 Green & Blue

Micro–doses of nature in the built environment make a positive difference to urban living, fulfilling an innate desire to connect with nature for **healthy and well–balanced lifestyles** in today's highly urbanised world.

Meaningful connections need to exist between people, buildings, and nature.

Integrating interconnected networks of green and blue infrastructure comprising multi-functional green and blue spaces contribute to emotional, mental, and community sustainability. These elements range from city parks, urban forests, to storm water management resulting in sustainable urban and climatic solutions. Enabling access to such green and blue elements results in a more equitable city where nature is a common good for all.

Our encounters with nature begin with **passive connections** — being in a natural or biophilic setting. These experiences involve direct connections with nature, from being in a park to being within a nature-inspired biophilic environment.

It encompasses visual, non-visual connections and sensorial stimulation to elements of nature.

Nature can also serve as a medium of connection where people can have intentional **active engagement** with nature through interactive activities. They could take the form of everyday accessible experiences integrated into healthy active lifestyle choices such as a run in a park or walking along a lake.

Lastly, biomimicry draws **interpretive lessons** from nature, using nature as a guide towards creating more sustainable and restorative solutions for our built environment. These lessons distil the proccesses in nature and reinterpret nature-inspired strategies, ranging from circularity of forest ecosystems to the self-cooling abilities of termite mounds.

GREEN & BLUE

INTERPRETIVE LESSON PASSIVE CONNECTIONS

ACTIVE ENGAGEMENT
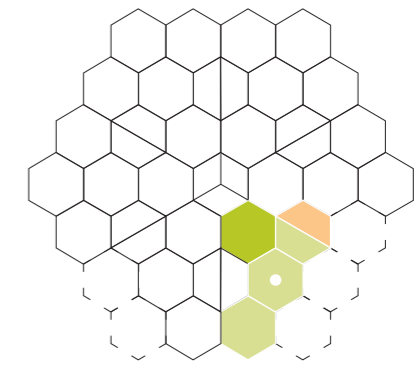
3 Elements:

01 Passive Connections:
Exposure to nature brings nature back into the city by being in a natural or biophilic setting that:
+ **Is nature-inspired, bringing people closer to elements of nature**
+ **Allows direct connections with nature and experience of natural environments**
+ **Enables indirect connections with nature through biomorphic forms and patterns**

02 Active Engagement:
Using nature as an active medium to engage in activities and programmes that are accessible in everyday experiences through:
+ **Integrating intentional engagement such as exercise or play into everyday spaces of parks and playground spaces near homes**
+ **Co-creation with community and ground-up events from a city-wide to community scale**

03 Interpretive Lessons:
Learning from the processes of nature, distilling lessons in nature for nature-inspired biomimicry, where:
+ **Nature inspires and functions as a design generator for architectural forms, and sparks innovations for nature-based solutions as responses to urban challenges**
+ **Principles of design are distilled from nature, offering insights into the design process and providing real world solutions**
+ **Nature's rich and diverse systems become inspiration for masterplanning-level interventions**
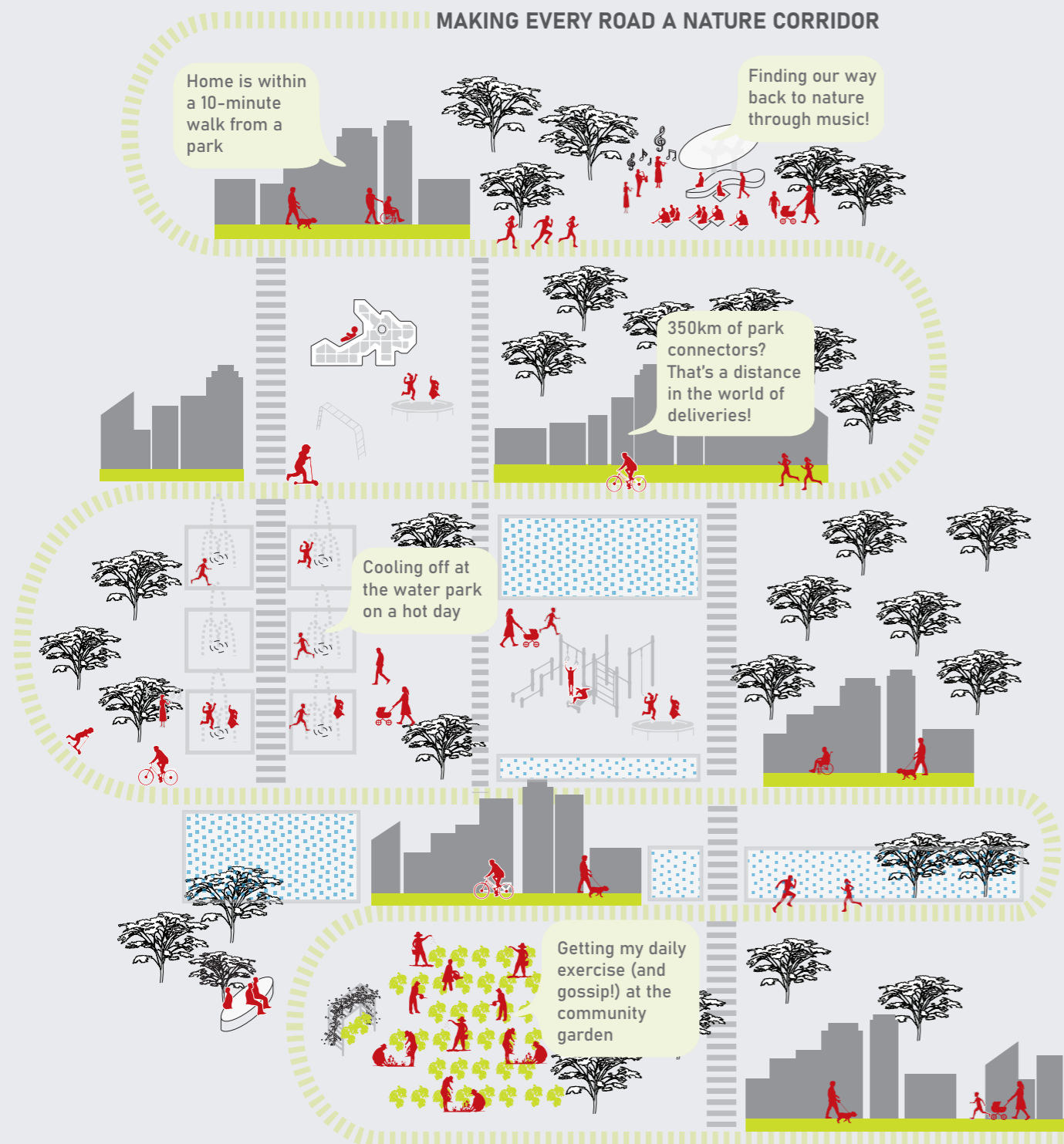
Green & Blue

Establishing a multitude of connections to nature, through active and passive means, using green and blue infrastructure as a tool to bring nature back into the city for healthy, well-balanced living

The element of **[Active Engagement]** will be explored in the next page.

Active Engagement

Creating and sustaining continuous urban greens that are accessible and embedded in one's daily experience

MAKING EVERY ROAD A NATURE CORRIDOR

Home is within a 10-minute walk from a park

Finding our way back to nature through music!

350km of park connectors? That's a distance in the world of deliveries!

Cooling off at the water park on a hot day

Getting my daily exercise (and gossip!) at the community garden

Active Engagement

Research has shown that immersing in natural landscapes such as urban forests can reduce stress and have a restorative effect on mental and social health. Spending time in green stimulates cognitive functioning, enhances social cohesion, and encourages physical activity for healthy and active living. Incorporating nature in a variety of scales and accessibility enhances urban living at various levels.

1. The calming and relaxing effects of nature make exercise feel easier, increasing the motivation for longer workouts with minimal stress. Stitching green spaces for play and exercise into daily activities encourages active lifestyles.

2. Active engagement through everyday experiences such as horticultural therapy with gardening and urban farming at therapeutic gardens stitched into everyday places, counter urban health issues such as dementia, depression, and loneliness.

3. Engagement with nature can happen at multiple levels and scales. Communities can come together organically to co-create activities involving nature as an active medium amidst urban rooftop gardens. Special large-scale events such as the Singapore Garden Festival have a wider social impact that includes the people in landscape design on a city and regional scale.

Environments and developments offering green and blue spaces provide autonomy for the community. These enable healthy choices to be an effortless decision and lifestyle for everyone.

GREEN & BLUE

INTERPRETIVE LESSON PASSIVE CONNECTION

ACTIVE ENGAGEMENT

Featured Project

Woodlands Health Campus

Singapore

Recovery is a journey to improve one's physical and mental health. An ecosystem of support, embedded in nature, where patients can seamlessly step down from acute care, accelerates this healing journey.

Awards

BCA Green Mark Award, 2020 — Platinum

MOHH Design Excellence Award, 2023 —Platinum

Featured Project
—

Woodlands Health Campus

Singapore

GREEN & BLUE

ACTIVE ENGAGEMENT

ACTIVE ENGAGEMENT
—

How can architecture engage with nature to bring communities together and encourage healthy salutogenic living?

The Woodlands Health Campus (WHC) envisions person-centric and quality healthcare for the community of the future by amalgamating new care models, technological innovation, and medical planning into a seamless facility within green parkland. It comprises an integrated Acute and Community Hospital (ACH), Specialist Outpatient Clinics (SOC) and a Long-Term Care Facility (LTC).

Reclaiming vehicular spaces, returning nature to people
—

Vehicular traffic is directed to the basement in an "open campus" design, freeing the ground for pedestrians. The SOC is placed close to bus stops with a basement connection to Woodlands South MRT Station, promoting public transport use and active mobility, reducing the need for car parking. Reclaiming vehicular spaces frees up precious grounds and returns nature to people. A 1.5ha healing garden designed by NParks uses nature as a medium to better mental and physical well-being with 4 zones of interactivity that transition from social public places to quiet private moments.

Connecting with others through social interactivity
—

A similar 4-zone garden concept is applied to the spatial design within the green spaces at WHC. Social interactivity (Zone 1) brings people together in places such as urban farms, where people can mingle while engaged in a common activity; and an amphitheatre, where schools can stage performances, sparking social moments. The stream plaza offers expansive greenery for mass events and physical activities (Zone 2) such as yoga and zumba.

Quiet introspective moments of peace
—

While Zones 1 and 2 bring people together with social interaction and mass activities, Zones 3 and 4 are more introspective. The rooftop garden above the community hospital offers quiet rehabilitative spaces (Zone 3) for therapeutic leisure walks. Set amidst garden greens, the cold interiors of the mortuary claim room are softened to relieve the grief of last goodbyes with private moments (Zone 4) in nature. Hospitals can be stressful environments that bring white coat anxiety. The journey to good health is both of active prevention with physical exercise, and recovery from mental stress. Even micro-doses of nature can heal.

- Element of **[Active Engagement]** in enabler of **[Green & Blue]**

Featured Project
—

Woodlands Health Campus

Singapore

GREEN &
BLUE
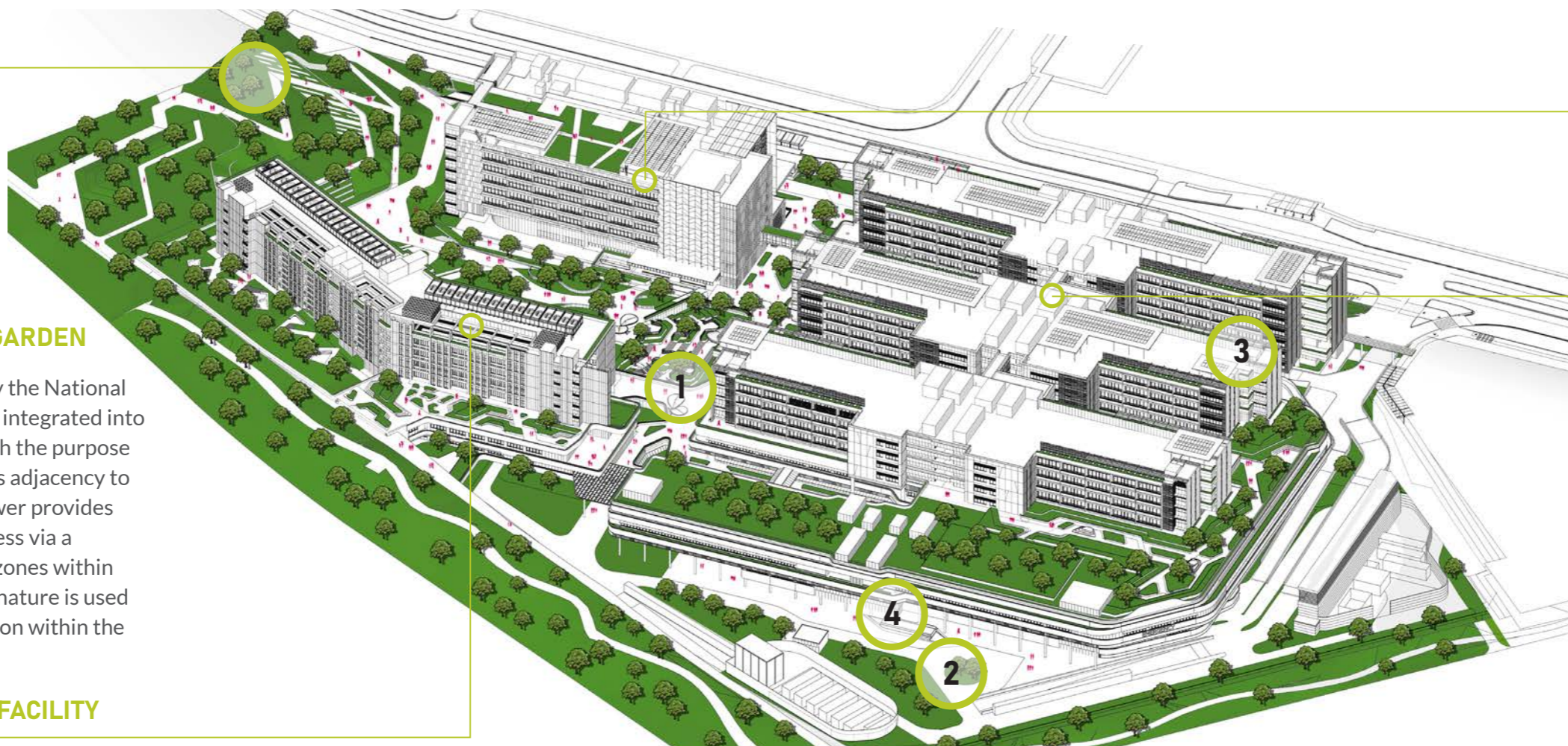
HEALING FOREST GARDEN

A therapeutic garden by the National Parks Board (NParks) is integrated into the hospital campus with the purpose of promoting healing. Its adjacency to the Long-Term Care Tower provides residents with easy access via a dedicated route. The 4 zones within the garden inform how nature is used as a means of socialisation within the buildings.

LONG-TERM CARE FACILITY

SPECIALIST OUTPATIENT CLINIC

ACUTE & COMMUNITY HOSPITAL

NATURE AS A MEANS TO SOCIALISE WITH OTHERS IN ACTIVITIES...

... AND ALSO A TRANQUIL SETTING FOR MOMENTS OF PEACE

ZONE 1:
Outgoing socialisation

ZONE 2:
Physical activities

ZONE 3:
Serene environment

ZONE 4:
Inward contemplation

An amphitheatre that fosters social activity and interaction with others amidst nature

A stream plaza and activity lawns allow for communal activities such as yoga and zumba within greenery

Rehabilitation spaces above a rooftop garden allow patients to build mobility and strength while enjoying nature

A mortuary claims room in a garden setting softens the cold interiors of last goodbyes

The **Healing Garden** extends into the Healing Forest, extending the campus landscape to the public park, forming a continuous green lung with cascading steps that transform into an amphitheatre and water feature

Vehicular-free **open campus design** where traffic is directed to the basement, allowing patients, staff, and the community to walk the grounds surrounded by green

The **healing garden** remains a consistent presence across the entire campus

05 Identity

Distinctive identities are not made just by beautiful or visually appealing spaces. They are created when people **identify with** a place — through the everyday moments and interactions that form a common identity, and where individuals feel an inclusive sense of belonging and fitting in with their community.

Humanistic designs that place people's needs at the centre create remarkable places that people identify with.

Identity is 1 of 7 elements that provide the emotional fulfilment crucial to happy and healthy people in lovable cities. The concept of lovable cities has evolved over the years from earlier pursuits of creating liveable cities. Distinct identities attract people to great places, transcending distances and agnostic to location. This ensures the continuity of social sustainability in any development, holding the key to *why* people visit and continue to visit a place. 'Place identity' is an association with a mental image that comes to mind at the mention of its name.

A unique design language gives physical form to tangible architectural and urban elements amidst the built landscape. In cities of constant change, a sense of place and belonging with **relatable spaces** that are tied to the specific history and culture of each space, transforms the physical, social, and economic identity of spaces, forming emotional connections between people and places.

Architecture is a vessel that holds **social significance** and spatial memories of encounters and interactions. An experience of a space transcends the physical and forms connections at an emotional level.

Attachment grows with familiarity, rootedness, and the time one spends in a place. **Unique programming** creates interesting experiences and opportunities for significant memories to be crafted, highlighting special moments that brighten the monotony of daily living, creating remarkable places enjoyed by all.
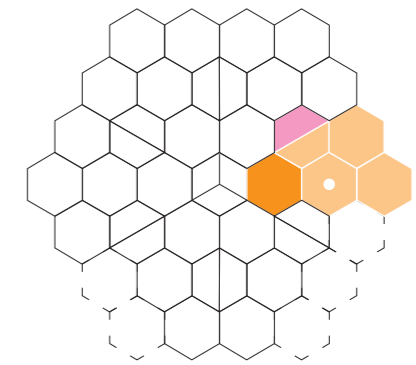
3 Elements:

01 Relatable Spaces:
Strong visual language, unique architectural features, or easily recognisable forms that create tangible associations that people can relate to a place's identity through:
+ **Impactful visual aesthetics, spaces, and experiences that are distinct and form strong mental images**
+ **Spaces that encourage quality interactions that build intangible emotional connection between people and places**

02 Unique Programming:
Placemaking helps an identity evolve through the years, by ensuring that people of different ages are attracted to a place that is relevant to their needs with:
+ **Distinct programming that draws and gives people a reason to visit the place, by offering interesting experiences that cannot be found elsewhere**
+ **Engaging activities where everyone has something to do**

03 Social Significance & Memories:
Unique intangible experiences are formed on a daily basis in different places, bringing joy in small moments to special occasions formed through:
+ **Short, frequent interaction with a place that one commonly passes through**
+ **Significant, celebratory, or emotional connections that build depth into the social memories that one forms with a place**

Identity

A unique, tangible, and physical form by which people recognise a place, along with the intangible experiences that give a sense of belonging
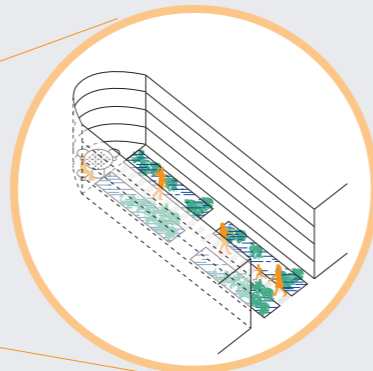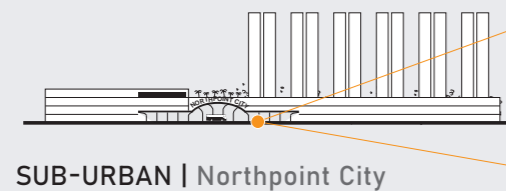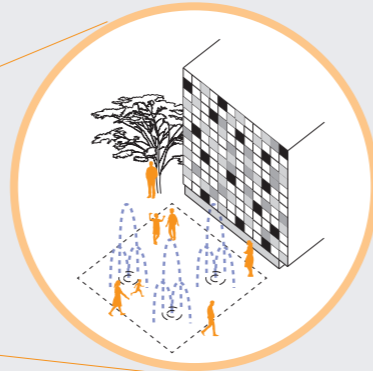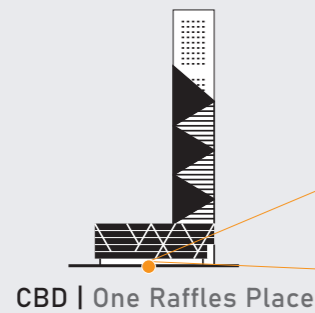
Relatable Spaces

Connecting people to places that they identify with, through impactful visual and spatial experiences

Impactful Visual Aesthetics, Spaces, and Experiences   **Public Spaces of Human Scale :**

CBD | One Raffles Place

REGIONAL | Jem

SUB-URBAN | Northpoint City

Relatable Spaces

The design of spaces and architecture impacts our emotions. Emotions are the basis upon which our brains create meaning. Communities need to connect emotionally with places to feel attachment. Architecture has the potential to create strong mental images. When coupled with unique spatial experiences, spaces become places, with the ability to bring people together through:

1. Environments that are human-scaled, which ensure that places of everyday interaction are of a relatable size and shape.

2. Spaces that enable pedestrians to explore storefronts at slow walking speeds and allow people to fully experience what a city offers. This contrasts with vast spaces built at an automotive scale where high speeds narrow visions and remove details.

3. Public places designed at an appropriate scale, which facilitate interactions as our senses process more information at shorter distances. Facial expressions and emotions can be perceived at less than 25 meters, but conversations can only be articulated at 7 meters.

While architectural designs seek to impress visually and spatially, we must also design to facilitate interactions in public places and connect people at human scale.

UNIQUE PROGRAMMING
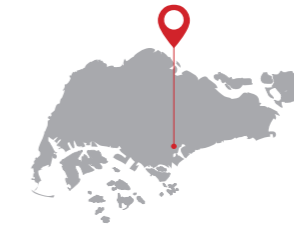RELATABLE SPACES
IDENTITY
SOCIAL SIGNIFICANCE

The element of **[Relatable Spaces]** in the enabler **[Identity]** will be explored in the following pages with **[City Gate]**.

Featured Project

City Gate

Singapore

IDENTITY

An urban landmark should go beyond its role as visual marker, to provide spaces for social moments and respite.

Awards

CTBUH Award of Excellence, 2022

Featured Project
—

City Gate

Singapore

**RELATABLE
SPACES**
—

How can skyscrapers remain relatable to the human scale, forging community interactions beyond being iconic tall landmarks?

City Gate replaces the previous Keypoint Tower, punctuating a stretch of skyscrapers that fronted Kallang Basin in the 1960s and 1970s prior to recent land reclamations. Its unique connection between the Central Business District (CBD) and historic Kampong Glam creates an urbanised heritage site. Two interconnected residential towers share a core above a 5-storey commercial podium, rehabilitating the previously commercial area with live-in residents. It revitalises the culturally rich district, amalgamating commercial, residential, and social facets.

**Visual marker of
human-scaled
places within
a central core**
—

Sixteen sky terraces are staggered within a module of 3 levels — an appropriate vertical scale that brings people together. These terraces offer new community spaces for people to gather and live within, while marking the central core that brings the 2 towers together in a hinged L-shape urban marker. Two lushly landscaped communal floors further punctuate and lighten the 25-storey massing, bringing communities together, while maximising city and seafront views through a green screen.

**Naturalistic
design language**
—

Kept at 5 storeys, the facade elements of the retail mall reflect the finer grain of its shophouse neighbours. The podium's facade "breathes and moves" to match the expression of the tower. It celebrates the concept of "motion in nature" through smooth sensuous fluid lines. The wave-like modular facade of the podium ebbs and flows with a free-flowing rhythm, responding to functional needs of shops. Waves create texture, revealing openings for dining and retail outlets, carefully rounded at the corners to reduce its bulk.

**Urban marker
offering unique
elevations from
different angles**
—

The final massing with naturalistic flowing lines appears slender while remaining dynamic, offering unique elevations when viewed from different angles of the city. This landmark at the urban fringe is a great departure from the rectilinear glass and concrete aesthetic typically associated with highly urbanised environments. As a gateway to the CBD, it brings back the intimacy of the human scale along the stretch of skyscrapers. It layers on "new history" to the district.

- Element of **[Relatable Spaces]** in enabler of **[Identity]**

Featured Project
—

City Gate
Singapore

IDENTITY

CITY GATE

16 sky terraces and 2 lushly landscaped communal floors punctuate and lighten the 25-storey massing.
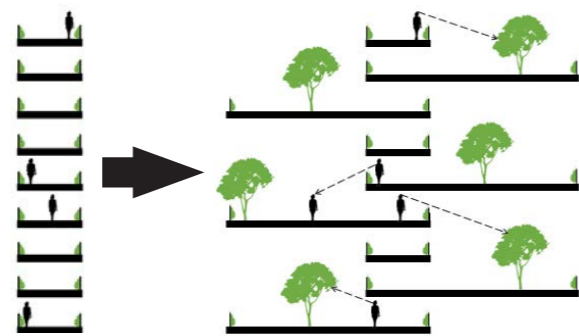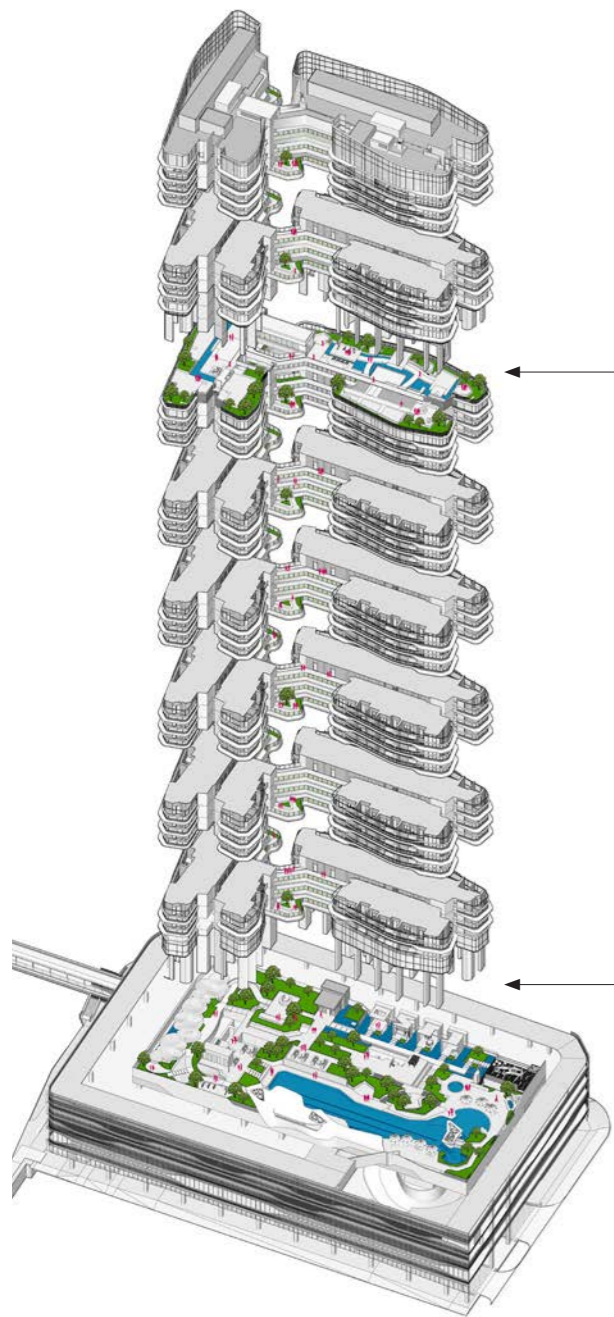

(Left)
The L-shape tower maximises city and seafront views, while offering dynamic and unique elevations of the urban marker when viewed from different angles and points of the city.

(Top)
The central core that connects the 2 towers visually marks communal spaces of relief.

Featured Project
—

City Gate
Singapore

+ 2 LUSH COMMUNAL FLOORS

Stacking the modules of 3-storey communities breaks down the scale of an otherwise imposing tower while visually marking the corner where the 2 towers come together

X 8 MODULES

Extending alternate planes into sky terraces, where neighbours are visually connected, spatially outlines a series of social moments on each level

(Left)
Staggering sky terraces within a module of 3 levels offer new community spaces for people to gather at a relatable scale.

(Top)
Overlooking the heritage shophouses with the city skyline as the backdrop at the communal sky terraces.

City Gate

City Gate joins the skyline at the urban fringe area in Singapore, where each skyscraper is a vertical interpretation of stacked layers

A naturalistic design language that ebbs and flows, breaking down the podium facade with **human-scaled elements**

Two **lushly landscaped communal floors** where communities can gather and enjoy views of the city skyline

06 Urban Vitality

Urban vitality is what makes high-density living lovable, giving cities a lively and bustling **sense of place**. Connecting many interesting and diverse places at multiple points within close proximity sets the stage for vibrant social moments and thriving economic transactions.

Designing spaces for social moments weaves a tapestry of bustling places that bonds communities.

Jane Jacobs first introduced urban vitality as street life across an entire day over a 24-hour period, relating to the quantitative number of people on the streets, across different lengths of time, with facilities that generate a lively and bustling sense of place. Cities are fundamentally markets of exchange and transactions, agglomerating social moments and economic opportunities.

Clustering **high densities** of people, buildings, and interactions, create inviting environments that attract, promote, and sustain economic vitality. A solid base for economic transactions built with high densities of people, at many different levels and layers, allows space for social and cultural transactions to occur and grow over time. Street life is instrumental to successful urban places.

Dense urban populations deliver the substantial customer base and regular foot traffic and critical mass that businesses need to thrive, when connected to each other at **close proximities**, setting the stage for diverse activities to occur organically in and around buildings and open spaces. Good urban places are structured with an underlying dynamic of activity and people.

Urban vitality is fundamentally built on the social interactions within a city. Urban areas that are lively and interesting tend to be "places of complex variety". **Visual sightlines** make it easy to navigate the connected, walkable city that co-locates economic opportunities and living places with dense pedestrian activities, creating an inclusive environment for people of all abilities. Enhancing accessibility through active mobility networks to urban spaces of interaction enhances a city's vitality, opening up opportunities for interactions to happen in longer and extended time periods, with increased complexity, forming deeper bonds within communities.
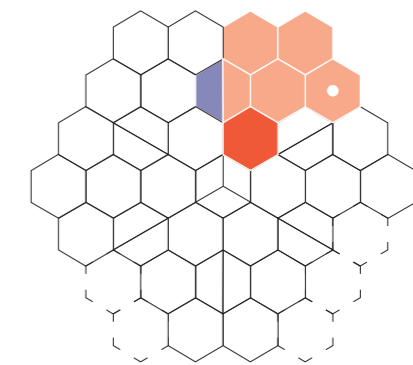
3 Elements:

01 High Density:
A high concentration of buildings and people clusters economies, forming the critical mass that is essential for bustling cities and fostering interactions through:
+ **A diverse built environment (of buildings, typologies, land uses) which form the backdrop for activities**
+ **Multitude of human activities and diverse profile of people (e.g., residents, employees, tourists)**
+ **Human environment interactions such as infrastructure, road networks, and nature, delivering different services essential for cities to function**

02 Close Proximity:
Many short links with numerous intersections that enable active mobility, encourage daily interactions and chance meetings at:
+ **Linked connections at the end of each junction**
+ **Alternative routes from residential neighbourhoods to destinations such as schools and shops**
+ **Highly used paths that consider shape of links and spatial structure of connection networks**

03 Visual Sightlines:
Easy visual navigation to all destinations from each link, to urban services maximises economic opportunities for retail shops through:
+ **Convenient street layout with diverse land use which enables accessibility and maximises footfall**
+ **Mental layouts that are easy to remember are also fast to navigate**
+ **Provision of direct short pathways that encourage through movement on spatial networks**

URBAN VITALITY

HIGH DENSITY
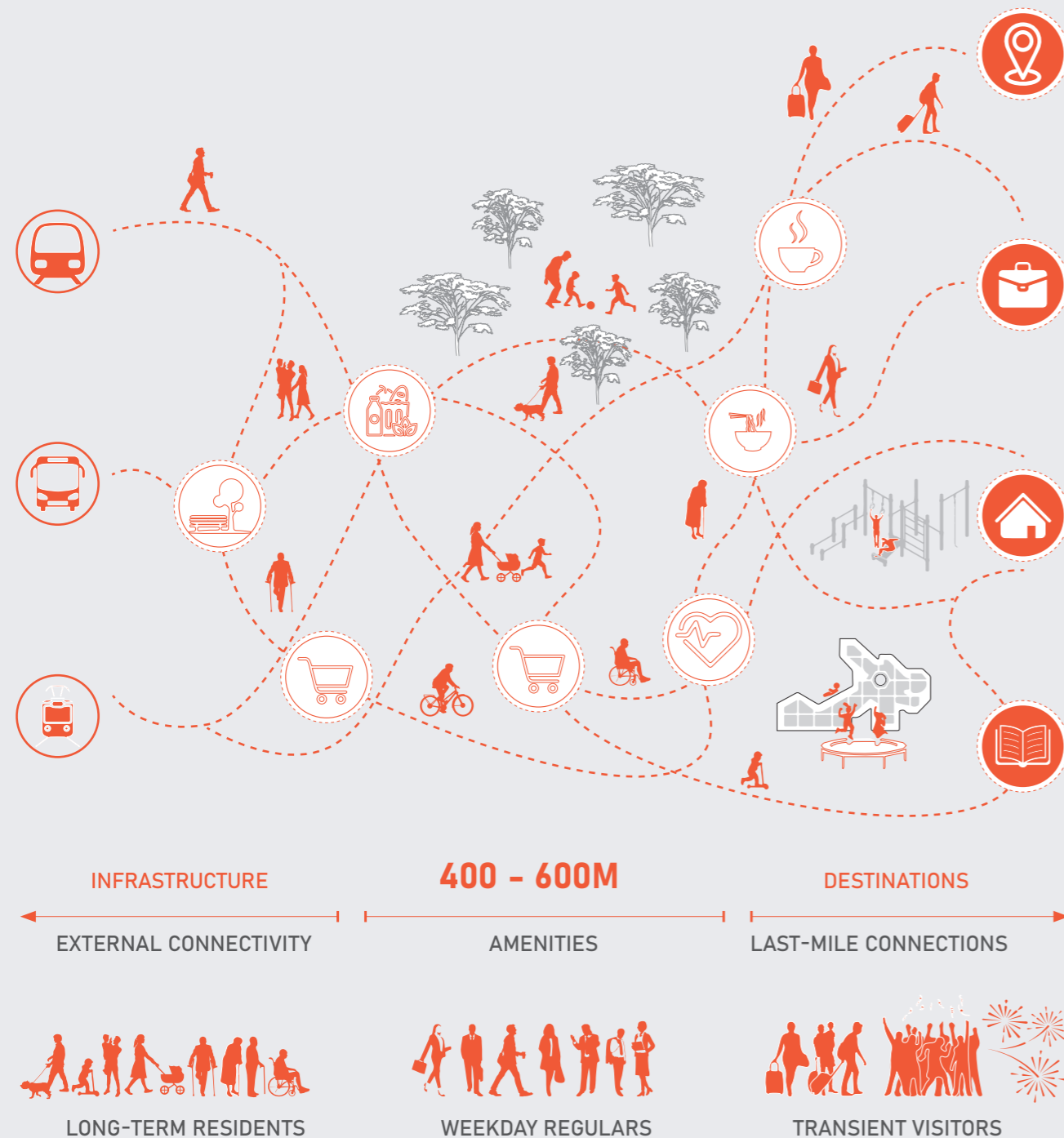VISUAL SIGHTLINES
CLOSE PROXIMITY

Urban Vitality

Vibrant urban living enabled by high density concentration of the built environment, human activities, and interactions at close proximity with visual sightlines that orientate and attract people, maximises social moments and economic transactions.

Close Proximity

Integrating third places of interaction within a network of highly used and multiple routes, at short distances, encourages walking and active mobility, which in turn impacts footfall and vibrancy

INFRASTRUCTURE
← EXTERNAL CONNECTIVITY

400 - 600M
AMENITIES

DESTINATIONS
LAST-MILE CONNECTIONS →

LONG-TERM RESIDENTS

WEEKDAY REGULARS

TRANSIENT VISITORS

Close Proximity

Proximity to significant major nodes is essential for vitality in urban public places. Different users utilise places differently and are active at varying times of the day, across different times of the week and year. Successful urban places use legible urban elements such as landmarks and nodes to facilitate wayfinding for everyone. Urban environments that connect multiple places at close proximity offer convenience to the regular resident, but could be complex for the unfamiliar visitor. A layered approach to movement and connections in this network is integral to creating socially vibrant 24/7 spaces for different users.

1. Residents: Creating highly used paths within a larger network of daily routes, as they walk from residential neighbourhoods to other nearby destinations such as schools and shops.

2. Weekday regulars: Creating a second layer of connections along specific routes during the high-traffic morning rush hours and lunch breaks.

3. The public: Weaving informal and organic activities into an active public network of third places, activating major nodes on special occasions.

The social connections that these user groups form with places, are instrumental in retaining and attracting future higher densities of people. Places come to be the embodiment of memory with time, taking on symbolic meaning for people through its place value, with third places serving as social hubs and opportunities for exchange. Public spaces in a city, along with the sequences of how they interconnect to many nodes of activities, are paramount in the life and vitality of cities.

HIGH DENSITY
VISUAL SIGHTLINES
URBAN VITALITY
CLOSE PROXIMITY

The element of **[Close Proximity]** in the enabler **[Urban Vitality]** will be explored in the following pages with **[Eastlink I & II @ Canberra]**.

Featured Project
—

East Link I & II @ Canberra

Singapore

URBAN
VITALITY

Incidental communal spaces invite people out of their homes, bringing people together through informal activities, breathing life and vitality into the social realm.

Awards
—

Eastlink I & II @ Canberra
BCA Green Mark Award, 2017 — Gold
Architecture Masterprize, 2022 — Social Housing

Canberra Plaza
BCA Green Mark Award, 2017 — Platinum

Eastlink I & II @ Canberra & Neighbourhood Centre
HDB Design Award, 2021 — Mixed Development
WAN Awards, 2021 — Residential, Bronze

Featured Project
—

East Link I & II @ Canberra

Singapore

URBAN VITALITY

CLOSE PROXIMITY
—

How can we inject and nurture social vitality into a new estate, designing for new communities to form lasting social networks?

Eastlink I & II @ Canberra along with Canberra Plaza is a mixed development project comprising residences and a new generation neighbourhood centre integrating commercial and community facilities with public housing.

Diverse, multi-functional estate

The multi-functional estate designed for young families integrates diverse users and uses. Co-locating the residential population in close proximity to amenities generates substantial demand to sustain diverse economic activities.

—

Multitude of third places in close proximity at the doorstep of homes

—

An articulated bridge and prominent elevated 360-metre-long central urban spine connects residents from Canberra MRT station directly to homes. A haven of elevated shared spaces, pocket greens, community roof gardens, activity nodes, connected walkways, and viewing decks extends from the spine, separating pedestrians from ground traffic. Activity nodes, landscape, playgrounds, and a multitude of third places are interwoven into these everyday routes to their doorsteps.

Amenities at close proximity with easy wayfinding encourage walking

—

Pavilions and multi-generational fitness corners and playgrounds spark opportunities for chance meetings and informal activities. These bridge social connections across generations, with diverse incidental communal spaces for everyone of all ages and abilities. Enhancing visual sightlines back to Canberra MRT station along the streets enables the elderly to orientate themselves effortlessly in new estates. Easy wayfinding, with amenities at close proximities, draws families out of their homes to explore the social communal life amidst outdoor greenery, maximising neighbourly interactions in new neighbourhoods.

From the urban spine to natural rivers and parks

—

Urban "rivers" flow and draw movement through the estate, meandering through the blocks with winding walkways, connecting to different places and daily events along the way home. A series of bridges, paths, and community spaces interwoven into the urban spine culminates with a bright yellow slide around a growing tree, bringing families to the adjacent river. The slide acts as a green marker, planting seeds of social memory for this new community, forging social networks. Walking and cycling connections invite residents to also explore the nature parks in the larger vicinity.

- Element of **[Close Proximity]** in enabler of **[Urban Vitality]**

Featured Project
—

East Link I & II @ Canberra

Singapore

URBAN VITALITY

An elevated urban spine bridges the connection between Canberra MRT station to the doorsteps of homes, with a multitude of third places that fit into the daily lives of residents. The proximity of such diverse amenities makes it convenient for people of all ages to pick up groceries, run errands, play, exercise, or rest; along their way to work, school, and home, and through the MRT station:

1   Canberra MRT Station
2   Rooftop garden
3   Canberra Plaza
4   Water play park
5   Community plaza
6   Rooftop garden
7   Yellow slide around a feature central tree, integrated with a viewing platform
8   NParks connection to Sungei Simpang Kanan
9   Multi-use pavilion

A **network of active mobility routes** on the ground level extends from the urban spine, connecting residents and community to the MRT station and amenities at the doorsteps of their homes

A **haven of elevated shared spaces** from pocket greens to community roof gardens, playgrounds, and activity nodes extends from the urban spine to each home

The urban spine culminates in the **yellow slide** around a feature tree, connected to the wider walking and cycling network, breathing life into the urban thoroughfare