

### 3.0 CAMPUS MASTERPLAN

### 3.5 DENSITY CONTROLS

#### OPTIMISING FOR VARIED BUILDING TYPES

In determining the appropriate built form and density for the campus, consideration has been given to other successful institutions both in Australia and internationally.

Great academic buildings come in a wide variety of shapes and sizes. Additionally, built form flexibility and diversity is critical to the success of any innovation precinct. The need for diversity applies not only to its users and uses, but also to building types, typologies and scales.

By building in flexibility to accommodate a variety of building types and forms, the masterplan ensures the continued development of a healthy, heterogeneous mix of users, uses and campus experiences. This flexibility is also critical in ensuring the campus' ability to grow and densify over time without compromising the quality of public open spaces.

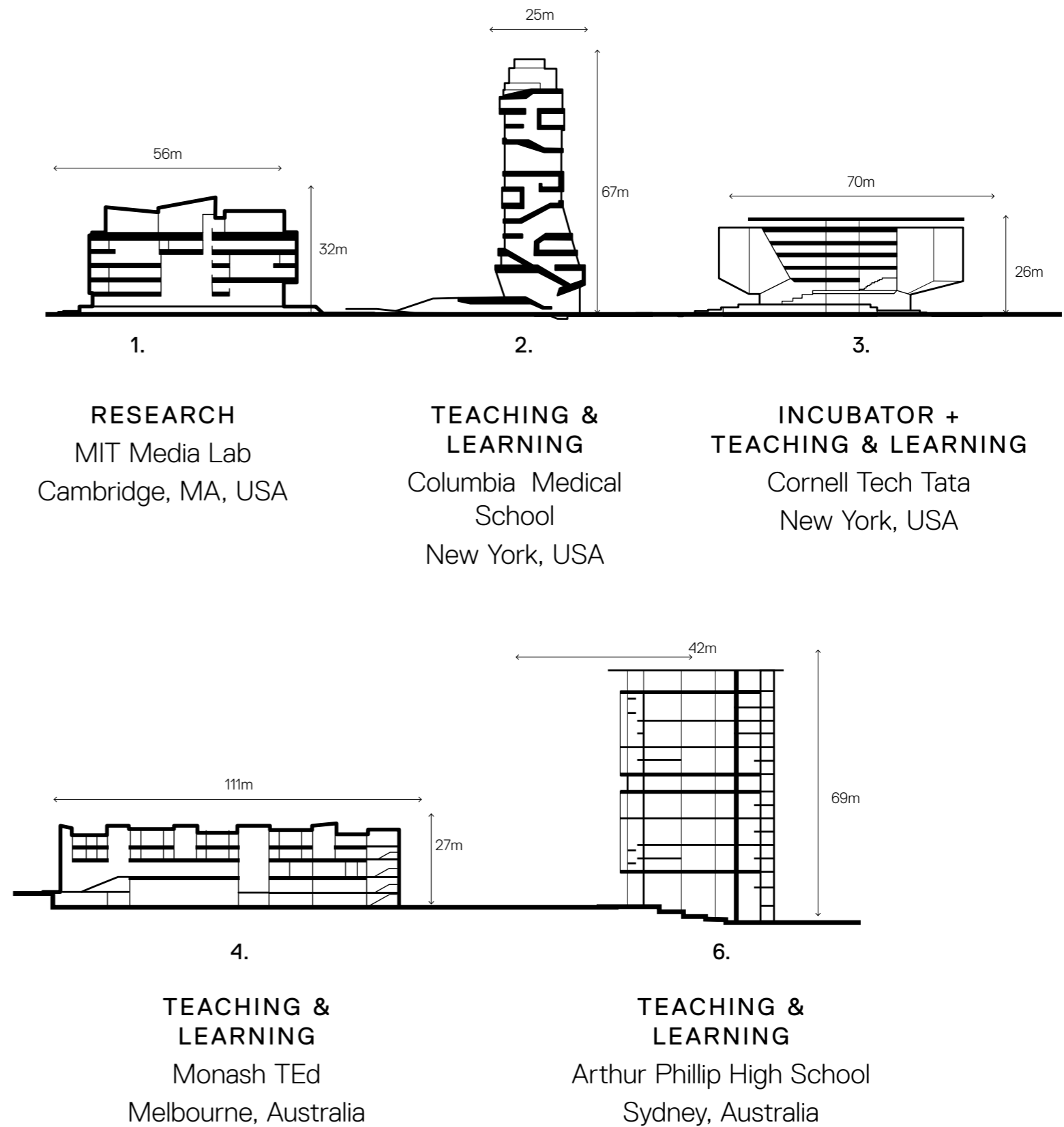


Figure 23 - Varying scales and morphologies of world-class education buildings





MIT Media Lab is a 6 level research and design facility with showcase galleries on the ground floor and networking facilities on the top level. Several multi-level atria provide flexible making/doing/testing exhibiting spaces throughout the building.



Columbia University's Vagelos Education Centre is a 14 level vertical school for the University's Medical School. It emphasises the importance of informal break-out, informal learning space by expressing a continuous public stair called the "Study Cascade" at the facade.



The Tata Innovation Centre at Cornell University's new campus on Roosevelt Island is a 7 level building that incorporates leaseable spaces for businesses and start-ups, traditional classroom learning for Cornell Students as well as a mixing space called *The Studio* for the two cohorts to come together and collaborate.



Monash University's upcoming Technology Education building is a long, 5 level structure that focuses on long spans to allow for very large, highly flexible, column free classroom/testing spaces.



The upcoming vertical campus for Arthur Phillip High school is comprised of six unique stacked communities of students across 17 levels.



### 3.0 CAMPUS MASTERPLAN

### 3.5 DENSITY CONTROLS

#### OPTIMISING DENSITY FOR INNOVATION PRECINCTS

Providing a critical mass of people, activities, workplaces and services is key to sustaining and growing a true innovation precinct. Around the world, innovation precincts take many different forms, but the most productive precincts tend to have floor area ratios between 2:1 and 4:1.

A floor area ratio of 3.2:1 is considered appropriate for the Fishermans Bend Campus, equating to a maximum GFA (above ground) of 230,000sqm.

This will achieve densities comparable to other successful innovation and education precincts and will provide a scale that will sit comfortably with the built form vision for the Employment Precinct

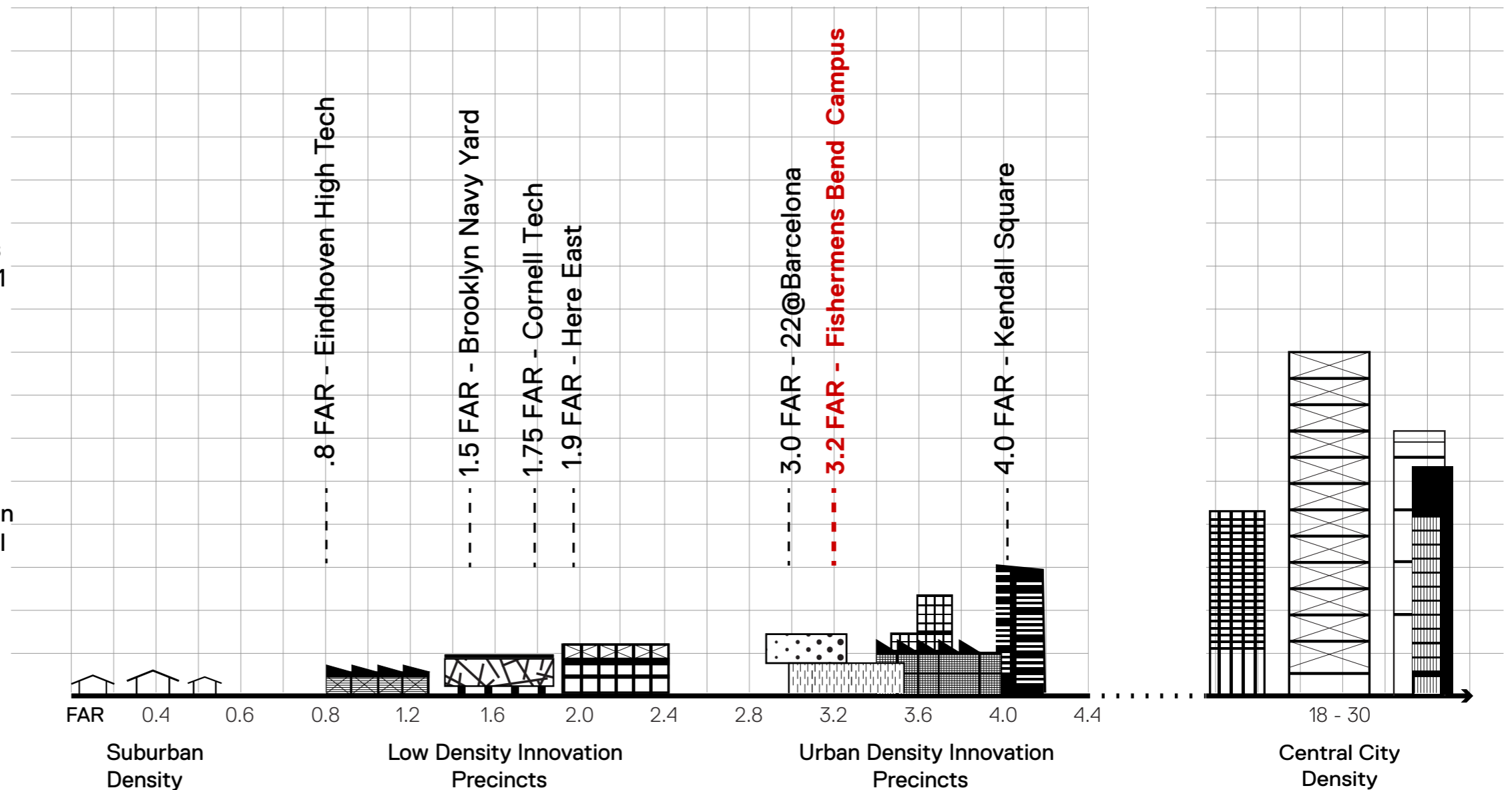


Figure 24 - Diagram of increasing density (FAR) in relation to global Innovation Precinct Benchmarks





**Here East, London, FAR 1.90**

Formerly the Olympic Press and Broadcast Centre, Here East hosts commercial space, creative space, co-working hubs as well as the University College London Bartlett Robotics Lab.



**Cornell Tech, New York City, FAR 1.75**

Cornell Tech invites collaboration between students and industry professionals, accommodating both working and living, and co-located academic and leaseable office space on the built-for-purpose campus on Roosevelt Island, off the east coast of Manhattan Island.



**Eindhoven High Tech Campus, FAR 0.80**

The campus is a high tech centre and R&D ecosystem hosting labs, conference centre, restaurants and shops to compliment its 10,000 skilled worker.



**Kendall Square, Cambridge, MA, FAR 4.00**

An eclectic cluster of tech companies and MIT buildings which has been called the “ most innovated square mile on the planet”.



**22@ Barcelona FAR 3.00**

A project towards the urban renewal of the industrial district, 22@ Barcelona facilitates technological innovation and offers public space for its emerging community.



**Brooklyn Navy Yard, New York City, FAR 1.5**

Anchoring New York City’s industrial sector, Brooklyn Navy Yard embraces its rich heritage while redevelopment on the site supports modern manufacturing and economic opportunity.



### 3.0 CAMPUS MASTERPLAN

### 3.5 DENSITY CONTROLS

#### INDICATIVE MASSINGS AT 3.2 FAR

The building envelope provides flexibility for numerous built form outcomes, allowing the campus to evolve as the masterplan vision is realised through the stages.

To illustrate how a floor area ratio of 3.2:1 could be achieved, two indicative massing options have been prepared. These are illustrated at Figure 25 and Figure 26.

Of note, both options comprise:

- Built form in accordance with the maximum building envelope shown in Figure 21 and 22.
- Through-block links in accordance with the site layout plan at Figure 16.
- A 24 meter floor-to-floor height for the building in the north-west corner, allowing for specialist uses and reflecting the highest requirement of the Melbourne School of Engineering labs.

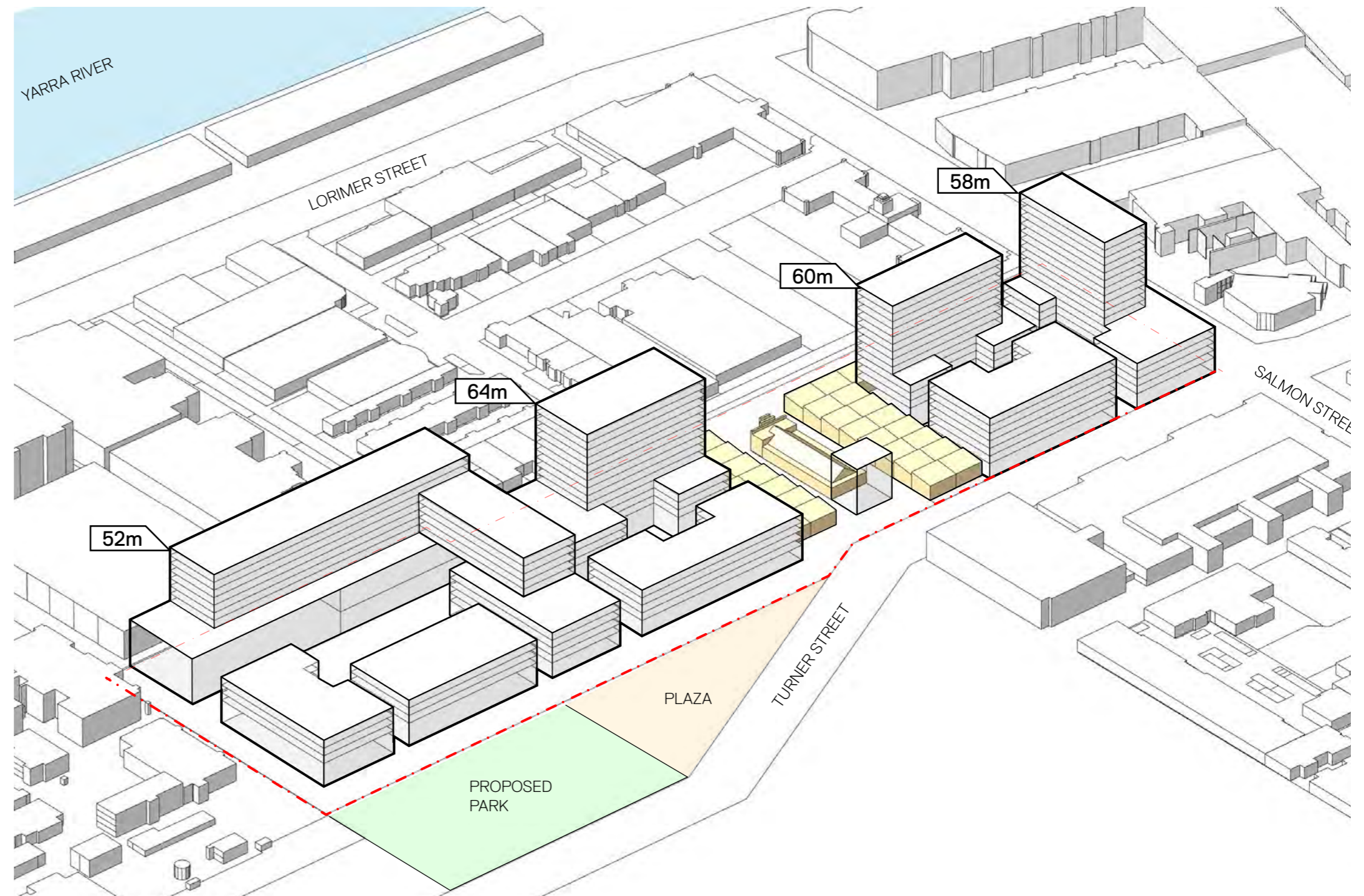


Figure 25 - Isometric view of an indicative massing at 3.2 FAR



### 3.0 CAMPUS MASTERPLAN

### 3.5 DENSITY CONTROLS

#### INDICATIVE MASSINGS AT 3.2 FAR CONTINUED

Buildings typically have a ground level floor-to-floor height of either 8 or 12 metres, allowing for active and gallery-style uses.

Above ground level, levels comprise 4m floor-to-floor heights.

These options are for illustrative purposes only. The ultimate built form outcome is likely to vary as detailed design progresses.

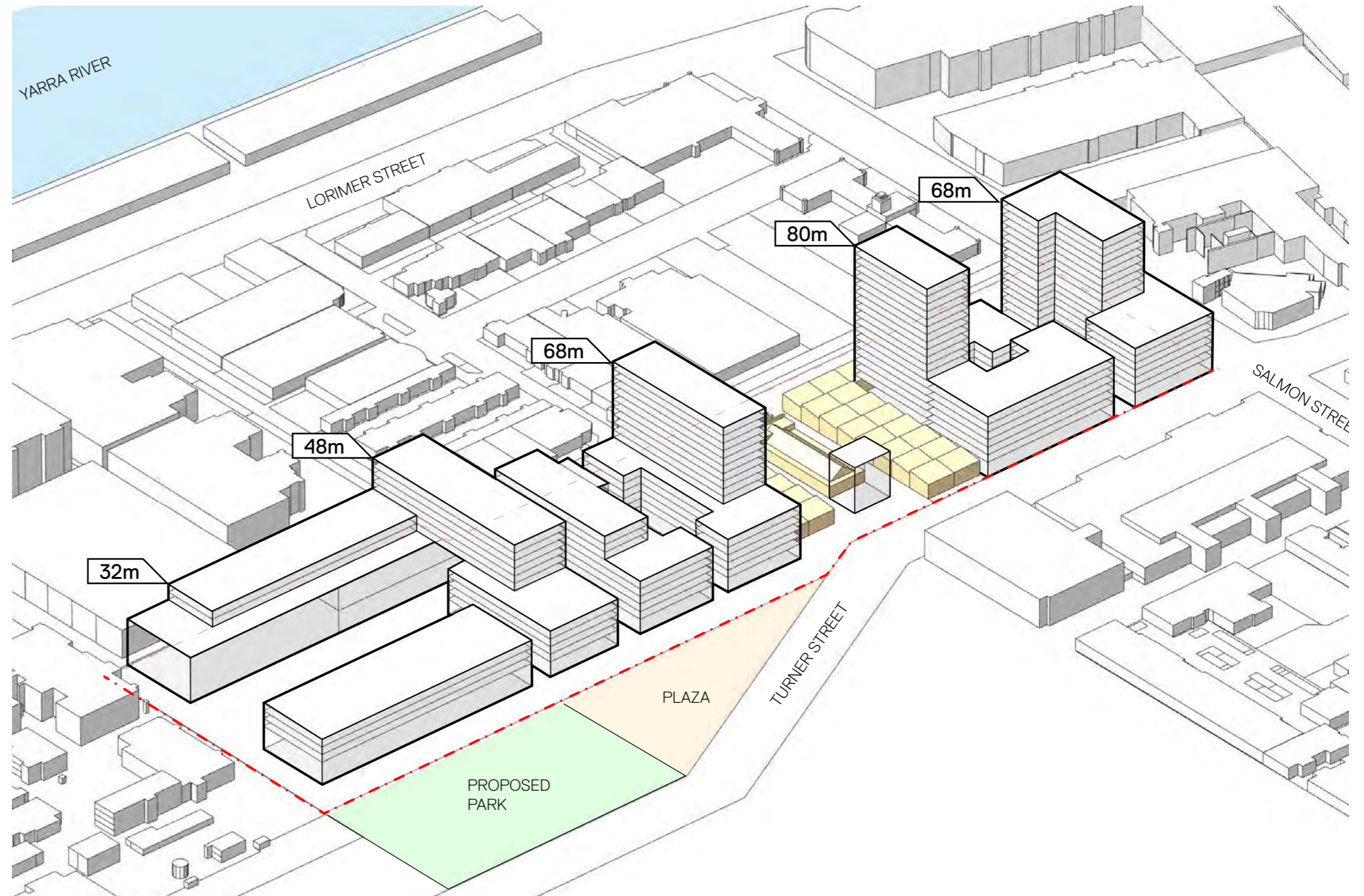


Figure 26 - Isometric view of an alternate indicative massing at 3.2 FAR



### 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

## 1.0 INNOVATION

To showcase and celebrate innovation and to work collaboratively with key Agencies and other landowners in Fishermans Bend to realise the innovative precinct objectives

### Principle

1.1 INNOVATION AND USE

### Design Criteria

1.1.1 Provide a diverse mix of uses that contribute to campus innovation, student engagement, research impact and education and support the broader National Employment and Innovation Cluster vision

1.1.2 Uses to align with the University's Partnership Charter that governs key external partnerships to ensure innovation is at the forefront of campus uses and activity, or to meet the following criteria

+ A temporary use of land in the interim before development

1.1.3 A use aligned with providing campus amenity or supporting services Encourage development of the campus aligns with the principles in the Living Labs Action Plan, including the creation of mechanisms to stimulate ideas and foster the inclusion of Living Labs into the design, development and operation of the campus

1.2 VISIBILITY

1.2.1 Innovation is to be showcased, on display and an integral part of the precinct identity where possible

1.2.2 Create public showcases of technological innovation, particularly on the Turner Street frontage

## 2.0 CAMPUS AMENITY

Provide an appealing and exciting environment that attracts a diverse group of users and supports chance encounters and cross-industry collaboration

### Principle

2.1 DIVERSITY

### Design Criteria

2.1.1 Encourage a heterogeneous mix of uses, programs, experiences and built form to encourage a variety of users

2.2 INTERACTION AND ENGAGEMENT

2.2.1 Define a network of distinct activity clusters which support the mix of making and doing, teaching and research, innovation and engagement, and social activities

2.2.2 Focus density around activity clusters to support a critical mass of users and uses, providing maximum exposure to the research and making/ doing on display

2.2.3 Encourage interdisciplinary and cross industry collaboration by providing publicly accessible working and networking spaces, such as informal learning spaces, meeting and conferences centres, business lounges, third spaces and co-working spaces



### 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

Campus Amenity Continued	Principle	Design Criteria
	2.3 FACILITIES AND AMENITIES	<p>2.3.1 Campus facilities and amenities should:</p> <ul style="list-style-type: none"> <li>— Support daily convenience, amenity, well-being, and comfort for staff, students, precinct partners and visitors</li> <li>— Be located and designed to encourage interdisciplinary and cross industry networking and collaboration</li> </ul> <p>2.3.2 Include a mix of amenities such as cafés and other retail and non-retail uses that make the campus inviting to the local community and that encourage them to visit and spend time on campus</p>
	2.4 CHARACTER	2.4.1 Create an environment that makes users welcome, comfortable, supported, networked, engaged and inspired
	2.5 HIERARCHY	<p>2.5.1 Road hierarchy to be provided generally in accordance with:</p> <ul style="list-style-type: none"> <li>— Turner Street to provide for primary vehicular movements to the site, linking to the transport hub and the front door of the Campus</li> <li>— The Tech-Dock to allow for heavy vehicle movements and large equipment to move through the public realm</li> <li>— Disco Avenue, Torana Avenue and other new designated vehicular links to allow for infrequent loading movements and emergency vehicle access</li> </ul>
	2.6 SUSTAINABLE TRANSPORT	<p>2.6.1 Provide a clearly defined pedestrian and cycle network through the site that links with the surrounding movement network</p> <p>2.6.2 Provide end of trip facilities to support cycling to the campus as a main mode of travel</p>
	2.7 CAR PARKING	2.7.1 Provide sufficient parking to support the target campus population at each stage of development, either off-site in a convenient location, or off site.
	2.8 PROXIMITY	<p>2.8.1 Encourage external partners to co-locate on campus by providing leasable spaces for different stages of enterprise development</p> <p>2.8.2 Provide leasable and licensable space within proximity to labs and specialist equipment to unlock the potential for immediate access and collaboration between the University and external partners</p>



## 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

## 3.0 PUBLIC REALM

To create places that promote collaboration, interaction and idea exchange and prioritise the health and well-being of campus users and the community

### Principle

### Design Criteria

#### 3.1 OPEN SPACE

- 3.1.1 Create a continuous network of open spaces throughout the site that connect to the surrounding public realm and invites the public into the site
- 3.1.2 Provide a variety of open spaces that promote creative freedom and provide event spaces to support a lively and amenity rich campus experience
- 3.1.3 Create a hierarchy of open space, including:
- Central open space focused around the Social Centre, with a minimum area of approx. 3,000m<sup>2</sup>
  - Linear open space, providing a ribbon of activity and native landscape running as a consistent element through the campus
  - Testing ground space connected to the Tech-Dock, for exhibition, building, making doing and delivery space
  - Secondary medium and small pockets of open space located throughout the campus, including intimate spaces and larger event spaces
- 3.1.4 Open space identified as publicly accessible is to provide 24/7 access to the public

#### 3.2 LANDSCAPING

- 3.2.1 Ensure open space contributes to the local ecosystem by:
- Creating resilient water infrastructure by integrating a series of connected channels and wetlands as flood mitigation
  - Connecting green space to the broader precinct green network linked to the existing habitat at Westgate Park to help re-establish local ecosystem corridors
  - Increasing tree canopy cover with trees known to provide year-round food supplies and habitat and enhancing microclimate throughout seasons
- Landscaping to be designed to relate to the site's industrial character and ecological history
- Landscape to provide shelter, respite and support a human-centred, healthy well-being campus environment

#### 3.3 MATERIALS

- 3.3.1 Use high-quality materials within the public realm and appropriate urban furniture

#### 3.4 PROXIMITY

- 3.4.1 Provide close and intimate public space and human-scale interfaces to support interaction with partners, networks and infrastructure



### 3.0 CAMPUS MASTERPLAN

#### 3.6 SCHEDULE OF DESIGN CRITERIA

Public Realm Continued	Principle	Design Criteria
	3.5 SOCIABILITY	<p>3.5.1 Create a network of appropriate amenities including the delivery of:</p> <ul style="list-style-type: none"> <li>— A “Campus Hub” in Stage 1, with direct access to the future transport hub on Turner Street</li> <li>— A “Heritage Heart” community space developed around the Social Centre</li> <li>— A second “Campus Hub” with a frontage to Salmon Street to be delivered in a subsequent stage</li> </ul> <p>3.5.2 Deliver socially engaging open spaces that create welcoming entry points, intimate meeting places, and integrated outdoor research or learning environments and accommodate recreation facilities</p>
	3.6 MICRO CLIMATE	<p>3.6.1 Prioritise outdoor thermal comfort and create a comfortable campus micro-climate through managing exposure to prevailing winds and direct exposure to solar radiation</p> <p>3.6.2 Publicly accessible spaces within and adjoining the site to be on or within comfortable walking criteria for wind as appropriate</p>
	3.7 SAFETY	3.7.1 Ensure that all public realm spaces are safe and usable by implementing good passive surveillance and wayfinding principles

### 4.0 OFF-SITE AMENITY

Be a good neighbour by minimising the environmental impact of noise, pollutant and light on the precinct

Principle	Design Criteria
4.1 USES WITH POTENTIAL FOR ADVERSE AMENITY	<p>4.1.1 Locate the majority of uses with potential for adverse amenity impact (dirty and noisy labs) around the Tech-Dock to the north of the site</p> <p>4.1.2 Buffer uses with potential for adverse amenity impact by clean labs and socially focused spaces to minimise amenity impacts to Turner Street and future public spaces to the south and any surrounding potentially sensitive uses</p> <p>4.1.3 Implement mitigation measures in the detailed design of the development to minimise the impact of noise, pollutants and light on surrounding development and the broader precinct</p>



### 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

## 5.0 HERITAGE

To create a distinct Campus rooted in the ecological, indigenous and industrial legacy of the site and celebrate history, while allowing for change, adaptation and regeneration

### Principle

#### 5.1 CULTURAL HERITAGE

### Design Criteria

- 5.1.1 Ensure development accords with the approved Cultural Heritage Management Plan
- 5.1.2 Reflect Indigenous cultural heritage in the physical environment of the campus
- 5.1.3 Create a tailored approach to embedding the indigenous past, present and future of the site into the campus, including:
  - Connection to Country: apply a regenerative approach to the design of development
  - Connection to People: establish a network of belonging and community
  - Living History and Memory: incorporate cultural narratives into the design of each stage
  - Art and Artefact: incorporate significant forms of cultural expression in a subtle and nuanced manner

#### 5.2 INDUSTRIAL HERITAGE

- 5.2.1 New development to respond sympathetically to heritage elements and structures, with high-quality, contemporary design interpretive of the historical and industrial context
- 5.2.2 Celebrate and restore the Social Centre in the heart of the campus and enable the adaptation of the Centre for compatible uses
- 5.2.3 Establish a focussed heritage precinct around the Social Centre and retaining adjacent open space
- 5.2.4 Investigate the retention of portions of the west structure of Plant 3, and of the east structure of Plant 5 and use for adaptive reuse, retention, or incorporation into future development
- 5.2.5 Interpretation to be included in the design of the development and landscaping, to include reference to both pre-settlement and post-settlement use of the Fishermans Bend area and the Yarra River
- 5.2.6 Identify key heritage structures and retain triggers to intangible and social values where possible, to create 'moments' across the site

### 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

6.0 BUILT FORM	Principle	Design Criteria
To create a future-ready campus with a foundation of resiliency and adaptability and support diverse range of flexible spaces that can adapt over time	6.1 STREET WALL	6.1.1 Provide a maximum 24 metre high street wall along Turner Street to minimise shadow impact to future open space
	6.2 BUILDING ENVELOPE	6.2.1 Development to be within the approved building envelope (except with a planning permit), providing flexibility in the built form outcomes for each stage 6.2.2 Massing to accommodate large specialist equipment, flexible making-and-doing laboratories and showcase spaces
	6.3 GFA	6.3.1 Total site GFA above ground to be no greater than 230,000 square metres 6.3.2 A maximum Floor Area Ratio of 3.2:1
	6.4 FLOOR TO FLOOR HEIGHTS	6.4.1 Provide a variety of floor to floor heights throughout the Campus to accommodate the operational requirements of diverse uses, including the following examples: — A ground floor varying from 3.5 meters to the high bays at 12-24 meters — Upper levels generally at 4 metres
	6.5 OVERSHADOWING	6.5.1 No overshadowing to the southern footpath on Turner Street and proposed public park to the south of the site between 11am-2pm at the Equinox 6.5.2 No overshadowing to a minimum of 50% of the future public park to the south of the site between 10am-3pm at the Winter Solstice
	6.6 FLEXIBILITY	6.6.1 Establish flexible site infrastructure that supports the staged expansion of the campus as well as the changing demands of research, teaching and learning, and industry shared space 6.6.2 Resilience and adaptability should guide the development of design and engineering infrastructure to support future technology
	6.7 HUMAN SCALE	6.7.1 Ensure a human scale of the building edges appropriate to each scale of through-site links, streets and laneways
	6.8 BUILDING IDENTITY	6.8.1 Incorporate diverse architectural facade treatments that are appropriately varied to enhance individual building identity
	6.9 BUILDING ENTRANCES	6.9.1 Major building entrances to be as visible as possible to Turner Street, primary through-site links and open spaces and support natural way finding 6.9.2 Clear front door entry point to be provided to all buildings



### 3.0 CAMPUS MASTERPLAN

#### 3.6 SCHEDULE OF DESIGN CRITERIA

Built Form Continued	Principle	Design Criteria
	6.10 MATERIALITY	<p>6.10.1 Promote the reuse, repair and recycling of building components in order to facilitate future change and need</p> <p>6.10.2 Flexibility, adaptability, functional suitability, addition and subtraction is to be considered in the design of buildings</p> <p>6.10.3 Incorporate innovative design and use of material where possible</p>
	6.11 ACTIVATION	<p>6.11.1 Maximise active frontages where possible to enhance the public realm and pedestrian environment</p> <p>6.11.2 Support the integration of internal and external space to encourage interaction</p>
	6.12 VISIBILITY	<p>6.12.1 Designate open working spaces for outdoor testing and prototyping</p> <p>6.12.2 Create public showcases of technological innovation, particularly on the Turner Street frontage</p> <p>6.12.3 Create a highly visible and activated servicing and infrastructure spine (the Tech-Dock) that maximises pedestrian access to loading areas and prototyping spaces to showcase activities in these spaces</p> <p>6.12.4 Provide active edges where possible in the making, doing and testing spaces:</p> <ul style="list-style-type: none"> <li>— without compromising wind and thermal comfort considerations</li> <li>— while providing sufficient private and secure areas for IP and security sensitive research</li> </ul>
	6.13 HIGH QUALITY DESIGN	6.13.1 Encourage high-quality and creative architectural design

### 3.0 CAMPUS MASTERPLAN

### 3.6 SCHEDULE OF DESIGN CRITERIA

7.0 SUSTAINABILITY		
	Principle	Design Criteria
To create a sustainable, resilient and technologically enabled Campus that supports, enriches and benefits the community	7.1 ENVIRONMENTAL PERFORMANCE	<p>7.1.1 Implement the University of Melbourne’s Fishermans Bend Campus Climate Adaptation, Resilience Plan and Sustainability Framework and progress toward net zero carbon</p> <p>7.1.2 Development to comply with the City of Melbourne Planning Scheme Clause 22.19 and Clause 22.23</p> <p>7.1.3 Development to be designed to a benchmark standard of minimum 5-star Green Star Design &amp; As-Built rating or equivalent, with a target of 6-Star rating</p> <p>7.1.4 ESD initiatives to include:</p> <ul style="list-style-type: none"> <li>— The selection of building materials and systems to enhance energy efficiencies</li> <li>— Passive heating and cooling and waste and water management in the design of the development</li> </ul> <p>7.1.5 Retention and recycling of original fabric and materials to preserve embodied energy, where possible</p>
	7.2 VISIBILITY	7.2.1 Showcase sustainable waste, water, energy and transport systems in front of house areas as an educational tool and to encourage sustainable behaviours
8.0 STAGING		
	Principle	Design Criteria
To support the staged development of the campus and temporary or interim uses	8.1 CAMPUS DEVELOPMENT	8.1.1 Ensure a flexible staging strategy to respond to the needs of the University Estate over time
	8.2 TEMPORARY USE	<p>8.2.1 Prepare staging plans to show the ongoing or alternative use of the site where possible for areas included within the second and subsequent development stages</p> <p>8.2.2 Support temporary/interim uses of the land that will complement existing development and support the needs of the users of the site and the local community</p>



### 3.0 CAMPUS MASTERPLAN

### 3.7 PROGRAMMING, USERS AND USES

#### CORE USES

The primary function of the site is as an academic campus, with an emphasis on “Making, Doing and Testing”. While traditional teaching and learning spaces will be present across the campus, the focus of the facilities will be on those programs and uses that are not easily accommodated on University’s other campus’. This includes very large research equipment such as wind-tunnels and Hydrodynamics Labs, heavy industrial labs (structural testing and crushing), Autonomous Systems Testing (Drones) as well as other various wet and dry labs.

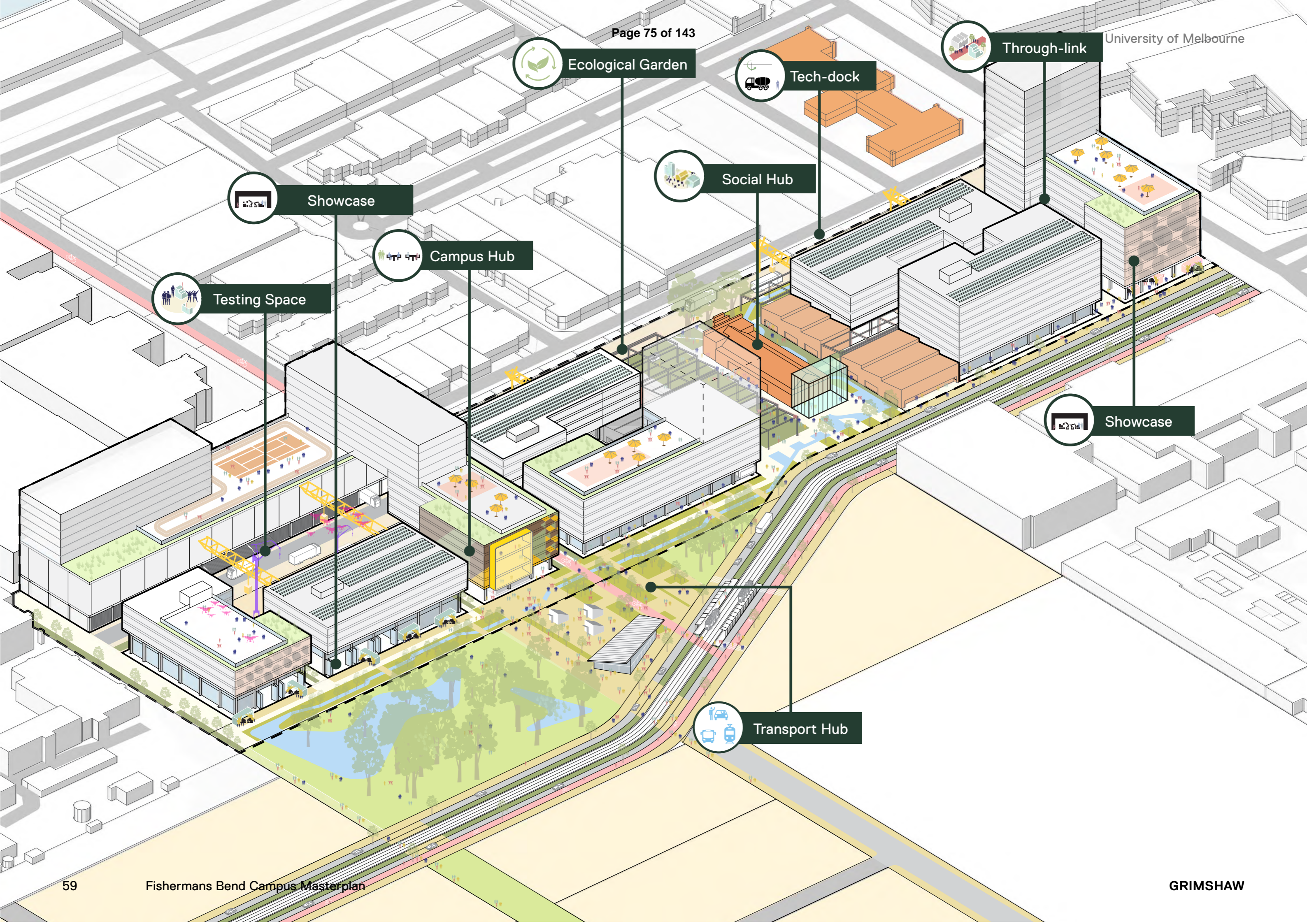
Additionally, the campus will provide large prototyping facilities where full scale building components can be built and tested, structural labs, places for the building of full-scale mock-ups within robotics labs etc.

Complimentary to the academic core uses are the industry focused core uses. These uses bring industry collaborators onto the campus by providing shared workspaces, networking hubs and meeting and collaboration spaces.

<b>Research &amp; Innovation Laboratories</b>	Hydro + Aerodynamics Lab	Heavy Industrial Labs	Light Industrial Labs	Autonomous Systems Testing	Dry Labs	Studio Spaces
<b>Teaching &amp; Learning</b>	Classrooms and Auditorium	Maker Spaces and Fab Labs	Informal Learning Spaces	Formal Meeting Rooms	Break Out Spaces	
<b>Research &amp; Innovation Workplace</b>	Offices	Collaborative Workspaces	Research Exhibition	Administration	Flexible Labs	Open Offices
<b>Testing and Prototyping</b>	Structural Labs	External Prototyping Pads	Flexible High-bay Spaces	Installation Spaces		
<b>Industry Engagement</b>	Co-located Industry Offices	Shared Testing Facilities	Leasable Start-Up Space			
<b>Networking and Collaboration</b>	Conference Facilities	Lecture Halls and Auditoriums	Networking Centres	Shared Gallery Hubs		

Figure 27 - Matrix of core uses





Ecological Garden



Tech-dock



Through-link



Social Hub



Showcase



Campus Hub



Testing Space



Showcase



Transport Hub



### 3.0 CAMPUS MASTERPLAN

### 3.7 PROGRAMMING, USERS AND USES

#### COMPLIMENTARY AND AMENITY USES

Providing a range of amenities and complimentary uses which support the needs of the people who work and visit the campus will be crucial to its success. A robust network of amenities will also enable a greater level of engagement with the broader community and existing and future innovation precinct inhabitants. These uses are also crucial to allowing the campus to function as the heart of the innovation precinct.

The masterplan aims to support students and staff's everyday needs, and health and well-being, as well as strengthening the campus' functioning as a place for tech showcase, making and doing, and engaging and networking.

The diagram on the following page qualitatively sorts these amenities based on their necessity. Essential amenities are crucial to the campus' operations and are more immediately required by students and staff while aspirational amenities are additional programs that act as precinct attractors and can be used by anyone.

1— The social hub at Duke University offers a variety of comfortable and dynamic spaces that encourage students, faculty, and alumni to congregate and interact.

2—Solar Decathlon showcases student-built innovative buildings powered by renewable energy



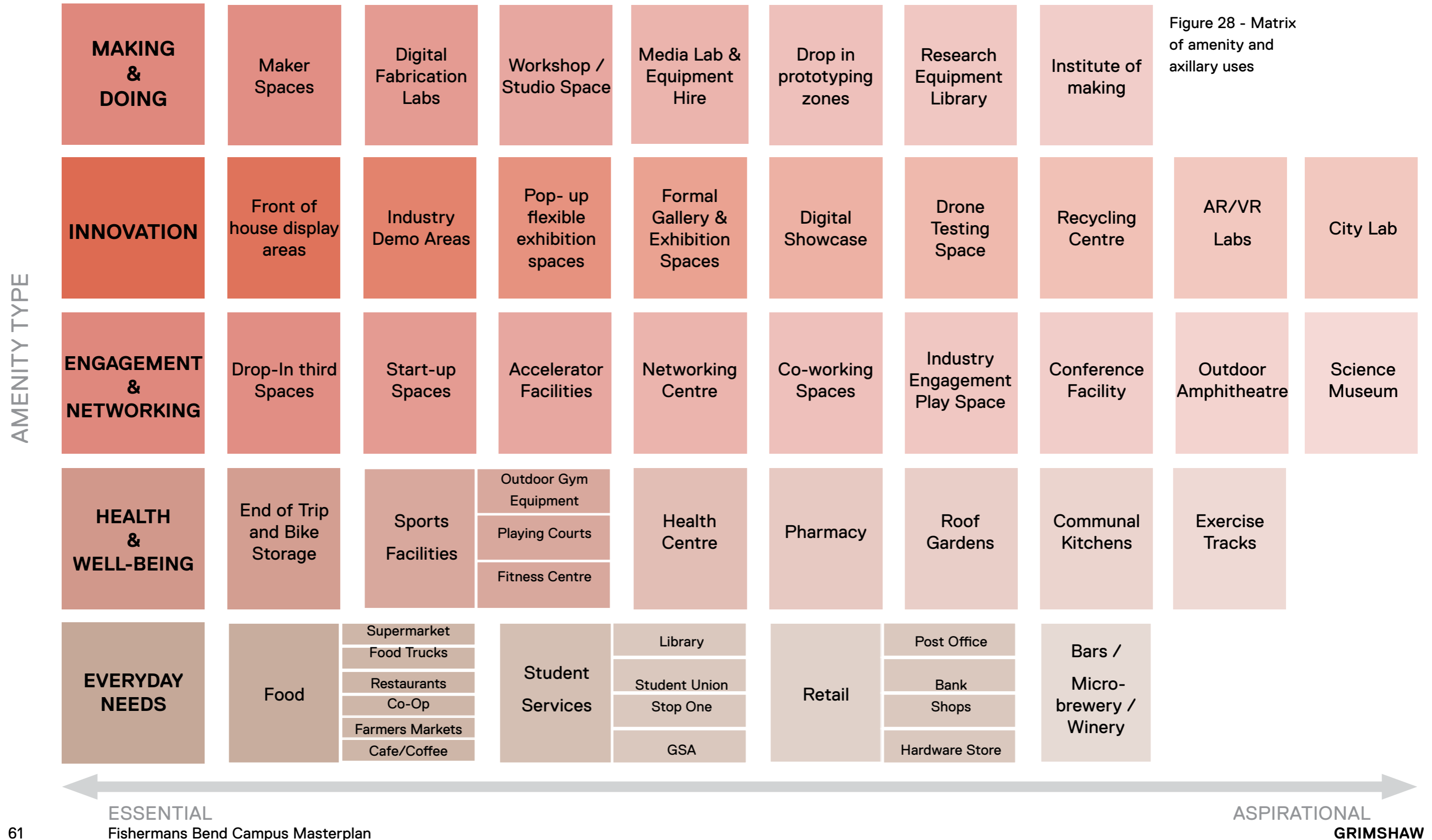
3—The Brighton Photography Centre combines gallery spaces with social, working and meeting spaces

4—The Drone Racing League race drones at 140km/h through 3D courses

5—The ArtCenter College of Design has a programmable Design-based Lab which enables different activities and workshops happen in the space

3.0 CAMPUS MASTERPLAN

3.7 PROGRAMMING, USERS AND USES





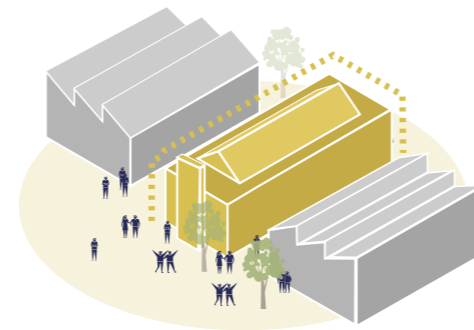
### 3.0 CAMPUS MASTERPLAN

### 3.8 HERITAGE

#### APPROACH

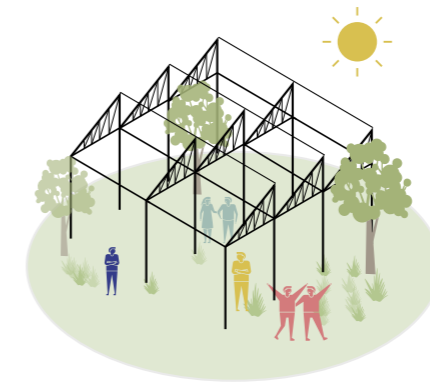
The industrial heritage of the site plays an important role in the development and identity of the campus. The role of General Motors Holden in the history of manufacturing in Australia is culturally significant and its legacy will be celebrated in the campus design.

The following approaches will inform future design strategies regarding the buildings of heritage significance



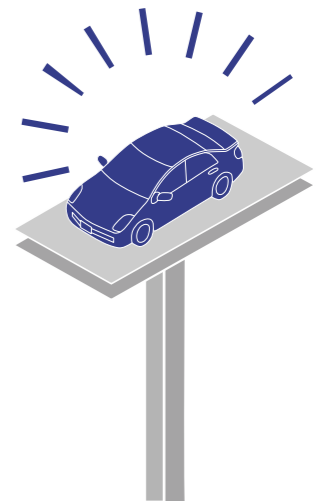
#### 1. RETAIN AND RESTORE

Celebrate and restore the existing fabric. Make minor adaptations to increase utility.



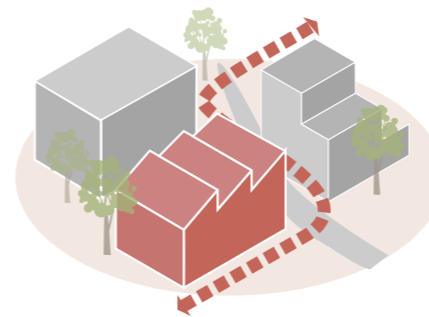
#### 2. EXPOSE AND STRIP BACK

Remove layers of or strategically cut away the fabric of existing structures to leave behind a re-imagined remnant.



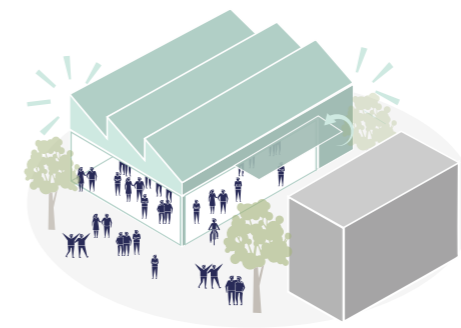
#### 3. FEATURE ARTEFACTS

Identify key objects, moments and equipment and maintain them in their setting or in a new setting.



#### 4. RECORD AND TELL THE STORY

Embed the site with narrative paths, settings and infrastructures to tell the story of the site.



#### 5. RE-PURPOSE AND ADAPT

Significantly alter or hybridise old with new to create high utility for new uses

Figure 29 - Methods and approaches to heritage across the site





Figure 30 - The Heritage heart of the project. The restored social centre and the garden within the re-purposed structure of Plant 5. Render for illustrative purposes only.





## 3.0 Campus Masterplan



### 3.0 CAMPUS MASTERPLAN

### 3.8 HERITAGE

#### ZONES AND TECHNIQUES OF RETENTION

The Social Centre comprises a significant heritage legacy and will be retained and restored. It will act as the “heritage heart” of the campus, showcasing the building for future generations.

Around the Social Centre, the open setting will be retained with Chapman Court providing opportunities for the industrial legacy to be recorded and the story told to campus users.

The heritage fabric of the first two bays of Plant 3 and 5, as well as part of the northern bay of plant 3 will be exposed and these areas will provide for adaptive reuse. These plants have undergone substantial modifications over the years, yet have been hard-working, performative buildings and their adaptation will reflect this.

A heritage strategy will be prepared that will inform the detailed design of the campus, including salvage and heritage interpretation opportunities. The existing Technical Centre housing key industrial remnants from the General Motors Holden manufacturing operations that could be utilised in the campus design.

1. RETAIN AND RESTORE
2. EXPOSE AND STRIP BACK
3. FEATURE ARTEFACTS
4. RECORD AND TELL THE STORY
5. RE-PURPOSE AND ADAPT



Brooklyn Navy Yard, New York City



The Foundries Garden, Nantes



Zollverein Park



Tonsley Innovation District, Main Assembly Building



UTAS School of Architecture, Launceston

### 3.0 CAMPUS MASTERPLAN

### 3.8 HERITAGE

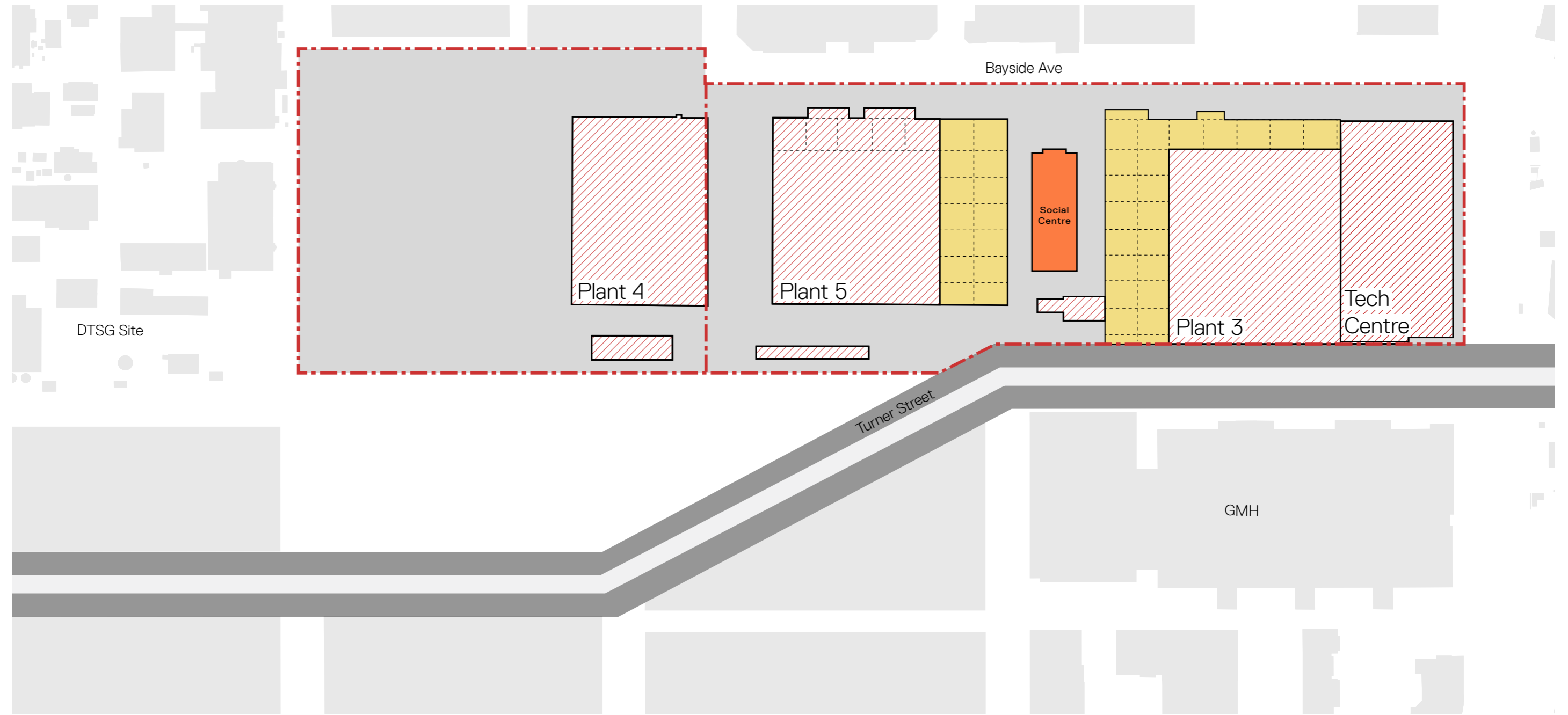


Figure 31 - Diagram of proposed retention and demolition.

- - - Site Boundary
- Heritage to be Retained
- Partial Demolition, Structure to be Retained for Adaptive Reuse
- ▨ Existing to be Demolished



### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

The subdivision of the former GMH site by Development Victoria will establish a network of public open spaces which serve the precinct, and locates the primary public park to the southern boundary of Stage 1 of the campus. From this central open space, interconnected green links will provide a pedestrian friendly network to the other development sites and neighbouring campuses, providing the ‘lungs’ for the precinct.

This central open space is planned to be a generously sized park, approximately 1.6 hectares, which maximises solar amenity during winter hours to a portion of the park whilst also enabling it to be a vibrant, programmable public space for the community and City of Melbourne.

The campus builds from this network of open spaces by reinforcing the park edge to the south, linking via the Heritage Heart at the retained Social Centre, and through to north, to capitalise on solar aspect and reinforce potential connections to the north and to the waterfront.

This network anchors the framework and provides a primary open space network, to be supported by a series of medium and smaller spaces which will offer a diverse mix of conditions and programmes. Open spaces within the campus will remain in the ownership and control of the University but will be accessible by the public.

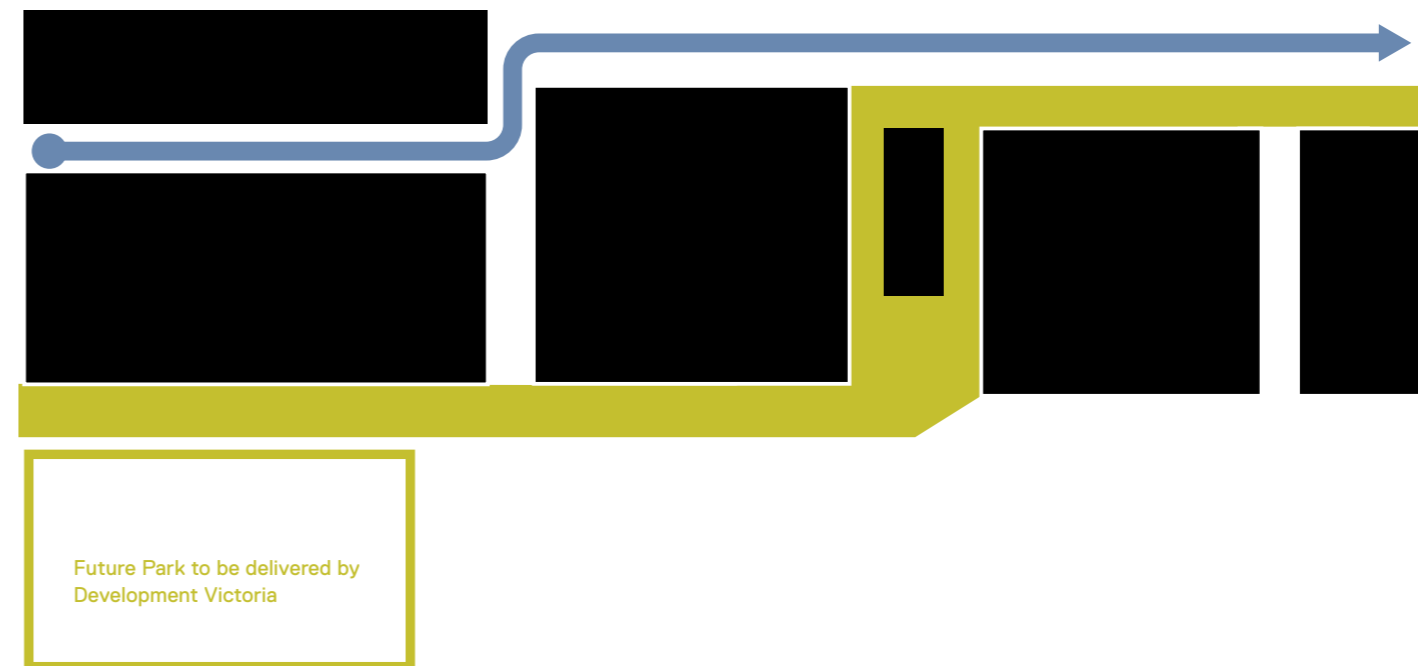


Figure 32 - Diagram of the relationship between the primary open space gesture, the massing and the Tech-Dock (blue arrow). The continuous open space links the precinct park through the heritage heart around the Social Centre to the sunny northern edge of the Tech-Dock. Green spaces will permit direct access to the buildings for people, vehicles, and equipment as required across or through the landscaped spine.

### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

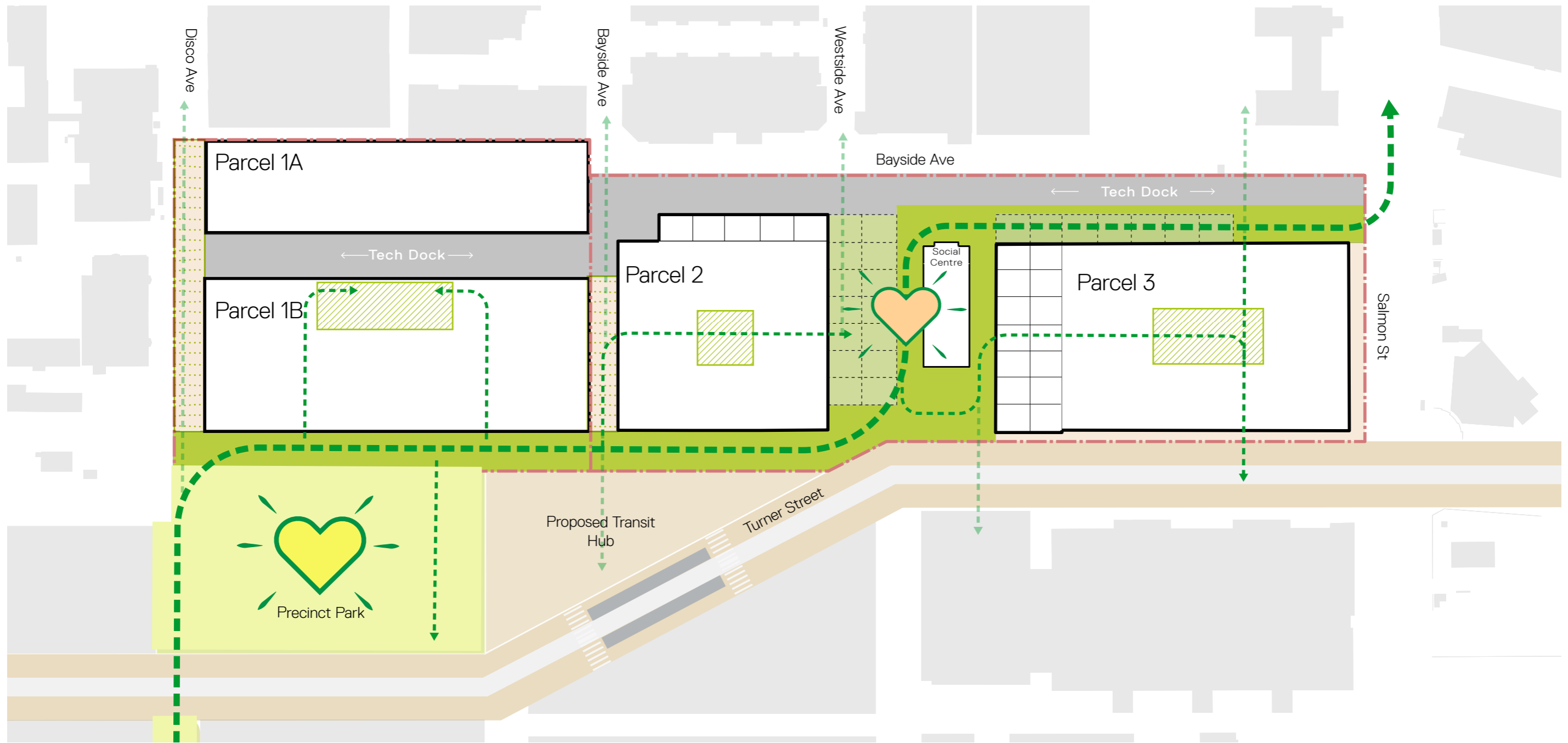


Figure 33 - Indicative diagram showing the network of open, green and social spaces across the campus. Location and scale of indicative open space to be confirmed during detailed design. Green spaces will permit direct access to the buildings for people, vehicles, and equipment as required across or through the landscaped spine.

- Site Boundary
- Primary developable footprint
- Primary Open Space
- Primary Open Space within heritage zone of investigation
- Required N-S through Site Link
- Indicative Location of open space to be located within future development
- Primary open space network
- Secondary interconnected network of open spaces



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

#### LANDSCAPE STRATEGY

The Fishermans Bend campus will have a distinctive identity that both connects and distinguishes it from the University of Melbourne’s Parkville campus. The site will be redeveloped to become a dense urban campus. The public realm will define the identity of the place with a strong landscape presence that will integrate the ancient ecology of the site with a new innovative, experimental, social and collaborative landscape. The six key site wide strategies on the right define the function and identity of the place.

The Fishermans bend campus will provide a welcoming setting for encouraging creative collaborations and testing. The public realm will provide spaces external to built form that is publicly accessible removing barriers to cross disciplinary collaboration. The built form of the public realm will create the social environment that will foster partnerships and creativity. Key collaboration components of the public realm will be:

#### Welcome spaces

Key entry points will connect to public transport and local amenities. Open spaces at these entry points will be designed as public squares, signifying entry to the site and defining the identity

of the campus as a welcoming and innovative place. Wayfinding from these locations will provide clear directions to the different facilities.

#### Meeting terraces

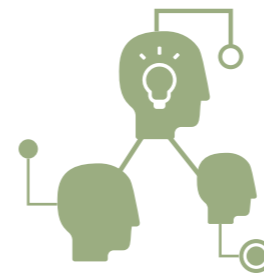
A series of small scaled external spaces will provide sheltered, visible spaces close to the offices and laboratories. With the natural backdrop of the showcase landscape, these spaces will be conducive to creative collaborations.

#### Learning spaces

Small to medium scaled courtyards will be created within the protection of the building blocks. Open to the public these will provide sheltered, more secluded space for social connections and for outdoor learning.

#### Working spaces

To the rear of the workshops, flexible public realm spaces will provide space for building and testing within a natural environment. Robust materials, connected open space with vehicle access will allow these areas to be highly flexible catering for a wide variety and scales of projects.



#### Social Spaces

External spaces to provide places to meet and collaborate



#### Microclimate

Landscape and urban design to provide comfortable external spaces



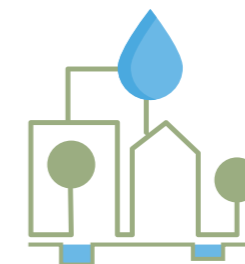
#### Green Infrastructure

Integrated green infrastructure to provide exemplary environmental performance



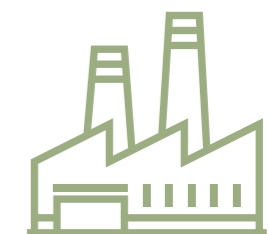
#### Enhanced Biodiversity

New landscape habitats to repair biodiversity



#### Surface water network

Connected surface water system to enhance identity, ecology and flood resilience



#### Industrial Memory

Industrial memory integrated into the landscape narrative



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM



1— Novartis Campus, Switzerland

2—Knowlton School of Architecture, Ohio

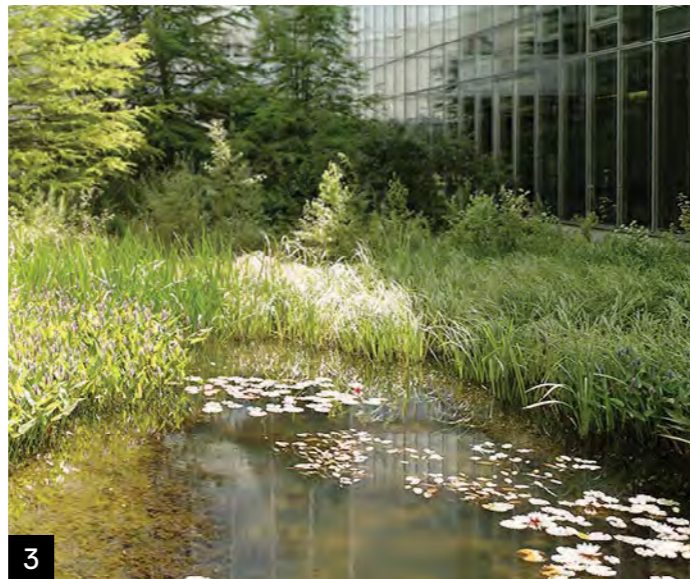
3—Novartis Campus, Switzerland

4—Rosa Luxembourg Garden, Paris

5—MADA Courtyard, Monash University

6—Embodied Computation Laboratory, Princeton University

7—Gates Foundation Campus, Seattle Washington





### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### OPEN SPACE TYPOLOGIES

The public realm has been configured to include a series of open space typologies. These provide a variety and balance of types of open space to deliver the functional and social outcomes that will achieve an innovative and collaborative campus. These typologies have been developed based on the study of existing typologies within the Parkville campus, within the City of Melbourne and within precedent innovation precincts such as Tonsley, Adelaide and the Embodied Computation lab at Princeton, New York



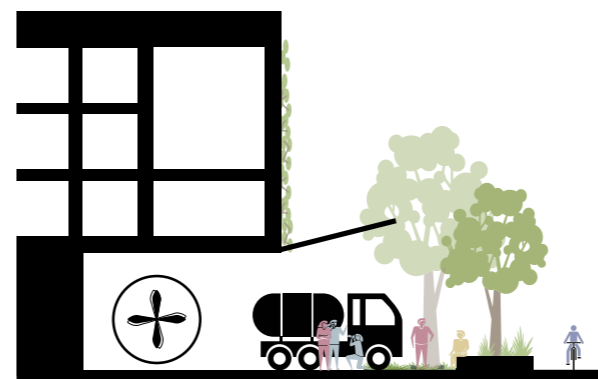
PEDESTRIAN CONNECTIONS

Pedestrian corridors with canopy cover.



LINEAR PARK

Showcase landscape. Connecting water, ecology, pedestrians, transport, buildings & establishing the campus character.



TECH-DOCK

Flexible spaces that transition between logistics & campus movement.



TESTING GROUND

Highly flexible spaces that provide hard spaces and lawn for building space, exhibition space and delivery space. Trees provide shade.



SMALL OPEN SPACE 100-500M<sup>2</sup>

Intimate spaces, cafés, seating nooks. Encouraging casual encounters & innovation between disciplines.



MEDIUM OPEN SPACE 500-2,000M<sup>2</sup>

Event spaces, BBQs, large trees. Ability for groups of people to take ownership of space for social events and gatherings.



LARGE OPEN SPACE >2,000M<sup>2</sup>

Unprogrammed space for activities. Ecological functions including biodiversity & water narratives.

### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

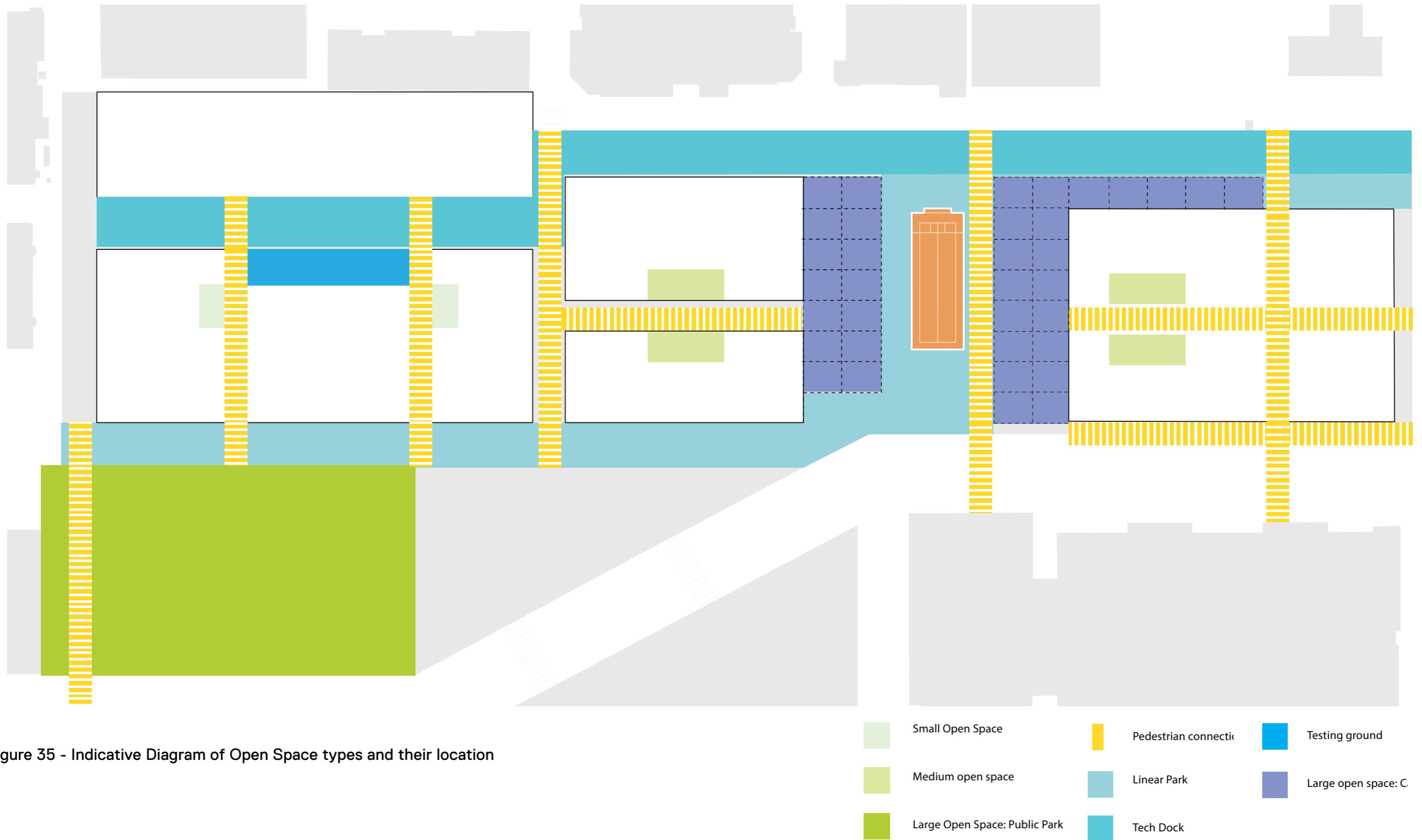


Figure 35 - Indicative Diagram of Open Space types and their location



### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### SOCIAL SPACES

The Fishermans Bend campus will provide a welcoming setting for encouraging creative collaborations and testing. The public realm will provide spaces external to built form that is publicly accessible removing barriers to cross disciplinary collaboration. The built form of the public realm will create the social environment that will foster partnerships and creativity. Key collaboration components of the public realm will be:

**Welcome Spaces**—Key entry points will connect to public transport and local amenities. Open spaces at these entry points will be designed as public squares, signifying entry to the site and defining the identity of the campus as a welcoming and innovative place. Wayfinding from these locations will provide clear directions to the different facilities.

**Meeting Terraces**—A series of small scaled external spaces will provide sheltered, visible spaces close to the offices and laboratories. With the natural backdrop of the showcase landscape, these spaces will be conducive to creative collaborations.

**Learning Spaces**—Small to medium scaled courtyards will be created within the protection of the building blocks. Open to the public these will provide sheltered, more secluded space for social connections and for outdoor learning.

**Working Spaces**—To the rear of the workshops, flexible public realm spaces will provide space for building and testing within a natural environment. Robust materials, connected open space with vehicle access will allow these areas to be highly flexible catering for a wide variety and scales of projects.

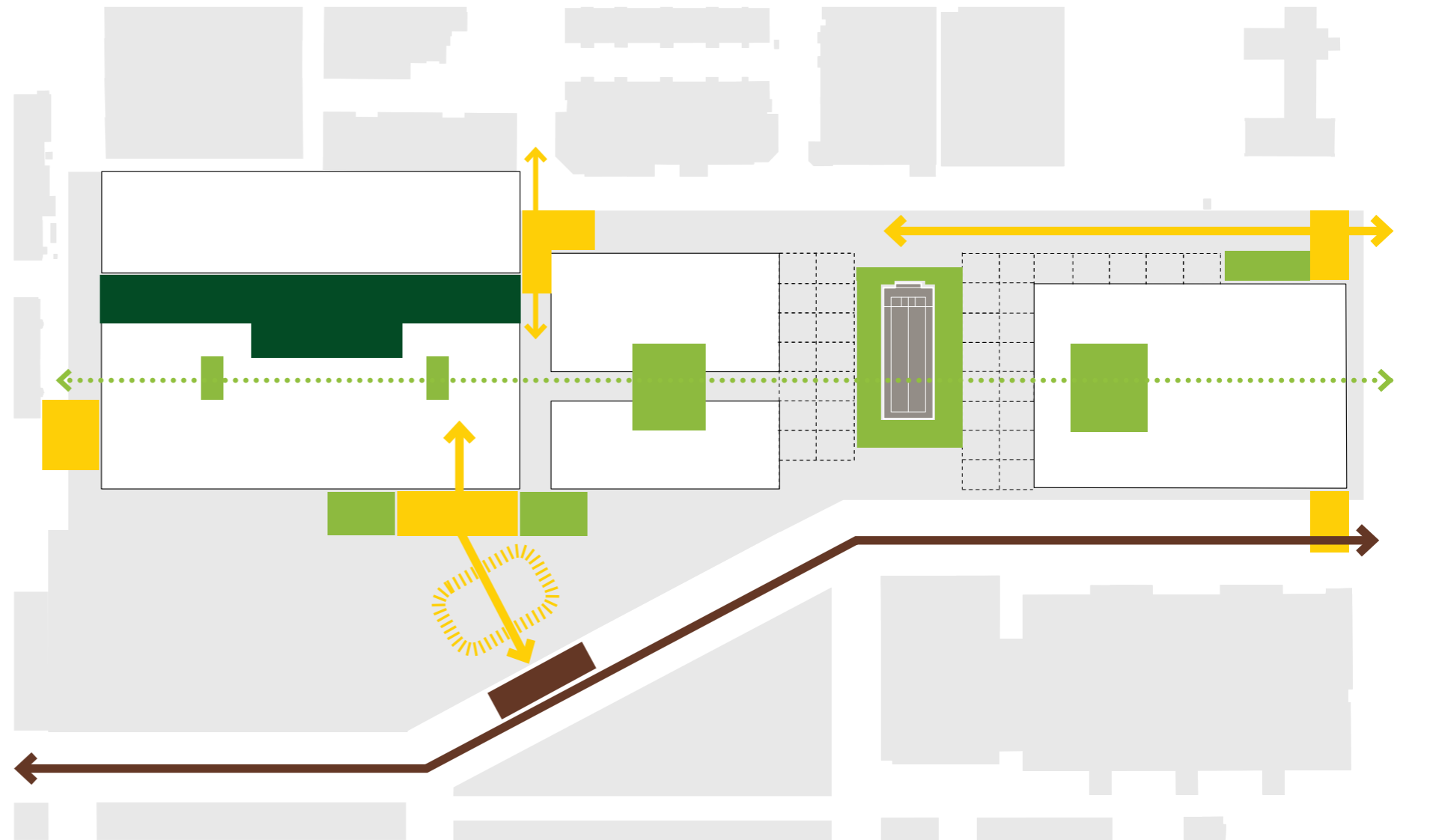


Figure 36 - Indicative diagram of various social spaces across the campus

- Transport arrival
- Social exchange / Partnership
- Welcome social spaces
- Public transport arrival
- Learning laboratory
- Arrival walks
- Public transport arrival

### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

#### MICROCLIMATE AND COMFORT

The landscape of the Fishermans bend campus should be specifically designed to extend the comfort range of the open spaces. Considerations for the comfort of external spaces include:

#### Winter Sun

External spaces along the north façades will provide sheltered outdoor spaces that will catch low angle winter sun during the day, providing comfortable external space for the workshops

#### Sheltered courtyards

Courtyards within the building blocks will be sheltered from winds, providing comfortable spaces during windy weather

#### Shaded spaces

Terraces along the southern façades of the buildings will be shaded, providing comfortable spaces during the summer months.

#### Shelter planting

Avenues of tree planting will provide permeable barriers to winds, reducing wind speeds and increasing comfort of the adjacent external spaces.

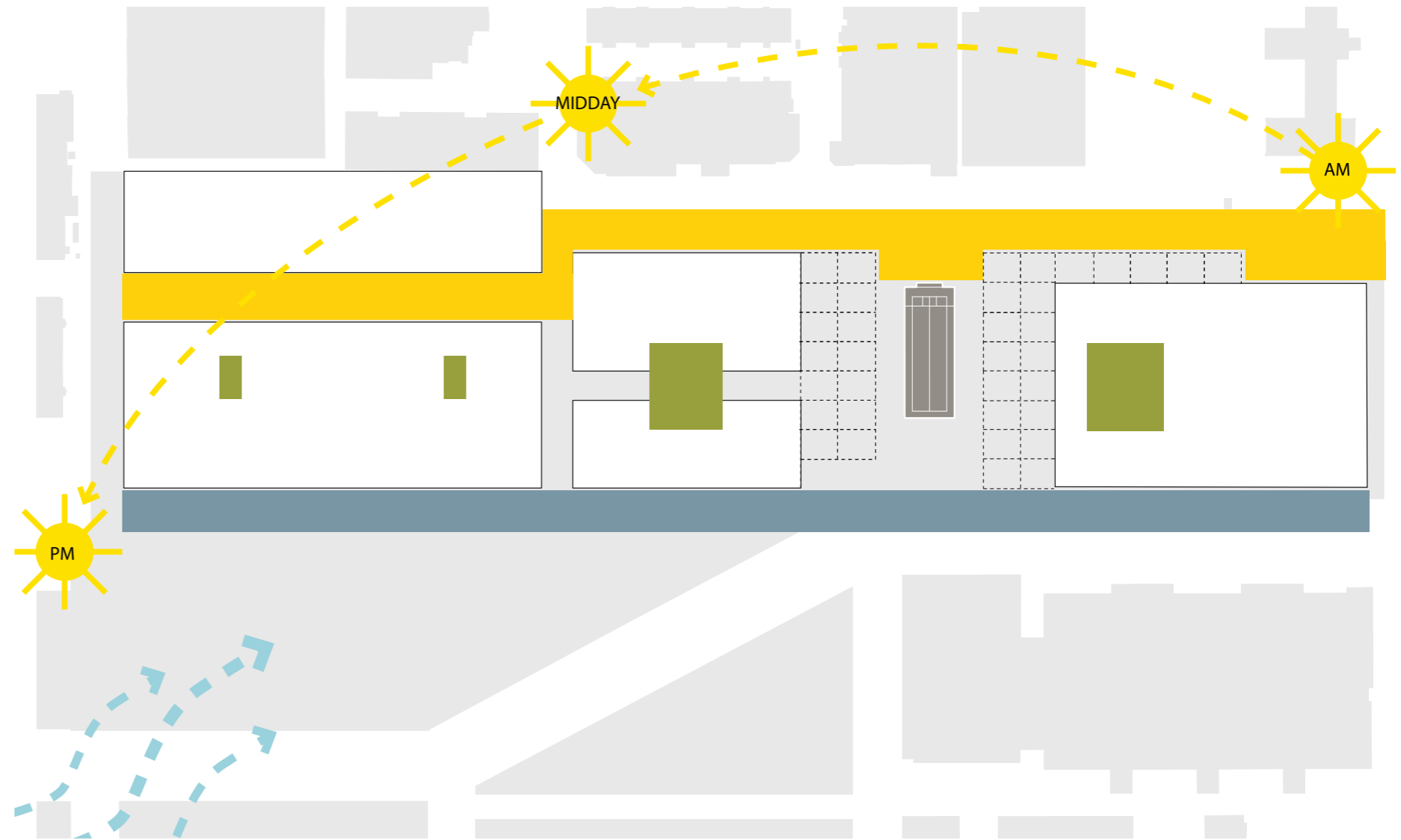


Figure 37 - Indicative diagram indicating Microclimate considerations

- Solar access
- Protected space
- Shaded space
- Prevailing wind



### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### GREEN INFRASTRUCTURE

The landscape and civil infrastructure of the Fishermans Bend Campus should be designed to integrate green infrastructure, improving the environmental performance of the campus and benefiting health and well being. Landscape targets have been developed for the site to set targets for the development that will ensure an exemplary sustainable landscape that places green infrastructure at the core of the development. Key green infrastructure targets include:

##### Increased canopy cover

A larger area of canopy cover, provides shade, habitat, reduces wind-speed and reduces urban heat island effect whilst also providing health and well being benefits. The precinct aims to provide a high level of canopy cover within the open space area by protecting existing trees, planting new trees and integrating irrigation and good soil conditions to enable healthy vegetation. A target of 40% canopy cover for the public realm is suggested for Fishermans Bend. (Target based on research developed by the City of Melbourne Urban Forestry strategy.)

##### Increased unsealed soil

Unsealed soil includes soil that is covered by grass or vegetation but is not covered by an impermeable surface such as concrete or asphalt. Unsealed soil allows water and air to get into the soil, improving vegetation growth and water retention whilst also providing evapotranspiration and significantly reducing the air temperature when compared with hard surfaces such as concrete. With a target of 30% of unsealed soil, the Fishermans bend campus will integrate a

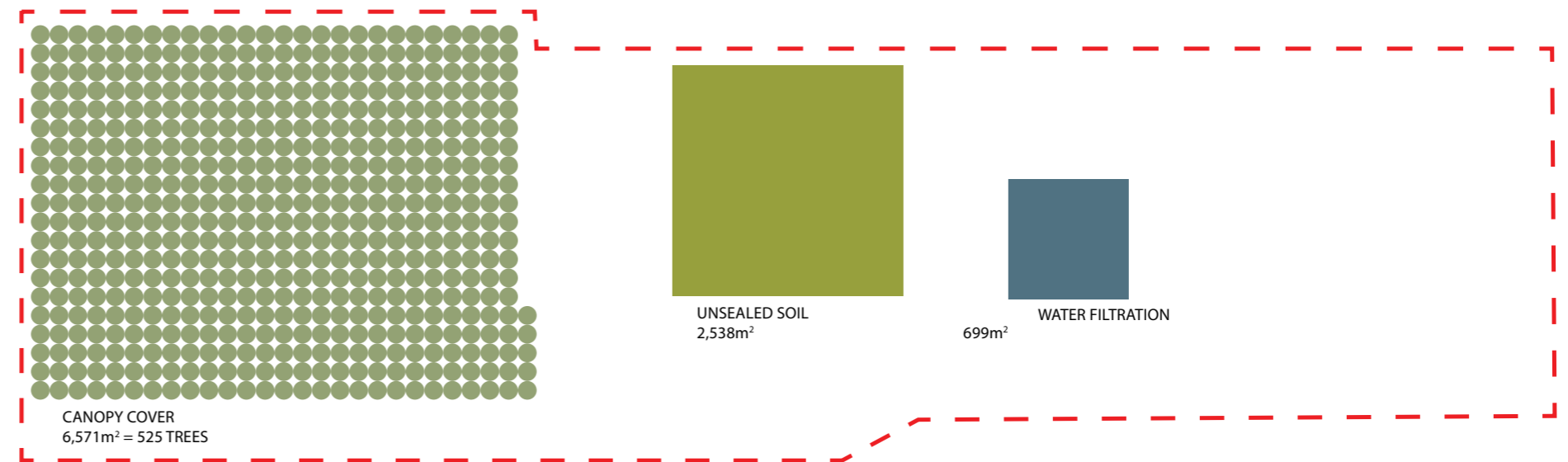


Figure 38 - Key Green Infrastructure Targets

high percentage of unsealed soil to promote better vegetation growth and cooler summer spaces. (Target based on research developed by the City of Melbourne Elizabeth Street Catchment Integrated Water Cycle Plan, 2015.)

##### Storm water management and water filtration

Storm water from the paved areas of the precinct will be collected and filtered using surface water channels and rain gardens. Rain gardens will provide native habitat and filter pollutants from the surface water. Rain gardens and wetlands covering a combined area of 1% of the overall impermeable surfaces will be integrated to provide up to 30% removal of sediments and nutrients from the water. The surface water strategy must take into account the likely hood of acid sulphate soils existing on site and avoid affecting existing ground water levels.

### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### ENHANCED BIODIVERSITY

###### Increased biodiversity

The Fishermans Bend campus will be a dense urban environment but will integrate improved natural values into the campus as part of the development of an identity that is both healthy and reflective of the locality. Improved biodiversity will be achieved through the following key strategies:

###### Restored ecological habitat

Historically the site was a combination of dry heathland dunes (Damp sands herb rich woodland) and low lying wetlands (Brackish wetland). Elements of these habitats should be restored as part of the public realm, helping to identify with the place and improving the habitat value of the site.

###### Connected habitat corridor

The site will provide appropriate habitat adjacent to Turner street to connect with the proposed habitat corridor linking to West gate Park.

###### Tree canopy habitat

Tree canopy cover will be increased. Tree species selection will favour trees known to provide year round food supplies and nesting habitat to aid birds and bats to use the campus.



Figure 39 - Diagram indicating key biodiversity corridors

- Open space linage
- Public open space
- Shaded space



### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### SURFACE WATER NETWORK

The existing water table is relatively close to the surface, estimated as between 0.5 and 1.5m below ground. Although this site is relatively high (+2.5 to +3.5m) compared to the surrounding area, it is still at risk from flooding. Taking into account increased risk of higher flood levels due to climate change, Melbourne Water have stipulated a minimum floor level of +3.0m to minimise the risk of flooding. This suggests that flooding would affect the lower areas of the landscape of the site but unlikely to affect the existing buildings which have floor levels of approximately +3.0m level. Studies into the flooding of Fishermans Bend by CRC for Water Sensitive Cities and Tom Patterson (Ramboll) suggest a flood mitigation strategy for the entire Fishermans bend area based on a network of artificial overland flow paths and storage sites to enable collection and distribution of flood water away from vital infrastructure. Individual sites would contribute to the flood distribution network to reduce the overall flooding risk.

The public realm of the Fishermans bend campus should integrate a series of connected channels and wetlands to divert flood-water away from essential roads and pathways, providing a sacrificial flooding landscape in the event of major flooding. The water channels will also provide valuable landscape identity and local habitat connecting with the ecological history of the site and connecting to the existing habitat at Westgate Park.

Key components of the public realm water network include; surface water channels, local water storage, wetland habitat and surface water filtration, wetland habitat and water storage

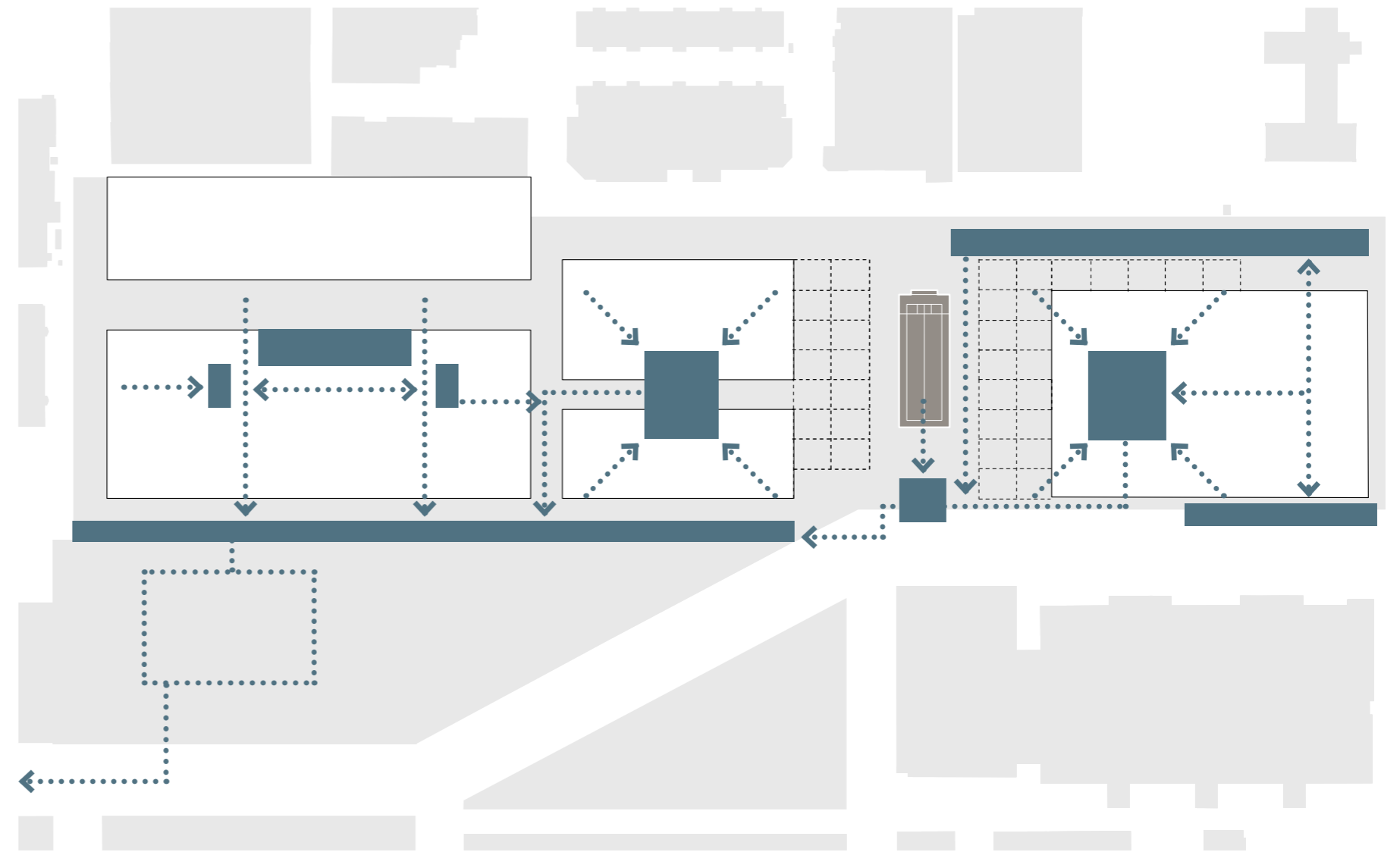
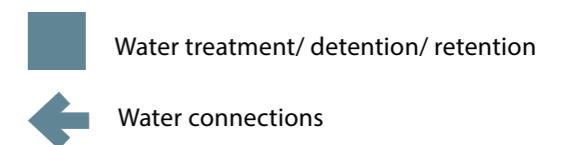


Figure 40 - Indicative diagram of proposed surface water network



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

#### INDUSTRIAL MEMORY

Remnants, memories and narratives of the industrial heritage will be integrated into the future public realm so that the history of the site informs the identity of the future campus.

Key industrial memories include:

- The tech centre and the legacy of invention and aesthetics in automotive design
- The testing laboratories and the legacy of experimentation and innovation
- The manufacturing plant and the legacy of process and the influence on built form
- Architectural expression based on functional requirements of the plant
- Engineering objects based on available technologies

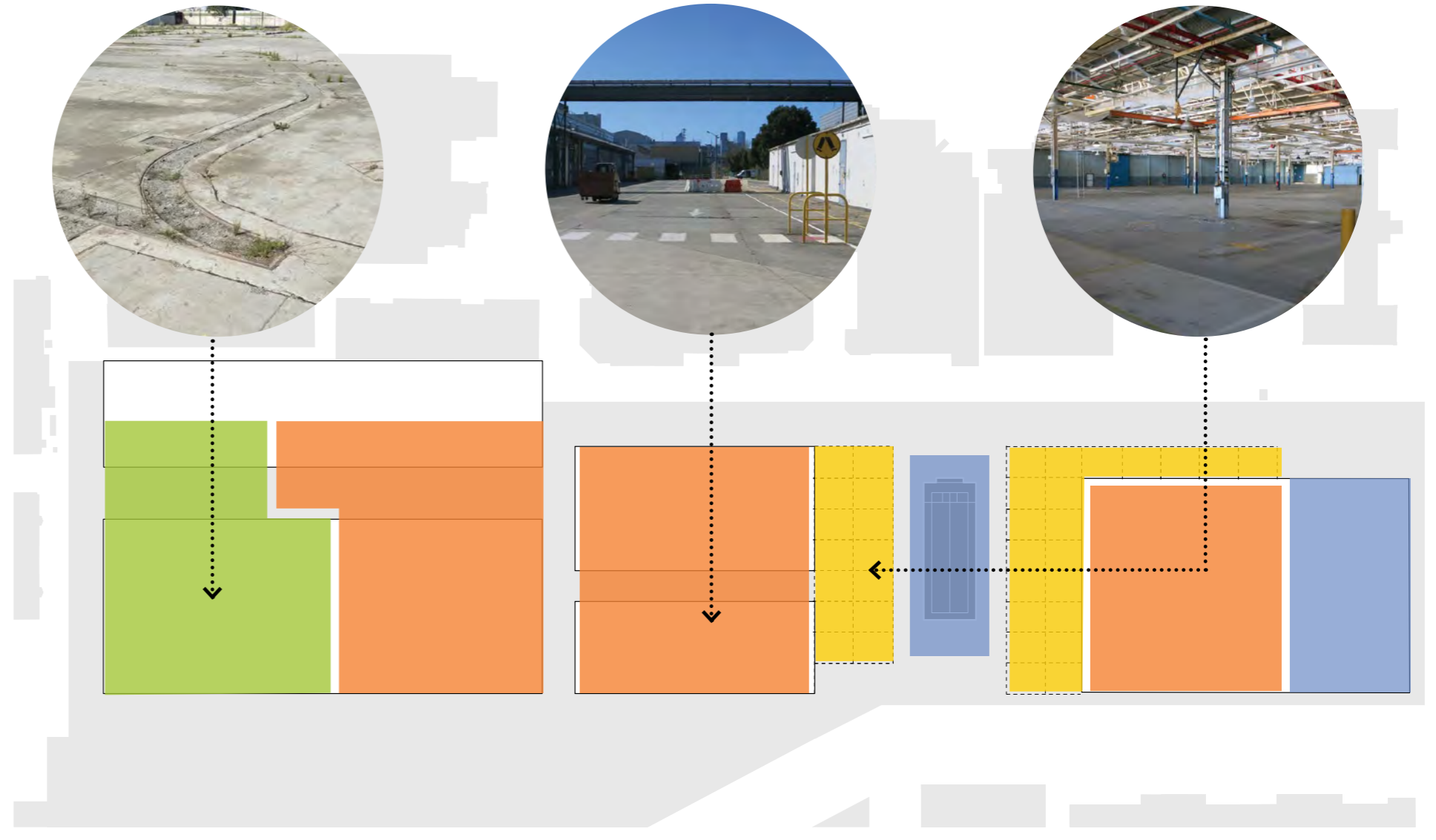


Figure 41 - Zones of consideration for representation of industrial memory in the public realm

- Legacy of invention and aesthetics
- Legacy of experimentation and Innovation
- Legacy of Process and the influence of built form
- Architectural expression



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

#### PLANTING PLAN AND SCHEDULE

Westgate Park is the ideal precedent for planting within the Fishermans Bend Campus. Over the past 30 years this park has researched and experimented with native plants to establish the thriving ecosystem that exists there today. The team of horticulturists responsible created the below map outlining the various plant communities that have developed. Each plant community has a specific type of habitat/condition that enables that group of plants to thrive. This provides useful information for what will grow right now in Fishermans Bend and what will grow in a changing climate in the future.

EVC	SCIENTIFIC NAME	COMMON NAME	TYPE
COASTAL HEADLAND SCRUB	<i>Allocasuariana verticillata</i>	Coast Sheoake	tree
	<i>Leucopogon parviflorus</i>	Coast Beard Heath	shrub
	<i>Correa alba</i>	White Correa	shrub
	<i>Lasiopetalum baueri</i>	Slender Velvet Bush	shrub
	<i>Hakea nodosa</i>	Yellow Hakea	shrub
	<i>Austrostipa eligantissima</i>	Feather Spear Grass	Grass
	<i>Pomaderris paniculosa ssp. Paralia</i>	Coast Pomaderris	Perennial Herb
	<i>Eutaxia microphylla var. microphylla</i>	Small-leaf Eutaxia	Perennial Herb
	<i>Olearia axillaris</i>	Coast Daisy Bush	shrub
COAST BANKSIA WOODLAND	<i>Banksia integrifolia</i>	Coast Banksia	tree
	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	shrub
	<i>Atriplex cinerea</i>	Coast or Grey Saltbush	shrub
	<i>Clematis microphylla</i>	Small-leaf Clematis	Perennial Herb
	<i>Leucophyta brownii</i>	Cushion Bush	shrub
	<i>Myoporum insulare</i>	Common Boobialla	Perennial Herb
	<i>Rhagodia candolleana ssp. Candolleana</i>	Seaberry Saltbush	Perennial Herb
	<i>Tetragonia implexicoma</i>	Bower Spinach	Perennial Herb
	<i>Leptospermum laevigatum</i>	Coast Tea-tree	tree
PLAINS SEDGY WETLANDS	<i>Themeda triandra</i>	Kangaroo Grass	Grass
	<i>Alisma plantago-aquatica</i>	Water Plantain	Aquatic
	<i>Baloskion tetraphyllum</i>	Tassel Cord-rush	Rush
	<i>Gahnia filum</i>	Chaffy Saw-sedge	Sedge
	<i>Kunzea leptospermoides</i>	Yarra Burgan	Shrub
	<i>Linum marginale</i>	Wild Flax	Perennial Herb
	<i>Typha orientalis</i>	Broad-leaf Cumbungi	Aquatic
	<i>Juncus amabilis</i>	Hollow Rush	Rush
	<i>Pycnosorus globosus</i>	Drumsticks	Perennial Herb
RIPARIAN WOODLAND	<i>Eucalyptus camaldulensis</i>	Red River Gum	Tree
	<i>Acacia dealbata</i>	Silver Wattle	Tree
	<i>Carex appressa</i>	Tall Sedge	Sedge
	<i>Enchylaena tomentosa</i>	Ruby Saltbush	Perennial Herb
	<i>Arthropodium milleflorum</i>	Pale Vanilla Lily	Perennial Herb
	<i>Bursaria spinosa var. macrophylla</i>	Sweet Bursari	shrub
	<i>Solanum laciniatum</i>	Large Kangaroo Apple	shrub
	<i>Poa labillardierei</i>	Common Tussock Grass	Grass
	<i>Mentha australis</i>	River Mint	Perennial Herb
SAND HEATHLAND	<i>Xanthorrea minor ssp. Lutea</i>	Small Grass Tree	arborescent monocot
	<i>Allocasuarina paradoxa</i>	Green Sheoake	shrub
	<i>Brunonia australis</i>	Blue Pincushion	Perennial Herb
	<i>Dillwynia cinerascens</i>	Grey Parrot Pea	Perennial Herb
	<i>Epacris obtusifolia</i>	Blunt-leaf Heath	shrub
	<i>Leptospermum continentale</i>	Prickly Tea-tree	shrub
	<i>Banksia marginata</i>	Silver Banksia	Tree
	<i>Melaleuca squarrosa</i>	Scented Paperbark	shrub
	<i>Stylidium graminifolium</i>	Grass-leaved Triggerplant	Perennial Herb

Figure 42 - Schedule of plants found in Westgate Park

### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

### PLANTING PLAN AND SCHEDULE CONTINUED

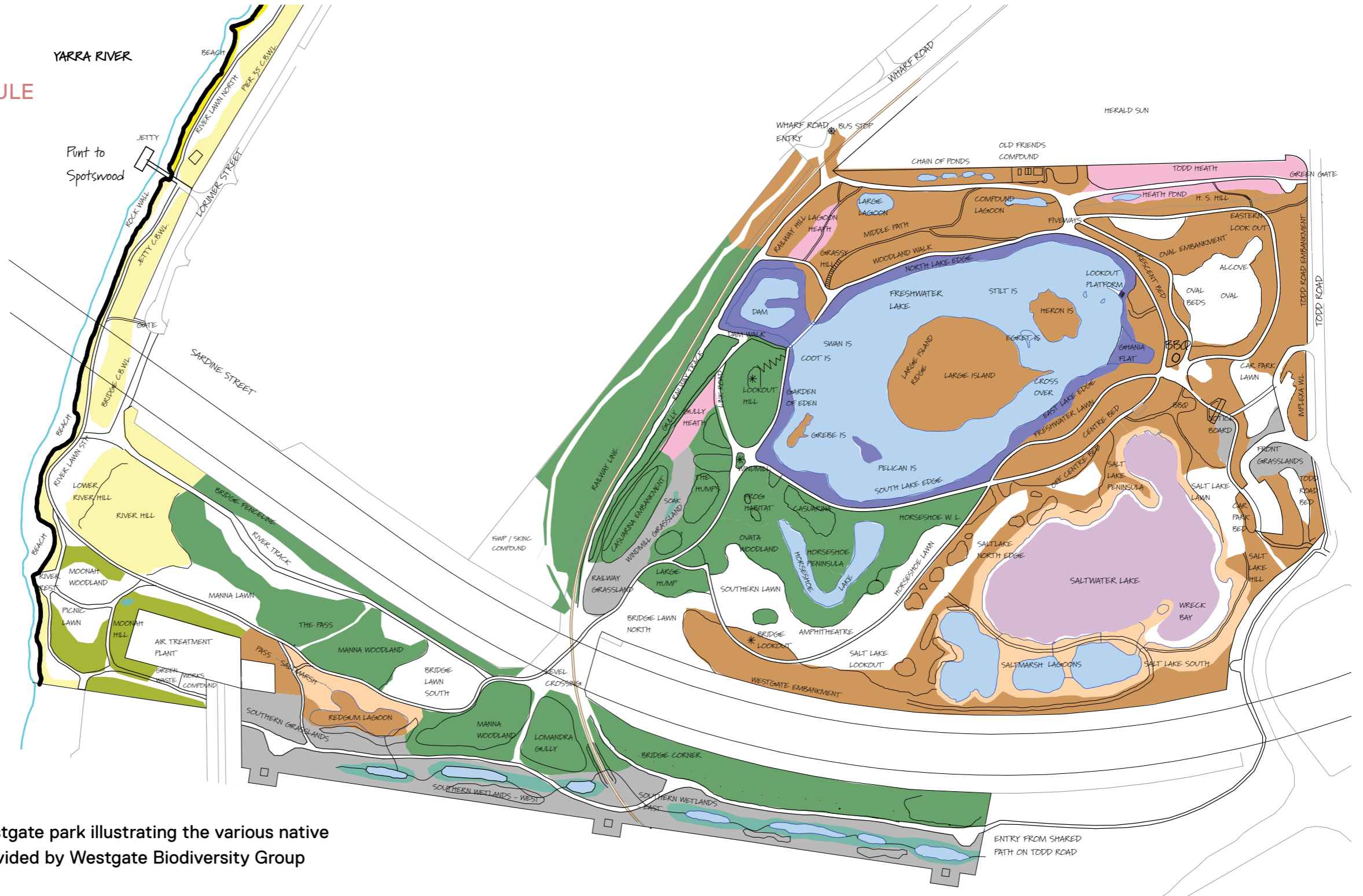


Figure 43 - Diagrammatic plan of Westgate park illustrating the various native plant types. Diagram created and provided by Westgate Biodiversity Group



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

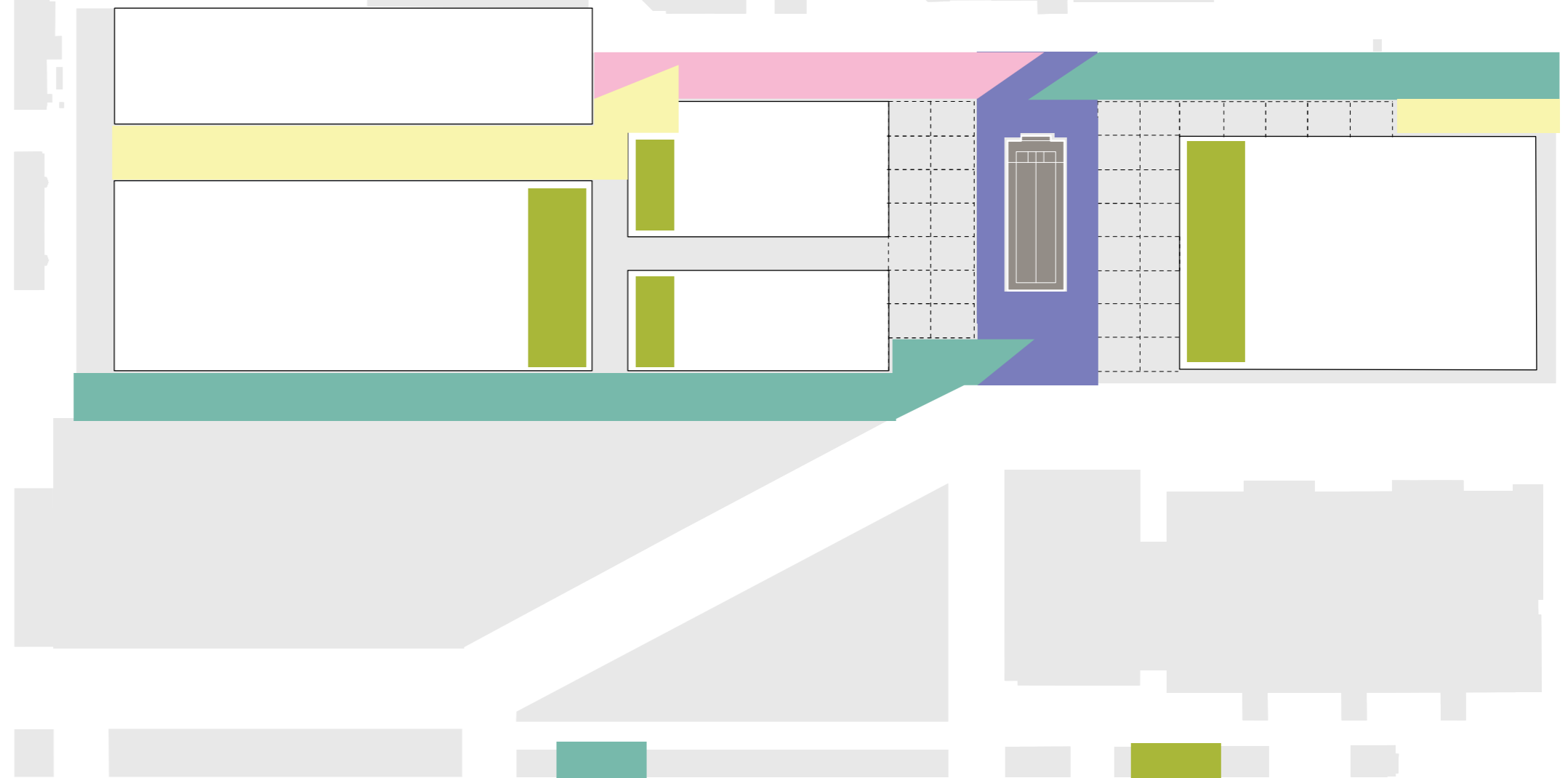
### PLANTING PLAN AND SCHEDULE CONTINUED

- Coast Banksia Woodland
- Coastal Headland Scrub
- Plains Sedgy Wetlands
- Riparian Woodland
- Sand Heathland

Found naturally in calcareous sands, *Banksia integrifolia* is the main canopy species, growing with a broad range of species and scales, from understory small shrubs, herbs, sedges and grasses. The tolerance to full-sun and provision of shade and spaces to rest presents the potential for association with human uses, therefore suggested for the Tech Dock, especially close to the Testing Ground.

Sand Heathlands are a unique feature of the Australian landscape. Located on the most exposed part of the Campus' public space, they tolerate the full-sun exposure and simultaneously dialogue with the provision of public furniture, close to a shaded area of the pergola.

As rivers provide life for the forest's ecosystems, the Campus' ponds should attract and gather people on the Social Core. The Riparian Woodlands embrace this ecosystem, protecting the waterbody and providing shade for the users, besides attracting wildlife to reinforce the biodiversity connection to Westgate Park.



Sedge-dominated wetland vegetation of lowland plains, with a diverse herbaceous component. Suggested for the ephemeral parts of the watercourse, among taller species in the transition for the Riparian Woodland.

Largely dominated by low growing shrub species due to their exposure to extreme salt-laden winds and sea-spray, ideal for exposed positions such as rooftops. Robust species require low-maintenance and low height to not obstruct the views.



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM



Bili Nursery and Landcare, Located at the Westgate Park



Plains Sedgy Wetland with Grassy Woodland in the background



Plains Sedgy Wetland with Riparian Woodland



Riparian Woodland in the freshwater lake



Plant diversity close to the lake



Healthy Woodland

Figure 44 - Benchmark native planting types and variations as seen in Westgate Park



### 3.0 CAMPUS MASTERPLAN

#### 3.9 PUBLIC REALM

##### ACTIVE EDGES

Wherever possible, the masterplan is designed to encourage maximum activation to the public realm—particularly the Turner Street Showcase. This activation strategy is tempered by the understanding that hard working buildings like those that will be on this campus will need to have fronts and backs. This requirement arises from both utility, accessibility and safety needs. While Tech-Dock interfaces will be encouraged to be as open, operable and transparent as possible, functionality requirements will take precedence here. This intensity of functionality will foster different kind of active edge, one bespoke to the functioning of this campus and the unique work that will happen there

Additionally, the masterplan identifies three locations spread across the site for “Campus Hubs”—front door welcoming points that will serve as hubs of amenities, orienting points and information nodes. The active edge and Campus Hub zones are located on the diagram on the following page.



Figure 45 - Turner Street Showcase. Render for illustrative purposes only.



### 3.0 CAMPUS MASTERPLAN

### 3.9 PUBLIC REALM

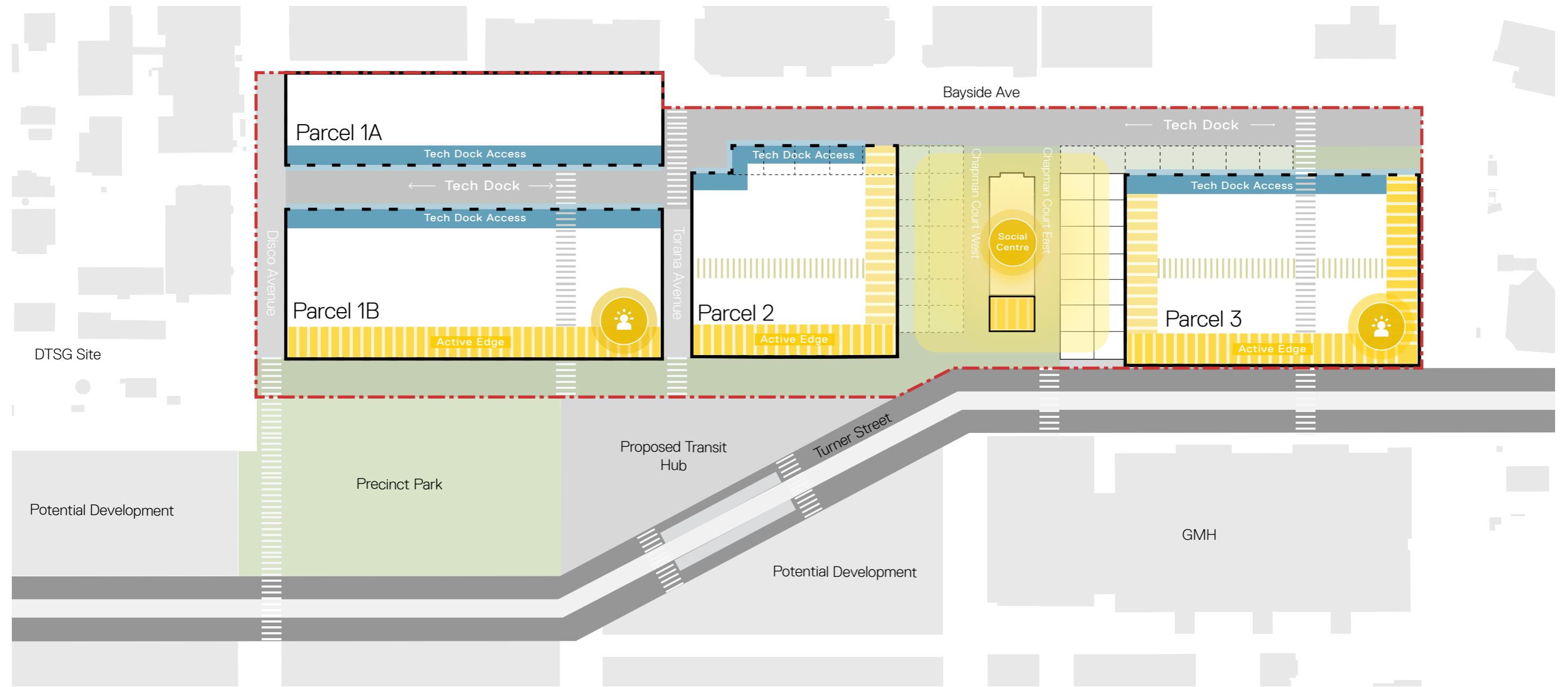


Figure 46 - Diagram showing the key interfaces and their activation level/type

- - - Site Boundary
- Primary developable footprint
- Indicative N-S through site connection
- Indicative E-W through site connection
- Tech Dock - Indicative Location  
Note: Structures and overhead equipment up to 12m in height permitted
- Showcase - Active where possible



### 3.0 CAMPUS MASTERPLAN

#### 3.10 MOVEMENT AND ACCESS

##### VEHICULAR ACCESS

Loading and servicing the labs and large equipment that will be housed in the campus buildings is a major concern of the masterplan. Additionally, it is critical to the social functioning of the campus that the public realm is primarily composed of pedestrian and cycle lanes only. The Tech-Dock concentrates the vast majority of both heavy and light vehicular loading and servicing into one infrastructural spine. The three major north-south links indicated on the diagram to the right would be able to accept vehicles, but only in rare and unusual circumstances, for instance, the installation of a pavilion or delivery of an extremely large item to a building on the southern edge of the campus. Otherwise all vehicular traffic on the campus will be isolated to the Tech Dock leaving North-South Connections as pedestrian and cycle only.

The role of the Tech-Dock also ensures that large trucks and service vehicles will turn from Salmon Street directly into the campus, allowing Turner Street to function better as a pedestrian focused precinct high street.

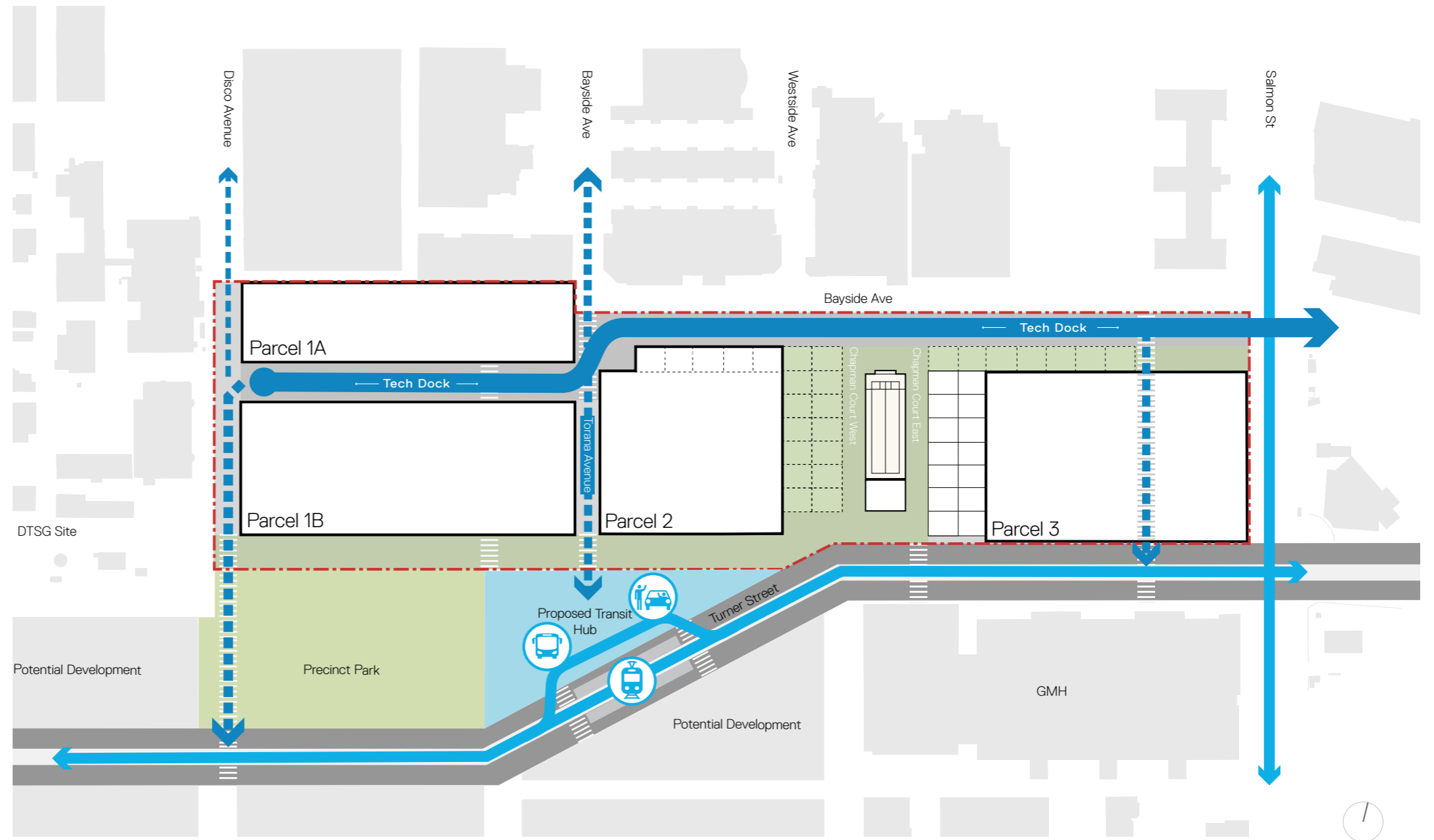


Figure 47 - Diagram showing the key vehicular access and movement through and around the campus

- Primary Vehicular Movement
- Heavy Loading Movements
- Infrequent Loading Movements

### 3.0 CAMPUS MASTERPLAN

#### 3.10 MOVEMENT AND ACCESS

##### PEDESTRIAN AND CYCLE ACCESS

The campus is designed as a primarily pedestrian area, with North-South through site connections required at frequent intervals and the majority of vehicular traffic isolated to a single service spine. All primary North-South Connections will be accessible to both pedestrians and cyclists while secondary North-South and East-West connections may be appropriate for pedestrian traffic only.

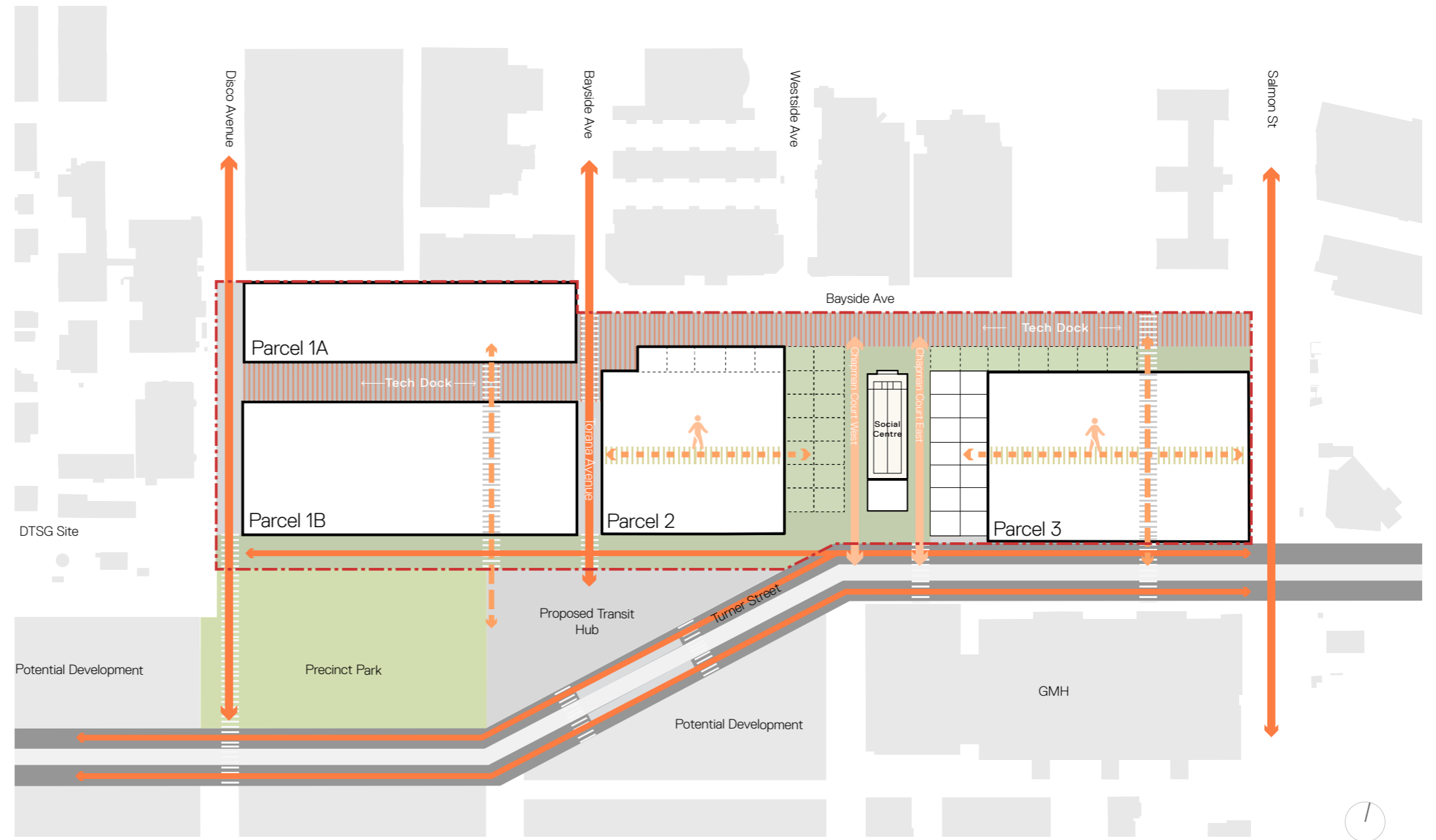


Figure 48 - Diagram showing the key pedestrian access and movement through and around the campus

- Primary Pedestrian Movement
- Secondary Pedestrian Movement
- Potential Through Site Connections



### 3.0 CAMPUS MASTERPLAN

#### 3.11 SUSTAINABILITY

##### SUSTAINABILITY PLAN 2017 - 2020

##### The Sustainability Plan

The Sustainability Plan sets out priority actions and targets towards realising the commitments of the Sustainability Charter over a four-year period. The current Sustainability Plan has two targets that endure beyond 2020; achieve carbon neutrality before 2030; and, support the implementation of the Sustainable Development Goals (which inherently have a 2030 time frame). It also commits to developing campuses as a living laboratory of sustainable communities which is a convergence of the research, teaching and learning and operational aspects outlined in the Charter.

The development and operation of the Fishermans Bend Campus will occur under the next Sustainability Plan. The future plan should ensure aspirations are actionable from its implementation.

##### Sustainability in Growing Esteem

Sustainability is core to the operation of the University of Melbourne (UoM). It is directly connected to The Melbourne Vision as set out in ‘Growing Esteem 2015-2020’, the University’s current Strategic Plan. The Melbourne Vision states that the University will be successful in its aspirations if, by 2020, it is “Recognised as a leader in embedding sustainability in all aspects of the University’s operations, teaching and learning, research and engagement”.

##### The Sustainability Charter

The UoM Sustainability Charter sits within the Sustainability plan. It is a framework for embedding social and environmental sustainability across all facets of the University. The Charter articulates a set of high-level principles and commitments that have been translated into priority actions through the Sustainability Plan.

The key principles and commitments set out in the Charter are:

- Research underpins the University’s contribution to creating a sustainable world
- The teaching and learning programs of the University inspire and support students to be leaders for a sustainable future
- The University’s staff and students actively engage with all sectors to drive progress towards sustainability
- Sustainable practices are embedded in all of the University’s operations, modelling innovative ways to maximise social and environmental value
- The University integrates sustainability principles into its decision-making and the management of the organisation
- That sustainability remains enshrined at the highest level of University strategies
- That sustainability impacts and performance are reported annually and publicly using global best practice standards
- That the principle of stakeholder inclusiveness in reporting and decision-making processes is upheld

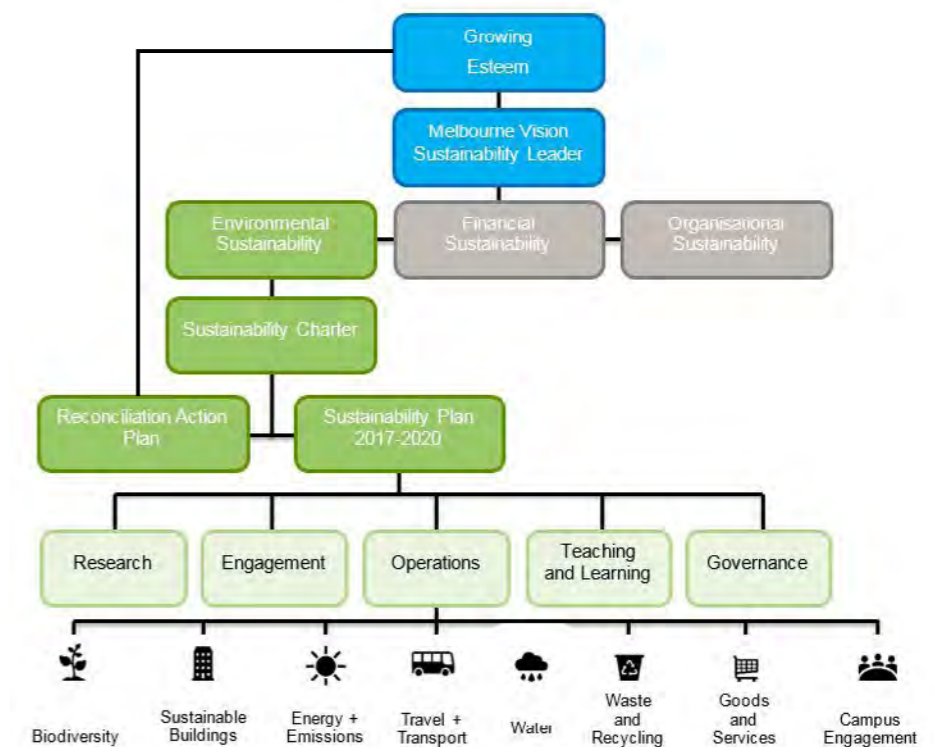











Figure 49 - University of Melbourne Sustainability Vision

### 3.0 CAMPUS MASTERPLAN

#### 3.11 SUSTAINABILITY

The table below integrates the most stringent requirements across:

- UoM Growing Esteem
- UoM Sustainability Charter
- UoM Sustainability Plan 2017-2020
- UoM Design Standards
- Fishermans Bend Framework.

 Biodiversity	 Sustainable Buildings	 Energy + Emissions	 Travel + Transport	 Water	 Waste + Recycling	 Goods + Services	 Campus Engagement	 Other
Habitat restoration and enhancement of landscape amenity	Maintain minimum 5-star Green Star Design & As-Built rating for all new buildings, achieve a minimum 6-star or equivalent by 2020	Achieve carbon neutrality by 2030	Reduce air travel emissions per staff member by 10% for domestic and international flights	Reduce mains water usage by floor area by 12% from a 2015 baseline by 2020	Reduce waste to landfill to 20kg per person by 2020	Develop and implement a supplier code of conduct by the end of 2017	Increase staff and student level of awareness of, participation in, undertaking of, and level of satisfaction in the University sustainability initiatives	Develop and implement climate adaptation plans for each university campus by 2020
Green Star ratings; Credit – Ecological Value, Design and As-built and Communities Tool	Instil sustainability principles in procurement decisions, across product life cycles and supply chains	Achieve zero emissions from electricity by 2021	Replace 10% of university car parking spaces with bicycle parking by 2018	Reduce nutrient discharges from stormwater and treated effluent to Port Phillip Bay	50% of all food waste is diverted from landfill	Achieve commitments under the University’s Fair-Trade Certification	Develop people who have the skills to create, define and succeed in the future careers and industries of sustainable societies.	The urban heat island effect is reduced so that Fishermans Bend will be no hotter than Inner Melbourne
Develop and implement Biodiversity Management Plan		Reduce emissions by 20,000 tCO <sub>2</sub> -e through on campus energy project	Reduce fuel emissions from fleet by 25% by 2020	Net sewage discharge reduced by 50%	Improved waste and recycling knowledge in the local community	A successful activity core is established in each precinct where businesses can thrive and everyday needs are met	Work strategically with partners to create innovative solutions to sustainability challenges	The community is resilient to the shocks and stresses of climate change
More than 90% of the trees will be in good health by 2050		An Energy Impact Statement (EIS) shall be completed for each new major University building project.	80% of trips are made via sustainable transport	Potable water demand of less than 100 litres per person per day			Develop and maintain its campuses as living laboratories of sustainable communities	
Greater diversity of plant species and fauna recorded compared to 2017 levels		Use of building integrated renewables should be considered for each project	90% of school related trips are made via sustainable transport	Reduced impact of storm and flood events, including sea level rise			A focus for community interaction is provided within each precinct.	
Tree planting will deliver 50% tree canopy coverage in public spaces			A walkability score of 90% is achieved from workplaces	Rainwater collected from roof areas stored in tanks to provide water for toilet flushing, cooling tower use and irrigation			A focus for community interaction is provided within each precinct.	



## 3.0 CAMPUS MASTERPLAN

### 3.12 STAGING

Under the arrangement with General Motors Holden, the University of Melbourne will first be able to develop the parcel of land on the western third of the site known as “Stage 1” before gaining access to the rest of the site. Stage 1 is scheduled to be completed in 2023 and open its doors to students, researchers and precinct partners for Semester 1 2024. It will be host to several large facilities for the School of Engineering (MSE) and Faculty of Architecture, Building and Planning (ABP) and co-located industry partners.

During the planning and construction of Stage 1, the University will gain access to the full site, enabling it to potentially commence temporary activation works on the existing Plant 3, Plant 5, Social Centre and Tech Centre. The above activation scenario depicts a fully realised Stage 1 with a simultaneously delivered Precinct park, Transit Hub and Turner Street. Stage 1 is a self sufficient campus with its own retail amenities, end of trip facilities and campus hub. It will host the large scale equipment required by the University and is centred around a large external prototyping space off the Tech-Dock.

To create a lively campus, full site activation will be critical to ensure the success of the campus. Plant 5 may be reused to host large workshop facilities as well as pop-up incubator spaces until redeveloped. The Social Centre will be restored and adapted into a communal social hub for the precinct. If the University is unable to secure off-site parking, Plant 3 will be used for temporary minimum car-parking.

Upon completion, the fully developed campus will be a lively network of streets and lanes, workshops, laboratories, teaching and learning spaces and cafés. As the exact use of the future stages is not yet known, the framework has been designed to allow for flexibility in use types without compromising the success of the campus.

In its fully realised state, Plants 3 and 5 are substantially removed and partially reused. The Technical Centre on the far eastern end of the site is removed to allow for further development. Large scale equipment and dirty laboratories continue to be located along the Tech-Dock on the northern site of the campus while uses tailored more for teaching, learning and research are located along the showcase edge of the Turner Street spine. The structure of Plant 3 frames the garden on the west of the restored Social Centre, creating a true campus heart.

This scenario projects that the campus will eventually have access to a precinct parking facility off campus and that the requirement for parking is greatly reduced by public transport—both tram and rail.

### 3.0 CAMPUS MASTERPLAN

#### 3.12 STAGING

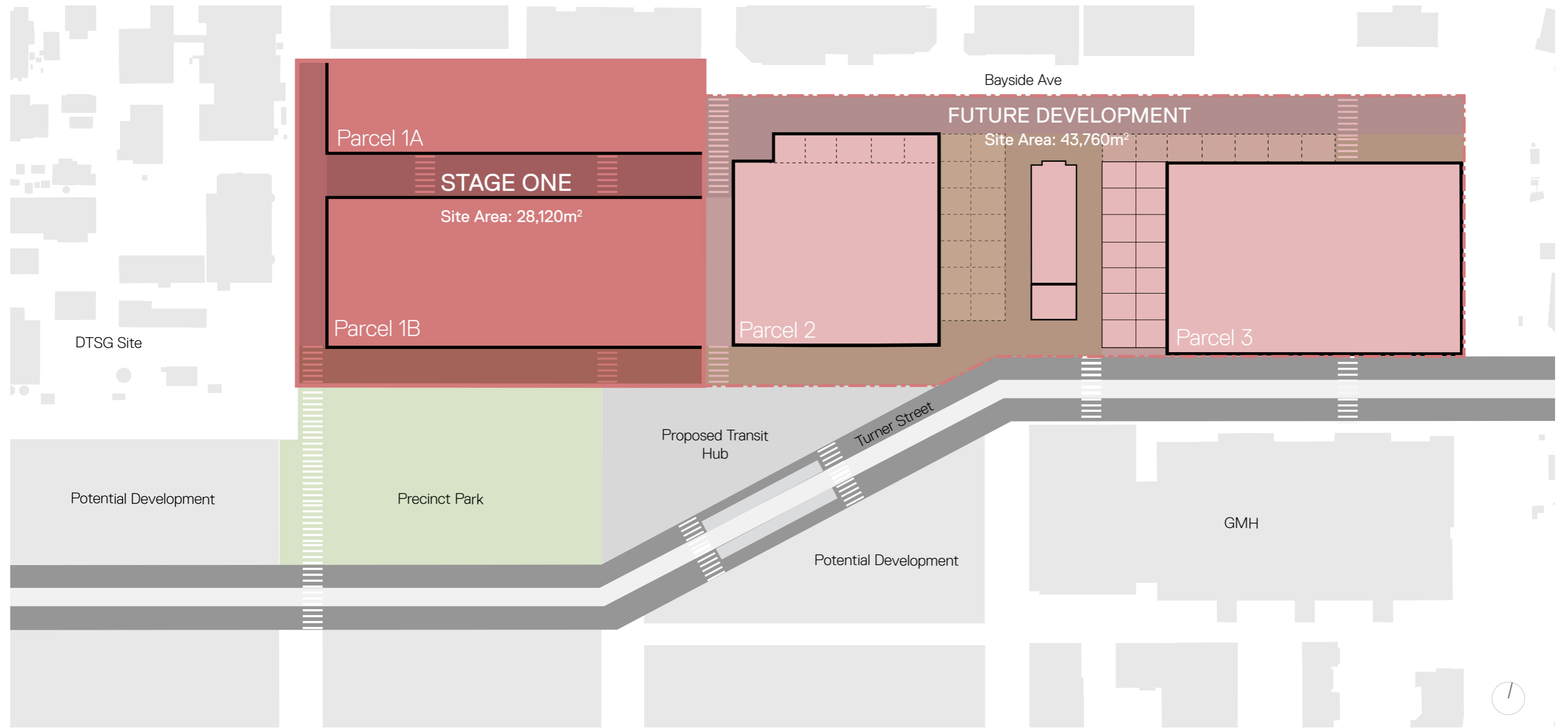


Figure 50 - Staging Diagram

















## APPENDIX

### A - VICTORIAN HERITAGE REGISTER NOMINATION

#### AREA PROPOSED FOR REGISTRATION

While the site is currently not subject to the Heritage Overlay, it has recently been nominated for inclusion in the Victorian Heritage Register (VHR).

The nomination relates to part of the larger GMH site. All of Lot 1 and Lot 21 on Plan of Subdivision 300001, part of Lot 2 on Plan of Subdivision 517280 and part of Common Property 1 on Plan of Subdivision 300001C have been nominated for inclusion on the VHR. It is proposed to include the land, buildings (interior and exterior), as well as other features, such as two murals painted on boards in the Social Centre.

#### THE ASSESSMENT PROCESS

The Executive Director made a recommendation to the Heritage Council of Victoria that the place be included in the VHR. This was followed by a period of public advertising in which people were able to make submissions to the Heritage Council of Victoria concerning the nomination and the Executive Director's recommendation.

On 30 January 2020, shortly after the notice period ended, the Minister for Planning called-in the nomination from the Heritage Council and directed the Heritage Council to provide a report to him in relation to the Executive Director's recommendation and the submissions made during the public notice period.

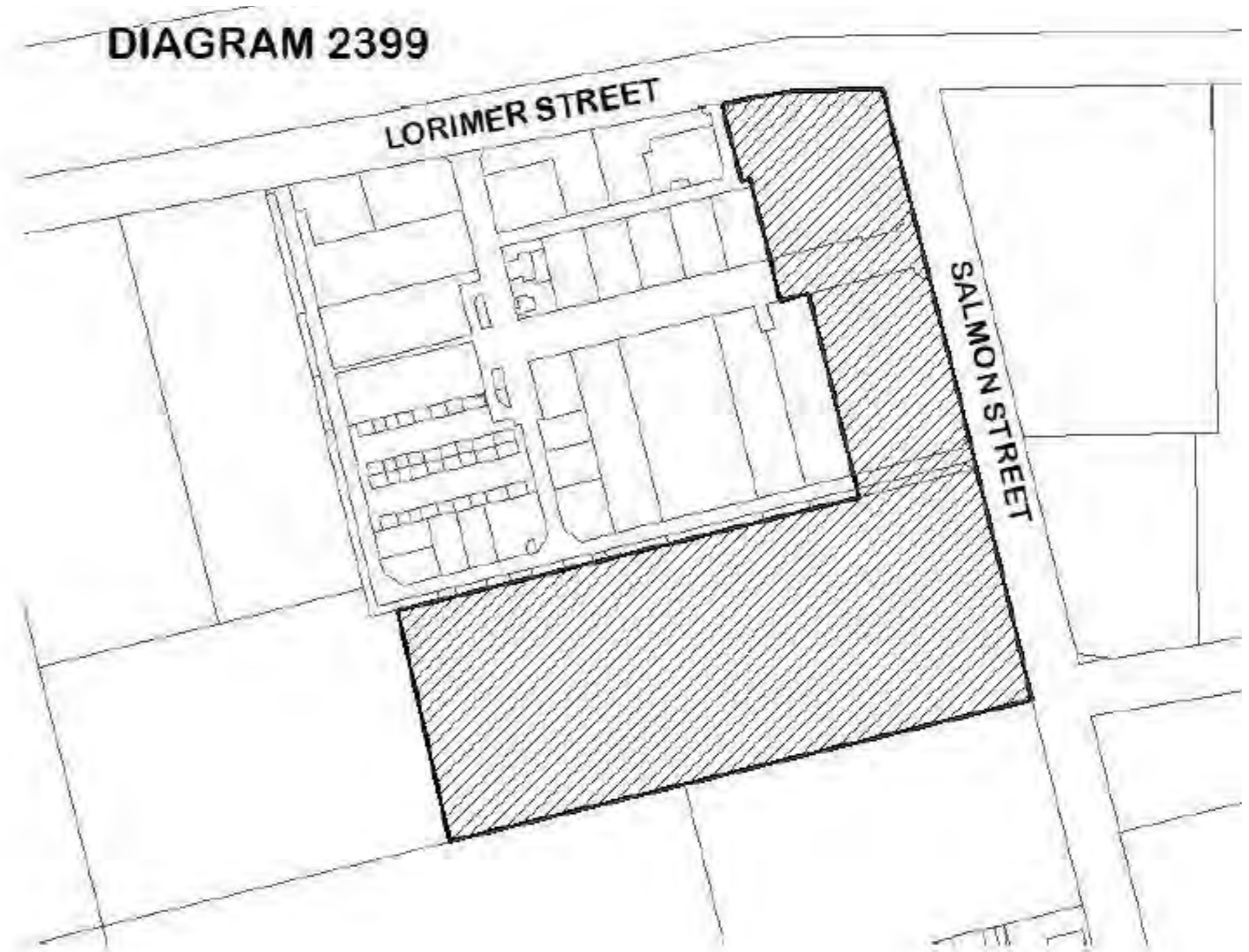


Figure 51 - Diagram of area currently nominated for inclusion in the Victorian Heritage Register

## APPENDIX

### A - VICTORIAN HERITAGE REGISTER NOMINATION

The Minister has yet to make a determination on the nomination, however:

- heritage controls are integrated into the Incorporated Document; and
- the Masterplan has been designed to respond to and preserve the heritage values on site.

This ensures that, irrespective of the Minister's determination on the nominations, the heritage significance of the GMH Site will be managed by heritage as part of the overall development of the land.

#### IMPLICATIONS OF THE DECISION ON THIS MASTERPLAN

If the Minister determines to include the GMH Site on the VHR, a heritage permit will be required for any demolition or buildings and works under the Heritage Act 2017 and it may be necessary to amend this Masterplan to respond to matters identified in the VHR listing.

Potential difficulties may nevertheless arise in future, where there was an inconsistency between conditions on a heritage permit and the development shown in the masterplan (or development plans) approved by the Minister under the Incorporated Document. It is foreseeable that, in order to enable development to proceed, the masterplan would need to be further amended by the Minister to resolve inconsistencies with individual heritage permits.



Figure 52 - Recommended Extent of Registration in the VHR (Source: Recommendation to the Heritage Council, November 2019)



