

James Cook University

Townsville Campus

MASTER PLAN

Version 1.0 - 28th October 2017

ACKNOWLEDGEMENTS

Acknowledging the First Nation peoples of the world, their rich cultures and their knowledge of the natural environment, we pay particular respect to Australian Aboriginal and Torres Strait Islander peoples, the traditional custodians of the lands and waters of Australia. We are pledged to achieve genuine and sustainable reconciliation between the Aboriginal and Torres Strait Islander peoples and the wider community.

This document has been prepared by Cox Architecture exclusively for James Cook University, in collaboration with Space Logic, 9Point9, Umow Lai, and Geoff Roberts Advisory.

DOCUMENT DETAILS

JAMES COOK UNIVERSITY TOWNSVILLE CAMPUS MASTER PLAN

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FOREWORD

MESSAGE FROM THE VICE CHANCELLOR

I'm delighted to present James Cook University's (JCU's) new Townsville Campus Master Plan 2017 – 2065. The Plan successfully embraces the opportunities and challenges of the 21st century and envisions a lively and vibrant urban campus that sits elegantly in its natural environment. JCU's strategic focus on the Tropics is fundamental to the University's charter and an integral characteristic of the new Master Plan – it embodies JCU's global positioning and special importance to people of the Tropics.

JCU is proud of our significant history, presence, and sense of place in Townsville. As Queensland's second oldest university, JCU has a rich history and heritage dating back to the first of its courses commencing in Townsville in 1961. Completion of the 1964 Stephenson Master Plan laid the foundations for developing the University's Douglas Campus in Townsville. The 2017 – 2065 Master Plan respectfully builds on the foundations of the previous master plans, and articulates strategies and initiatives that will deliver an exemplar Health and Knowledge Community for Townsville. The planning process has been underpinned by rigorous consultation with the university community with a particular focus on engaging our students to help prioritise 'on campus' student life experiences that can't be had online, and to create a campus environment that's enjoyable for staff and students. Importantly, consultation with external stakeholders has contributed to planning responses that will activate the JCU community and strengthen the University's integration with industry and the regional community.

Connections to Country, a key initiative of the Master Plan, embraces continued development of local indigenous narratives, enhancing the

opportunity for students, staff and visitors to read and understand the landscape through indigenous eyes. Of the many campus attributes adored by the University community, our staff and students, it was unanimously agreed that the local wildlife were highly valued and must be preserved at all costs. Significantly, this Master Plan has embraced the landscape for reinforcing a strong sense of place, belonging and memorability. The landscape will feature learning oases, tropical courtyards and an arboretum. The campus setting will be an amenity for the wider community by hosting activities and attractions for residents and visitors.

JCU's Townsville campus is also recognised as a health and knowledge precinct. The Memorandum of Understanding signed this year between JCU and our immediate neighbour the Townsville Hospital and Health Service has formalised our shared desire to collaborate to develop a co-located North Queensland Academic Health Hub Alliance. In the long term the potential is for both organisations to collaborate to deliver improved health outcomes and significant social and economic benefit for the region. All of which will help progress development of JCU's Discovery Rise and the City of Townsville. Given the land scale of our campus, other opportunities include resolution of title on land held in trust by JCU and development of a university school.

JCU is pleased to have developed a Master Plan which supports our strategic intent. The next 50 years will be significant as we strive to unlock the potential of our University and our great city and secure mutually beneficial outcomes that are socially, economically and environmentally sustainable.



MASTER PLAN STRUCTURE

This Master Plan Report fits into a broader suite of documents that have been completed as part of the master planning process.

✓ MASTER PLAN REPORT

The Master Plan document is arranged in ten distinct sections as described in the diagram below. This structure provides users with a framework for understanding and interpreting the final design.

✓ MASTER PLAN SUMMARY DOCUMENT

✓ TECHNICAL STUDIES / APPENDICES

Additional work completed as part of the Master Plan design and consultation has been included as appendices. These documents include supporting documentation, research and technical studies that will continue to be updated as the Master Plan develops.

- Campus Evolution
- Campus Analysis
- Benchmarking and Competitor Analysis
- Aspirational Brief
- Consultation Outcomes
- Sustainability Report
- Student Growth and Space Requirements
- Water Bodies Overview

1. Introduction	Purpose, consultation, design process, consultation outcomes.
2. Context	Global, regional and local context. Includes political, educational, environmental, climatic, & physical environment.
3. Vision	Vision, strategic direction, opportunities, objectives, enablers, targets.
4. Conceptual Framework	Organising strategies, key concepts, Master Plan
5. Staging	Student growth, required floor area, growth and staging scenarios.
6. Strategies	Specific design intent and important considerations described through overlay maps
7. Initiatives	Enabling and catalyst projects, and priority developments
8. Precincts	Detailed precinct plans.
9. Campus Urban Design Guidelines	Overarching design direction for campus-wide design elements.
10. Development Controls	Development lots, heights, setbacks and site cover.

Subsequent documents to follow:

- | | |
|------------------------------|-------------------------|
| - Public Art | - Sports and Recreation |
| - Sustainability Plan | - Traffic |
| - Infrastructure Master Plan | - Flood Mitigation |
| - F&B | - Signage |

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EXECUTIVE SUMMARY

It was identified through the planning process that development of the site would need to span beyond the initially proposed 2035 horizon. Consequently, the Master Plan vision was increased to 2065.

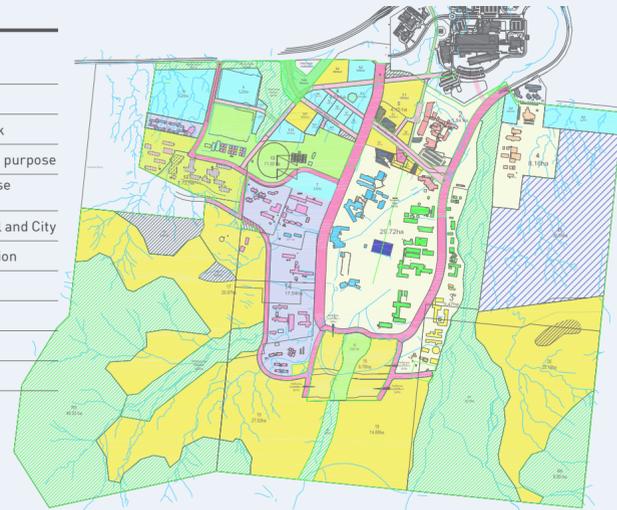
PROJECT PURPOSE

This document seeks to build upon past planning and visioning strategies to address current ambitions and challenges. Higher Education and Research is a highly competitive industry. An increasingly global context necessitates that campuses are unique, vibrant and inclusive.

Leading University campuses are deeply embedded in their region. The Townsville context, encompassing growing urban centre and industry, striking natural environment and tropical setting is intrinsic to the identity of this campus, defining both the academic strategies and physical sense of place. Preserving and enhancing this distinctiveness is central to the Master Plan framework.

LEGEND

- JCU Academic core
- Stock holding paddock
- Development - known purpose
- Development - purpose to be decided
- Development - School and City
- Student Accommodation
- Recreation
- Conservation
- Public road 1
- Public road 2



DISCOVERY RISE LAND USE PLAN

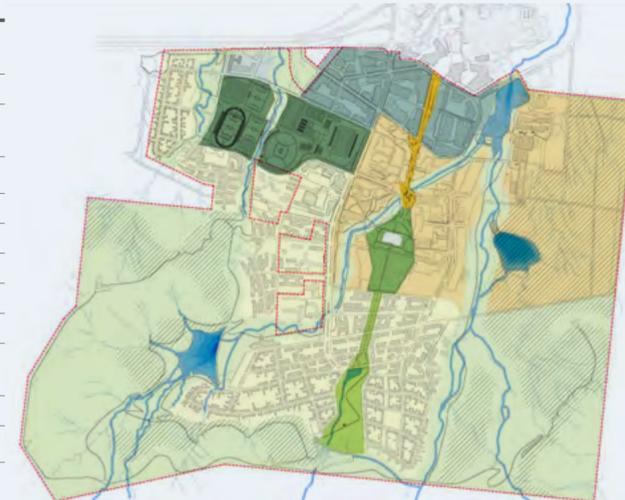
This project was initiated with the aim of exploring the following ambitions:

- Provide a roadmap for the urbanisation of the campus
- Enhance University engagement with industry and local community
- Support the expression of the distinctive regional context and natural environment and make this key to the campus experience
- Modernise facilities to match current student and workplace expectations
- Develop a lively, vibrant student oriented place offering a 24-7, study, work and lifestyle environment
- Incorporate future land use opportunities identified in the Discovery Rise plan into the University campus Master Plan.

This report encompasses a year of collaboration between the Consultant Team and key stakeholder groups which included Academic and Service Divisions, Colleges, Institutes and specially formed task groups, students, staff and external representatives, including TCC, Main Roads, TTH, ADF, and others.

LEGEND

- University Mall
- Academic Core (including industry and community partners)
- Veterinary Holding Paddocks/ Future University Use
- Academic & Mixed Use
- Convenience Retail
- Green Heart
- Sport Fields
- Parkland
- Natural Bush Reserve - Research, Conservation, Drainage & Wildlife
- Residential
- Future Residential subject to further investigation



PROPOSED LAND USE PLAN

GLOBAL TROPICAL CONTEXT

Economic growth in many developed economies is increasingly driven by knowledge, and it is this strategic 'asset' that is now widely recognised as the primary driver of productivity and economic growth (OECD, Paris 1996, 'The Knowledge Based Economy'). This significant shift has led to a new focus on the role of information, technology and learning in the economic performance of cities and regions, and an increasing importance of educational institutions around the world.

The University is uniquely positioned as a national and international leader in teaching and research to address many of these challenges facing the tropics worldwide, which include climate change, disease, poverty, rapid urbanisation and population growth.

In response to these issues, the University has positioned itself as the 'University for the tropics' with a focus upon the following four themes:

- Tropical Ecosystems and the Environment
- Industries and Economies in the Tropics
- People and Societies in the Tropics
- Tropical Health, Medicine and Biosecurity.

In a competitive globalised tertiary education sector, this tropical focus and location is a key asset.

REGIONAL AND CITY CONTEXT

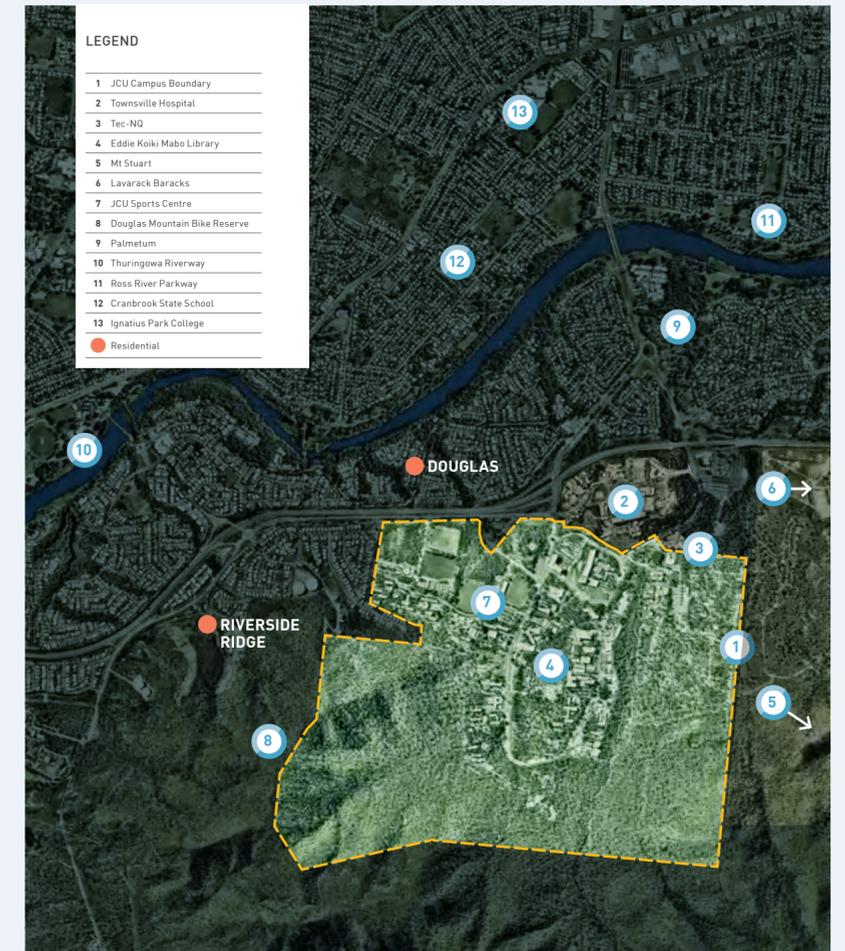
The Townsville campus is the largest in JCU's suite of campuses, incorporating many of the University's key administrative functions. As such, the University is seeking to engender a sense of place and community befitting its role as the institution's key address.

JCU is an important contributor to the city's economy, attracting people and investment. The City provides JCU with a sense of "place" and identity; infrastructure such as transport, retail services and accommodation; cultural and social context and recreation and leisure. The University acts as a gateway to key regional industries.

The campus distance from the CBD has from time to time been suggested to have established two complementary poles for investment. Although some elements of JCU activity have moved, and more may relocate to the CBD, the investment in infrastructure and adjacency has meant that this Master Plan is premised on continued occupation and intensification of development on the Douglas Campus.

The University's immediate context includes some of the region's key industry and community assets including the Townsville Hospital and the Lavarack Barracks, offering ample opportunity for direct engagement should the campus embrace a more porous physical and social approach.

With regard to the hospital in particular, this Master Plan is constructed to facilitate maximum engagement with the hospital, however it is dependent upon the hospital development working towards this same objective.

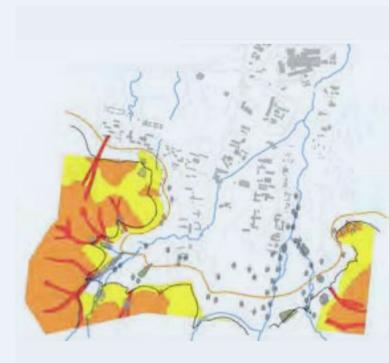


SITE CONTEXT

The JCU Townsville campus has a number of inherent conditions, constraints and other considerations that require a full investigation and understanding before any significant planning work can be undertaken. These major considerations were identified during the Master Plan consultation process, and also through a separate review of pre-existing campus reports and studies.

Major considerations that affect the form and development potential of the campus include the:

1. Steep, rocky and unstable terrain to the south and west
2. Biodiversity and conservation value of the natural environment, particularly on the foothills and adjacent to the waterways
3. Major drainage routes of the two creeks that dissect the campus and create significant overland flow and flooding in major rain events
4. Heritage places and features, including indigenous, colonial, natural environment and more recently developed places on campus
5. The Space Rationalisation Plan, an estate initiative to consolidate the campus and demolish old and disused facilities.



GEOLOGY & TOPOGRAPHY

Steep, rocky and unstable terrain to the south and west.



NATURAL ENVIRONMENT

Biodiversity and conservation value of the natural environment, particularly on the foothills and adjacent to the waterways.



FLOODING

Major drainage routes of the two creeks that dissect the campus and create significant overland flow and flooding in major rain events.



HERITAGE PLACES

Heritage places and features, including indigenous, colonial, natural environment and more recently developed places on campus.

1964 STEPHENSON MASTER PLAN

The original plan for JCU Douglas reflected a 'back to nature' ethos as benefiting academic and social maturity at a time when space was abundant and the private motor vehicle ensured access and convenience. The plan contrived to harness the distinctive landscape qualities of the site with the pursuit of academic practice and campus as a chrysalis for personal growth, creating an enduring legacy for the campus.

- Decentralized campus of large open spaces
- Low density development with buildings placed equidistant
- Perimeter road network that enabled convenient vehicular access and internal movement
- Library at the core of the campus – introducing the notion of sacred space and celebrating the strength of symbolic gesture
- Buildings grouped by discipline
- Academic core pedestrian only zone yet public domain lacks clarity and purpose
- 3 visual 'axes' - enshrining the importance of the visual connection, the landscape relationship, and sense of place
- A student focused social and service centre within proximity of the library
- Residential developments on the foothills.

THE HEALTH AND KNOWLEDGE PRECINCT

Another major planning initiative that is relevant to the campus Master Plan is the 2014 'Health + Knowledge Precinct Master Plan'. This initiative reinforces the strategic intent to:

"Integrate The Townsville Hospital and The James Cook University into a unified, healthy and inclusive environment that promotes learning, knowledge and well-being."

Importantly, this report identified the importance of providing a physical (primarily pedestrian) connection along the Magnetic Island axis that was supported by consolidated urban forms and a central 'Health Plaza' at the junction between the hospital and the university. These two initiatives are unreservedly supported, adopted and integrated into this new Master Plan.



SPACE RATIONALISATION

The Space Rationalisation Plan, an estate initiative to consolidate the campus and demolish impaired and functionally obsolescent facilities.



1964 MASTER PLAN

- Perimeter road network
- Library at the core of the campus
- Academic core pedestrian only zone
- 3 visual 'axes'
- Residential developments on the foothills.

DISCOVERY RISE MASTER PLAN

Several subsequent master plans have attempted to consolidate the dispersed facilities, with the most recent iterations including a clear desire to consolidate towards the northern half of the campus and connect to The Townsville Hospital. The Architectus Master Plan from 2013 went furthest in this regard, and laid out a vision for Discovery Rise to:

"Create a university town with distinctively Australian tropical ambiance which will incorporate energetic academic, social, artistic and commercial environments. It will be an integrated community of living and learning that will set a new benchmark in sustainability, and will enhance JCU as a leading tropical university."

The Discovery Rise Master Plan included several important initiatives, including Discovery Central town centre and Discovery Rise residential on the foothills. These initiatives have been carefully considered and integrated with the academic heart of the campus in this new Master Plan..



INTEGRATED HEALTH AND KNOWLEDGE PRECINCT

- Direct connection to the hospital via Magnetic Axis link
- Gathering place - 'Health Plaza' at the junction between JCU and The Townsville Hospital.



DISCOVERY RISE

- Consolidation towards the north
- Development of a university town centre on Mount Stuart Street
- Fully integrated community, with expansion of residential development to the south.

SITE CHARACTER

The JCU Townsville campus is set in a natural bowl on the foothills of Mount Stuart, roughly 13km from the city centre.

Tall gum trees and dry tropical savannah vegetation, along with the peaks and rises that surround the university, impart a unique and distinctive bushland character to the campus.

Geographic features and the incorporation of sightlines to significant landscape features distinguished the campus site planning of the 1960's.

To date the campus has offered modest community facilities and the city public transport network is recognised as underdeveloped. As such, the campus has limited incidental visitation and community engagement.

Decentralised centres of activity and limited community offering do not support the interactive, social campus environment envisaged by the University. The natural setting is beautiful and distinctive, however in the context of the sparse urban arrangement can act as an inhibitor, rather than a contributor to the legibility of the campus.

The existing Goondaloo Creek in combination with established native vegetation provides the basis for a compelling landscape, however these features sever the site, impeding visibility, access and wayfinding.

The existing campus setting is characterised by its low density building arrangement. This dispersed urban form, without formal address and identifiable 'heart' lacks legibility. Disparate clusters of buildings with little cohesive identity and few directional landmarks make the campus difficult to navigate.



VISION

The Master Plan vision consolidates the university's broader community integration and development objectives with enhancement of the academic core.

The campus is envisaged as a place of academic excellence as well as a home to staff, students and broader community residents seeking the unique combination of campus lifestyle and natural setting.

It shall be sustainable, compact, walkable, socially active and defined by its tropical setting.

Development of an Aspirational Brief was a key, early part of the consultation process. The Aspirational Brief articulates the needs and aspirations of the staff, students and broader community, which were expressed and captured through the consultation process. As such, the Aspirational Brief is "the voice of the university community", and reflects a broad vision for what the campus could be. The widely varying, and sometimes contradictory aspirations have been analysed and considered by the consultant team, and adopted for inclusion where appropriate.

SIGNIFICANT OPPORTUNITIES

The brief identified the task of overcoming the dispersed and separated campus in order to create one cohesive, collaborative academic community as key to the Master Plan task. The following significant opportunities were found to be inherent to the existing Townsville campus:

- The natural landscape is a defining characteristic of the site. Forming new public spaces deeply rooted in a distinctive sense of place is imminently achievable provided the mix of density and open space is sensitively managed
- The existing planning structure is readily adapted and supports growth. The north-south axis aligned with the library can form the basis for improved wayfinding and connectivity
- The collocation of the Townsville Hospital drives the consideration of an integrated Health and Knowledge Precinct
- The large land holding and relationship to the Townsville city, supports a combination of academic and non-academic uses, and private sector involvement that are aligned with the Townsville City Deal.



1964 MASTER PLAN

EXISTING CAMPUS

PROPOSED CONCEPTUAL FRAMEWORK

PROPOSED LAND USE

MASTER PLAN VISION

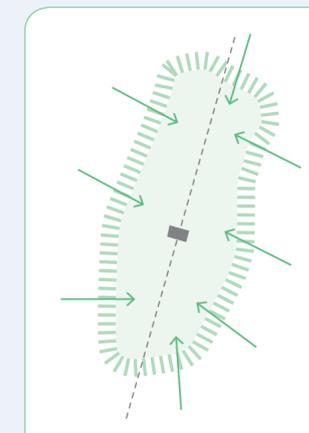


1. Eddie Koiki Mabo Library
 2. Library Green
 3. Indigenous Interpretive Garden
 4. University Central Plaza
 5. Chancellery
 6. University Mall
 7. Ideas Market
 8. Bus Stop
 9. Chancellery Place
 10. University Place
 11. Mt Stuart Street
 12. The Lagoon
 13. Winter House
 14. Events Lawn & Community Park
 15. Sports Complex
 16. Sports Plaza
 17. Sports Walk
 18. Vet Walk & Bridge
 19. Retirement Living / School
 20. Veterinary Precinct
 21. Veterinary Holding Paddocks + Future University use
 22. Future University Residential use pending further investigation
 23. High Density Residential
 24. Medium Density Residential
 25. Low Density Residential
 26. Community Plaza
 27. Orchard Walk
 28. Creek Corridor
 29. Bush Walk Trails
 30. Trail Lookouts
 31. Student Accommodation
 32. Environmental Centre
 33. University High School / Academic
 34. Convenience Centre
 35. Infrastructure
 36. University Private Hospital
 37. The Townsville Hospital
 38. Tec-NQ
 39. Childcare
 40. Hospital Plaza
 41. Creek Dams & Flood Basins
 42. Integrated Child and Aged Care
 43. Bush Walk
- P Parking
* Future Collaborative Design Stage

Sites are interchangeable. The Master Plan represents an indicative form only.

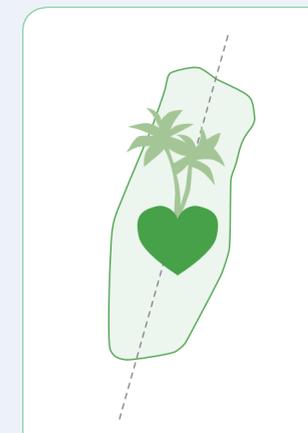
MASTER PLAN OBJECTIVES

Central to the Master Plan vision are the following objectives:



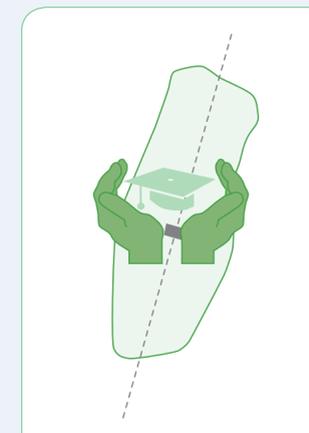
1. TO CREATE A STICKY, MAGNETIC CAMPUS

Create a 'sticky' campus that is vibrant and inviting. The Campus should seek to attract and retain students and staff. This is enabled by a campus focused upon social interaction, legibility and activation.



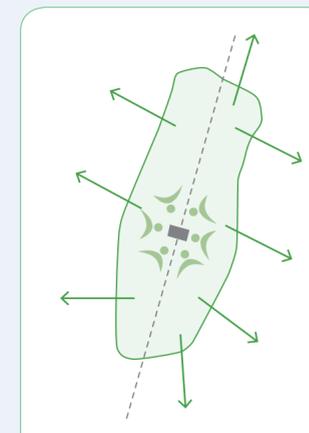
2. TO CREATE A MEMORABLE, TROPICAL PLACE

Engender a sense of place that is memorable, tropical and representative of our place in the tropics. The distinctive existing landscape may be curated and enhanced with built form.



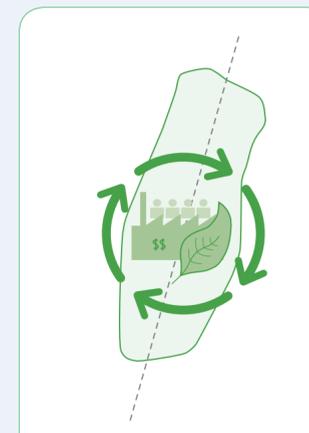
3. TO FOSTER A KNOWLEDGE COMMUNITY

Foster an energised, collaborative and accomplished academic and research community. Great workplace environments that are innovative, connected and collaborative support successful communities.



4. TO SUPPORT TOWNSVILLE & THE REGION

Reinforce the University's commitment to the economy and community of the Townsville region. Contribution to a thriving region is achieved through the creation of a regionally focussed knowledge community, attractions community engagement and community facilities.



5. TO CREATE AN INTEGRATED & SUSTAINABLE COMMUNITY

Be an integrated knowledge community that is economically, environmentally and socially sustainable. Placemaking that enhances community and commercial integration, social engagement and environmental awareness drives sustainable communities.

ORGANISING STRATEGIES

A Concept Framework identifies key organising principles which deliver the Master Plan Vision. The framework accommodates growth and is flexible allowing the University to respond to future aspirations and challenges.

The Vision is grounded in the creation of new spaces that are collaborative, active and community focused. A key challenge lies in achieving this ambition on a campus of such significant scale. For this reason, the Concept Framework proposes a series of connected activity nodes.



EXISTING CONDITION



NEW CIRCULATION

A new grid of streets and pathways provides a legible means for navigating the site.

The 'city block' arrangement provides a rationale for new building arrangement and access.



LEGIBLE URBAN FORMS

A new formal entry point provides a campus address.

Urban form responds to circulation network, providing landmarks and visual cues for site navigation.

Building forms strengthen primary axes and key gathering spaces.



GATHERING

Gathering places are key to the sticky campus. Spaces of activity, event and collaboration enliven the spine.

Memorable places are points of orientation.



NEIGHBOURHOODS

Recognisable arrangements of building forms and open spaces create neighbourhoods, a key means of wayfinding on the site.



STRUCTURAL FRAMEWORK

Several overarching ideas comprise the Framework:

1. Reinforcement of the Magnetic Island axis as a movement spine
2. Preservation of the ring road as a major access route and piece of heritage infrastructure
3. Strengthening and extending of Mt Stuart Street as the high street for the Campus
4. Formation of a major green heart to form the centre of a densified campus
5. Consolidation of a Sports Precinct west of the ring road
6. Identification of formalised entry points at the Chancellery Building, Discovery Drive and Mt Stuart Street
7. Expansion of the southern residential arc to include a mix of housing and residential typologies
8. Consolidation of the academic footprint
9. Connection beyond the campus to the community, including the hospital.

LEGEND

Creeks	Green Heart	Library	Mt Stuart Street Extension
Lagoon	Sports Precinct	University Mall	Secondary entry points
Ring road	Magnetic Island Pedestrian Axis	Central Plaza	Formal University Arrival Point
Primary Cross Axis	Secondary Cross Axis		

KEY CONCEPTS

STICKY CAMPUS

The Master Plan can provide a platform for building a sticky campus by proposing meeting places that attract and retain visitors, staff and students. A new urban grain inside the ring road encourages visitation and movement across the campus. Engaging and legible building form and lively open space supports activation.

Ring road, axes and green heart connect consolidated academic, residential and sporting zones. A clear demarcation between the academic core to the north east, and the Residential Arc to the south and west, provides a clear basis for an establishing community and future growth.

MEMORABLE AND TROPICAL CAMPUS

A memorable and tropical place can be achieved by providing pathways and structures that enhance the experience of the unique existing setting. Each of the framework principles support this aim.

Buildings frame discrete and diverse landscape spaces. Landscape embellishment, both naturalistic and curated, combine with active building edges to encourage occupation of green spaces. A stronger Magnetic Island axis connection seeks to bridge the divisive creek bed, connecting the southern residential zone with the Hospital precinct.

Porosity of new building form balances landscape experience with active urban arrangements. Visual connections to surrounding landscapes are preserved.

KNOWLEDGE COMMUNITY

Greater opportunity for incidental meeting and engagement is aided by the reconsideration of academic silos, in turn encouraging a vibrant knowledge community. Engagement across disciplines is strengthened by the provision of public meeting places, both internal and external.

Transparent and porous architecture facilitates collaboration. External spaces provide new learning environment opportunities.

Industry engagement promotes innovation and translational research outcomes.

TOWNSVILLE & REGION ENGAGEMENT

Soft campus edges encourage a view of the University as welcoming and engaging.

A parkland setting positions the campus as an amenity for the broader fabric of Townsville city.

Public transport and active transport are encouraged through integrated design solutions, making the campus universally accessible.

Strong physical connections between the University and Hospital inspire shared community spaces and attitudes. The Sports and Recreation hub provides a stronger community offering to the region.

SUSTAINABLE CAMPUS

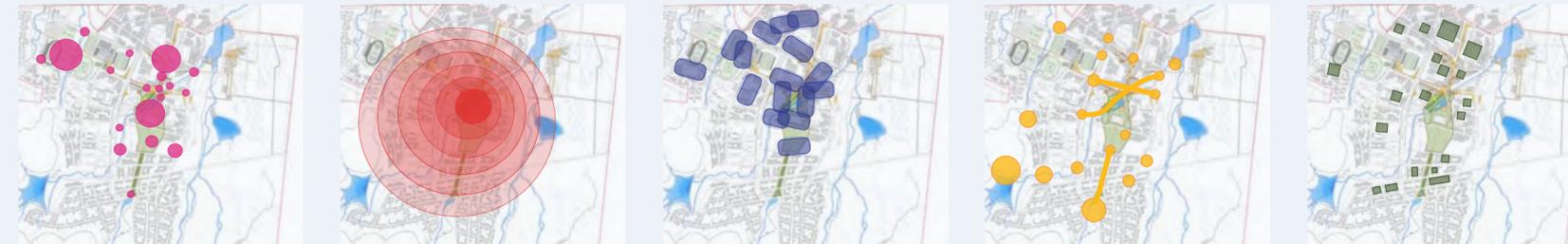
An emphasis upon shaded external movement, gathering and learning environments reduces energy consumption. A porous urban form preserves site breezes and provides for passive building design techniques.

Sustainability is encouraged at a campus more geared towards public and active modes of transport and less towards private cars. A central energy strategy aims to improve energy efficiency in the short term and streamline the introduction of new technologies in the medium and long term.

A consolidated urban arrangement supports these strategies.



LANDSCAPE MASTER PLAN CONCEPTS



STICKY CAMPUS

The campus offers a diverse range of attractive and engaging outdoor places as a destination and a place to linger. It includes places for celebration, vibrant centres of activities, food, beverage, retail, amenities and services plus spaces supporting outdoor sporting initiatives. Furthermore, it provides amenity for the wider community by hosting activities and attractions for residents and visitors from the wider Townsville area.

MEMORABLE CAMPUS

An unmistakably North Queensland landscape surrounds the campus and is a key part of the campus identity. Existing buildings such as the library and surrounding spaces are a well-respected and significant part of Townsville's history. The landscape proposed for the JCU campus will reinforce the strong sense of place and belonging while strengthening the university's uniqueness through delivery of a global tropical landscape. Art and place making also contribute to the connections to country and ultimately how memorable the campus is.

LEARNING OASIS

The landscape promotes and facilitates open learning through supporting the function and operation of the academic community. Provision of external learning spaces will function as a landscape extension of the indoor learning environment and act as a link between built form and the broader campus. Spaces are culturally appropriate and socially supportive to foster academic excellence in a natural setting.

ARBORETUM

A campus wide arboretum will be established for growing trees for shade, conservation, scientific research, education purposes and a habitat and food source to attached local fauna. Walking trails will link remote areas to the central core and showcase tropical, rare, endangered, symbolic and landmark trees, as well as vegetation significant to aboriginal heritage and culture. Informative and educational material will be provided by integrated art and interpretative signage. The arboretum will add to the university's appeal as a destination, recreation feature and education facility for the academic community and the people of Townsville.

TROPICAL COURTYARDS

A series of tropical courtyards will form a campus wide network of multifunctional green spaces that provide support for events, study, relaxation, gathering, meeting and learning. As well as being shady, comfortable and safe, they will be a counterpoint to the built form and include supporting amenity and digital connectivity. Tropical themes, art and amenity applied to courtyards will allow the academic community to experience different tropical settings from around the world.

LANDSCAPE STRUCTURE AND CHARACTER ZONES



LEGEND

- Primary Address
- Significant Intersection
- Boulevard - James Cook Drive
- Mt Stuart Street
- Shared Street
- Campus Walks
- Riverline Landscape
- Library Green / Open Space
- Pedestrian Mall
- Urban Spaces & Tropical Courtyards Between Buildings
- Residential
- Future Residential
- Natural Areas
- Sports Precinct
- Animal Holding & Future Use

LANDSCAPE PLAN



1. Library Green
2. Indigenous Outdoor Learning Garden
3. University Central Plaza
4. University Mall
5. Chancellery Place
6. James Cook Drive
7. Mt Stuart Street
8. The Lagoon
9. Winter House
10. Events Lawn & Community Park
11. Sports Complex
12. Sports Plaza
13. Sports Walk
14. Vet Walk & Bridge
15. Community Plaza
16. Orchard Walk
17. Creek Corridor
18. Bush Walk Trails
19. Trail Lookouts
20. Hospital Plaza
21. Creek Dams & Flood Basins
22. Local Park
23. Arboretum
24. University Place
25. Chancellery Lawn
26. Woodland Memorial Park
27. Adventure Challenge Course
28. Mountain Bike Trails
29. Bush Tucker Walk
30. Discovery Drive

LANDSCAPE STRATEGIES

These landscape strategies draw on the Landscape Master Plan Concepts and provide further detail to describe the proposed landscape development.

They have been developed in response to the brief, consultation processes and the overall landscape design intent.



ECO RESERVE

The Eco reserve includes the natural areas to be protected and enhanced.



PUBLIC ART

An opportunity to create meaningful art connections showcasing local, national and international public art.



CONNECTIONS TO COUNTRY

An Indigenous inspired public realm, art and outdoor education strategy linking the ideas market to the peaks of the foothills.



ARBORETUM

A campus wide arboretum for education and scientific research, connected to walking trails, roads and signage/art initiatives.



CANOPIES

Distinctive canopies for shade and wayfinding while redefining the campus as a Global Tropical University.



TROPICAL PLANTING

Global Tropical characteristics will influence all design including colour, signage, furniture, structures and vegetation.



WATER

Urban water features will enliven the campus core and public spaces. Stormwater devices will address water quality and encourage ground infiltration.



STREETS AND WALKS

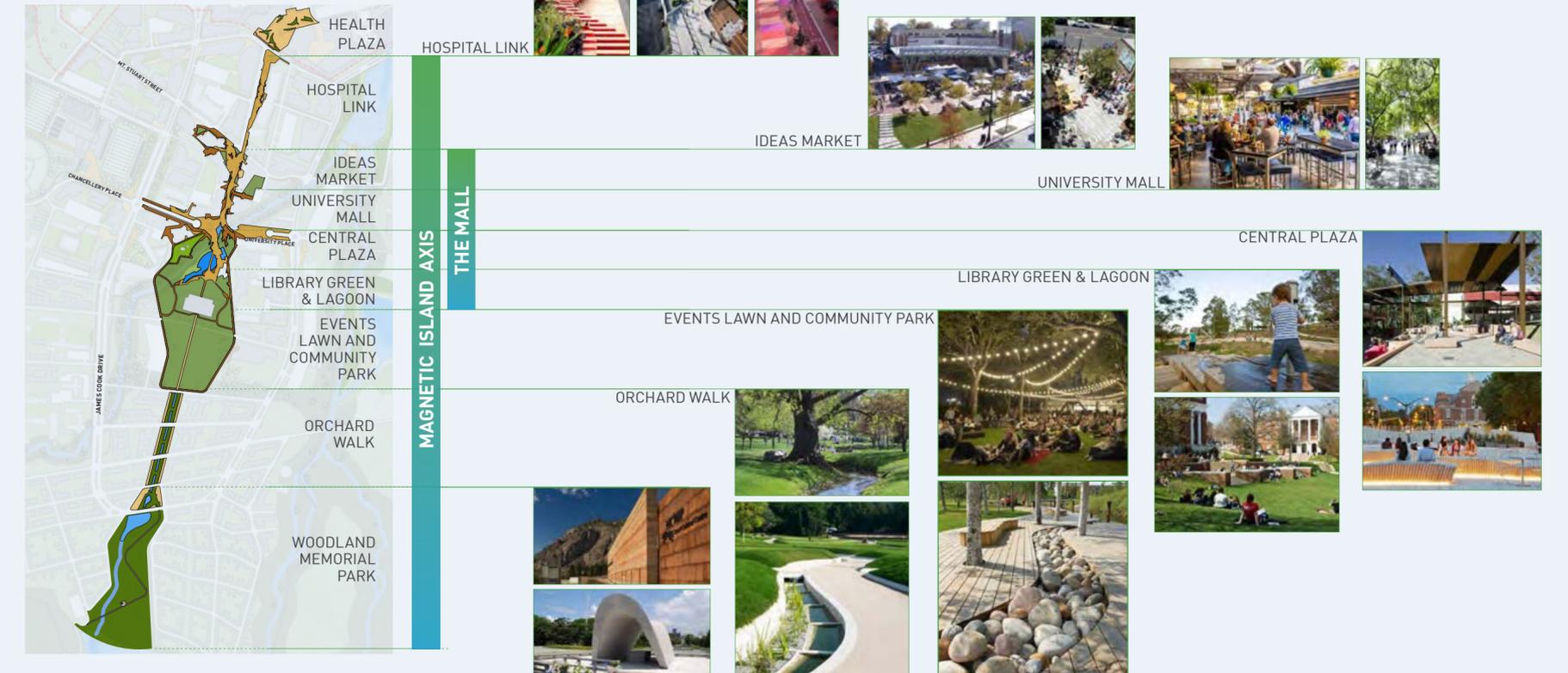
A hierarchy of streets and walks will redefine moving around the campus in shade provided by boulevard and landmark trees.



TROPICAL COURTYARDS

Multifunctional tropical courtyards will provide green spaces for events, study, relaxation, gathering and learning.

MAGNETIC ISLAND AXIS



STRATEGIES

A number of strategies have been developed that expand on the conceptual framework of the Master Plan and provide a detailed approach to campus development.

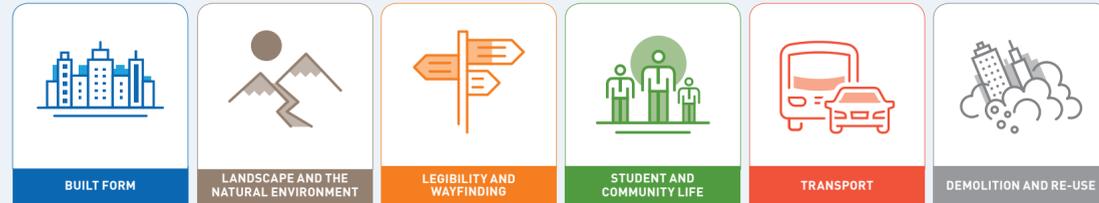
These strategies describe important considerations of the Master Plan, and are a direct response to the brief and other the concerns raised during the consultation and design process. The strategies capture the specific design intent of the Master Plan,

and communicate this through a number of overlay maps that are grouped into six different themes for ease of reference.

The maps not only describe the design intent for various aspects of the design, but they also collate relevant initiatives into a single overlay so that the overall intent for the campus and relationship between these initiatives can be fully understood – for example, the 'Art, Culture and Events' overlay describes the

overall strategy for enlivening the campus culture with events and activities, and locates a number of separate initiatives that contribute to this intent, including smoking ceremonies, welcome to country, graduation, concert stages, bonfire nights etc.

These strategies are intended to guide and control future development, but should be modified as required to respond to emerging trends and conditions whilst maintaining the overall design intent.



STAGING

This Master Plan describes a long-term vision that encompasses the full extent of the Townsville Campus. The JCU Townsville site is significant in size. As such the extent of development described in the long-term vision is beyond the expected academic needs of the university in the year 2035.

This Master Plan is not dependent upon future academic priorities, but rather through its framework it outlines a strategic approach to development within the site, focused upon connectedness, consolidation and engagement. Determining future academic space requirements is complex, contingent upon student population and guided by the Tertiary Education Facilities Management Association (TEFMA) benchmarks.

The short term Master Plan identifies catalyst initiatives. Most priority works offer immediate opportunity for campus engagement, including new campus entry, landscape and campus heart interventions. Other catalyst projects are necessary as they remove key constraints of the site.

As an example, the Ideas Market and north-south spine provide connectivity, wayfinding and potential for building address.

Medium term investments are focused upon the advancement of university precincts, connectivity, landscape and enlivenment.

Long term initiatives address the integration of key public sector partnerships and include residential and aged care developments and a potential secondary school.



INITIATIVES

A number of enabling projects and priority developments have been identified throughout the master planning process. These initiatives support the overall vision to create a globally significant, integrated, and tropical knowledge community, which together will transform the campus over time.

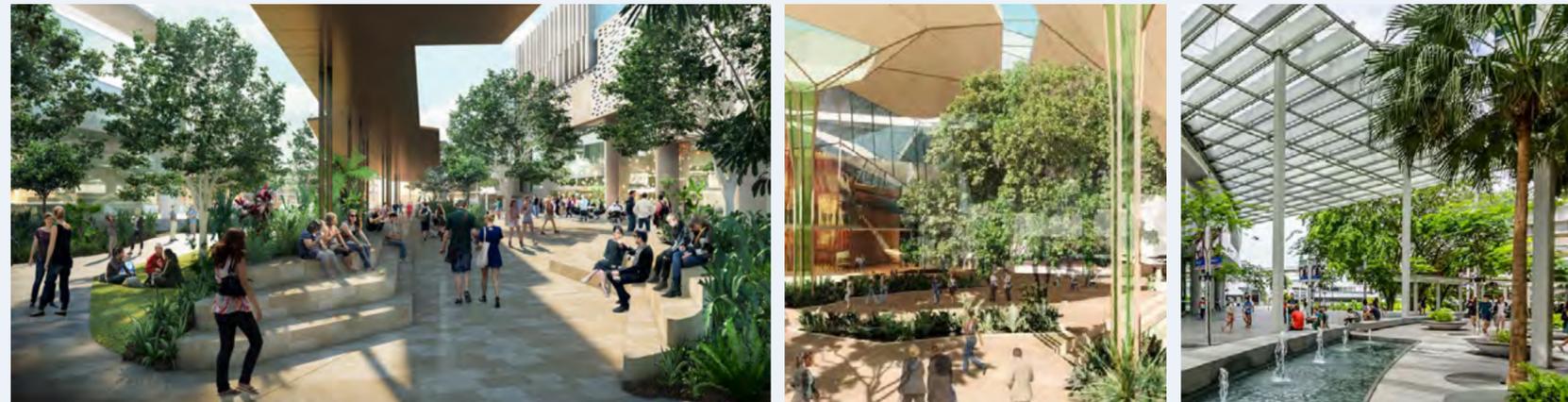
Each initiative contributes to the overall placemaking and development strategies that are outlined in the previous 'strategies' section, where they are combined into thematically similar overlays

so the overall intent of the campus can be understood. Each initiative is designed as manageable sized project that can be developed in whole or in part as a specific project. Together these initiatives will drive incremental but fundamental change across the campus.

It is important to note that the initiatives are diverse in their character, and include new events, facilities, infrastructure, policies and landscape interventions, amongst others. They are therefore relevant to a broad cross-section of the university community,

and a coordinated and collaborative approach across the various academic and administrative departments will need to be adopted to achieve the ultimate vision.

For ease of reference, the initiatives have been divided into thematically similar groupings, with priority projects identified in each section. The priority projects are considered to be those that will contribute most significantly to the transformation of the campus and are achievable in the next five years.



PRECINCTS

The campus has been subdivided into a number of precincts to help identify parcels of land and development zones, and to reduce the scale of the site into manageable portions for detailed consideration.

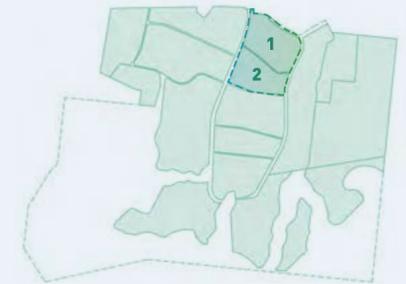
Precinct names are typically not used as part of the public way-finding system (which relies on a city-grid street and numbering system), but instead offer a useful reference for describing the various parts of a large campus.

The precinct names identified are subject to final approval, but specifically shy away from associating individual precincts to specific academic disciplines and/or colleges. The names instead seek to adopt a more neutral and agnostic attitude that encourages a more inter-disciplinary and collaborative approach to locating buildings and facilities.

Each precinct is described in three ways to assist with a detailed understanding of the Master Plan intent:

1. Existing condition
2. Built Form Master Plan
3. Landscape Plan.

Whilst there is sufficient information shown on these detailed precinct plans to understand the general intent, the plans should also be read in conjunction with the strategy overlay maps.



KEY PLAN



EXISTING CONDITION

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries



PRECINCT PLAN

CAMPUS URBAN DESIGN GUIDELINES

The Campus Design Guidelines provide overarching design direction for campus-wide design elements, such as built form and architecture, landscape and planting palettes, pedestrian shade canopies, street layout and furniture, and signature materials.

The intent for every element on campus is that it should reinforce the overall vision to create a globally significant, integrated, and tropical knowledge community. As such environmentally appropriate responses are always given a high priority, and significant inspiration is drawn from the local and global tropics.

Several other important documents that precede this one have been referenced and in some cases reproduced, including the Discovery Rise Design Guidelines and the University Design Guidelines. The contribution of these previous documents and their authors is significant, and whilst specific content and instances of reproduction are too numerous and dispersed to be identified in each case, the University acknowledges the important contribution of thought and content that has been transferred to the current document.



DEVELOPMENT CONTROLS

The development controls are an additional layer of precision in identifying lots for development rather than the current loose description of land parcels which has historically evolved from the generosity of the site and the 'buildings in a landscape' architectural response.

The lot definition evolves from adoption of the campus precincts which are generally developed from existing and proposed roads.

A series of super lots are developed using the precinct number for identity with further subdivision to building lots.

For example, Lot 2.3.5 would be Lot 5 within Super Lot 2.3 in Precinct 2.

Actual survey identity and definition of the lots is not fundamental to occur until development is proposed for the area.

It is also the case that some lot boundaries are configured based on proposed future development rather than existing development. Subdivision arrangement in the residential district is shown generically and subject to more detailed civil road design and development type.



DEVELOPMENT LOTS



BUILDING HEIGHTS



SETBACK & SITE COVER

01

INTRODUCTION



1.1 MASTER PLAN PURPOSE

This comprehensive new Master Plan for JCU Townsville Campus builds on planning work that stretches back 50 years to the Stephenson Plan of 1964, and supports further development of the campus into a lively and vibrant urban environment that embraces the opportunities and challenges of the 21st century and sits elegantly in its natural environment.

This Master Plan is permissive and encouraging of development initiatives facilitated by funded ventures.

Attracting key industry partners to the University will be a key focus.

The Master Plan recognises that priorities for investment can change significantly over time. This document is intended to provide guidance to assist and not dictate decision making.

This Master Plan is a 'living' document, and represents an indicative form only. Consequently, the plan is structured on the basis that sites are interchangeable and new forms of site development can be accommodated.

The Master Plan is guided by JCU's Statement of Strategic Intent, the University Plan and many hours of consultation with the university and internal and external stakeholders.

The Master Plan absorbs the university's Discovery Rise planning and reframes it as part of a holistic and unified response to all development considerations for the entire 378 ha campus site.

The need for a new Master Plan is driven by the university's strategy to urbanise and modernise the campus, and fulfil its mandate to augment engagement with industry and the broader community.

The Master Plan brief was formally considered to a 20 year horizon. The Master Plan does provide a framework that is likely to support development beyond that timeline to approximately 2065.

The extent to which the Master Plan is fulfilled in the 20 year timeline is subject to both internal and external capital investment.

Short, medium and long term campus forms are included that respond to current growth indicators.

1.2 CONSULTANT TEAM

The project team was appointed in November 2015, and brings together a unique set of skills and specialist expertise from a number of local and international consultancies. Cox Architecture is the lead consultant, with sub-consultants in the fields of educational space planning, architecture, landscape architecture, ESD and future city thinking. These consultants have brought specialist expertise to the consultation and design process, which has been supported by engineering consultants that have been engaged by JCU to address specific campus issues around water management and flood mitigation.

Cox Architecture's project team consultants are:

- **SpaceLogic** - Campus space rationalisation and student/stakeholder/staff consultation
- **RPS** - Landscape architecture
- **9point9 Architects** - Local architects
- **Umow Lai** - Environmental consultants
- **Geoff Roberts** - Futurist and Deputy Chief Commissioner of the Greater Sydney Commission.

The University consultants include:

- **Northern Consulting** - Flood modelling and mitigation.

1.3 CONSULTATION AND DESIGN PROCESS

This Master Plan has been very much influenced by the opinions, thoughts and ideas of a wide range of people, including the students, staff and local community.

The consultant team has conducted a number of extensive consultation sessions with the university stakeholders and the wider community, and has placed particular importance on the needs of students. In order to ensure that the Master Plan meets and exceeds these needs, the project team has undertaken in excess of 200 hours of direct student engagement in addition to the numerous surveys, consultations, and workshops with the stakeholder groups. This extensive consultation was consolidated into an Aspirational Brief, which captured the vision and aspirations that emerged during the consultation process, which has comprised:

- Interviews with the university executive
- Workshops with the Divisions and Colleges
- Discussions with university personnel responsible for the estate, retail, residential and student services
- Discussions with special interest groups – Aboriginal and Torres Strait Islander Centre, the eResearch Centre, Environmental Psychology students
- Task Groups of the university, partner organisations, government and Townsville City officials focussed on landscape & sustainability, placemaking and student life, circulation & infrastructure and Discovery Rise
- A web-based campus performance survey of students to which 2066 responses were received
- A separate web-based campus performance survey of staff to which 556 responses were received, and
- A "Big Ideas Forum" which attracted 100 staff and students which addressed the University's challenges and opportunities, led by futurist Geoff Roberts.



STAKEHOLDER GROUPS

Stakeholder groups are comprised of academic divisions and service divisions, colleges, institutes, and centres, specially formed task groups, student and staff groups.

These were established and engaged to provide information and feedback that informed the Master Plan brief at a very detailed level. In addition to the staff and students, these groups are detailed in the adjacent diagram.

Four task groups were set up to review progress at key milestones and provide feedback on particular topics. These task groups included external and community stakeholders, such as the Townsville City Council, DLGP, ADF & Lavarack Barracks, the Townsville Hospital, and Tec-NQ.

TASK GROUPS

1. PLACEMAKING AND STUDENT LIFE

Responsible for ensuring that the Master Plan catered for the full range of student life on campus, including the social and cultural activities that make for a sticky campus.

2. LANDSCAPE, ENVIRONMENT AND SUSTAINABILITY

Responsible for ensuring that the Master Plan considered, respected and carefully integrated the physical environment of the campus.

3. DISCOVERY RISE AND COMMUNITY

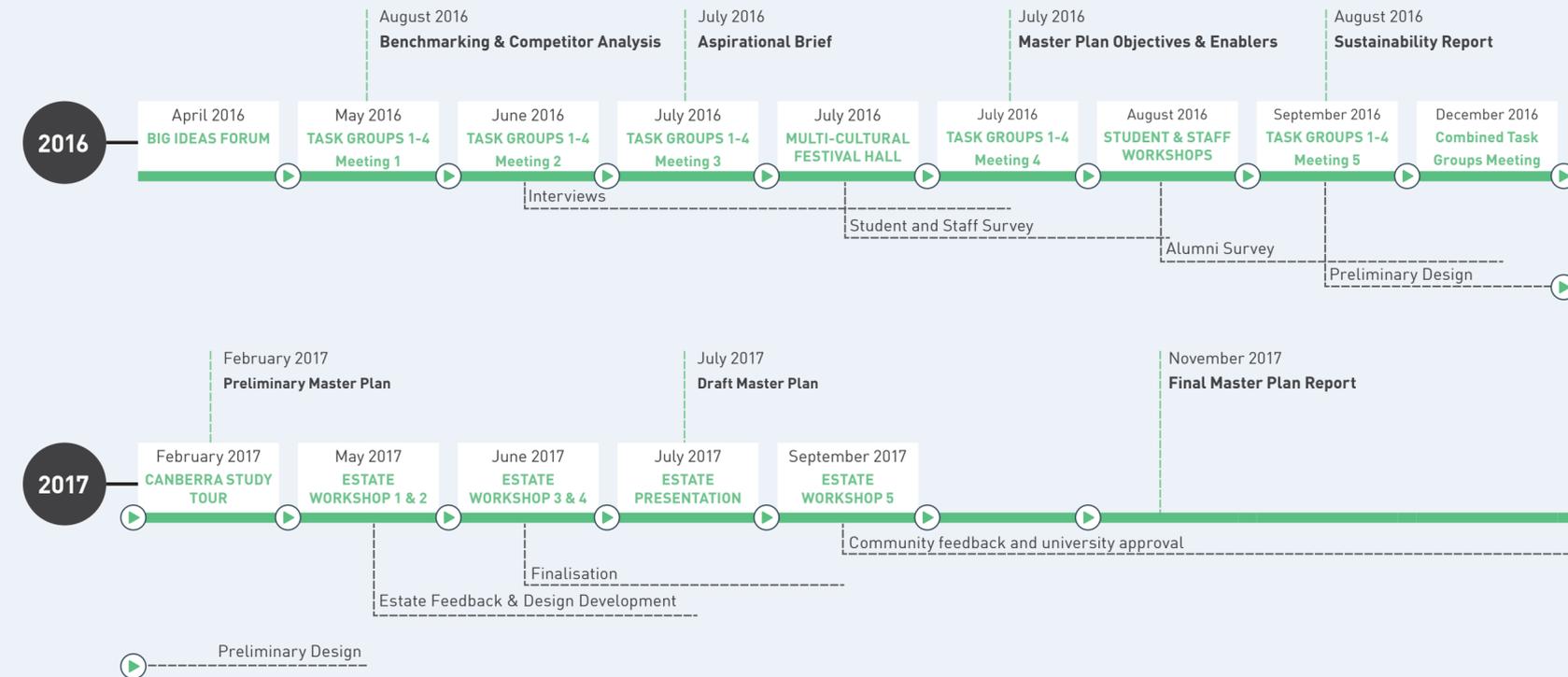
Responsible for ensuring the Master Plan understands and integrates with the rapidly growing Discovery Rise precinct and the broader community.

4. CIRCULATION AND INFRASTRUCTURE

Responsible for ensuring the Master Plan accommodates the transportation and infrastructure requirements of the campus.



1.3 CONSULTATION & DESIGN PROCESS



1.4 CONSULTATION OUTCOMES SUMMARY



NATURAL ENVIRONMENT

Equally universal was the perceived importance of the natural bushland environment of the campus and the wildlife that inhabits it. Whilst there is room for improvement in the way it is maintained, the authenticity of the campus landscape in the context of the Townsville climate and environment is valued.



LIBRARY

The Eddie Koiki Mabo Library is perhaps one of the most significant assets of the university, but there is room for improvement – more study space, more quiet space, and a completion of the internal renovations.



STUDY SPACE

A particularly significant deficiency of the campus from the student perspective is the availability and accessibility of study space, which is wanted over extended hours and in a variety of modes – individual, group and “silent” being the most keenly sought. Any strategy to attract and retain students on campus must have this as a fundamental priority.



SHADE

There is strong interest in both informal learning and socialising outdoors on campus but insufficient shade to enable this.



CONNECTION

A related issue is the need for weather protected / shaded connections between buildings. The quality of footpaths, confusing building numbering, signage and wayfinding were all identified as being in need of improvement.



FOOD OPTIONS

Also heavily criticised by both staff and students was the lack of choice, diversity and availability of on-campus food options. Both “healthy” and “fast” food are desired. Also sought are both cheap pub and more upmarket offerings. And there is a universal desire for longer opening hours.



PARKING

Parking is a very significant issue. As much as one might want to promote public transport as a responsible alternative, both staff and students are committed to the private car and the quality, cost and availability of car parking is a key issue in terms of “the campus experience”. Unpaved car parks were especially criticised.



COMMUNITY

There is a desire for a greater sense of connection between academic disciplines, between staff and students, and between the university and the wider community. Space that foster interaction and collaboration, social venues and events are seen as being important in this regard.

02

CONTEXT

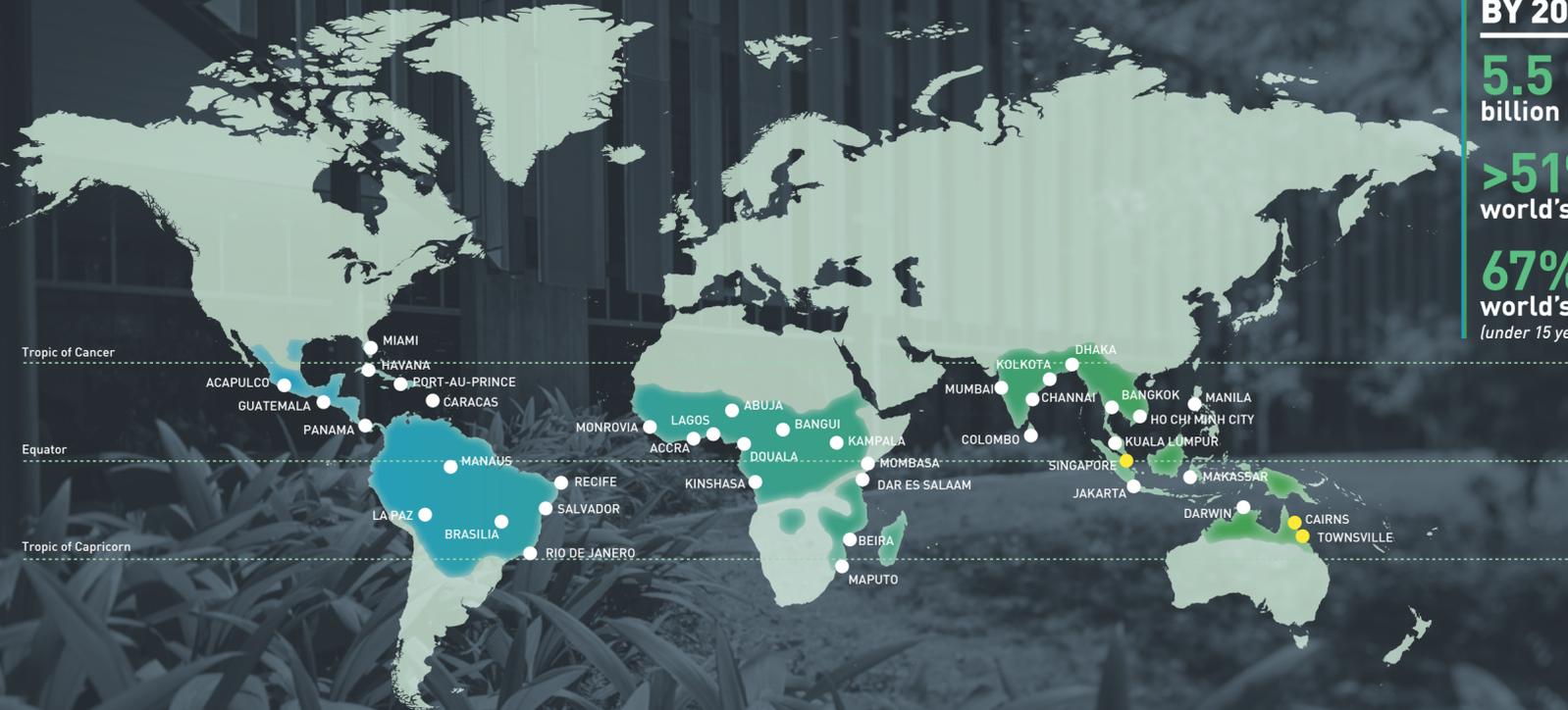
2.1 GLOBAL AND TROPICAL

James Cook University is defined by its place in the tropics. It was established as Australia's university for the tropics, and is now recognised around the world as a leading teaching and research institution that addresses critical challenges facing this region worldwide.



© Mark Ziembicki/markzphoto.com

BY 2050:

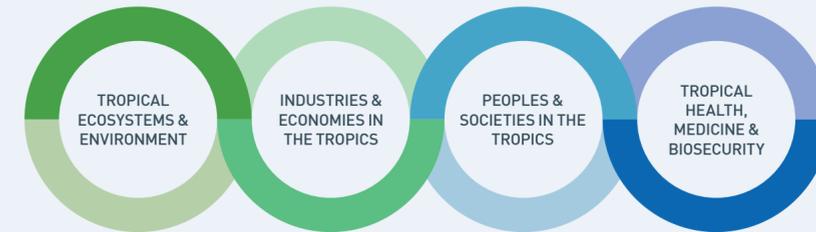


Almost half the world's population call the Tropics home. People have lived and thrived in the region for millennia, mastering their tropical domains and developing effective strategies for living in these hot and humid regions. The stunning and beautiful landscapes of the tropics are complemented by an array of diverse and rich cultures, and it is the challenges and opportunities presented by these places and people that give JCU inspiration and a reason for being.

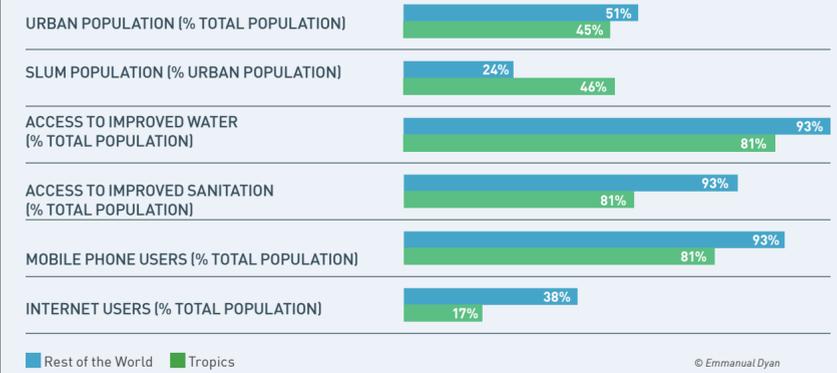
The university is uniquely positioned, as a national and international leader in teaching and research, to address many of these challenges facing the tropics worldwide, which include climate change, disease, poverty, rapid urbanisation and population growth. Several important research and development themes have emerged that will play a pivotal role in responding to the challenges and opportunities:

- Technology and Innovation (a knowledge based economy)
- Health
- Agriculture and aquaculture
- Biosecurity
- Education and industry skills - International education
- Disaster resilience/tropical planning and design.

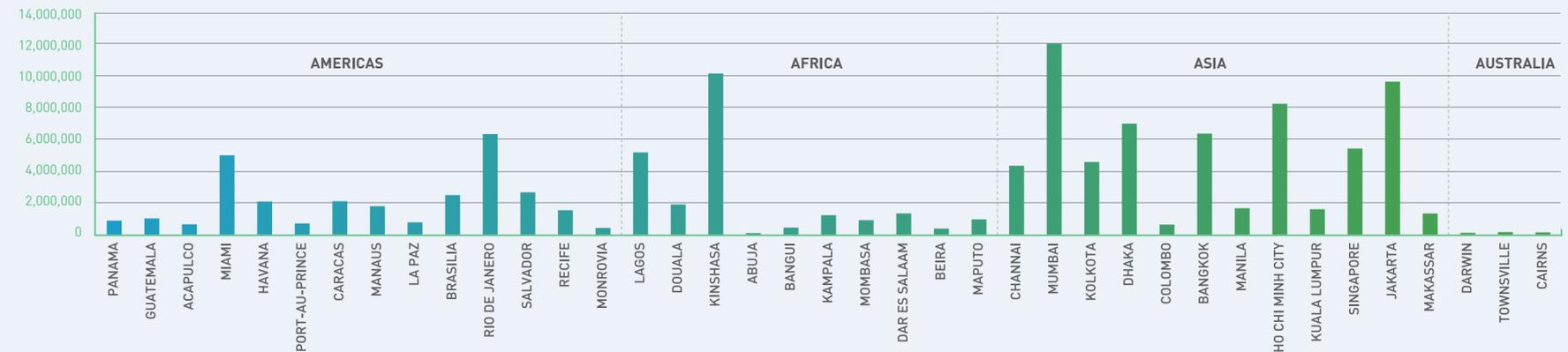
In order to support and enable this unique challenge, the university shapes its teaching, research and engagement around four themes:



THE CHALLENGES AND OPPORTUNITIES



"JCU is distinctive. The university was established as Australia's university for the tropics and for more than 40 years James Cook University has drawn scholarly inspiration from its location in the Australian tropics. The distinctive character of James Cook University is a product of our place. Collectively, the priorities of the University define us: they arise from and express the distinctiveness of the University."



2.2 A LOCAL AND REGIONAL KNOWLEDGE ECONOMY

JCU's main sites are located in Tropical Northern Queensland, a remarkable region where over a million visitors come each year to experience.



CAMPUSES

CAIRNS
SINGAPORE
TOWNSVILLE
BRISBANE



STUDY CENTRES

ATHERTON
MACKAY
MT ISA
THURSDAY ISLAND



RESEARCH STATIONS

FLETCHERVIEW
ORPHEOUS ISLAND
DAINTREE RAINFOREST
OBSERVATORY
PALUMA



\$73
MILLION
JCU RESEARCH INCOME

1,500
INTERNATIONAL STUDENTS IN TOWNSVILLE

THE KNOWLEDGE ECONOMY

Economic growth in many developed economies is increasingly driven by knowledge, and it is this strategic 'asset' that is now widely recognised as the primary driver of productivity and economic growth. This significant shift has led to a new focus on the role of information, technology and learning in the economic performance of cities and regions, and an increasing importance of educational institutions around the world.

The knowledge economy is regarded as the most recent stage of development in global economic restructuring, and knowledge is now recognised as the driver of productivity and economic growth that can lead to a new focus on information, technology and learning. This transition is already well underway across Australia as the country moves from a minerals to a knowledge based economy. This shift will underscore JCU's importance for the city and region, which will continue to grow over the next fifty years as it naturally becomes a significant jobs and revenue generator despite the knowledge economy being under-represented in policy settings for North Queensland and Townsville.



Digital transformation and increased life expectancy will drive people to work longer and seek jobs that rely on human capital and knowledge, placing JCU in a prime position to take advantage of this shift by offering world-class opportunities for learning, teaching and research. Key themes and characteristics of the knowledge economy include:

1. Products and services with added value that command price premiums due to the underlying knowledge
2. Focused research driving investment and economic decisions
3. Stable and secure communication systems to assist with information flow and storage
4. Proximity vs distance, and the contradictory benefits of working closely vs working apart
5. Information security and the protection of knowledge as an asset
6. Human capital, and the emphasis on skills and competency.



Characteristics of the Knowledge Economy

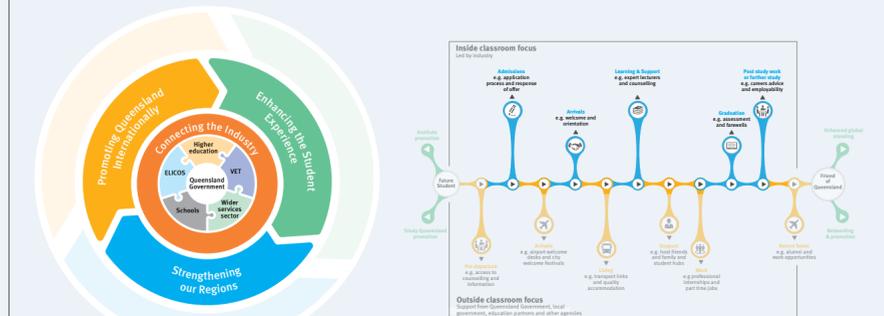
GLOBAL EDUCATION MARKETPLACE

As the world moves towards an ever more integrated and connected global economy, JCU finds itself competing for and attracting students from around the world who are looking for unique, specialised and highly regarded qualifications. This demand for will continue to grow and there is a significant opportunity to increase the number of international students (15%) that attend JCU to bring the representation compared to other Australian universities closer to the proportionate population figure of 26%.

PROMOTING INTERNATIONAL EDUCATION

International education and training is Queensland's second biggest service export and is vital to the future prosperity of the state. During 2015, international education in Queensland contributed \$2.8 billion in export revenue, supported 19,000 jobs, and hosted more than 100,000 students coming from over 160 countries. The contribution of international education to the Queensland economy takes a variety of forms and materialises across an array of sectors. Students contribute via their expenditure on tuition fees and study materials as well as their expenditure on accommodation, transport and their broader living costs. International education also spurs economic activity via the flow-on tourism it stimulates, which primarily includes expenditure by friends and relatives who travel to Queensland to visit an international student.

The significance of this sector is recognised by the state government, who have put in place a strategy to grow and support the industry. The Queensland Government has committed \$25.3 million over five years to fund initiatives under four strategic imperatives: Promoting Queensland Internationally; Enhancing the Student Experience; Growing our Regions; and Connecting the Industry. JCU intends to fully support and engage with this initiative.



QLD Government International Education Strategy

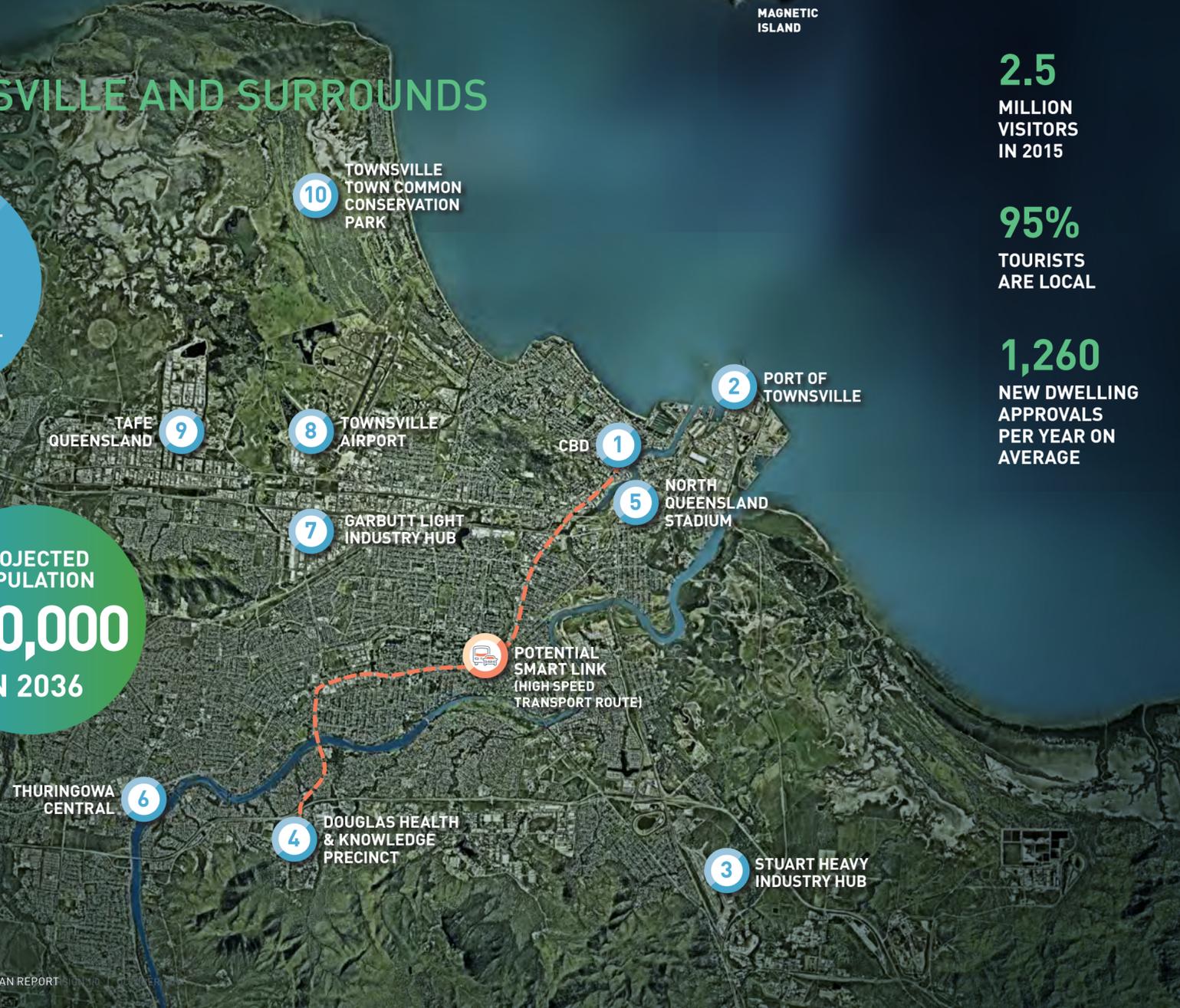
QLD Government International Education Partnership and Promotion Strategy

2.3 TOWNSVILLE AND SURROUNDS

\$11.1
BILLION
GROSS REGIONAL
PRODUCT

CURRENT
POPULATION
194,000
IN 2015

PROJECTED
POPULATION
300,000
IN 2036



2.5
MILLION
VISITORS
IN 2015

95%
TOURISTS
ARE LOCAL

1,260
NEW DWELLING
APPROVALS
PER YEAR ON
AVERAGE

TOWNSVILLE

The university has a symbiotic relationship with the City of Townsville and this is an important factor in the growth and prosperity of both. JCU is an important contributor to the city's economy, attracting people (staff, students and visitors) and investment. The City provides JCU with a sense of "place" and identity; infrastructure such as transport, retail services and accommodation; cultural and social context and recreation and leisure.

Townsville has a relatively young demographic with strong economic fundamentals and is the largest city in Tropical Australia. It is a leader and standout in the region as gateway for agriculture, mining, education, military and home of the key Great Barrier Reef Authority. Some of the important attributes of the city include:

- Location of two universities in Northern Queensland - James Cook University (JCU) and Central Queensland University (CQU)
- Substantial Port Activity as an import and export destination
- Townsville Base Hospital as the Regional Hospital
- Military base as one of the largest in Australia supporting Army and RAAF
- Key centre and world leader in Tropical Research in Coral and Tropical Medicine through JCU and AIMS
- Headquarters of the Great Barrier Reef Marine Park Authority GBRMPA
- Significant Cultural Community and established events
- Home of the North Queensland Cowboys Rugby League Team
- Home to the JCU Fire (women's basketball team sponsored by JCU).

As a city that hosts a university, Townsville lacks some of the vibrancy and attractions of a capital city or a tourist destination such as Cairns. It is also too big and too dispersed to create the palpable sense of student community that exists in cities such as Dunedin in New Zealand or the university towns of the UK and Europe. But its location in the tropics and proximity to the Reef, in combination with the courses related to these, are attractive to students from cold climate regions such as Canada, the US and Europe.

Whilst the university community remains based at the main campus in Douglas, the university has opened its city campus to support the work of the Townsville City Council and the City Deal in revitalising the city core and creating employment opportunities. The current concern of the city council regarding the shifting "centre of gravity" away from the CBD should be rectified by the development of the North Queensland Stadium and other projects in the priority development area, as well as the array of projects identified in the 2017 Townsville Master Planning document. This should see the CBD growth balanced by growth of local activity centres around the city, including the JCU campus at Douglas, which is seen as a complementary centre to others around the city. These hubs include:

1. Townsville CBD
2. Port of Townsville
3. Stuart Heavy Industry Hub
4. Douglas Knowledge Precinct.

TOWNSVILLE CITY DEAL

The Townsville City Deal is a potentially transformative initiative that seeks to leverage the existing strengths of the city and grow the local economy to be an economic gateway to Asia and Northern Australia. It also aims to create a prosperous and lifestyle-rich city for its community and visitors, and seeks to reinforce the city as the economic gateway to Asia and Northern Australia and a...

"global leader in tropical and marine research and innovation."

There are six key initiatives that the City Deal seeks to implement, all of which are supported by the University and the Campus Master Plan. These include initiatives such as creating integrated health and knowledge hubs, improving public transport solutions, securing energy and water supplies, supporting international education and training, and evolving as a smart, technologically enabled smart city. These initiatives are grouped around these themes:



Townsville City Deal Initiatives

Townsville features a diverse economic base, with no industry contributing more than 18% to Gross Regional Product. Port of Townsville is a key strategic asset for the region servicing the North West Minerals Province and North Queensland agricultural sectors.

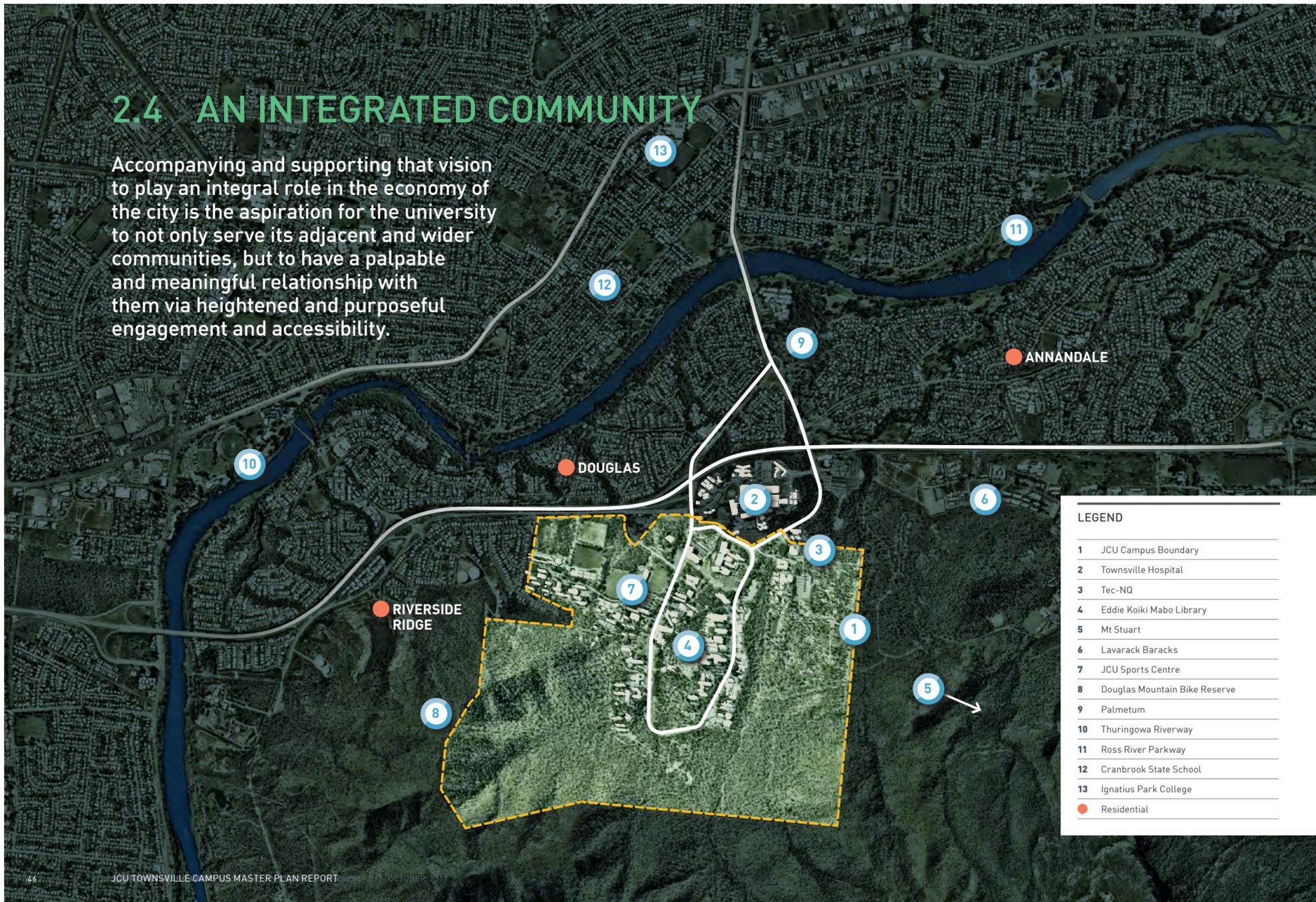
MAJOR INDUSTRIES IN TOWNSVILLE INCLUDE:



Townsville Economic Development Scorecard, Townsville City Council - April, 2016

2.4 AN INTEGRATED COMMUNITY

Accompanying and supporting that vision to play an integral role in the economy of the city is the aspiration for the university to not only serve its adjacent and wider communities, but to have a palpable and meaningful relationship with them via heightened and purposeful engagement and accessibility.



LEGEND

- 1 JCU Campus Boundary
- 2 Townsville Hospital
- 3 Tec-NQ
- 4 Eddie Koiki Mabo Library
- 5 Mt Stuart
- 6 Lavarack Baracks
- 7 JCU Sports Centre
- 8 Douglas Mountain Bike Reserve
- 9 Palmetum
- 10 Thuringowa Riverway
- 11 Ross River Parkway
- 12 Cranbrook State School
- 13 Ignatius Park College
- Residential

2. THE TOWNSVILLE HOSPITAL

The Townsville Hospital is a public tertiary care hospital that provides healthcare across the entire North Queensland region, with patients from as far as Mount Isa and Cape York being airlifted or transported to the Hospital on a daily basis. This is the third general hospital to be built in Townsville and is relatively new (completed 2001). The next main referral hospital is the Royal Brisbane and Women's hospital, in Herston, Brisbane some 1,375 kilometres (854 mi) distant. The Townsville Hospital currently has over 580 beds.

- Health and Tropical Diseases
- Translational Research

3. TEC-NQ

Tec-NQ provides a range of training and educational programs to Townsville and the North Queensland region including full-time apprentice training, on demand industry training, pre-employment programs and school-based apprentice programs.

- Collaborative research, teaching and learning for built environment disciplines

4. EDDIE KOIKI MABO LIBRARY

The university library is the centre of the university campus, and has the capacity to become a pivotal place for meeting and learning within the community.

- Significant Knowledge Hub for Community

5. MT STUART

Mount Stuart is an iconic feature in the Townsville landscape, and is a popular outdoor recreational area, including trail running, mountain biking and rock climbing. It was named for Clarendon Stuart (1833-1912), from 1859 Townsville's first district surveyor.

- JCU as an Eco Tourist
- Hiking Gateway to Mt Stuart

6. LAVARACK BARRACKS

Lavarack Barracks is a major Australian Army base that is currently home to the Army's 3rd Brigade and 11th Brigade. Population growth and the desire to develop northern Australia saw the base opened in 1966 and many of the Australian troops to serve in Vietnam had at some point been based at or transferred through Lavarack Barracks.

- Defense Housing
- Health and Fitness Research
- Robotics and Technology

7. JCU SPORTS CENTRE

Students at JCU Townsville have excellent sporting facilities on campus plus plenty of sporting clubs for participating and making friends.

- Expansion to cater for and attract Local Community
- Health and Fitness Research facility for medical disciplines

8. DOUGLAS MOUNTAIN BIKE RESERVE

The Douglas Mountain Bike Park is home to the city's original and most renowned trails. The trail park boasts 30km of predominantly cross country trails including a beginner's loop and skills park that can be accessed from the parking lot on Angus Smith Drive. The trails are also easily accessible from the shaded bike path following the Ross River which takes riders from the city to within a few kilometres of the trail-head.

- Citywide recreation hub and tourist attraction / Departure point

9. THE PALMETUM

Opened in September 1988, the Palmetum is a botanical garden covering 17ha that features only one family of plants, the palms. Approximately 60 species of palms are native to Australia; most are represented. The collection contains about 300 species; many rare and threatened in their natural habitat.

- Collaborative Research
- Research and Tourism
- Destination Synergy with JCU Arboretum

10. THURINGOWA RIVERWAY

Thuringowa Riverway is a riverfront parkland attraction located in the Condon Suburb of Townsville that opened in July 2006. It stretches along 11 km of the Ross River, with areas at Pioneer Park, Loam Island, Apex Park and Ross Park at the Ross River Dam. The Riverway Arts Centre is the centrepiece of a much larger project, firstly to rehabilitate the Ross River, and secondly to create a community heart in a city where shopping malls governed social interaction.

- Local Amenity / Complimentary arts, culture and sports facilities

11. ROSS RIVER PARKWAY

The Ross River Parkway is a series of parks, community facilities and pedestrian bridges which stretch from Twin Cities Bridge, Douglas to Rooney's Bridge, Railway Estate which are interlinked by more than 30 kilometres (19 mi) of shared use pathways.

- Local Amenity
- Cycle Connection to City

12&13. CRANBROOK STATE SCHOOL & IGNATIUS COLLEGE

Cranbrook State School currently has more than 500 students enrolled, while Ignatius Park College is an all-boys' school with over 1000 students. They are both significant high school education providers in the immediate vicinity of JCU, and represent an excellent opportunity for engagement, employment and educational collaboration. Engagement with other schools beyond this immediate vicinity should also be continued.

- Shared teaching and learning for greater awareness and local recognition
- Student employment



2.5 THE TROPICAL SETTING

1970

FOUNDED 20TH APRIL

379

HECTARES

13KM

FROM THE CBD

154,000M²

FLOOR AREA

6 RESI

COLLEGES

AVERAGE ANNUAL
RAINFALL:
1,143 ML

AVERAGE
TEMPERATURE:
29 °C

CLIMATE
CLASSIFICATION:
TROPICAL
SAVANNA
CLIMATE (AW)

PREDOMINANT
BREEZES:
SOUTHEAST
TRADE WINDS

VEGETATION:
DRY TROPIC
SAVANNAH
WOODLAND

THE TROPICAL CAMPUS

The JCU Townsville campus is set in a natural bowl on the foothills of Mount Stuart, roughly 13km from the city centre. The tall gum trees and dry tropical Savannah vegetation, along with the peaks and rises that surround the university, impart a unique and distinctive bushland character to the campus.

Staff, students and other visitors typically embrace the natural setting and the wildlife that it brings, and adapt to the hot and humid conditions that dominate the summer months. The challenges of the dispersed campus and its typically isolating architecture are widely recognised, and there is a very strong desire by the entire community to more fully embrace the tropical setting with more appropriate infrastructure, shade, landscaping, and a more open and engaging architecture.

Geographic features and the incorporation of sightlines to significant landscape features distinguished the campus site planning of the 1960's, celebrating visual connections to the Mount Stuart, the amphitheatre to the west, and Magnetic Island to the east, thereby instilling a reverence for the landscape as a visual, as well as ecological and experiential resource. Compounding this reverence is the growing appreciation of the landscape for its biodiversity and rich associations with Aboriginal culture and history.

VEGETATION

A scattered and relatively low tree canopy is dominated by eucalyptus, and growing amid the granite soils, rocks and outcrops is an understorey of dense grasses. Development at the periphery of the campus is 'wrapped' by natural Savannah, and a modified, more manicured central landscape includes vegetative elements of the surrounding landscape amid an amenity setting.

CLIMATE

The dry tropical climate provides sunshine for most of the year, but the high temperatures, bright sunlight, lack of moisture in the winter, and the prospect of severe flooding in the summer have a profound effect on all aspects of life and landscape. Owing to a quirk of its geographical location, Townsville's winter rainfall in particular is not as high as elsewhere in the coastal tropics of Queensland, although the region is certainly prone to significant flooding - as evidenced in recent years when James Cook Drive has been inundated by floodwaters.

Summer months are hot and often humid, while winter months are dominated by blue skies, warm days and cool nights. Like most of North Queensland, Townsville is susceptible to tropical cyclones, which usually occur between December and April, forming mainly out in the Coral Sea, and usually tracking west to the coast.

The following commentary was identified during the extensive staff, student and alumni consultation:

DEFINING CAMPUS CHARACTERISTICS

- Fauna - wallabies, bush turkeys, birdlife
- Open space
- Views of the bush and the hills beyond
- "Dry tropic" landscape / trees
- Wadda Mooli and Goondaloo Creek
- The Eddie Koiki Mabo Library and the Ken Back Chancellery

CAMPUS DEFICIENCIES

- Weather protected links between buildings
- Food and beverage services outside 8am - 3pm
- Places for outdoor learning / socialising / chilling (shade and grass)
- Places to belong (academic communities)
- More / better places for informal learning and group study
- No "front door"
- Lack of identity
- Lack of vitality / sense of activity
- Lack of connection / places to support interaction and collaboration
- Manifestation of environmental sustainability
- Ugly grey buildings
- Acres of bitumen (car parks)
- Navigation, wayfinding and illogical building numbering system
- Safety at night
- Chaplaincy facilities
- "Maker" spaces
- Lack of community facilities / engagement
- Lack of "landmark" congregation spaces other than the library



2.6 EXISTING CONDITIONS, CONSTRAINTS & CONSIDERATIONS

The JCU Townsville campus has a number of inherent conditions, constraints and other considerations that require a full investigation and understanding before any significant planning work can be undertaken.

These major considerations were identified during the Master Plan consultation process, and also through a separate review of pre-existing campus reports and studies.

Major considerations that affect the form and development potential of the campus include the:

1. Steep, rocky and unstable terrain to the south and east
2. Biodiversity and conservation value of the natural environment, particularly on the foothills and adjacent to the waterways
3. Major drainage routes of the two creeks that dissect the campus and create significant overland flow and flooding in major rain events
4. Heritage places and features, including indigenous, colonial, natural environment and recent master planning places
5. The estate initiative to consolidate the campus and demolish impaired and functionally obsolescent facilities.

It is important to note that some of the information included here requires further detailed investigation, and which should be undertaken.



GEOLOGY & TOPOGRAPHY

LAND IDENTIFIED AS BEING OVER 10 DEGREES SLOPES IS CONSIDERED TO BE UNSUITABLE FOR DEVELOPMENT

- Constructibility on hill slopes above 10%
- The main Geotechnical issues identified during the site investigation, in relation to the proposed development described above include:
 - Slope stability issues
 - Presence of intermittent watercourses through the campus with potential for high velocity and high volume flows during rainfall events
 - Potentially extensive earthworks requirements
 - Erodibility of soils, particularly over the northern portion of the site
 - Excavation conditions in areas of exposed/shallow weathered granite.

LEGEND

Inferred Geological Boundary	Zone 3 - Potential Landslide
Boulders + Cobbles	Zone 4 - Potential Debris Flow
Outcrop	Foothill Slope Above 10°
Zone 2 - Unlikely Landslide	



NATURAL ENVIRONMENT

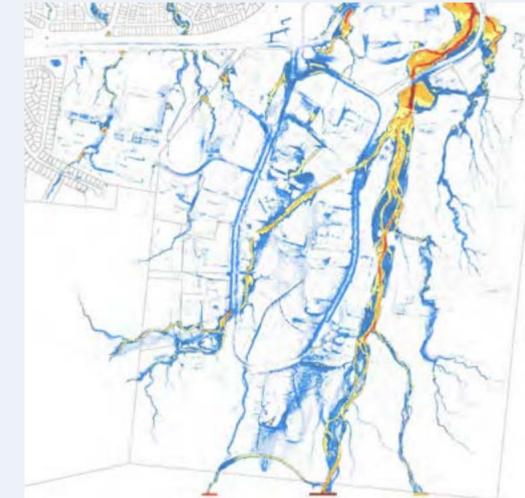
Areas containing biodiversity values important to the education program implemented by JCU should be preserved. Clearing of vegetation or construction of permanent buildings is not recommended riparian zones. Low impact development to enhance public awareness and access around the campus is a possibility. This could include walkways, seating and unobtrusive signage but should be in consideration of impact to the values of high conservation areas.

Natural values of Goondaloo Creek (University Creek) need to be preserved including:

- Maintaining the creek as a relatively unaltered corridor for land and water bound species from the Ross River to upper (southern) reaches
- Preserving a natural habitat for the spawning and growth of numerous native fish species.

LEGEND

Zone A - High Conservation	Zone C - Low Biodiversity Value
Zone B - Medium Biodiversity Value	Zone D - Area Not Investigated (Above 22 Degree Slope)
Zone E - Academic Core	



FLOODING

Given the dry tropical setting of the Townsville area, gullies and creeks flowing through the site are ephemeral, in that they only flow after periods of high rainfall. This predominantly occurs in the summer months of December to March or "wet season". Maintenance of water quality is important as the site is located in the upper reaches of the Ross River catchment.

Consideration should be given to the construction of flood retention and stormwater treatment facilities for developments occurring adjacent to waterways following the completion of hydrological investigations.

Currently there are significant flood issues across the campus which need to be addressed, primarily north of Wadda Mooli Creek and along Discovery Drive.



HERITAGE PLACES

JCU has sought to adopt best practice principles and conservation practices outlined in the Burra Charter, and various places have been identified to date that have conservation and heritage value, as outlined in the diagram above. Consultation is ongoing, and whilst there are some places that have been identified in this document, JCU recognises that there are a broader range of places that can be recognised and conserved, including indigenous and colonial elements, objects, spaces and views, with both tangible and intangible dimensions.

LEGEND

Axis based on 1964 Master Plan	Historic Stock Route
Eddie Koiki Mabo Library	Joe Baker Field
Chancellery	University Halls
Indigenous Interpretive Landscape Garden Trail	Ring Road
	Camp Fires



SPACE RATIONALISATION PLAN

The Space Rationalisation and Campus Consolidation projects seek to increase activity and collaboration by concentrating accommodation north of the Eddie Koiki Mabo Library and decommissioning buildings that are south of it. The Space Rationalisation project is an enabler of the consolidation, seeking to reduce poorly utilised and obsolete space on campus. A total space saving of the order of 20,000 sqm. (GFA) has been targeted under this project.

2.7 UNIVERSITY CULTURE

13,065
STUDENTS

3,555
STAFF
MEMBERS

5.3%
STUDENTS
ABORIGINAL &
TORRES STRAIGHT
ISLANDER

57%
OF STUDENTS ARE
FIRST IN FAMILY TO
ATTEND UNIVERSITY

137
RESEARCH STUDENT
COMPLETIONS P.A.

\$73M
RESEARCH INCOME
PER ANNUM

1,823
RESEARCH
PUBLICATIONS
PER ANNUM

STAFF AND STUDENTS

The topical agenda of the university and the courses it delivers under this banner are highly sought after by the students and staff alike, and this has resulted in a reasonably strong sense of belonging within disciplines and individual courses. There is, however, no strong and overarching identification with the broader community and global tropical focus across multiple disciplines, which in most part is due to the lack of a true campus heart that supports large community gatherings and acts as a meeting place. This is particularly so with the staff, who recognise the "university for the tropics" is a clear strategic intent, but still struggling to shift from traditional location-agnostic teaching delivery methods. In this sense, the university is yet to fully transition from seeing itself as a regional service provider to being a specialist, globally-significant knowledge and innovation hub.

As expected, students attending the Townsville Campus are drawn from a mix of Townsville, regional, interstate and international locations. While there are variances across the disciplines, there are some aspects of the student cohorts that are different from those of capital city universities:

- A significant number of Australian Aboriginal and Torres Strait Islander students (4% of domestic students), reflecting the significant indigenous population of Townsville (the largest of a major city in the country) and of the wider region
- A high number of regional (North Queensland) students (17% of domestic students)
- Undergraduate students who are "first in family" (i.e. the first in their family to attend a university), from low socio-economic backgrounds, who are mature age or are spouses of military services personnel stationed in Townsville
- An international student cohort that is typically lower in percentage terms to that of other universities but, with the exception of the health disciplines, a high proportion of North American and European origin as opposed to the Asian-dominated populations of capital city universities.

Demand for student places varies. In some disciplines (e.g. Medicine) demand outstrips supply by a considerable margin, but this is common in Australian universities and is influenced by the limited availability of clinical placements. In others, current numbers are lower than previous years and many of the colleges have capacity for more. A particular issue for the university is attracting high-achiever school leavers who are actively courted by capital city universities such as UQ, Monash and ANU.



The university has a clear desire to increase the uptake of high-performing local students, and also to promote the graduation rate of its Aboriginal and Torres Strait islander cohort.

RESEARCH

An important objective of the university's recent restructure that created the two academic divisions has been to promote multi-disciplinary, translational research. This is supported by the leadership teams at both divisional and college level, and has been given further impetus by shifting government funding priorities that focus on systems outcomes rather than traditional discipline-based investigations.

The campus and the buildings and facilities within it have an important role to play in achieving this objective. The Campus Consolidation project and new buildings such as The Science Place, Australian Institute of Tropical Health and Medicine (AITHM) and the proposed Technology Innovation Complex are important initiatives to address this, but there remain some significant impediments to the creation of a connected and cohesive research community on campus:

1. The dispersed and separated campus results in a dislocation of research teams
2. The limited number of creek crossings and the visual barrier that these create mean that the various campus precincts are largely invisible to each other
3. Traditional discipline-based precincts have emerged, along with discipline-specific infrastructure in each of these precincts, further reinforcing separation.

It will be an important task of the Master Plan to bridge these separations and create a sense of one cohesive, collaborative academic community.

LEARNING AND TEACHING

Learning and teaching at JCU is evolving from a focus on traditional didactic pedagogy to a spectrum of teacher-centred and learner-centred approaches, whilst the learning experience for students is shifting from solely lecture theatre / classroom / laboratory formats to an increasing emphasis on blended learning. This shift in pedagogy has resulted in a significantly changed requirement for learning and teaching spaces, and new forms of space should be provided to accommodate this shift, including TEAL, maker, collaboration and other supports spaces, in addition to informal learning and outdoor teaching spaces. It is important that academic staff are supported in exploring how to teach in these new spaces and how to operate and leverage the new technologies.

No. ONE
Worldwide for
Marine Biology

No. TWO
In the world for
biodiversity
conservation
research

Top 300
Worldwide
ranking

2.8 INDIGENOUS HERITAGE



THE ORIGINAL 1964 STEPHENSON PLAN

Acknowledging the First Nation peoples of the world, their rich cultures and their knowledge of the natural environment, we pay particular respect to Australian Aboriginal and Torres Strait Islander peoples, the traditional custodians of the lands and waters of Australia. We are pledged to achieve genuine and sustainable reconciliation between the Aboriginal and Torres Strait Islander peoples and the wider community.

(JCU Statement of Strategic Intent)

All Aboriginal and Torres Strait Islander people in Australia have a strong sense of connection to their ancestral land. Land for Indigenous Australians is more than a geographical place. It is a place where the Indigenous sense of belonging is created - where communities, family, culture and identity come to be intrinsically linked with the land, sea and sky. For thousands of years this relationship has shaped Indigenous people's sense of who they are, their place in the universe, their systems of knowledge, language, and social organisation. Ancient Indigenous narratives speak of ways of knowing and being in the natural world and provide important referents for how we can continue to shape the world we live in today.

The JCU site rising from the base of the Mt Stuart range provides an outstanding setting to articulate local Indigenous stories. This, plus existing elements and activity on campus provide the foundations for creative research, interpretation and inspiration which will inform landscape design, art built in and public art responses. Key resources include:

- The region's Indigenous stories pre-settlement, settlement and contemporary experience
- Landscape, flora and fauna, past, present and future relationships and uses.
- Research, teaching and learning by and with Indigenous people at JCU with Indigenous communities locally, nationally and internationally.

JCU's role with Australia's Indigenous community cannot be underestimated. The most celebrated example being the significant friendships Eddie Mabo formed while working at JCU and the role these played later in life as part of his journey to the High Court of Australia. Consequently Eddie has been honoured through the naming of the JCU Townsville Library. Less well known but perhaps of equal weight is the pioneering research of Professors Reynolds and Loos into the recent history of settlement, conflict and race relations.

As general principle under this Master Plan, local Indigenous narratives strive to be embedded in relevant aspects of planning and development on the Townsville campus. This is particularly so with respect to preservation, enhancement or modification of landscape. Planning and design aim to create the opportunity for staff, students and visitors to read and understand the landscape with reference to customary narratives and practice.

LOCAL KNOWLEDGE BASE

Although JCU has a prodigious knowledge base on Indigenous matters across many disciplines, there is not a repository of site specific information for the Townsville campus and surrounds. With this in mind PVC Indigenous Education and Strategy is leading the collection of an archive of material relevant to the JCU Townsville property and surrounding areas. The narratives and information that emerge from this process will inform developments such as Connections to Country.

CONNECTIONS TO COUNTRY

It is inescapable that physical and spiritual connections to land are at the core of Indigenous culture, or at the very least the most visible and tangible elements. The Connections to Country proposal contemplates a cultural journey on foot through the landscape at JCU Townsville from highly contrived modern and even confronting contemporary built landscapes to natural and unaltered landscapes. Connections to Country is described in Part 2.8 - p105 of this Master Plan.

The journey may be taken in part or in whole, but if taken as a whole the traveller will gain an appreciation of customary Indigenous society and their own journey from before European settlement to contemporary contexts and future directions.

CURATION

To maintain factual integrity, artistic merit, durability, legibility and coherence, curatorial oversight is required across the site. Done well, projects such as the Connections to Country journey have the potential to be exemplars of national and international renown. The risk is that well-meant but poorly conceived and executed work will become an embarrassment to the university and an insult to the Indigenous community it is supposed to celebrate. This risk will be mitigated through the periodic engagement of a well-qualified curator who has a deep understanding and commitment to the project vision.

The full development of the journey through a number of disparate elements will take some years. To ensure quality, coherence and continuity over time the overall plan needs to be worked up early with expert curatorial input and broad consultation to allow the pieces to fit well together as they are produced.

NAMES

Local and relevant language names are to be adopted wherever possible. A good example of 'relevant' naming is the Anetyeke garden in Alice Springs, named from 'mwerre aneyeke' in Arrrente language meaning 'a good place to sit'. Good places to sit are at the heart of this plan.

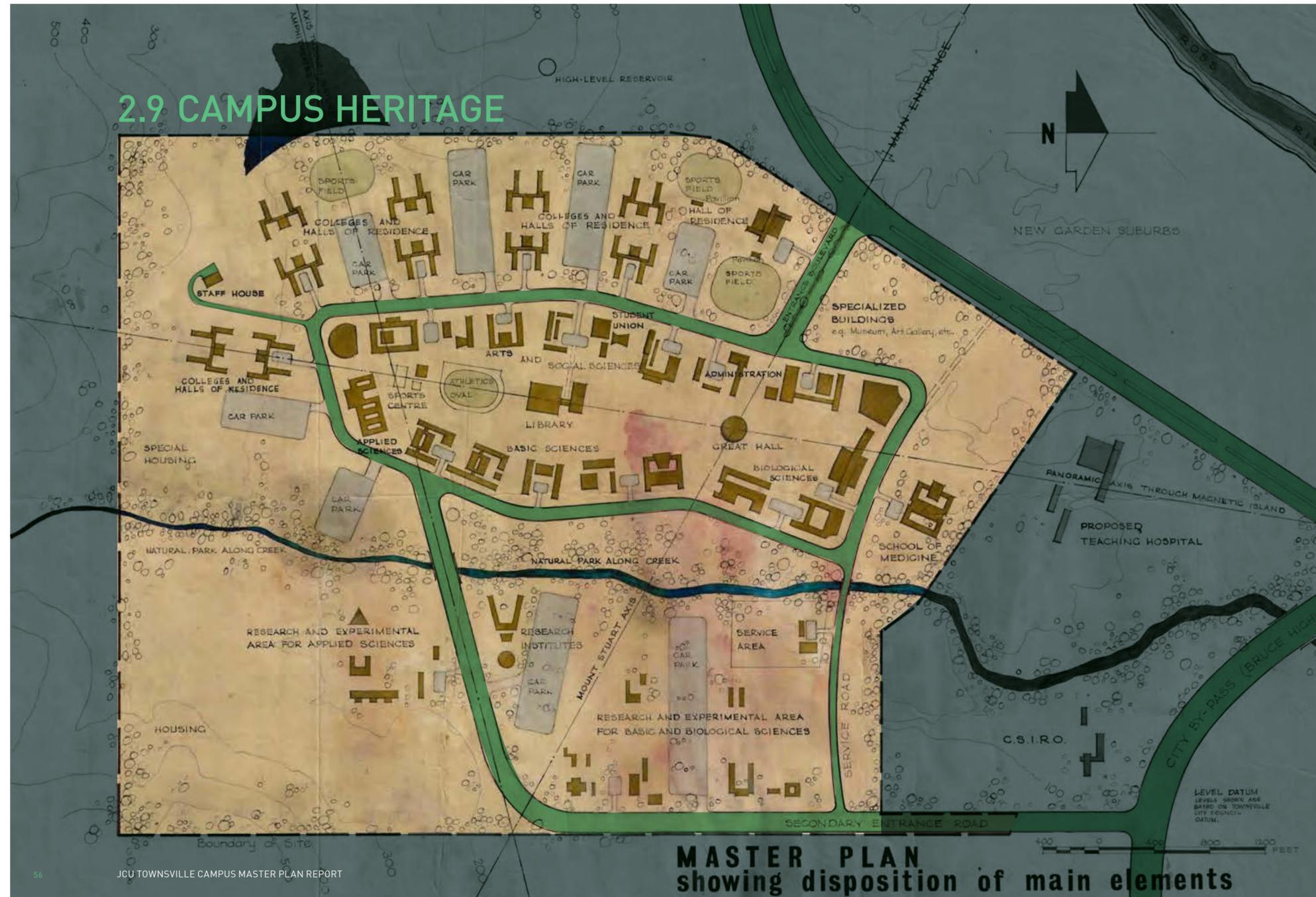
Currently there are only two local Indigenous geographical names on campus - the two creeks, - Goondaloo and Wadda Mooli. There are naming opportunities in new roads, gardens, pathways and gathering places.

TANGIBLE OUTCOMES

The physical manifestation of all of the above will include:

- Local welcome to country and a ground map installation that outlines the Connections to Country journey and the various way points
- Contemporary 'big art' that engages, challenges, is provocative and entertains. The artistic responses can be edgy and arresting and should not shy away from referencing past traumas
- More literal and public art with a clear didactic purpose
- Shade structures with culturally symbolic elements
- Useful plant gardens containing traditional food and medicine plants, utilitarian plants for tools, and habitation and other plantings of cultural significance such as for decoration
- Interpretive signage as well as geo-referenced applications on smart phones or tablets. The latter can be transformational in helping the non-Indigenous people 'see' the landscape through Indigenous eyes.

2.9 CAMPUS HERITAGE



MASTER PLAN
showing disposition of main elements

THE ORIGINAL 1964 STEPHENSON PLAN

Since its inception, campus planning has responded to the landscape setting and the cultural mores of the time. Additionally and significantly, campus planning and design has often spearheaded spatial planning philosophy and practice at a broader level as models for development, stewardship and civitas.

Development of JCU's Townsville campus followed a proposal in 1957 to establish a regional university college in Queensland and on 19 May 1960, State Cabinet announced that a university college would be established at Townsville. Successive Master Plans have built on the original plan developed in 1964 by Stephenson and Birrell.

The original plan for JCU Douglas reflected a 'back to nature' ethos as benefiting academic and social maturity at a time when space was abundant and the private motor vehicle ensured access and convenience. The plan contrived to harness the distinctive landscape qualities of the site with the pursuit of academic practice and campus as chrysalis for personal growth, creating an enduring legacy for the campus. Crucially, this plan envisioned several key features of the precinct, some of which have been implemented and others of which are included in the 2017 Master Plan, including:

- Hospital
- Arterial bypass
- Future residential
- Water bodies.

Other key features of the 1964 Master Plan include:

- Decentralized campus of large open spaces
- Low density development with buildings placed equidistant
- Perimeter road network that enabled convenient vehicular access and internal movement
- Library at the core of the campus – introducing the notion of sacred space and celebrating the strength of symbolic gesture
- Buildings grouped by discipline
- Academic core pedestrian only zone yet public domain lacks clarity and purpose
- 3 visual 'axes' - enshrining the importance of the visual condition, the landscape relationship, and sense of place
- A student focused social and service centre within proximity of the library
- Residential developments on the foothills.

Several subsequent master plans have further developed the campus, with the most recent iterations including a desire to densify the northern half of the campus and connect it to the Townsville hospital, an initiative named discovery central.

DISCOVERY RISE MASTER PLAN

Several subsequent master plans have attempted to consolidate the dispersed facilities, with the most recent iterations including a clear desire to consolidate towards the northern half of the campus and connect to the Townsville Hospital. The Architectus Master Plan from 2013 went furthest in this regard, and laid out a vision for Discovery Rise to:

"Create a university town with distinctively Australian tropical ambience which will incorporate energetic academic, social, artistic and commercial environments. It will be an integrated community of living and learning that will set a new benchmark in sustainability, and will enhance JCU as a leading tropical university." - Reference

The Discovery Rise Master Plan included several important initiatives, including Discovery Central town centre and Discovery Rise residential on the foothills. These initiatives have been carefully considered and integrated with the academic heart of the campus in this new Master Plan.

THE HEALTH AND KNOWLEDGE PRECINCT MASTER PLAN

Another major planning initiative that is relevant to the campus Master Plan is the 2014 'Health + Knowledge Precinct Master Plan'. This initiative reinforces the strategic intent to:

"Integrate The Townsville Hospital and The James Cook University into a unified, healthy and inclusive environment that promotes learning, knowledge and well-being." - Reference

Importantly, this report identified the importance of providing a physical (primarily pedestrian) connection along the Magnetic Island axis that was supported by consolidated urban forms and a central 'Health Plaza' at the junction between the hospital and the university. These two initiatives are unreservedly supported, adopted and integrated into this new Master Plan.



Discovery Rise



Reference



Chronological Master Plan Progression



CONFORMITY WITH EXISTING PLANNING SCHEMES

The strength of the Stephenson Plan is highly valued.

The three main axis and ring road have been maintained through the evolution of the campus.

Although the location of the Townsville Hospital was envisaged at the time of preparation of the original Master Plan, a connection strategy was not shown.

Interestingly, the Wadda Mooli Creek diversion across the campus was not part of the original Master Plan.

The external major road connections have also occurred differently to what was originally anticipated.

The following diagrams illustrate the progression of the Stephenson Master Plan, to the current condition and the proposed Master Plan.

The hospital has developed substantially independent of JCU. Previous Master Plans have been prepared for the hospital that indicate strategies for greater connectivity. For a variety of reasons these have not been implemented to date.

The JCU Master Plan has been developed to allow the greatest possible flexibility in connection to the hospital and this is demonstrated by overlay of the historic hospital Master Plan showing the potential continuity of the central spine.



STEPHENSON PLAN



CURRENT CONDITIONS



STEPHENSON PLAN , HEALTH AND KNOWLEDGE PRECINCT MASTER PLAN AND NEW MASTER PLAN OVERLAID

03

VISION



VISION

INTRODUCTION

The Townsville campus is envisioned as an integrated community supporting learning, research, residential, community, sporting and recreational activities.

The campus environment shall seek to express the University's strong student focus, providing settings and facilities that support a balance of academic and social life on campus.

The University will consolidate its academic built form to a richer, walkable pedestrian focussed footprint supporting development driven by design excellence.

A finer urban grain seeks to engender a more vibrant, lively campus setting by encouraging gathering and interaction.

Diverse land use will enliven the campus and contribute to making it a place for investment and visitation.

It will be a dynamic place, a knowledge community that is part of a Health and Knowledge Precinct that is a key component of Townsville's economy.

The University will embrace the full extent of its 378 ha footprint with a landscaped focussed design as an exemplar tropical environment of natural and curated vegetation.

Shade and shelter, precinct streets and an oasis of landscape and integrated water elements will attract and retain students, staff, academics and the broader community.

The campus will support the university's credentials as the foremost university for Northern Australia and a leading global university for the tropics.





3.1 ASPIRATIONAL BRIEF

It will be an important task of the Master Plan to overcome the dispersed and separated campus and create a sense of one cohesive, collaborative academic community. Initiatives in this regard need to include:

- Bridging the physical divisions
- Improving cross-campus connectivity and visibility
- Co-locating research infrastructure, and
- Creating centralised facilities for collaborative research, including conference and seminar facilities and discussion forums.

GLOBAL TROPICAL

This is an aspiration of national and international significance, and it is fundamental that the Townsville campus reflect and support this strategic intent. To do this, the University needs to fully transition from seeing itself as a regional service provider to being a specialist, globally-significant knowledge and innovation hub with world-class facilities that reflect this ambition.

STICKY/MAGNETIC CAMPUS

The campus should be designed to attract students regardless of their timetable requirements, with the ultimate objective to create an energetic and vibrant campus.

SENSE OF IDENTITY

Making places that students and staff feel they can “belong”, with multi-disciplinary workspaces to build a sense of camaraderie and collaboration across the colleges.

UNIFIED AND CONSOLIDATED CAMPUS

It will be an important task of the Master Plan to overcome the dispersed and separated campus, and to create a sense of one cohesive, collaborative academic community. Initiatives in this regard need to include:

- Bridging the physical divisions
- Improving cross-campus connectivity and visibility
- Co-locating research infrastructure, and
- Creating centralised facilities for collaborative research, including conference and seminar facilities and discussion forums.

LEARNING AND TEACHING

- New forms of space should be provided to accommodate the shift in pedagogy, including TEAL, maker, collaboration and other student support spaces
- Addition to informal learning and outdoor teaching spaces should be provided to meet the increased demand for self-led learning spaces and to reinforce the connection to the environment

- Learning spaces should be separated from academic workspace entirely to avoid the isolation of knowledge, with the centralised spaces forming a mixing point where different disciplines come together
- Student services should not only be a large centralised facility, but should also sit alongside teaching spaces
- A good mix of large lecture and blended learning spaces will be required moving forward.

RESEARCH

Promote multi-disciplinary, translational research and collaboration through proximity of facilities and connections across campus.

LOCATING LEARNING AND TEACHING SPACES

Apart from large lecture theatres, the traditional approach has been for classroom, tutorial and specialist teaching spaces such as laboratories and workshops to be collocated with academic disciplines. It is inevitable a sense of ownership and segregation will form in this scenario, but if the “cohesive community” aspiration is to be achieved, the learning spaces should be separated from academic workspace entirely, with the centralised spaces forming a mixing point where different disciplines come together. This would have the added advantage of enabling the provision of a diversity of formal and informal spaces that are actively managed.

LECTURE THEATRES

The significant shift in pedagogy has also called into question the requirement for large theatres, although there will always remain a need to accommodate large groups for traditional lectures and talks. Ultimately the university believes that a good mix of lecture and learning spaces will be required moving forward.

TEAL SPACES

The pedagogical shifts occurring in the university are leading to lectures and other didactic forms of teaching that include more group discussion and debate. This has increased the need for spaces that support “technology enabled active learning” (TEAL) where students are seated in groups at tables with access to localised LCD screens that can support local group activity or be linked for whole-of-class instruction and display.

SUPPORT SPACES

Support services that offer the much-needed learning support, academic skills, student mentoring and counselling for students are currently squeezed into existing buildings and separate from the teaching spaces. Student services should not only be a large centralised facility, but should also sit alongside teaching spaces, and supplemented by student led maker spaces and collaborative spaces.



3.2 MAJOR OPPORTUNITIES

- Collocation with The Townsville Hospital is a significant advantage, and the growth of an integrated Health and Knowledge Precinct should be pursued
- Eddie Koike Mabo Library is an iconic piece of architecture that is easily adaptable to a more student-centric use
- The current reliance on cars means that the opportunity to grow public transport usage and encourage a modal shift towards active and public transport is significant
- Connections to the CBD, reinforced by the Townsville City Deal initiatives, could lead to increased collaboration and economic growth for the university, the city and the region
- New consolidated connections, routes and pathways could be built to connect the various precincts and improve accessibility
- New wayfinding strategies will help to redefine the campus experience
- Great streets and boulevards can be created from the current campus road infrastructure with care and attention to parking and landscaping
- New facilities and improved landscape, including community focused places, expanded food and beverage options, and memorable places can encourage a greater occupation of the campus
- Creation of a built environment that is not just vaguely tropical, but one that outdoes all other universities in tropical character and use
- Exemplary habitat and dry tropical landscape like no other university that can be curated and managed to create better amenity and wildlife habitats
- Use current development opportunities to facilitate industry and community engagement
- Wadda Mooli and Goondaloo Creeks offer excellent amenity and relief from the built environment and should be retained and enhanced
- New shaded links and verandahs can be constructed to open up the very internalised buildings and create a better landscape experience
- Private and public sector investment into the built environment could unlock significant community and economic benefits for the campus
- High proportion of indigenous students with local cultural knowledge that can be leveraged to create a campus that is regarded as the most supportive of indigenous and Torres Strait Islanders
- Strong basis and opportunity for enhanced urbanisation to accommodate growth and create a vibrant centre

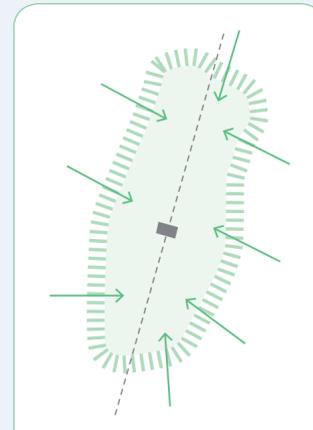
- The dispersed campus structure means that there is excellent consolidation potential that could see growth occur in the centre of the campus and the creation of a new heart
- Increase the extent and quality of wi-fi coverage to encourage students and staff to stay on campus
- Planned new facilities and infrastructure can help to redefine the university's brand as a world-leading tropical innovation hub
- Increasing demand for sporting facilities means that a new sports centre and fields will be required
- There are significant development opportunities on vacant and underutilised land across the campus
- New arrival sequences and statements will help define the campus as an important tropical knowledge community.



3.3 OBJECTIVES

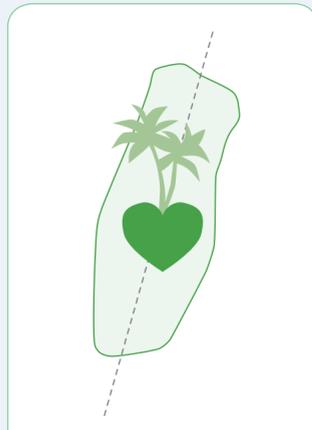
The aspirational brief and stakeholder discussions were used as a basis to form fine key objectives that could be used as a guide to all decision making.

The objectives look to encapsulate layered and diverse stakeholder inputs into a digestible form and support internal and external messaging.



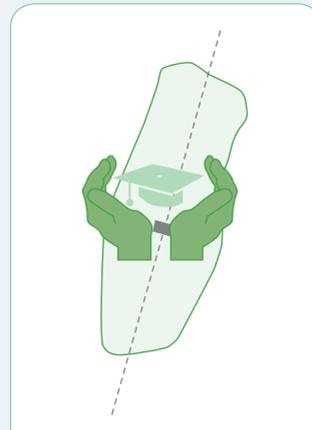
1. TO CREATE A STICKY, MAGNETIC CAMPUS

Create a 'sticky' campus that is vibrant and inviting. The Campus should seek to attract and retain students and staff. This is enabled by a campus focused upon social interaction, legibility and activation.



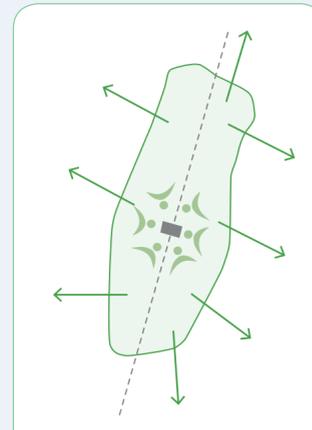
2. TO CREATE A MEMORABLE, TROPICAL PLACE

Engender a sense of place that is memorable, tropical and representative of our place in the tropics. The distinctive existing landscape may be curated and enhanced with built form.



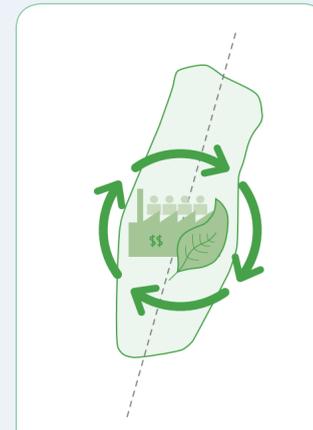
3. TO FOSTER A KNOWLEDGE COMMUNITY

Foster an energised, collaborative and accomplished academic and research community. Great workplace environments that are innovative, connected and collaborative support successful communities.



4. TO SUPPORT TOWNSVILLE & THE REGION

Reinforce the University's commitment to the economy and community of the Townsville region. Contribution to a thriving region is achieved through the creation of a regionally focussed knowledge community, attractions community engagement and community facilities.

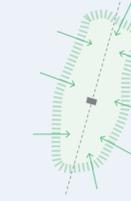


5. TO CREATE AN INTEGRATED & SUSTAINABLE COMMUNITY

Be an integrated knowledge community that is economically, environmentally and socially sustainable. Placemaking that enhances community and commercial integration, social engagement and environmental awareness drives sustainable communities.

OBJECTIVE 1.

CREATING A VIBRANT, DYNAMIC CAMPUS



ENABLING STRATEGIES

- Quality learning / study / social spaces
- Vibrant centres of activity that are accessible, transparent and visible, including at night and on weekends
- Quality, accessible technology and learning resources that are not available off campus
- Attractive and engaging outdoor places that support and integrate with the built form
- Diversity, affordability and availability of food and beverage, retail, amenities and services
- On-campus community activities and attractions with active curation and management
- Ease of access –public transport and parking
- Quality on-campus accommodation –both long-and short-term
- A pervasive sense of safety and security across the campus
- Openness, accessibility and logical and intuitive wayfinding
- Compact urban environment within a tropical landscape setting
- Balance the built environment with connections to country and integrate the natural landscape.



OBJECTIVE 2

CREATING A MEMORABLE, TROPICAL CAMPUS THAT STAFF, STUDENTS, ALUMNI AND THE DIVERSE AND INDIGENOUS COMMUNITIES ARE PROUD OF



- Curated arrival sequence that allows 'soft edges' to the campus
- Identifiable formal university address
- A strong sense of place - preserving and enhancing the unique tropical landscape, highlighting and respecting the buildings of significance
- A strong sense of knowledge community and "belonging" with comfortable and welcoming places
- High quality and environmentally responsive architecture that provides great facilities in a unique and authentic landscape
- Strengthen the University's uniqueness – the tropics, sustainability, cultural diversity, and history
- Preserving / fostering wildlife on the campus by preserving environmental corridors
- A diverse, rich and transformative landscape
- Acknowledge and celebrate the indigenous and cultural history.



OBJECTIVE 3

FOSTERING AND SUPPORTING AN ENERGISED, COLLABORATIVE AND ACCOMPLISHED ACADEMIC AND RESEARCH COMMUNITY



- Great place to work, research and learn (i.e. both inspiring and functionally appropriate)
- Spaces, places and circulation that encourage interdisciplinary interaction and collaboration
- Provide a catalyst for pedagogical innovation and immersive learning
- Openness and transparency of buildings to reveal the activities within
- Places for celebration of success and achievement
- Effortless and accessible virtual connectivity
- Identify opportunities for industry collaboration and co-location
- Reinforce the campus's tradition as a place of learning and a living laboratory
- Flexibility and adaptability to respond quickly to new opportunities and needs.



OBJECTIVE 4

REINFORCE THE UNIVERSITY'S COMMITMENT TO THE ECONOMY AND COMMUNITY OF TOWNSVILLE AND THE REGION



- Create a globally recognised and regionally-focussed university and knowledge community
- Foster and supporting local innovation and working with local industry, government, health, defence and other sectors to generate economic opportunity and employment
- Create a destination in Townsville that attracts academics, students and visitors, particularly those from overseas
- Support the communities, enterprises and economy of Northern Australia through teaching, research and engagement
- Provide community facilities and attractions that are of benefit to the Townsville and greater regional community.



OBJECTIVE 5

CREATING AN INTEGRATED KNOWLEDGE COMMUNITY THAT IS ECONOMICALLY, ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE



ENABLING STRATEGIES

- Smart link to the city
- Link to The Townsville Hospital
- Soft Edges
- Sustainable Transport Initiatives
- Economic
- Divestment of obsolescent space for improvement of overall campus performance
- Identify opportunities for development that reinforce the university's strategic intent and campus performance
- Identify and promote diverse land use including commercial and residential opportunities.

ENVIRONMENTAL

- Establish a campus environmental rating tool and roadmap
- Reduce energy consumption
- Ensure water sensitive design
- Identify and implement solar energy opportunities
- Recognise and preserve the natural resources and landscapes on campus.

SOCIAL

- Acknowledgment and celebration of place and cultures
- Spaces and places that are culturally appropriate and socially supportive for all university staff, students, collaborators and visitors
- Townsville community engagement and support.





3.4 2035 CAMPUS TARGETS

RANKING		COMMUNITY PROFILE		INDUSTRY ENGAGEMENT		EXPERIENCE	
2016	2035	2016	2035	2016	2035	2016	2035
<ul style="list-style-type: none"> • Top 300 in universities worldwide • Top 14 in Australia 	<ul style="list-style-type: none"> • Top 200 in universities worldwide • Top 10 in Australia 	<ul style="list-style-type: none"> • 11,887 students • 1,475 student accommodation beds • 2 x Child Care centres • 5 small businesses • 3,500 on-campus jobs 	<ul style="list-style-type: none"> • 16,560 students (+40%) • 8,000 residents • 2,000 student accommodation beds (+25%) • 2 x Child Care centres (new) • 1 aged care home • 1 x young care home • 1 x hotel • 20 small businesses +400% • 5,000 on-campus jobs 	<ul style="list-style-type: none"> • Significant industry partners currently on campus 	<ul style="list-style-type: none"> • Double the number of catalyst industries based on campus 	<ul style="list-style-type: none"> • Full time students: Average 25 hours per week on campus • Part time students: Average 15 hours per week on campus 	<ul style="list-style-type: none"> • Improved campus and university experience ratings • Full time students: Average +40 hours per week on campus • Part time students: Average +25 hours per week on campus • Increased numbers of campus visitors
ENVIRONMENTAL		ACADEMIC SPACE		MODAL SHIFT		RESEARCH	
2016	2035	2016	2035	2016	2035	2016	2035
<ul style="list-style-type: none"> • TropEco • 1 x Leed Gold Building under construction 	<ul style="list-style-type: none"> • Six star community rating • International recognition for environmental initiatives • Recognition of awareness in the local community of environmental credentials • 20% reduction in waste, and energy and water consumption per student 	<ul style="list-style-type: none"> • Total = 174,000m² 	<ul style="list-style-type: none"> • Total = 124,000m² (-30%) • New = 30,000m² (20%) • Demolished = 80,000m² (45%) 	<ul style="list-style-type: none"> • 60% traveled by car • 14% using public transport • 10% cycling to uni • 5% other modes 	<ul style="list-style-type: none"> • 30% traveled by car • 35% using public transport • 30% cycling to uni • 5% other modes • 100% using the campus loop 	<ul style="list-style-type: none"> • \$73M research income p.a. • 1,823 research publications p.a. • No.2 in the world for biodiversity conservation research • No.1 in the world for marine biology 	<ul style="list-style-type: none"> • \$150M research income p.a. • 2,500 research publications p.a. • No.1 in the world for biodiversity conservation research • No.1 in the world for marine biology

04

CONCEPT FRAMEWORK



4.1 ORGANISING PRINCIPLE



SIMPLIFIED DIAGRAM OF EXISTING CONDITIONS

The existing campus is defined largely by the ring road of the original Master Plan.

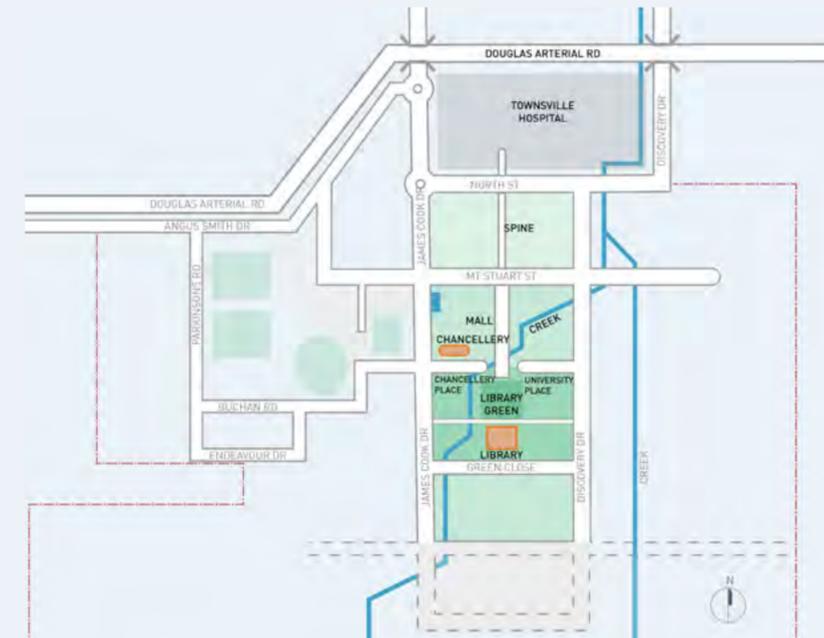
The ring road provides addressable development for buildings on the perimeter but buildings deeper within the plan are more difficult to connect to.

The university's signature building – the library is one such building.

The area defined by the ring road and the associated distances are significant; 600m east-west and 900m north-south (from Mt Stuart Street to the southern ring road loop).

Additionally, Wadda Mooli Creek provides a character to the site but also a barrier for engagement between north and south.

Townsville Hospital is fundamental to the Health and Knowledge Precinct opportunity but the campus is effectively located behind the hospital with no effective engagement.



SIMPLIFIED DIAGRAM OF PROPOSED CONDITIONS

Taking cues from the Magnetic Island Axis that has been left uncompromised by the history of development, a series of connections are possible that connect the library through to the hospital and halve the distance across the ring road.

The location of the Chancellery and the Science Place mean that an organising link is possible across the ring road that intersects with the creek and the axis to provide a logical hub for organising development and creates nodes at more comfortable distances between the hospital and the library.

The addition of a connection south of the library, mean that the library can have an address consistent with its significance whilst maintaining the Library Green as an important communal space to the north.

A further connection between the library and the southern loop of James Cook Drive defines an appropriate area for essential campus development.

The connections are a mix of vehicle and pedestrian paths that maintain the pedestrian character of the campus.

The organising framework naturally promotes connectivity and alignment at Buchan Road and the extension of Mt Stuart Street east and west to normalise the connection to the 'Vet Precinct' and define the Sports Precinct.

4.2 CONCEPT FRAMEWORK



The organising framework for the Master Plan was premised on amending as little as possible to the original Stephenson Plan to maintain the landscape character of the campus but as much as necessary to improve the connectivity and functionality for both existing and future development.

4.3 ORGANISING FRAMEWORK

The organising principle provides the basis to deliver logical and necessary framework for the campus.

The scale of the campus is made palatable and the strength of the original Master Plan is reinforced.

The Concept Framework identifies key organising principles which deliver the Master Plan Vision. The framework accommodates growth and is flexible allowing the University to respond to future aspirations and challenges.

The Vision is grounded in the creation of new spaces that are collaborative, active and community focused. A key challenge lies in achieving this ambition on a Campus of such significant scale. For this reason the Concept Framework proposes a series of connected activity nodes.



NEW CIRCULATION

A new grid of streets and pathways provides a legible means for navigating the site. The 'city block' arrangement provides a rationale for new building arrangement and access.



LEGIBLE URBAN FORMS

A new formal entry point provides a campus address. Urban form responds to circulation network, providing landmarks and visual cues for site navigation. Building forms strengthen primary axes and key gathering spaces.



GATHERING

Gathering places are key to the sticky campus. Spaces of activity, event and collaboration enliven the spine. Memorable places are points of orientation.



NEIGHBOURHOODS

Recognisable arrangements of building forms and open spaces create neighbourhoods, a key means of wayfinding on the site.

4.4 KEY CONCEPTS

The Concept Framework identifies key organising principles which support the Master Plan Vision. The framework accommodates growth and is flexible allowing the University to respond to future aspirations and challenges.

The Vision is grounded in the creation of new spaces that are collaborative, active and community focused. A key challenge lies in achieving this ambition on a campus of such significant scale. For this reason the Concept Framework proposes a series of connected activity nodes.

Several overarching ideas comprise the Framework:

1. Reinforcement of the Magnetic Island axis as a movement spine
2. Preservation of the ring road as a major access route and piece of heritage infrastructure
3. Strengthening and extending of Mt Stuart Street as the high street for the campus
4. Formation of a major green heart to form the centre of a densified campus
5. Consolidation of a Sports Precinct west of the ring road
6. Identification of formalised entry points at the Chancellery Building, Discovery Drive and Mt Stuart Street
7. Expansion of the southern residential arc to include a mix of housing and residential typologies
8. Consolidation of the academic footprint
9. Connection beyond the campus to the community, including the Hospital.



EXISTING CAMPUS

STICKY CAMPUS

The Master Plan can provide a platform for building a sticky campus by proposing meeting places that attract and retain visitors, staff and students. A new urban grain inside the ring road encourages visitation and movement across the campus. Engaging and legible building form and lively open space supports activation.

The ring road, axis and green heart connect consolidated academic, residential and sporting zones. A logical demarcation between the

Academic Zone to the north, and the residential zone to the south and west, provides a clear basis for establishing a community and for future growth.

MEMORABLE AND TROPICAL CAMPUS

A memorable and tropical place can be achieved by providing pathways and structures that enhance the experience of the unique existing setting. Each of the framework principles support this aim. Introduction of the waterbodies within the Campus provides a richness and respite.



CONCEPT FRAMEWORK DIAGRAM

LEGEND

Creeks	Green Heart
Lagoon	Sports Precinct
Ring Road	Magnetic Island Pedestrian Axis
Primary Cross Axis	Secondary Cross Axis
Library	Mt Stuart Street Extension
University Mall	Secondary entry points
Central Plaza	Formal University Arrival Point

4.5 MASTER PLAN



Sites are interchangeable. The Master Plan represents an indicative form only.

1. Eddie Koiki Mabo Library
 2. Library Green
 3. Indigenous Interpretive Garden
 4. University Central Plaza
 5. Chancellery
 6. University Mall
 7. Ideas Market
 8. Bus Stop
 9. Chancellery Place
 10. University Plaza
 11. Mt Stuart Street
 12. The Lagoon
 13. Winter House
 14. Events Lawn & Community Park
 15. Sports Complex
 16. Sports Plaza
 17. Sports Walk
 18. Vet Walk & Bridge
 19. Retirement Living / School
 20. Veterinary Precinct
 21. Veterinary Holding Paddocks + Future University use
 22. Future University Residential use pending further investigation
 23. High Density Residential
 24. Medium Density Residential
 25. Low Density Residential
 26. Community Plaza
 27. Orchard Walk
 28. Creek Corridor
 29. Bush Walk Trails
 30. Trail Lookouts
 31. Student Accommodation
 32. Environmental Centre
 33. University High School / Academic
 34. Convenience Centre
 35. Infrastructure
 36. University Private Hospital
 37. The Townsville Hospital
 38. Tec-NQ
 39. Childcare
 40. Hospital Plaza
 41. Creek Dams & Flood Basins
 42. Integrated Child and Aged Care
 43. Bush Walk
- Parking
- Future Collaborative Design Stage

4.6 MAGNETIC ISLAND AXIS VISION

Buildings frame discrete and diverse landscape spaces. Landscape embellishment, both naturalistic and curated, combine with active building edges to encourage occupation of green spaces. A stronger Magnetic Island Axis connection would to bridge Wadda Mooli Creek further strengthening the library status.

Porosity of new building form balances landscape experience with active urban arrangements. Visual connections to surrounding landscapes are preserved.

KNOWLEDGE COMMUNITY

Greater opportunity for incidental meeting and engagement is aided by dissolving academic silos, in turn encouraging a vibrant Knowledge Community. Engagement across disciplines is strengthened by the provision of public meeting places, both internal and external.

Transparent and porous architecture facilitates collaboration. External spaces provide new learning environment opportunities.

Industry engagement promotes innovation and translational research outcomes.



HEALTH PLAZA	IDEOLOGIES			MAGNETIC ISLAND AXIS	THE MALL
HOSPITAL LINK (MAGNETIC ISL. WAY)	COLLABORATION	PARTNERSHIPS	HEALTH & KNOWLEDGE		
IDEAS MARKET	INTERACTION	EXCHANGE	DISCOVERY		
UNIVERSITY MALL	CONNECTION	DIALOGUE	COLLABORATION		
CENTRAL PLAZA	COMMUNITY	OPENNESS	SENSE OF PLACE		
LIBRARY GREEN LAGOON	RECREATION	TROPICAL IDENTITY	INDIGENOUS NARRATIVE		
EVENTS LAWN & COMMUNITY PARK	RECREATION	RELAXATION	NATURE		
ORCHARD WALK	REFLECTION	RETREAT	INTIMACY		
WOODLAND MEMORIAL PARK	REFLECTION	RETREAT	INTIMACY		

TOWNSVILLE & REGION ENGAGEMENT

Soft Campus edges encourage a view of the University as welcoming and engaging.

A parkland setting positions the Campus as an amenity for the broader fabric of Townsville city.

Public transport and active transport are encouraged through integrated design solutions, making the Campus universally accessible.

Strong physical connections between the University and Hospital inspire shared community spaces and attitudes. The Sports and Recreation hub provides a new community offering to the region. The connections to country and bush trails encourage local visitations.

SUSTAINABLE CAMPUS

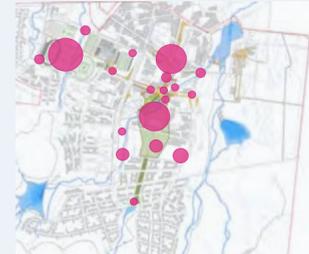
An emphasis upon shaded external movement, gathering and learning environments reduces energy consumption. A porous urban form preserves site breezes and provides for passive building design techniques.

Sustainability is encouraged at a campus more geared towards public and active modes of transport and less towards private cars. A central energy strategy aims to improve energy efficiency in the short term and streamline the introduction of new technologies in the medium and long term.

A consolidated urban arrangement supports these strategies.

4.7 LANDSCAPE MASTER CONCEPTS

LANDSCAPE MASTER PLAN CONCEPTS



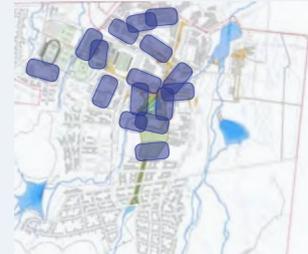
STICKY CAMPUS

The campus offers a diverse range of attractive and engaging outdoor places as a destination and a place to linger. It includes places for celebration, vibrant centres of activities, food, beverage, retail, amenities and services plus spaces supporting outdoor sporting initiatives. Furthermore, it provides amenity for the wider community by hosting activities and attractions for residents and visitors from the wider Townsville area.



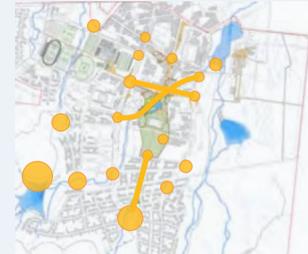
MEMORABLE CAMPUS

An unmistakably North Queensland landscape surrounds the campus and is a key part of the campus identity. Existing buildings such as the Library and surrounding spaces are a well-respected and significant part of Townsville's history. The landscape proposed for the JCU campus will reinforce the strong sense of place and belonging while strengthening the University's uniqueness through delivery of a global tropical landscape. Art and place making also contribute to the connections to country and ultimately how memorable the campus is.



LEARNING OASIS

The landscape promotes and facilitates open learning through supporting the function and operation of the academic community. Provision of external learning spaces will function as a landscape extension of the indoor learning environment and act as a link between built form and the broader campus. Spaces are culturally appropriate and socially supportive to foster academic excellence in a natural setting.



ARBORETUM

A campus wide arboretum will be established for growing trees for shade, conservation, scientific research, education purposes and a habitat and food source to attached local fauna. Walking trails will link remote areas to the central core and showcase tropical, rare, endangered, symbolic and landmark trees, as well as vegetation significant to aboriginal heritage and culture. Informative and educational material will be provided by integrated art and interpretative signage. The arboretum will add to the University's appeal as a destination, recreation feature and education facility for the academic community and the people of Townsville.



TROPICAL COURTYARDS

A series of tropical courtyards will form a campus wide network of multifunctional green spaces that provide support for events, study, relaxation, gathering, meeting and learning. As well as being shady, comfortable, safe, they will be a counterpoint to the built form and include supporting amenity and digital connectivity. Tropical themes, art and amenity applied to courtyards will allow the academic community to experience different tropical settings from around the world.

4.8 LANDSCAPE MASTER PLAN



1. Library Green
2. Indigenous Outdoor Learning Garden
3. University Central Plaza
4. University Mall
5. Chancellery Place
6. James Cook Drive
7. Mt Stuart Street
8. The Lagoon
9. Winter House
10. Events Lawn & Community Park
11. Sports Complex
12. Sports Plaza
13. Sports Walk
14. Vet Walk & Bridge
15. Community Plaza
16. Orchard Walk
17. Creek Corridor
18. Bush Walk Trails
19. Trail Lookouts
20. Hospital Plaza
21. Creek Dams & Flood Basins
22. Local Park
23. Arboretum
24. University Place
25. Chancellery Lawn
26. Woodland Memorial Park
27. Adventure Challenge Course
28. Mountain Bike Trails
29. Bush Tucker Walk
30. Discovery Drive

4.9 LANDSCAPE STRATEGIES

LANDSCAPE STRATEGIES

Drawing on the conceptual framework identified in the Landscape Master Concepts, strategies have been developed in more detail to describe the proposed landscape development of the campus. They illustrate the Master Plan considerations related to the campus landscape and have been developed in response to the brief, consultation processes and the overall landscape design intent.

These strategies are further captured and communicated through a series of overlay maps and initiatives which identify specific projects. For example, an initiative has been prepared for the development of a campus wide arboretum. It describes the proposal to grow trees for shade, conservation, scientific research, education and recreation to benefit the campus, academic community and the people of Townsville.

The future development of the campus will be guided and controlled through these strategies, over time they may be modified in response to site conditions and development trends while preserving the overall design intent.



ECO RESERVE

The nature reserve includes the natural areas on the southern perimeter of the campus which are to be protected and enhanced by JCU.



PUBLIC ART

The university has a unique opportunity to invest and a local, national and international public art collection that could create meaningful connections to the local and international communities across the tropics.



CONNECTIONS TO COUNTRY

An Indigenous inspired public realm, art and outdoor education strategy specifically designed along a route from the ideas market to the peaks of the foothills.



ARBORETUM

A campus wide arboretum will be established for growing trees used for education and scientific research.

It will be connected by walking trails, roads and pedestrian paths, and include signage and art.

4.9 LANDSCAPE STRATEGIES CONT.



CANOPIES

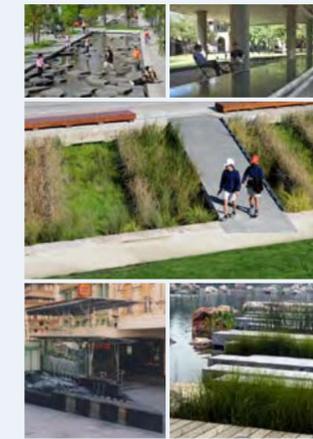
Distinctive canopies will redefine the campus experience, branding and image of the campus as a Global Tropical University.

Will provide shade, create a new heart and assist with wayfinding.



TROPICAL PLANTING

Global tropical characteristics will influence all aspects of the campus environment including colour, signage, furniture, structures and vegetation.



WATER

Urban water will enliven the core of the campus, providing amenity and cooling to the courtyards and University Mall.

Stormwater will be treated sensitively with swales designed to encourage ground infiltration.



STREETS AND WALKS

A hierarchy of streets and walks will redefine the experience of moving on and around the campus.

Boulevard trees, landmark trees on view axis, and recognisable tree groupings will reinforce these routes and provide shade.



TROPICAL COURTYARDS

A series of tropical courtyards will form a campus wide network of multifunctional green spaces that provide support for events, study, relaxation, gathering, meeting and learning.

05

STRATEGIES



STRATEGIES

A number of strategies have been developed that expand on the conceptual framework of the Master Plan and provide a detailed approach to campus development.

These strategies describe important considerations of the Master Plan, and are a direct response to the brief and other matters raised during the consultation and design process. The strategies capture the specific design intent of the Master Plan, and communicate this through a number of overlay maps that are grouped into six different themes for ease of reference.

The maps describe the intent for various aspects of the design, and also collate relevant initiatives. For example, the 'Art, Culture and Events' overlay describes the overall strategy for enlivening the campus culture with events and activities, and locates a number of separate initiatives that may contribute to this intent, including smoking ceremonies, welcome to country, graduation, concert stages and bonfire nights.

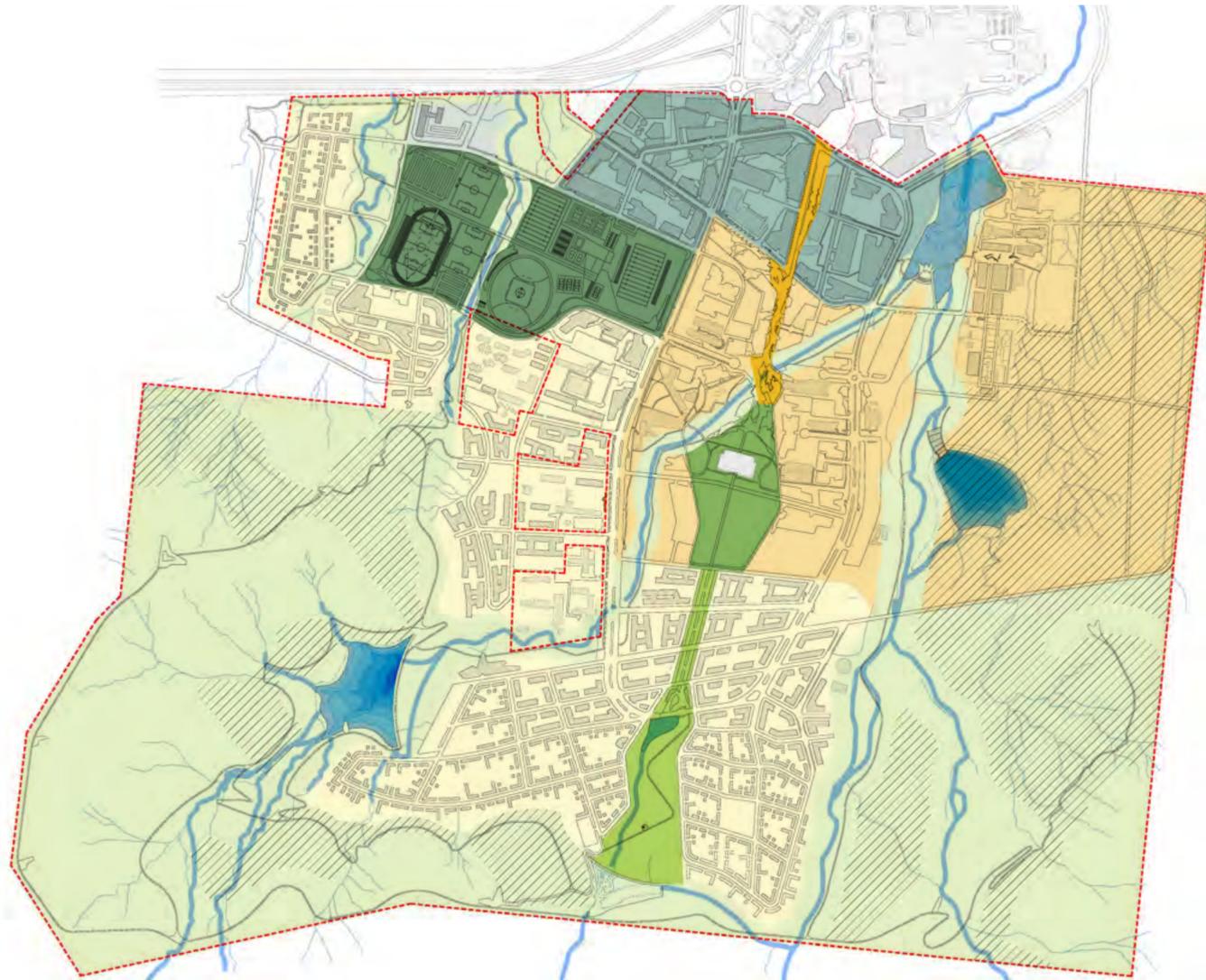
These strategies are intended to guide and control future development, but should be modified as required to respond to emerging trends and conditions whilst maintaining the overall design intent.

Individual initiatives are identified with a number, described in further detail in the Initiatives Section of this report.

<p>BUILT FORM</p>	<p>LANDSCAPE AND THE NATURAL ENVIRONMENT</p>	<p>LEGIBILITY AND WAYFINDING</p>	<p>STUDENT AND COMMUNITY LIFE</p>	<p>TRANSPORT</p>	<p>DEMOLITION AND RE-USE</p>
<ul style="list-style-type: none"> 1.1 Development Zones 1.2 Public Space Structure 1.3 Heritage Places 	<ul style="list-style-type: none"> 2.1 Landscape Structure and Character Zones 2.2 Environmental Reserve and Ecological Connectivity 2.3 Open Space and Parkland 2.4 Geological and Topographical Constraints 2.5 Waterways and Lakes 2.6 Public Art 2.7 Vistas and View Corridors 2.8 Connections to Country 2.9 Landmark Planting 	<ul style="list-style-type: none"> 3.1 Campus Address and Arrival 3.2 New Roads and Connections 3.3 Road Hierarchy 3.4 Street Naming and 3.5 Building Entry, Address and Servicing 3.6 Signage 	<ul style="list-style-type: none"> 4.1 Art, Culture and Events 4.2 Retail Food & Beverages 4.3 Sport and Recreation 4.4 Significant Buildings 	<ul style="list-style-type: none"> 5.1 Public Bus Route 5.2 Parking 5.3 Campus Electric Bus Loop 5.4 Overall Cycle Strategy 5.5 Bicycle Routes and End of Trip Facilities 	<ul style="list-style-type: none"> 6.1 Demolition Ultimate 6.2 Demolition - Timeline

BUILT FORM

1.1 LAND USE



The Land Use Plan is generally an extension of the strategies in place in the existing campus and those identified in the Discovery Rise planning.

The academic core is consolidated around the green heart and University Hall with areas to the south of the site identified for potential residential development. Large areas within the foothills of Mt Stuart are dedicated to existing bushland.

The colleges zone is maintained with more flexible development proposed to the west surrounding an expanded sports precinct.

Uses in the north reflect the potential for more research and innovation and partnerships associated with the hospital.

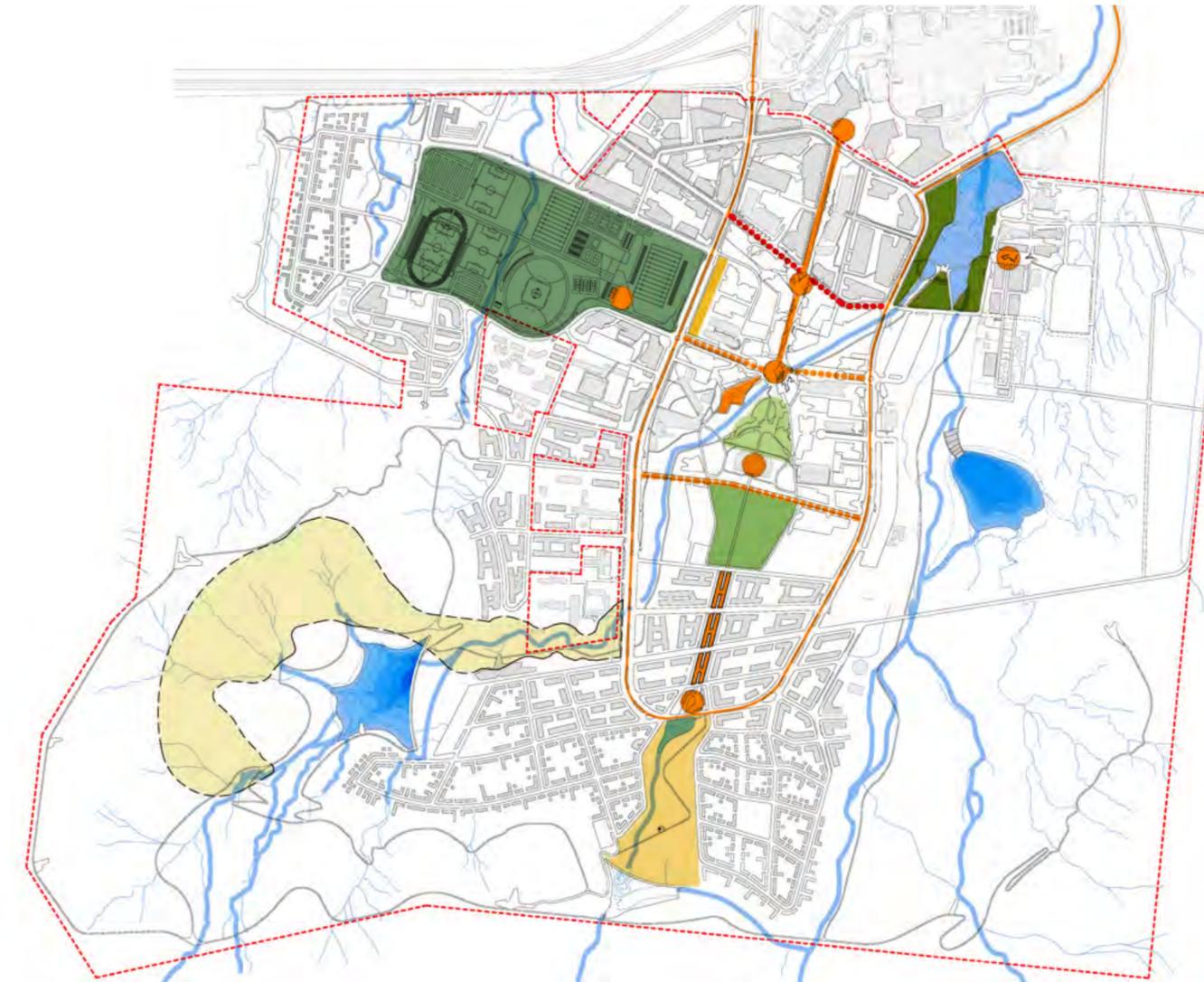
Large areas to the east of Goondaloo Creek are maintained as flexible areas for potential large scale unidentified future opportunities.

LEGEND

- University Mall
- Academic Core (including industry and community partners)
- Veterinary Holding Paddocks/Future University Use
- Academic & Mixed Use
- Convenience Retail
- Green Heart
- Sport Fields
- Parkland
- Natural Bush Reserve - Research, Conservation, Drainage & Wildlife
- Residential
- Future Residential subject to further investigation

BUILT FORM

1.2 PUBLIC SPACE STRUCTURE



The building edges, streets, lanes, squares, courtyards, parks and green spaces – the public realm of the campus – provide the ‘connective tissue’, that binds all the activity in the University.

The majority of public spaces strive to be accessible to people of all abilities, ages and life stages. A range of free social and recreation experiences are provided across the campus.

Public spaces are designed to offer safety through visibility, casual surveillance and access choice.

The public realm has a strong underlying and unifying structure based on the existing landscape elements of the campus. This public space structure comprises the following elements:

1. Key spaces of the campus, villages and precincts are located on the Magnetic Island Axis and on the central campus north-south green space
2. East west streets, laneways and pedestrian paths provide the key connectors into the campus heart
3. James Cook Drive is an important landscape and circulation corridor for the whole campus.

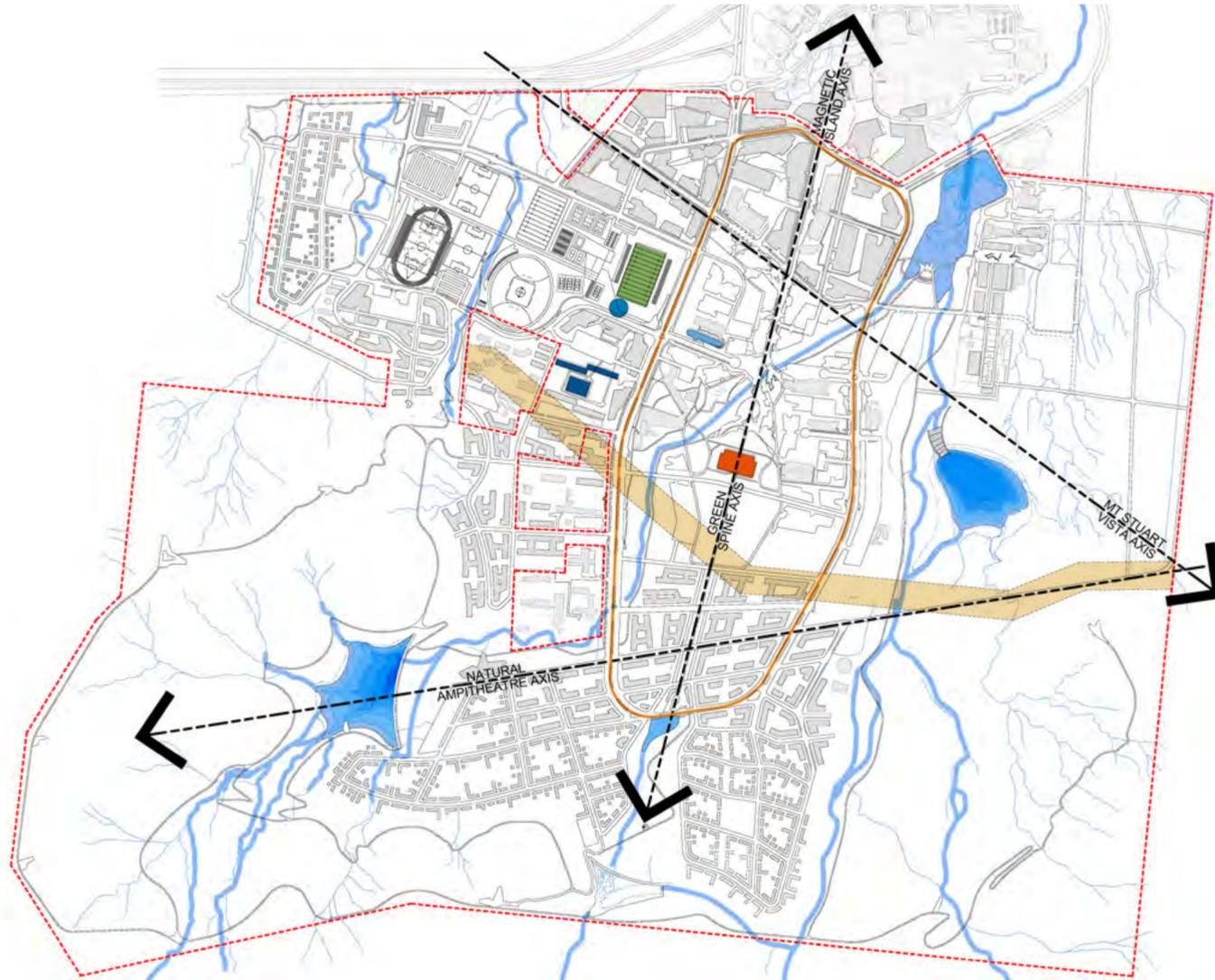
[This overlay does not indicate all public space. Finer diagram of public space are identified in individual precinct planning].

LEGEND

- Major Activity Nodes
- Sports Precinct
- Public Green Space
- Library Green
- Events Lawn & Community Park
- Arboretum
- Woodland Memorial Park
- Indigenous Outdoor Learning Garden
- Orchard Walk
- Major Pedestrian Spine
- Mt Stuart Street
- Shared Zones
- James Cook Drive

BUILT FORM

1.3 HERITAGE PLACES



Since the establishment of JCU there are some major strategies inherent in the original Master Plan and subsequent early buildings that are considered significant and should be retained and enhanced as valuable cultural heritage. These include the James Cook Drive ring road and the three major axes – the Magnetic Island Axis, the Mt Stuart Axis and the Natural Amphitheatre Axis. The Axes are reinforced in this Master Plan.

Three buildings associated with Architect James Birrell – the Eddie Koiki Mabo Library, the Ken Back Chancellery and University Hall (Administration and Residential Wings A & B) are all significant buildings with the library being the symbolic heart of the campus. The Joe Baker field is significant by name association. The historic stock route is not currently identifiable but is a layer of history that can be developed through interpretative strategies.

The broader cultural significance of the site and indigenous heritage is outlined in strategies 2.8 Connections to Country.

LEGEND

- Axis based on 1964 Master Plan
- Eddie Koiki Mabo Library
- Chancellery
- University Hall
- Joe Baker Field
- Historic Stock Route
- James Cook Drive
- Signing of the JCU Act by Queen Elizabeth II

NOTE: Watercourse based on Flanagan Consulting Group JCU Environmental Assessment Report - Opportunities and Constraints Analysis 2008. Historic Stock Route based on JCU Information. Axis based on 1964 Master Plan.

LANDSCAPE + NATURAL ENVIRONMENT

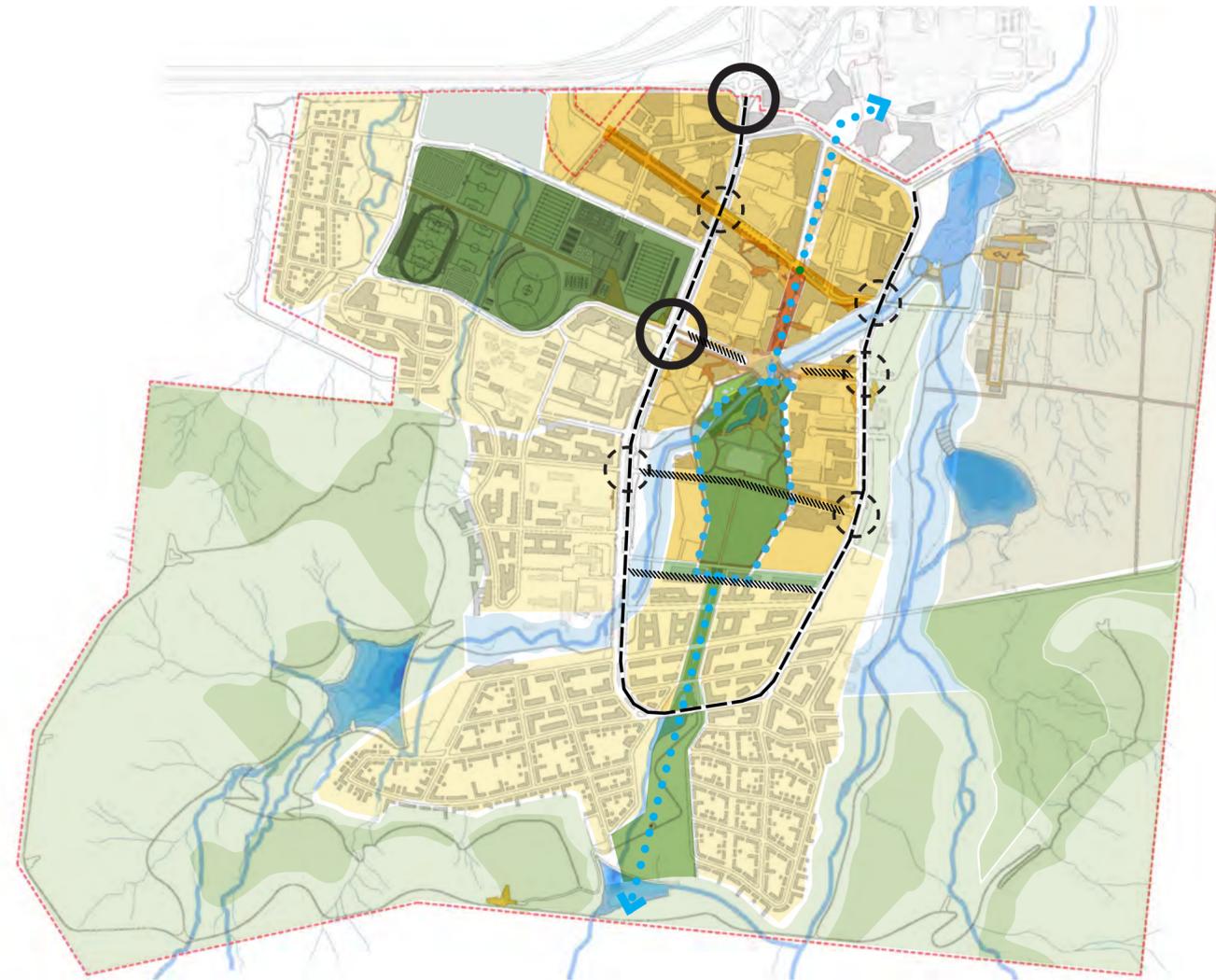
2.0 LANDSCAPE MASTER PLAN



The landscape Master Plan promotes delivery of a global tropical landscape within the surrounding natural beauty of the dry tropics. Strategies and structure of the plan provide for future growth and redevelopment in a way that is identifiable and memorable. The landscape will include shaded boulevards, landmark trees, green spaces and exciting public realm that are welcoming to the knowledge community and general public alike.

The structure of the plan includes a number of key elements. An arrangement of pedestrian paths and links to enhance movement beneath a canopy of shady and flowering trees. James Cook Drive will enclose the inner campus as a welcoming informal boulevard of large shade trees with collections of palms and flowering trees. Waterway corridors will enhance pedestrian movement, recreation and be rehabilitated to increase local flora and fauna diversity and movement. Between campus buildings, multifunctional courtyard spaces will support learning, provide amenity for functions, textured tropical planting, art as well as locations for quiet study and reflection. Pedestrian malls and significant streets will be exciting spaces with landmark entries, feature lighting, shade structures with hanging plants, art and flowering trees. These tropical settings will create a window to tropical landscapes of the world and delivery of a global environment for staff, students and community.

2.1 LANDSCAPE STRUCTURE & CHARACTER ZONES



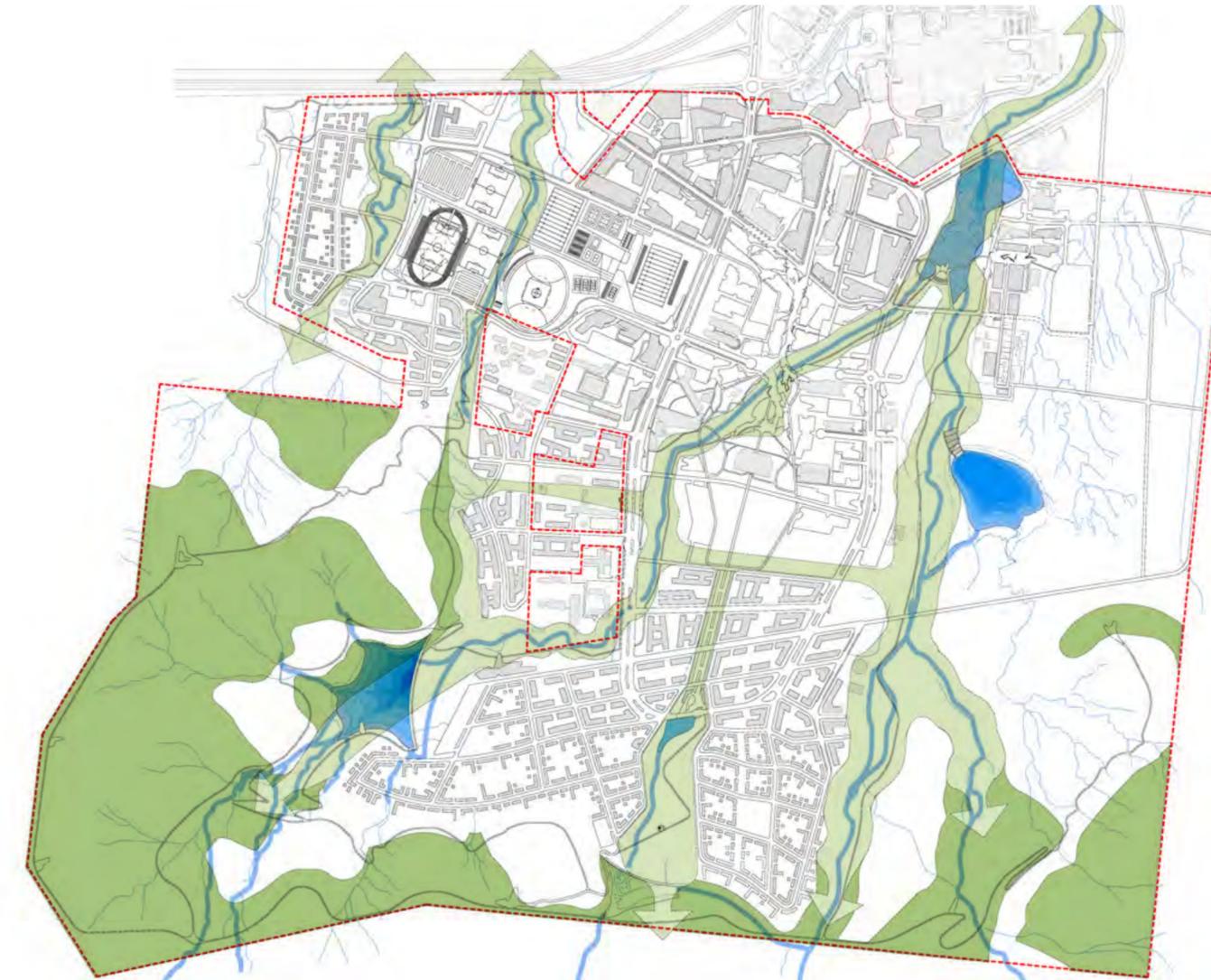
The landscape structure of the campus includes eight of the primary zones which collectively make up its character. The key elements include:

- Welcoming primary and secondary entries.
- James Cook Drive as a major tree lined boulevard and important landscape corridor
- Waterways and riverine corridors providing structure to the built form, with vegetated edges, recreation areas, shaded and cool spaces and a route for pedestrian and cycle movement
- The library green and open spaces supporting campus activities, recreation amenity and opportunities for events
- Shady and textured courtyards between buildings include areas for external learning and events
- Footpaths and cycle ways enabling comfortable and direct pedestrian movement
- Campus streets including shade tree planting and generous pedestrian paths
- Residential areas with nearby open space, parks and recreation amenity and comfortable pedestrian connections
- Natural bush areas enclosing the campus providing a backdrop of dry tropics as well as numerous active and passive recreation opportunities.

LEGEND

- Primary Address
- ⊕ Significant Intersection
- Boulevard - James Cook Drive
- Mt Stuart Street
- Shared Street
- Campus Walks
- RiverLine Landscape
- Library Green / Open Space
- Pedestrian Mall
- Urban Spaces & Tropical Courtyards Between Buildings
- Residential
- Future Residential
- Natural Areas
- Sports Precinct
- Animal Holding & Future Use

2.2 ENVIRONMENTAL RESERVE + ECOLOGICAL CONNECTIVITY



The nature reserves and corridors of the campus are to be protected and enhanced through Master Plan initiatives and those of the campus Asset Management Plan.

Healthy flora and fauna communities should be established and maintained through habitat protection, removal of environmental pests, planting works ecological restoration and water treatment devices to improve water quality and ground infiltration.

These initiatives will also assist fauna movement between the central campus and external areas.

Active and passive recreation will be enhanced through walking trails, cycle paths, art and educational signage aligned with points of interest.

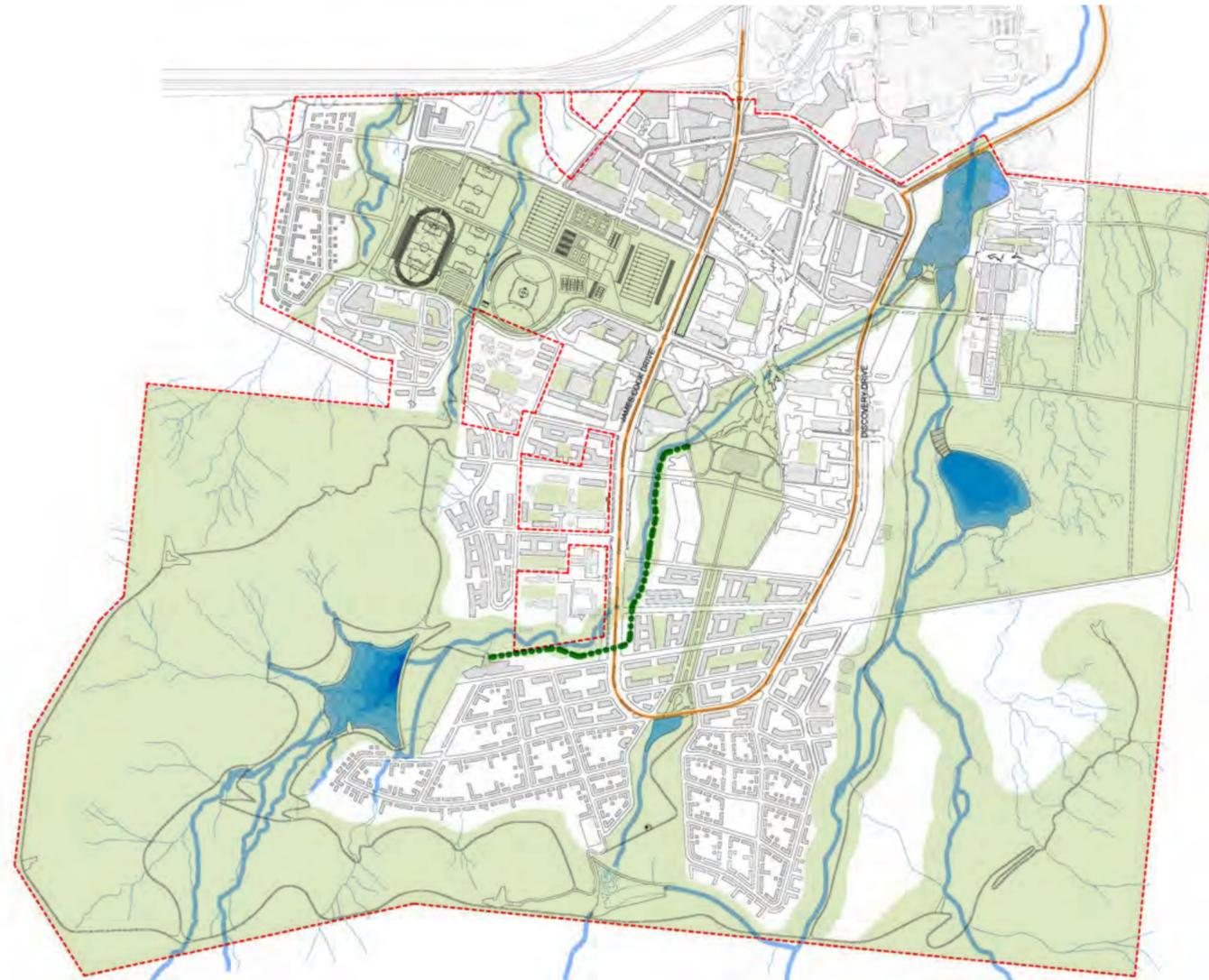
- Ecological connectivity should be maintained and reinforced along creeks. No vegetation or soil disturbance is caused in these corridors during construction of adjacent buildings and infrastructure, unless directly bridging the corridor, in which case minimal impact is expected and restoration /improvement of the existing condition will be required
- Development setbacks to waterbodies should be as per legislative requirements which are generally less than 25m and 50m. Preservation of exemplary remnant vegetation is a priority.

LEGEND

- Ecological Connectivity
- Environmental Reserve
- Potential Major Waterbodies
- Existing Waterways

LANDSCAPE + NATURAL ENVIRONMENT

2.3 OPEN SPACE AND PARKLAND



The university campus is 3.78ha and is dominated by sense of a tight core and broad open spaces at its edge. The natural setting is key to the university being of 'its place'. Maintaining large areas of open space is important to the character and ecology of the place.

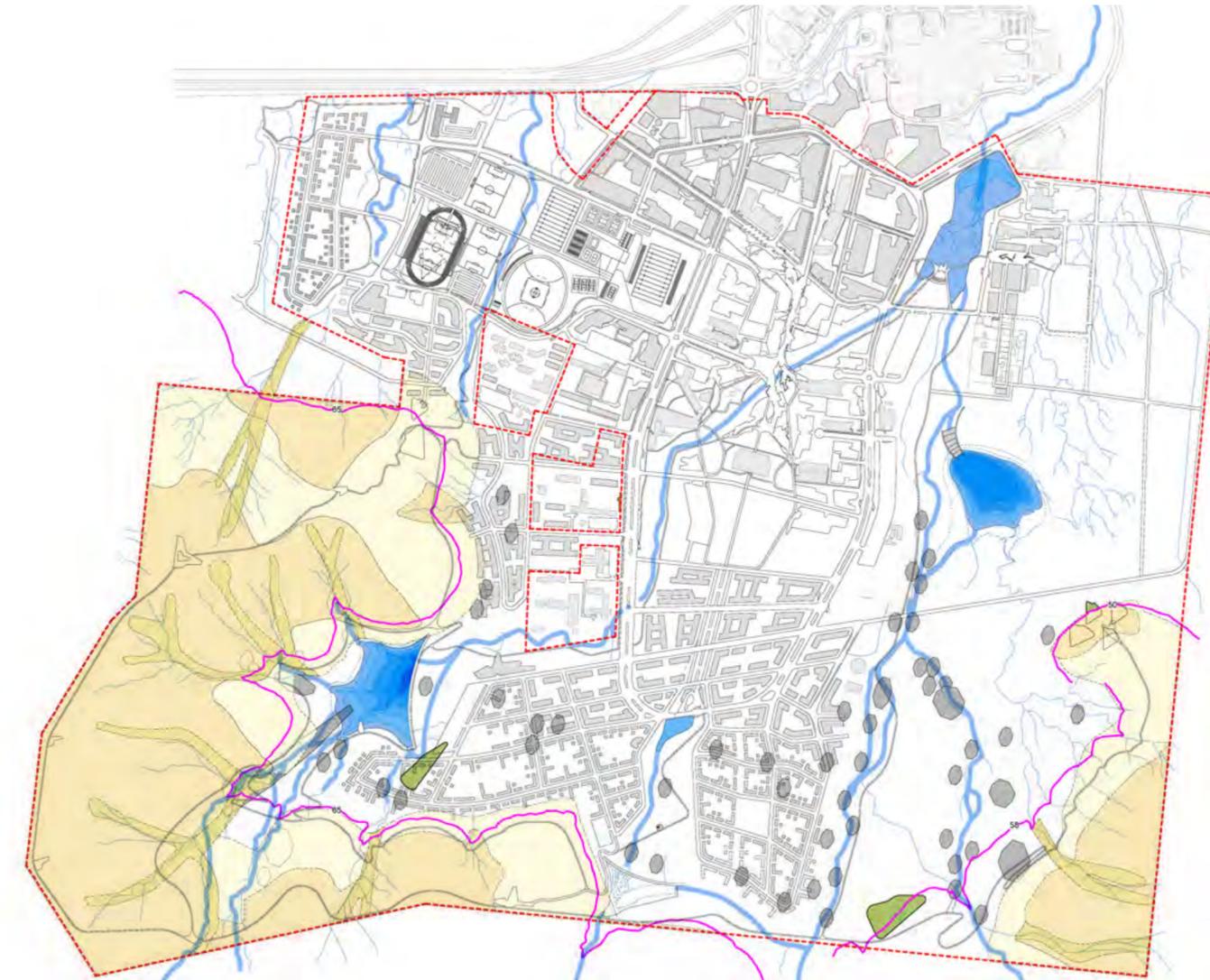
Contiguous open space represents 60.7% of the total land area.

LEGEND

- Open Space
- Ring Road

LANDSCAPE + NATURAL ENVIRONMENT

2.4 GEOLOGICAL AND TOPOGRAPHICAL CONSTRAINTS



JCU's setting in the foothills of Mt Stuart substantially define it and allow for visual location of the campus from a significant distance in the Townsville area.

The foothills within the campus boundary transition from relatively benign slopes to steep and rocky terrain. These areas naturally remain resistant to development and are maintained as bushland and enhanced with strategies outlined elsewhere.

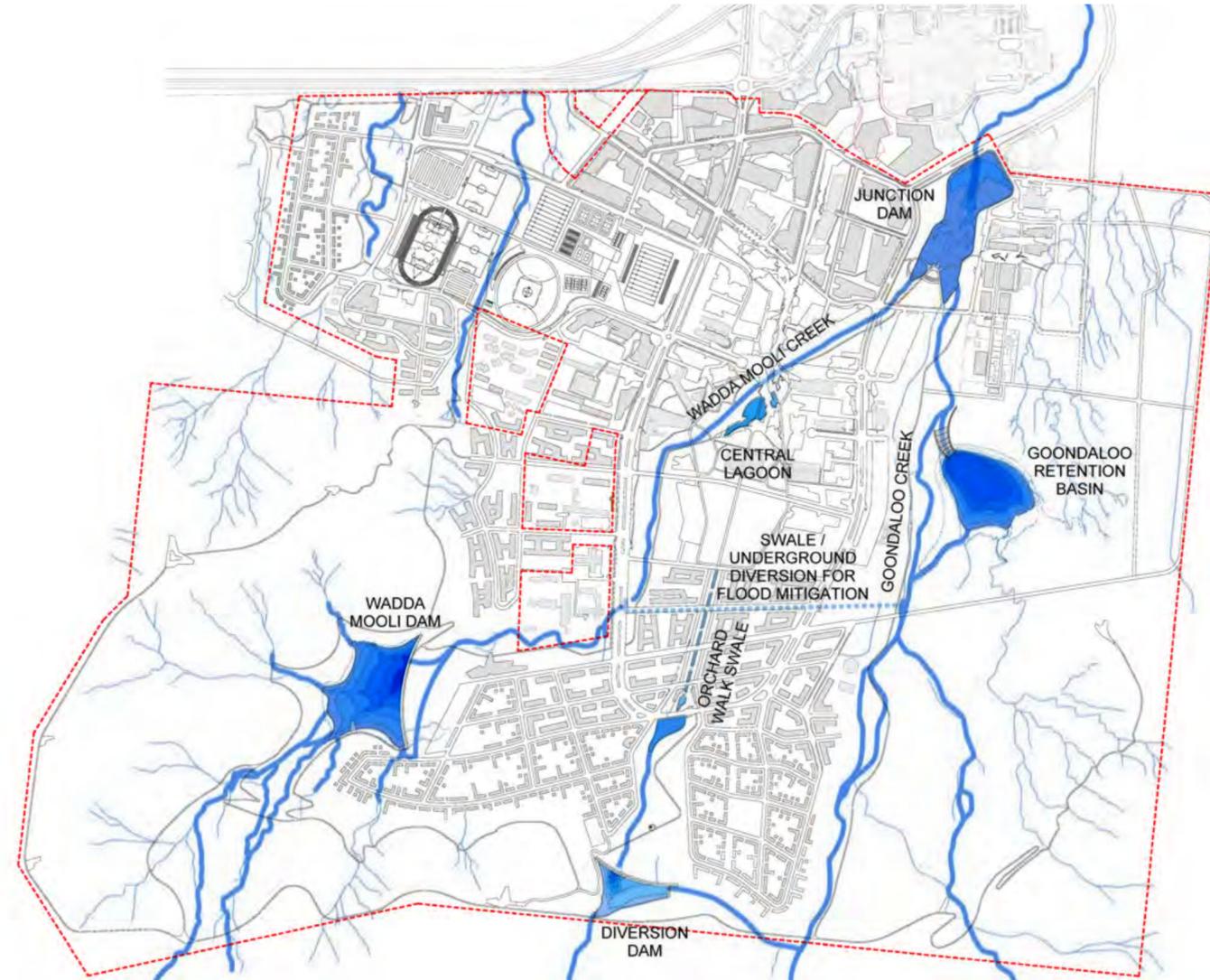
In general development on slopes above 10% grade is excluded from development due to soil stability and rock fall issues. However there are areas identified as an unlikely landslide condition (zone 2) that are set aside for future further investigation for residential development.

LEGEND

- Boulders and Cobbles
- Outcrop
- Zone 2 - Unlikely Landslide
- Zone 3 - Potential Landslide
- Zone 4 - Potential Debris Flow
- Foot Hill Slope > 10 Degrees

NOTE: Geological Constraints Source: Coffey Geotechnics PTY LTD - Discovery Rise Project Preliminary Geotechnical Assessment 2008. Based on Townsville City Council Information

LANDSCAPE + NATURAL ENVIRONMENT
2.5 WATERWAYS AND WATERBODIES



There are two named major creeks within the campus and various other additional water courses. All contribute to the ecology of the campus and are distinctive features.

Goondaloo Creek runs from south to north on the eastern side of the James Cook Drive ring road. It is steeper in nature to Wadda Mooli Creek. There is little engagement with the creek and it is fenced off in parts.

Wadda Mooli Creek runs diagonally south west to north east eventually merging with Goondaloo Creek.

Wadda Mooli Creek was diverted from its original course through the campus. It's tree lined banks provide amenity but also contribute to the wayfinding and connectivity issues of the campus.

The Wadda Mooli Creek planting has an association with Eddie Koiki Mabo and his time as part of the university's gardening team.

In significant rain events these creeks do not contain the water volume and overland flow flooding results.

The modelling of Wadda Mooli Creek in particular, demonstrates constraints to building development north to Mt Stuart Street. Flood water diversion strategies are proposed and the university has commenced investigation of these measures.

Several water bodies are proposed to help mitigate the flood risks. It is anticipated that these reservoirs could be features of the campus landscape, whilst also providing significant storage capacity for landscape irrigation.

Water run-off from the residential development in the foothills will have the potential to change the ecology of the Wadda Mooli Creek, and preventative measures are needed to be undertaken to avoid this.

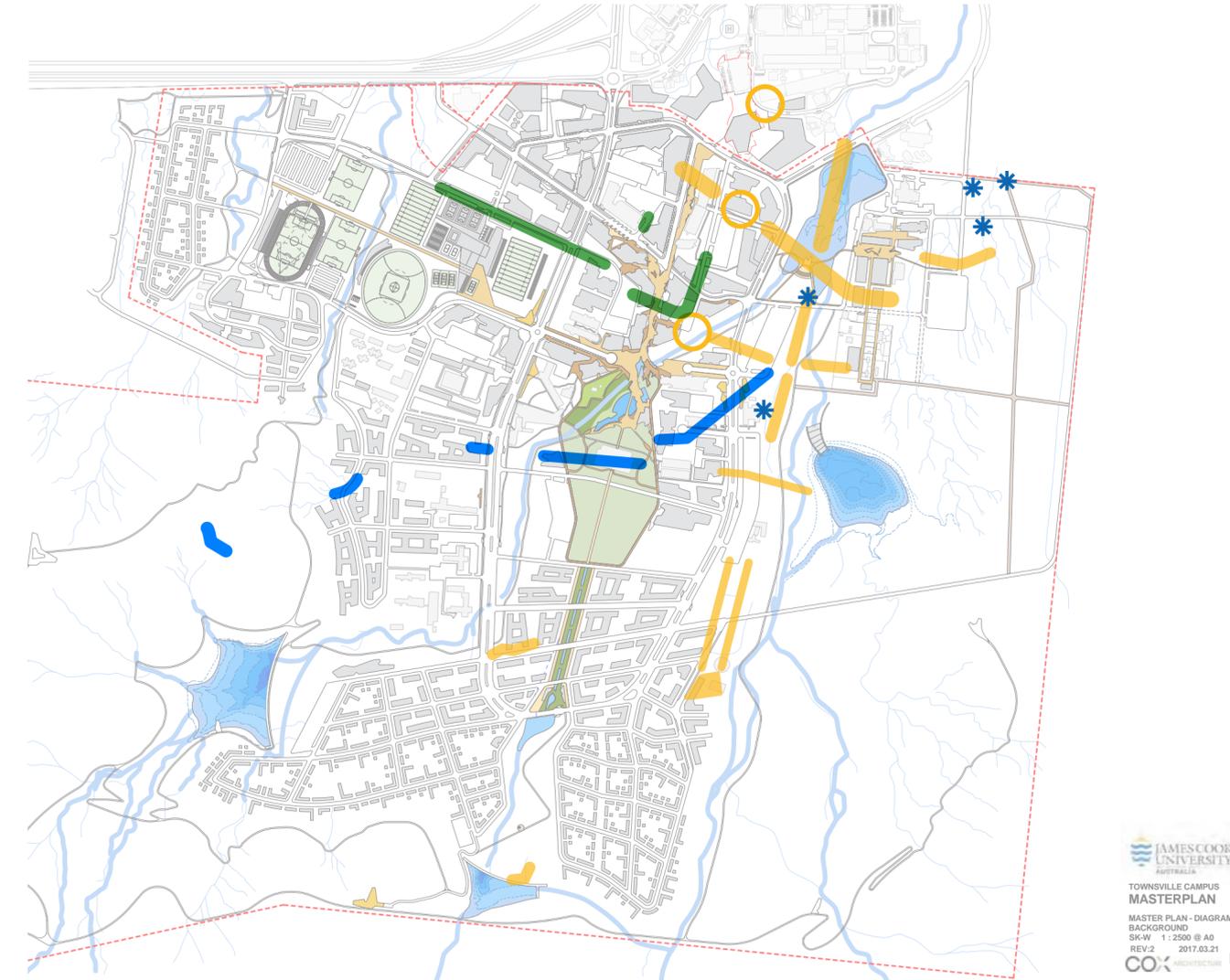
The introduction of water as a visual and recreational amenity within the heart of the campus is proposed in addition to the (often dry) creeks. Water features in and around the library green, Central Plaza and Orchard Walk are seen as challenging to the context of the Townsville attitude to water however these are considered as fundamental to perceptions of public comfort.

As a summary of measures, it is proposed to:

- Retain and enhance the dry creek bed character where possible
- Rehabilitate creeks and manage planting and understorey overgrowth
- Construct waterbodies required for flood mitigation as per the detailed flood report.

Note that further detailed investigation of the waterbodies will be required outside of the Master Plan as a major potential project.

LANDSCAPE + NATURAL ENVIRONMENT
2.6 PUBLIC ART



The University has a limited number of existing external public artworks. It is proposed to increase the consideration of Public Art to add to the richness of the campus.

A focus of art within the campus can explore contextual relationships with University life, the site and its cultural history. The campus can be seen as a tapestry to include public art in urban spaces, courtyards and waterways to contribute meaning, uniqueness and attract people to the University. Public Art can provide additional layers of wayfinding throughout civic spaces and pedestrian thoroughfares. Landmark art can mark campus arrival points. While it can be located across the campus the key opportunities include Mt Stuart Street, the Mall, Central Plaza, the Library Green, the Sports Precinct and the connection to country trails.

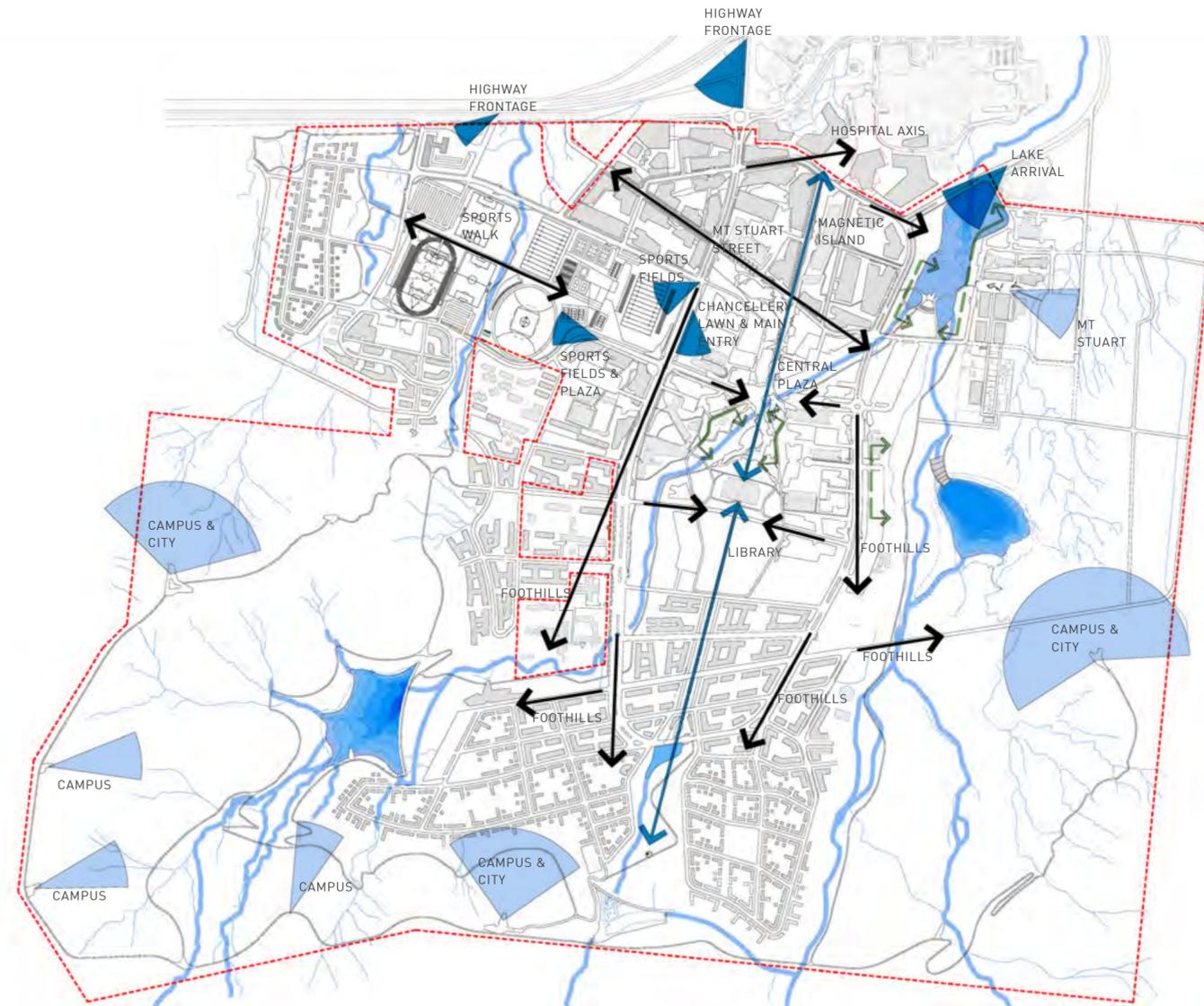
Art initiatives may include:

- Partnering with the school of creative arts, local community, Australian and international artists
- Art that is educational provocative, interpretive, monumental, functional
- Indigenous art
- Temporary or performance art
- Lighting art
- A Tropical theme emphasising place.

LEGEND

- Opportunity for Landmark Art
- Sports related Art
- Connections to Country
- Art Opportunity
- ★ Water Feature and Art

LANDSCAPE + NATURAL ENVIRONMENT
2.7 VISTAS AND VIEW CORRIDORS



Reinforcement of view corridors and awareness of the potential of major arrival points and road alignments can assist wayfinding and building design opportunities and planning.

The Magnetic Island axis as the key organising principle of the Master Plan should be maintained as a continuous visual corridor only bisected by the library.

The Mt Stuart axis (now adopted as the Mt Stuart Street axis) is proposed to be reinforced to the west on the axial alignment. The existing kink at the east is historically unfortunate accommodating the water crossing James Cook Drive, but it is retained in the Master Plan, with the extension east more aligned with opportunities in the Vet Precinct.

Built form at this intersection should take this axis into consideration.

The Natural Amphitheatre axis is proposed to be identified in a future road alignment. Additionally, the cranking nature of James Cook Drive, Buchan Road and Discovery Drive suggest opportunities for built form that respond as visual termination points.

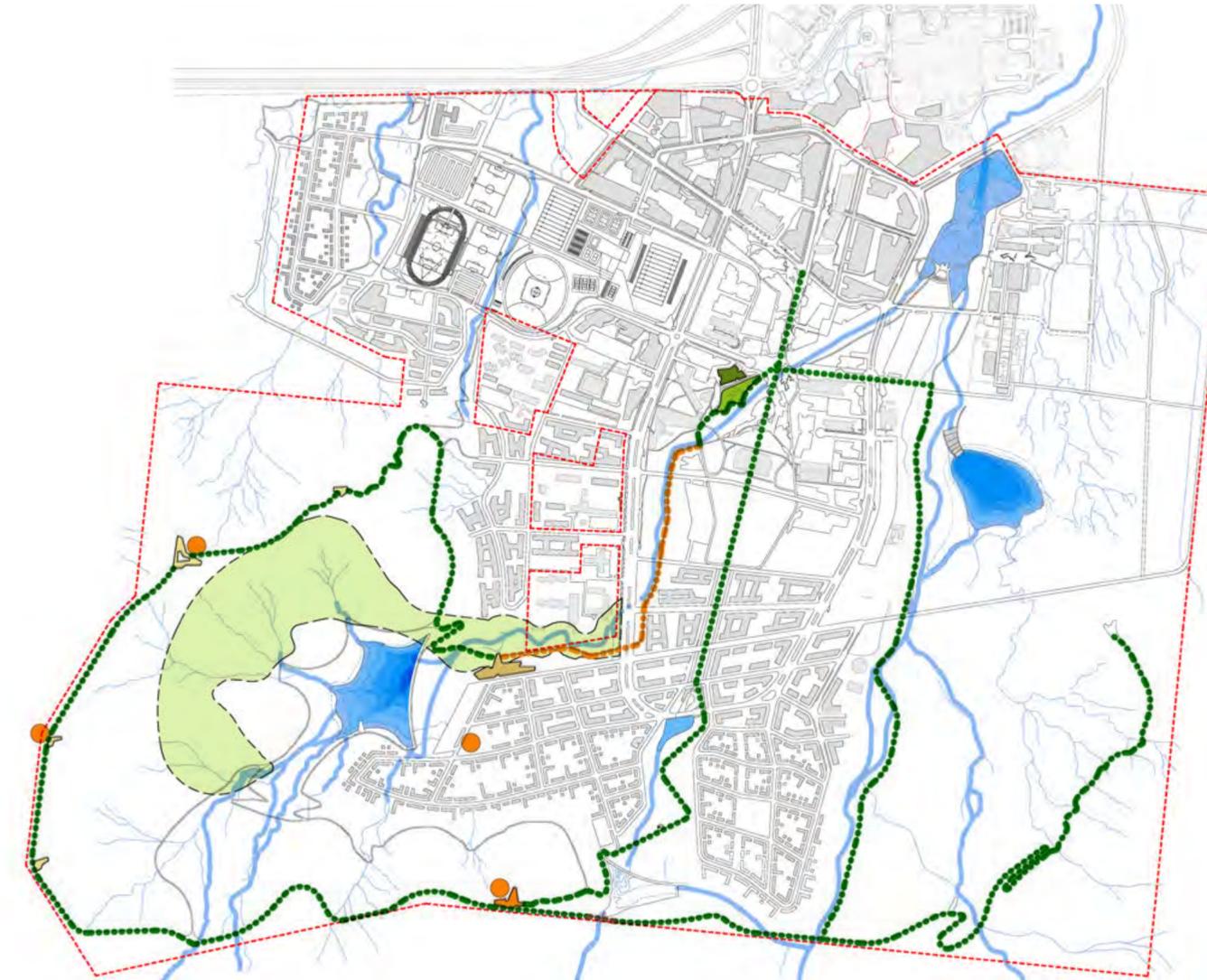
Development around the Angus Smith Drive roundabout is a location that has a critical primary arrival responsibility.

Looking out from the campus has been a focus of this Master Plan. Elevated locations in the foothills to the south provide dramatic regional views and should be celebrated.

LEGEND

- Vistas
- Primary Arrival & Gateway
- Creek Views
- Axial Views
- Magnetic Island & Library Axis

LANDSCAPE + NATURAL ENVIRONMENT
2.8 CONNECTIONS TO COUNTRY



Connection to Country is a phrase intrinsically linked with Aboriginal culture.

The traditional ownership of the land on which JCU is built has not been formalised at the time of preparation of the Master Plan.

Traditional creation stories associated with the dramatic geography of the region and consideration of bush foods and useful plants can be part of the campus experience. This strategy provides a notional physical framework to apply these messages.

Generally, local Indigenous narratives should be considered when planning and developing, particularly with respect to preservation, enhancement or modification of landscape. Where relevant, planning and design should create the opportunity for staff, students and visitors to read and understand the landscape with reference to customary narratives and practice.

An Indigenous inspired public realm, art and outdoor education plan is proposed to be developed along a route from the ideas market to the peaks of the foothills. The walk can be taken in part or in whole, and seeks to deliver on JCU's Statement of Strategic Intent through tangible acknowledgment of indigenous culture in the built and natural environments. It will provide a prominent expression of academic enquiry in the grounds of the JCU Townsville campus, and act as a learning resource, not only for JCU but for the community. Fully realised the Connections to Country journey could be taken as a matter of course by all schoolchildren in the region.

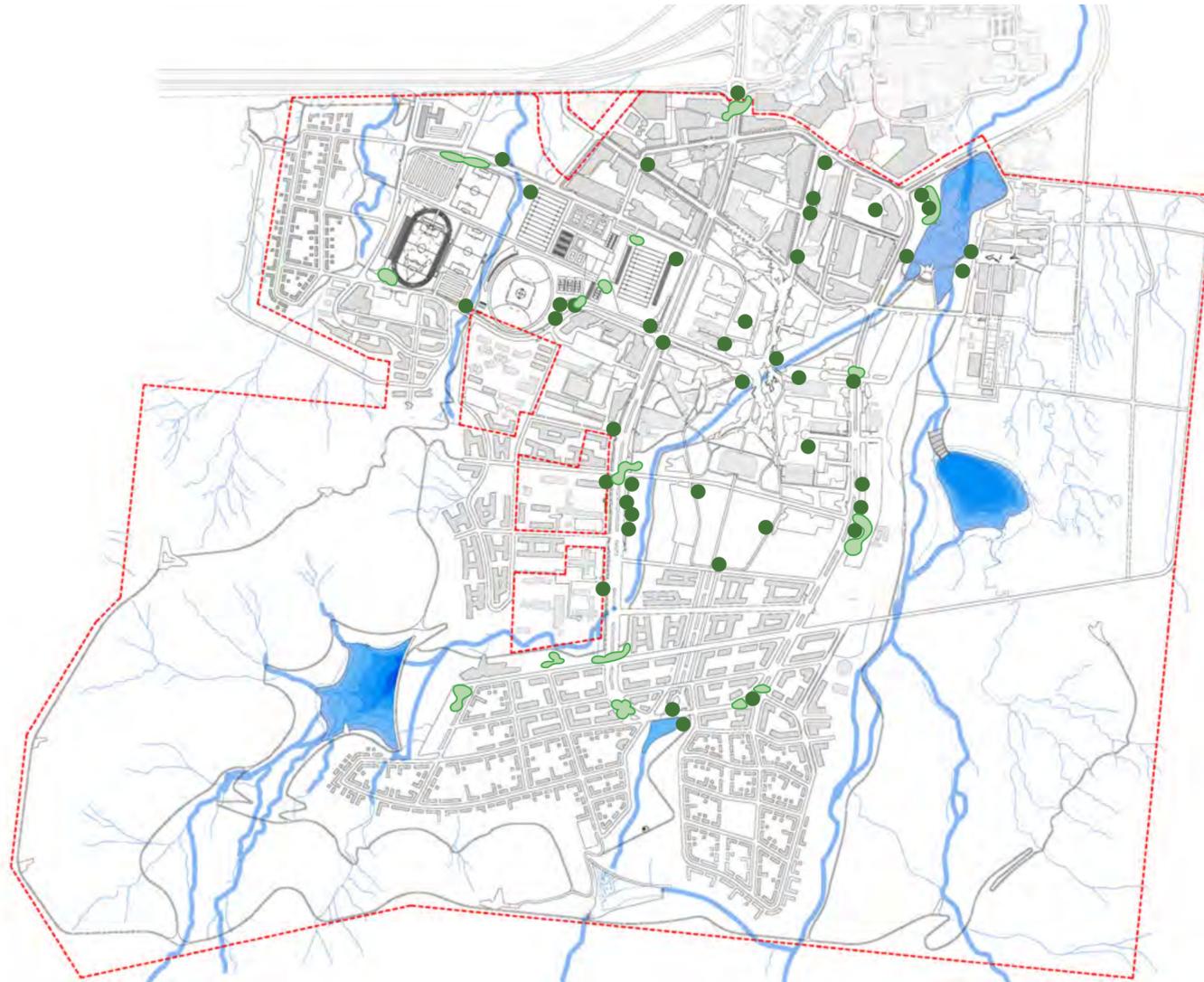
The route will provide a memorable and meaningful journey with aesthetic appeal with attributes that foster learning and contemplation, and will distinguish the campus both local and nationally.

The proposed full sequence may include movement from the Ideas Market to the Central Plaza, continuing on through an Indigenous outdoor learning garden that may be associated with a Museum and Interpretation Centre, the journey continues via a 'Bush Tucker Walk' to the Arboretum and associated Environmental Centre. The Arboretum can continue the Useful Plant Garden continuing via a Bushwalk Trail to the highest parts of the site including lookouts and the Winter House.

LEGEND

- Museum, Art Gallery & Interpretive Centre
- Indigenous Outdoor Learning Garden
- Useful Plant Garden (Arboretum)
- Trail Lookouts
- Environmental Centre
- Winter House
- Bush Tucker Walk
- Bushwalk Trail
- Camp Fires

2.9 LANDMARK PLANTING



A campus wide opportunity is proposed for growing trees for shade, education and recreation. It will be connected by a series of walking trails and showcase tropical, significant and landmark trees.

Landmark and notable trees will be located on view lines, key intersections, in tropical courtyards, meeting points and streets between buildings where there is space for canopies to develop. They will generally be characterised by large spreading canopies, but may also have distinctive features such as large foliage texture or colourful flowers or be of ecological or heritage significance. Large trees will generally appear as individual specimens at prominent locations. Smaller flowering trees and palms (*Wodyetia Bifurca*) planted in large numbers may also deliver a landmark effect.

Landmark species could include:

- Culturally relevant Ficus species
- Ficus Beughalensis (Banyan Fig)
- Terminalia species including *Sericocarpa* and *Meulleri* (Townsville Native Rain Tree and Meuller's Damson)
- *Samanea Saman* (Rain Tree)
- *Wodyetia Bifurca* (Foxtail palm).

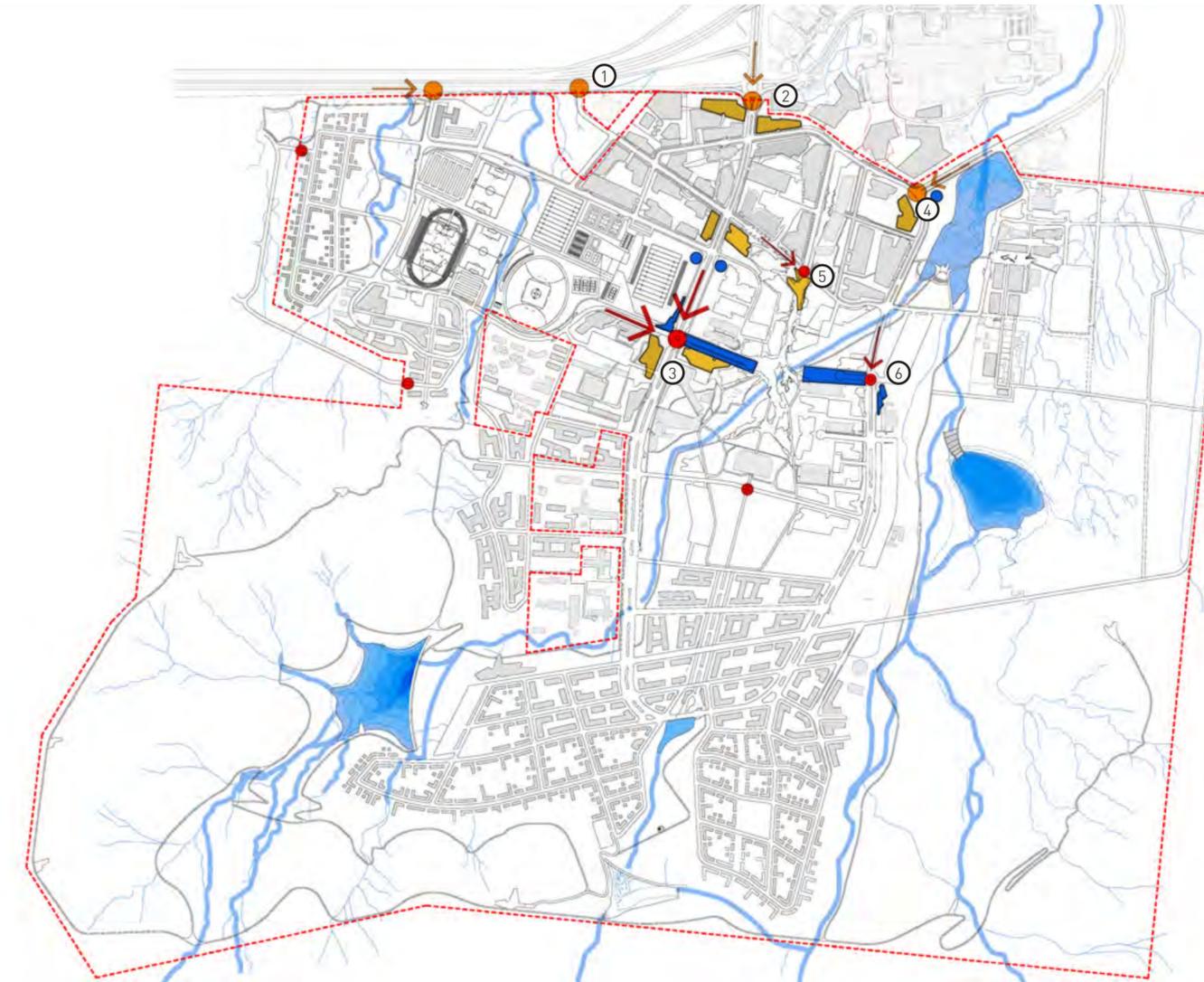
These landmark plantings will form the beginning of a walk through the campus, culminating in the consolidated arboretum.



LEGEND

- Landmark Tree Opportunity
- Tree Grouping

3.1 CAMPUS ARRIVAL AND ADDRESS



The existing extremely large campus is defined by the relatively few vehicular access points and these are all configured on the northern edge.

A greater connection to the community is desired to more 'normalise' the campus and assist in alternative traffic routes. Additional connections are proposed via the extension of Mt Stuart Street to Angus Smith Drive and by potential connections to the residential community at Klawarra Boulevard and Girraween Avenue at the West.

Potential connections to Lavarack Barracks have been noted as unlikely in defence consultation at this time.

External arrival points are proposed to be enhanced by consideration of significant building opportunities when appropriate to development requirements.

The Master Plan proposes that the Chancellery is considered the formal arrival point and front door for the campus and that the intersection of James Cook Drive and Buchan Road is proposed to be augmented by the introduction of Chancellery Place as an arrival cul de sac. The Science Place and Ideas Market/ Mt Stuart Street locations also act as default arrival points and should reflect this status.

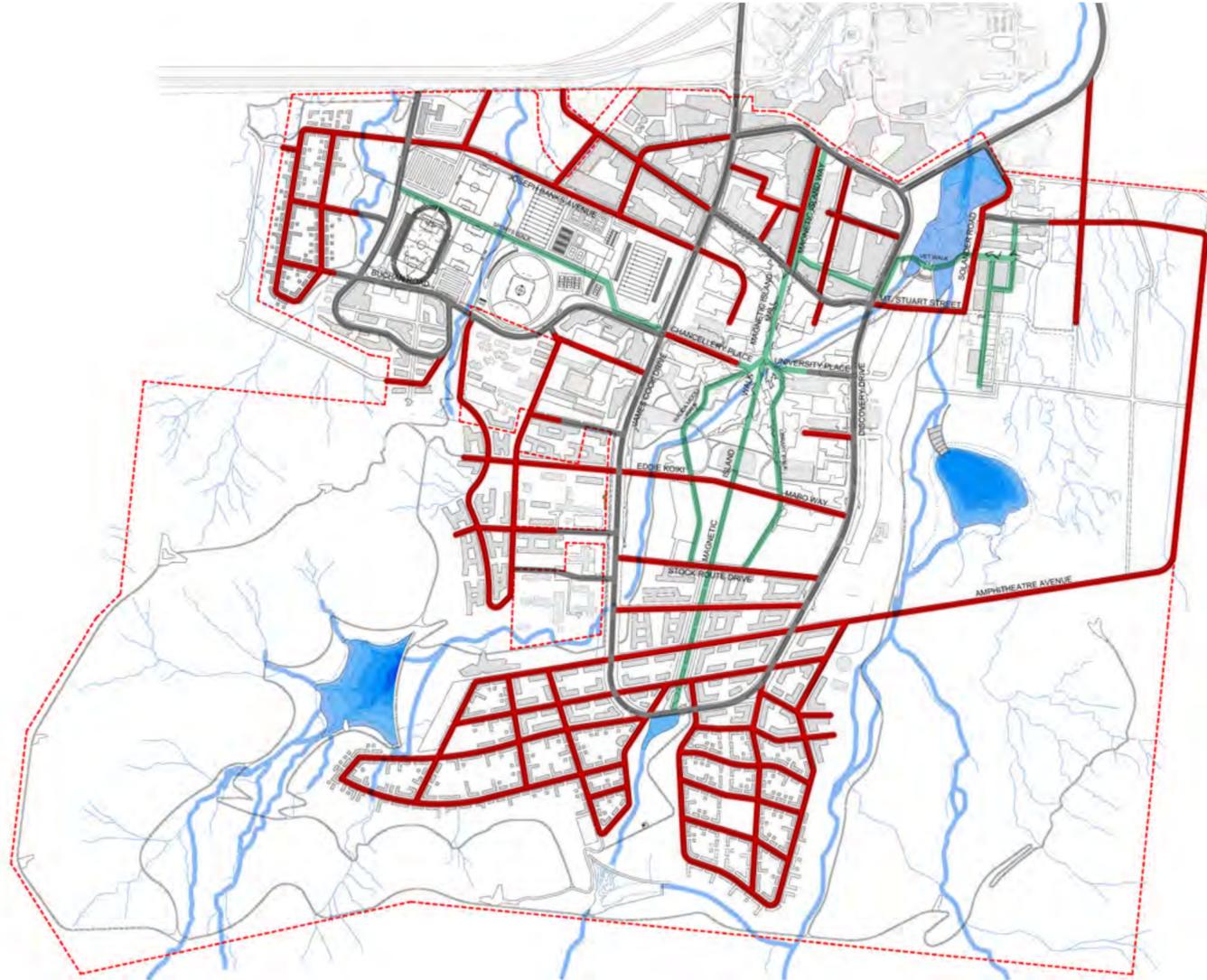
Key elements:

- ① Main Campus identity opportunity visible from National Highway (A1)
- ② 'Soft Edge' landscaped entry through non-academic buildings
- ③ Formal arrival point with iconic new University building, landscape + bus stops
- ④ Secondary Arrival at future key University building on axis with Discovery Drive.
- ⑤ Mt Stuart Street Ideas Market. Marked with canopy and entry statement.
- ⑥ Discovery Drive/University Place entry, marked by feature bus stops and entry statements.

LEGEND

- Main Entry
- Soft Edge Arrival Points
- Secondary Entry
- Entry Statements (9)
- Gateway Buildings/ Canopies
- Main Arrival Views
- Initial Arrival Views

3.2 NEW ROADS AND CONNECTIONS



As noted earlier in the Master Plan wayfinding, address, identity and collaboration are all elements that are identified as opportunities for improvement on the campus. The long term Master Plan shows the introduction of many new roads that will be required when the residential and other perimeter development occurs. However it is proposed that several connections closer to the academic core could be of a higher priority in delivering increased university functionality without compromising the sense of place.

We note the general strategy and key priorities below:

APPROACH

- Maintain the ring road as the key access road to the University
- Provide a finer grain of streets within the ring road to assist servicing and building address
- Reinforce wayfinding by extending My Stuart Street east and west of the ring road
- Consider long term future road to Eastern Boundary supporting residential opportunities
- Assume finer grain residential street network to south and west subject to detailed development layout
- Explore future perimeter campus connections to north and west for greater community connection.

MASTER PLAN PRIORITY CONNECTIONS

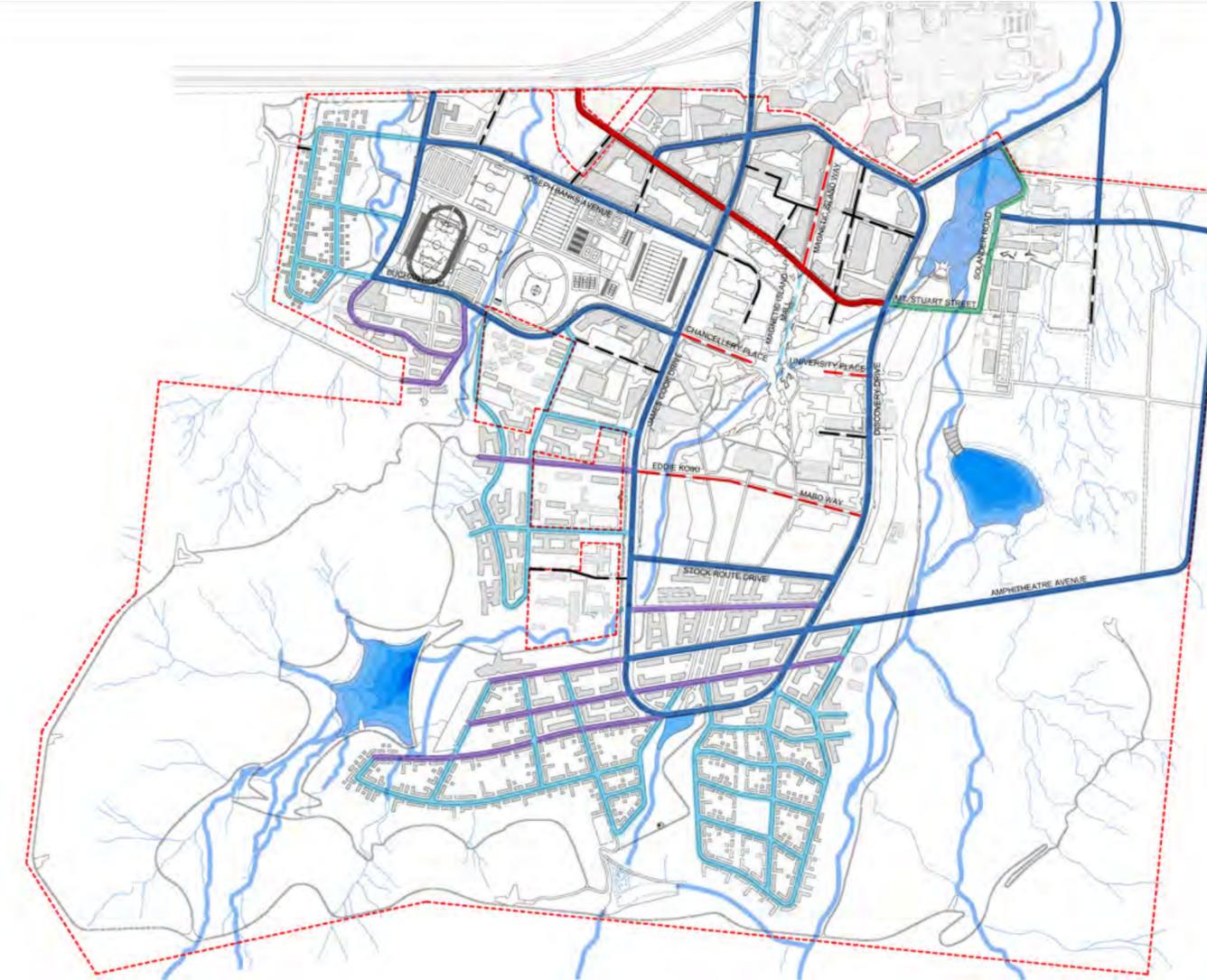
1. Chancellery Place - Relocation of Carpark in front of Chancellery with new cul de sac connecting to Central Plaza
2. Eddie Koiki Mabo Way - Vehicular connection to the south of the Library connection the ring road
3. Pedestrian path connection Central Plaza to Mt Stuart St
4. Pedestrian Land Bridge connection on axis
5. Vehicular Road and pedestrian way connecting Mt Stuart Street to hospital.

Note: The Road layout in the residential precinct in the south and west is largely notional with actual design to develop from detailed project proposal.

LEGEND

- New Road
- New Pedestrian Link

3.3 ROAD HIERARCHY

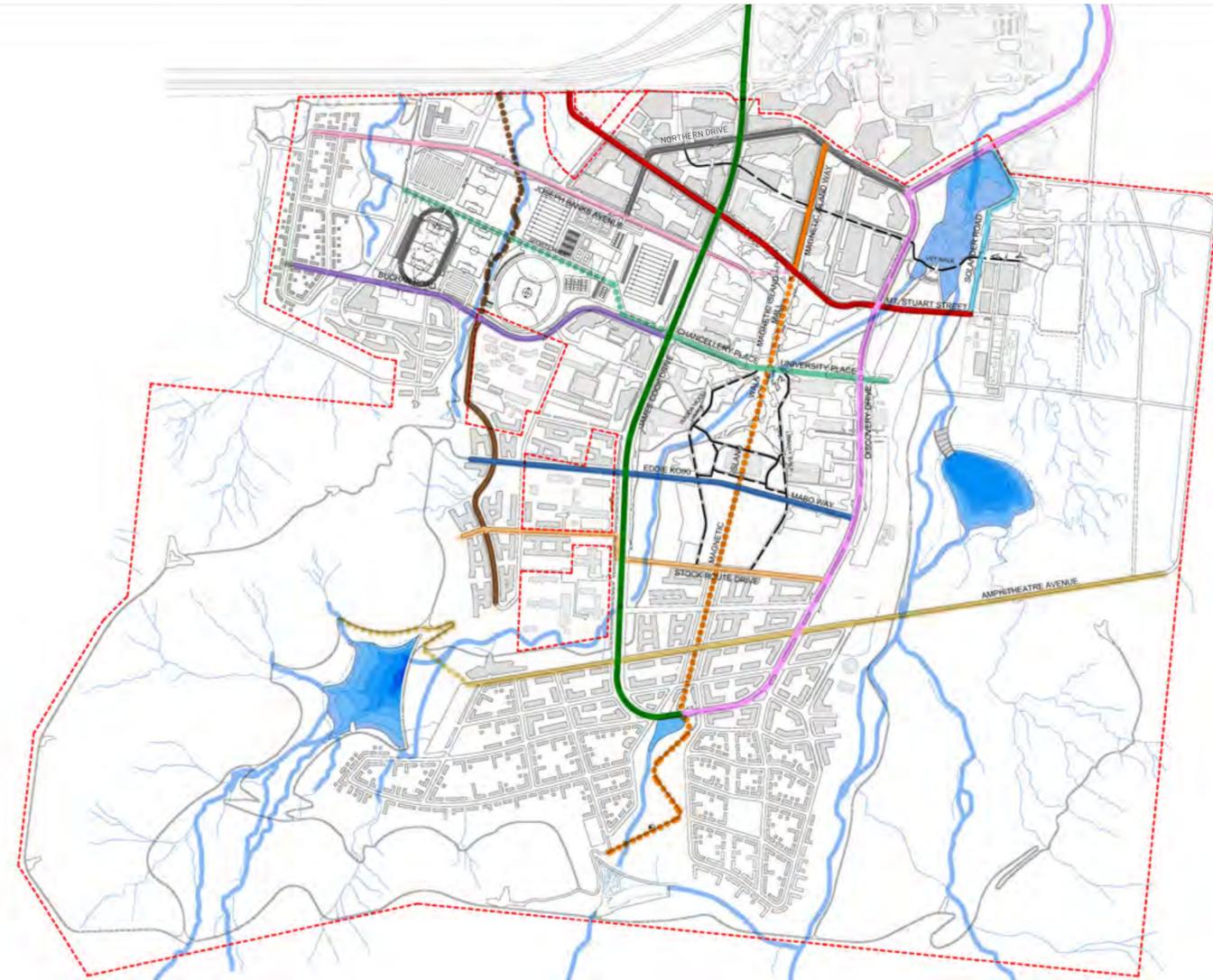


A road hierarchy is proposed that is associated with street width, parking, cycleways, footpaths and landscape of each road. The proposed solutions are detailed in the Campus Design Guidelines in Section 9.

LEGEND

- Esplanade
- Boulevard
- High Street
- - - Shared Street
- - - Mall (Emergency Vehicle Access Only)
- Residential Street
- Residential Avenue
- - - Access Road

3.4 STREET NAMING & WAYFINDING



The Master Plan proposes that the introduction of new streets provides the capacity for wayfinding and address consistent with established convention each street can have a street name and each building can have a street number.

Use of colour coding streets can assist in ordering of the campus in published material as well as insitu signage.

The strategy proposes street names and colours for the purpose of illustration. It is expected that naming conventions would be explored and adopted through formal processes and wayfinding as part of a separate project.

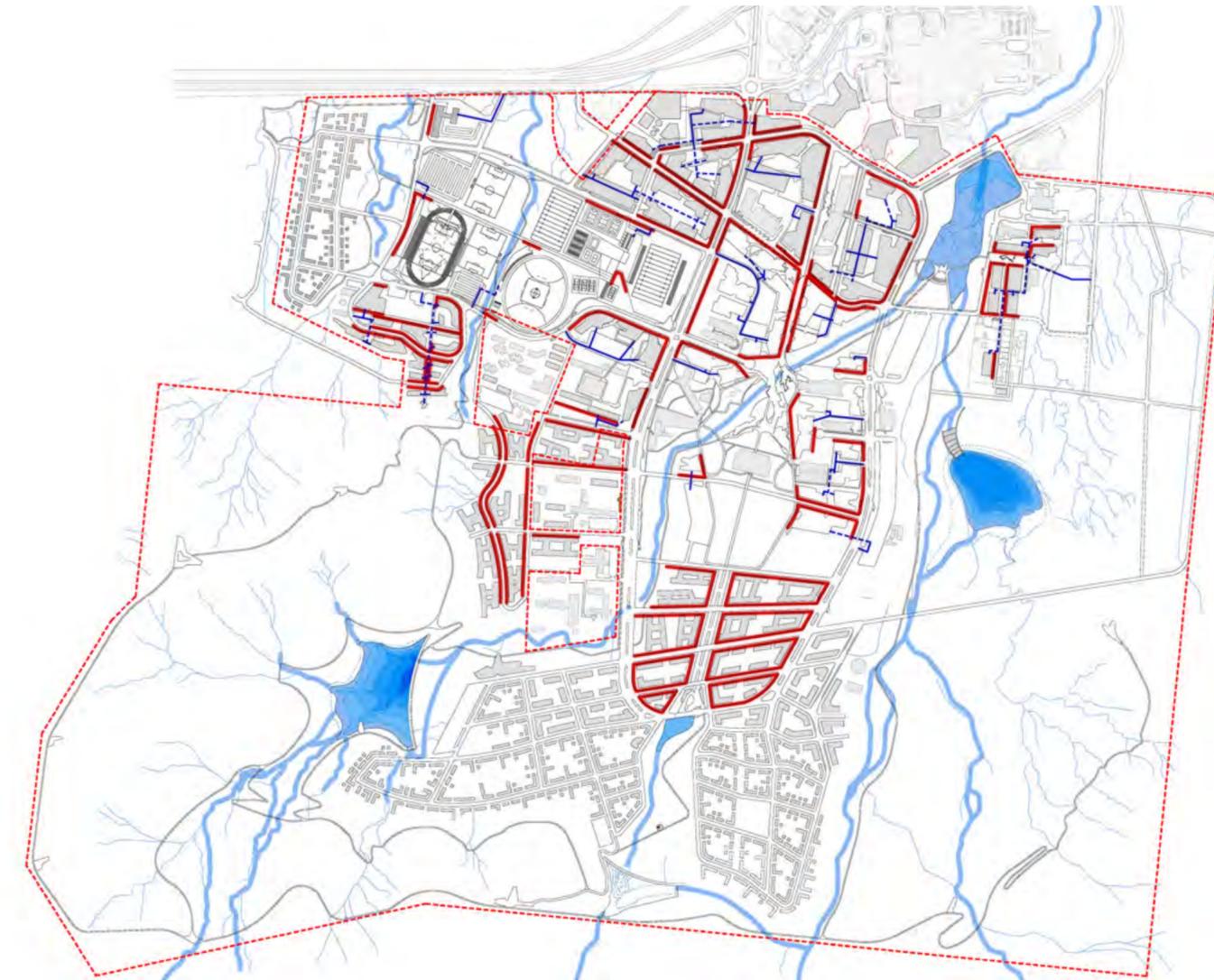
The system would still allow retention of building naming.

The Master Plan poses consideration with regard to the naming of James Cook Drive and whether separating the naming of the East and West arms would improve wayfinding.

LEGEND

- Solander Road
- Northern Drive
- Mt. Stuart Street
- Discovery Drive
- James Cook Drive
- Magnetic Island Way
- - - Magnetic Island Walk
- Creek Avenue
- - - Creek Walk
- Joseph Banks Avenue
- Chancellery Place / University Place
- - - Sport Walk
- Buchan Road
- Eddie Koiki Mabo Way
- Stock Route Drive
- Amphitheatre Avenue
- - - Amphitheatre Walk
- - - Pedestrian Links

3.5 BUILDING ENTRY, ADDRESS & SERVICING



The existing campus condition allows buildings on James Cook Drive to have an identity but all other buildings setback within the heart of the academic core are difficult to locate and have a limited formal address and loading structure. The proposed additional connections are proposed to resolve this.

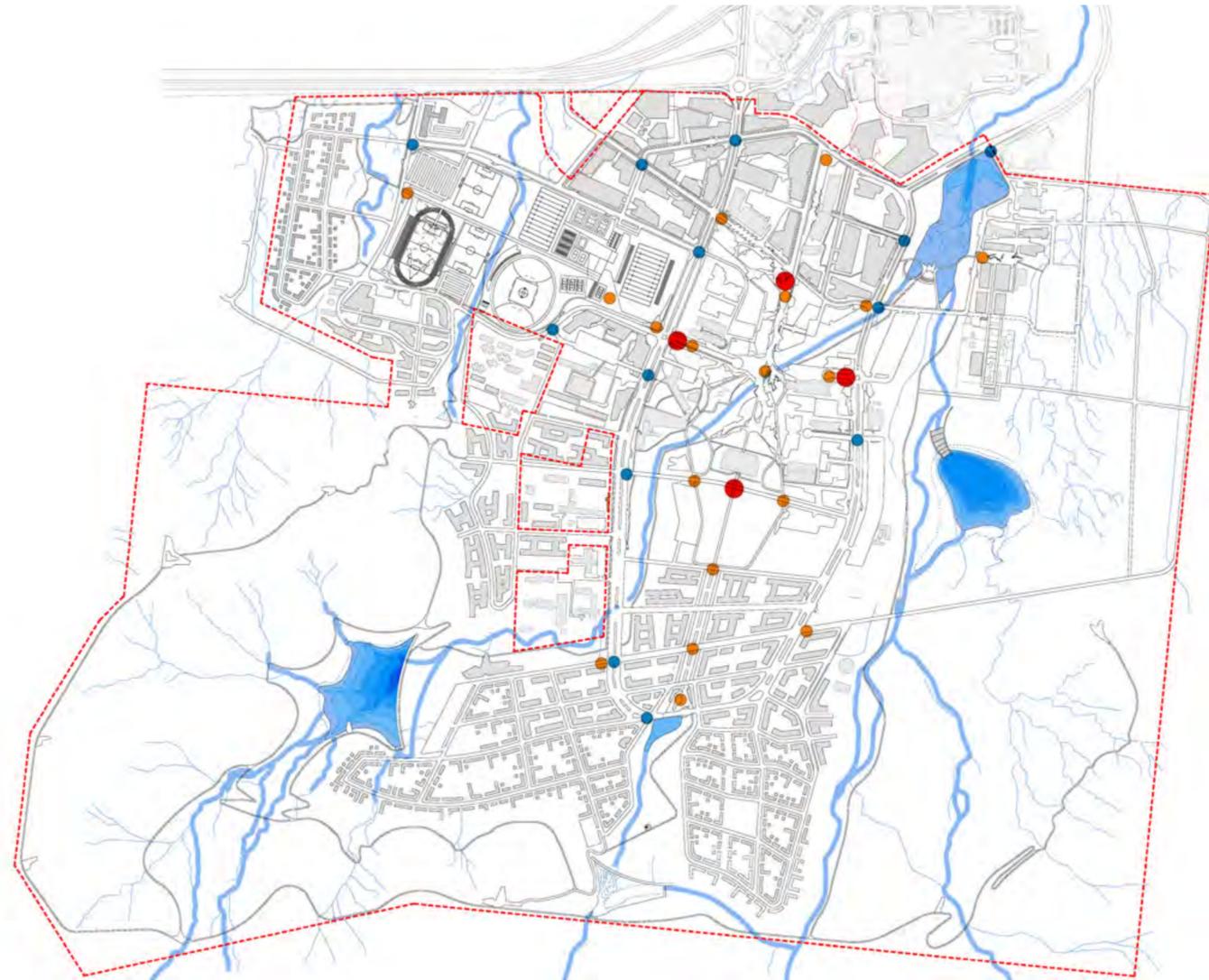
The attached diagram highlights the front of house and back of house intent.

- Building entries are intended to reinforce primary circulation routes along the Magnetic Island axis, the numerous cross axes, and inner verandah walk loop
- Commercial, educational, research or mixed use buildings orient their primary entrances, ground floor activities, and upper level verandahs facing the street or public space
- Building edges should include transitional/ outdoor spaces that foster mixing of university, commercial and recreational activity
- Access for loading and delivery is to occur from the rear of all buildings, away from the primary circulation routes. These locations are to be accessed via the service roads
- Residential buildings orient their primary address, living spaces and verandahs/ terraces facing the street or public space.

LEGEND

- Building Entry / Address
- Vehicular Loading
- - - Loading

3.6 SIGNAGE



Further to strategy 3.5, a series of major signage elements would augment the proposed Master Plan. The attached diagram indicates a notional location plan for signage that would be developed in a wayfinding project.

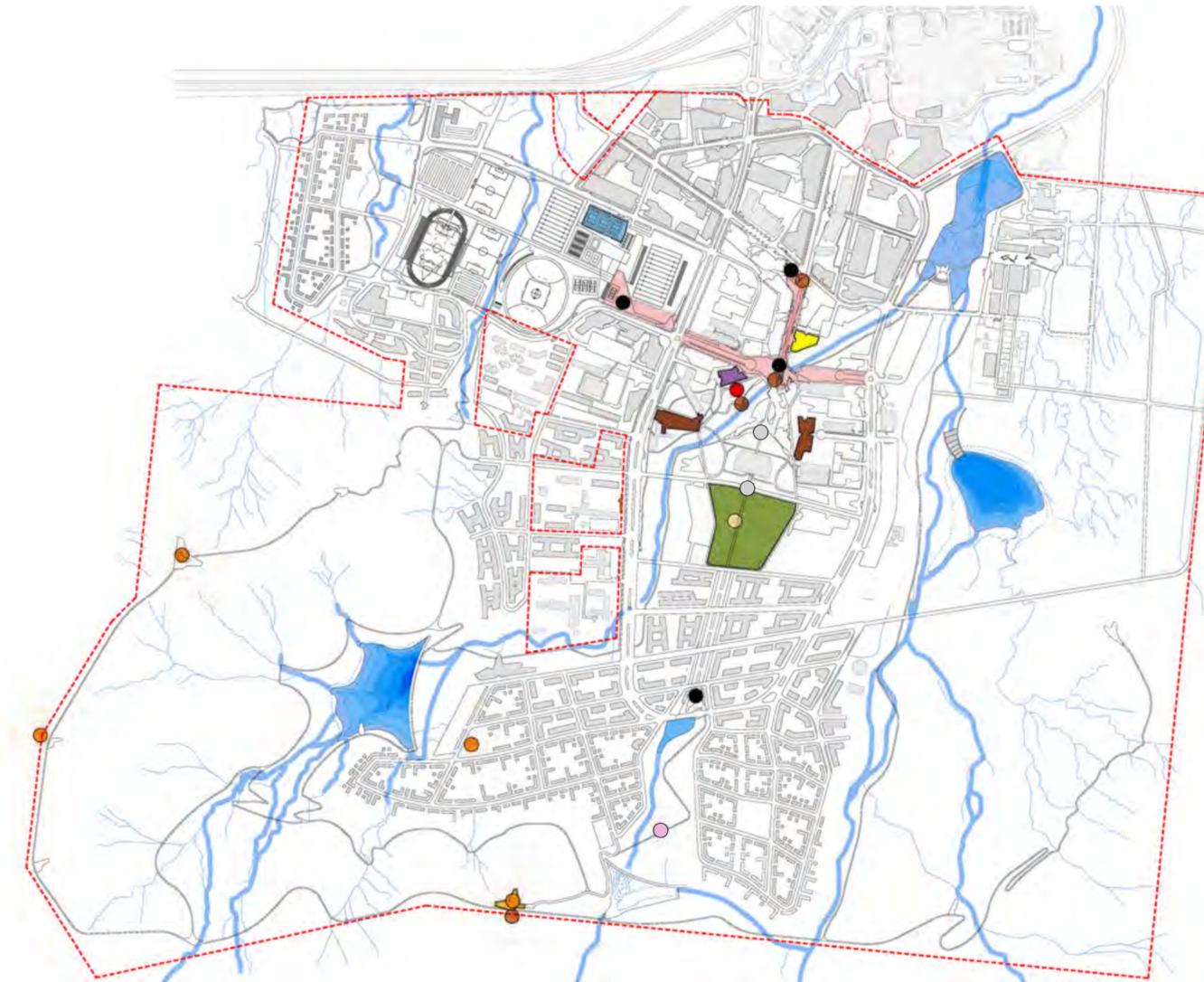
Additional strategy commentary below reflects opportunities available in the Master Plan.

- Wayfinding signage is complimented by a diverse array of travel distance, motivational, environmental and interpretive information – set within pedestrian/cycle pavements or integrated within landscape, streetscape elements or public art pieces
- Major university signs would include maps and building directories
- Directional signage is to reflect street wayfinding signage in cities, with the street name and building numbers
- Building addresses and old building numbers could be included on building signage
- Building names would be fixed directly to the building and not included in wayfinding signage
- Parking signage is to be dynamic digital signage with live availability updates
- Directions to commercial and retail outlets are to be included on wayfinding signage in a discrete but visible manner.

LEGEND

- Major University Sign
- Primary Directional Sign
- Parking Sign

4.1 ART, CULTURE & EVENTS



The consultation process identified many 'campus life' considerations that could contribute to a rich campus.

Some of the elements proposed do not necessarily require a fixed or specific location however it was important that:

- The Master Plan did provide areas of flexibility and servicing to support these opportunities (e.g. markets), and
- The Master Plan did not restrict areas to prevent large scale events with considerations of compatibility with adjacent developments.

While many of the considerations only require external flexible space, some opportunities for building projects were identified.

These are worth noting:

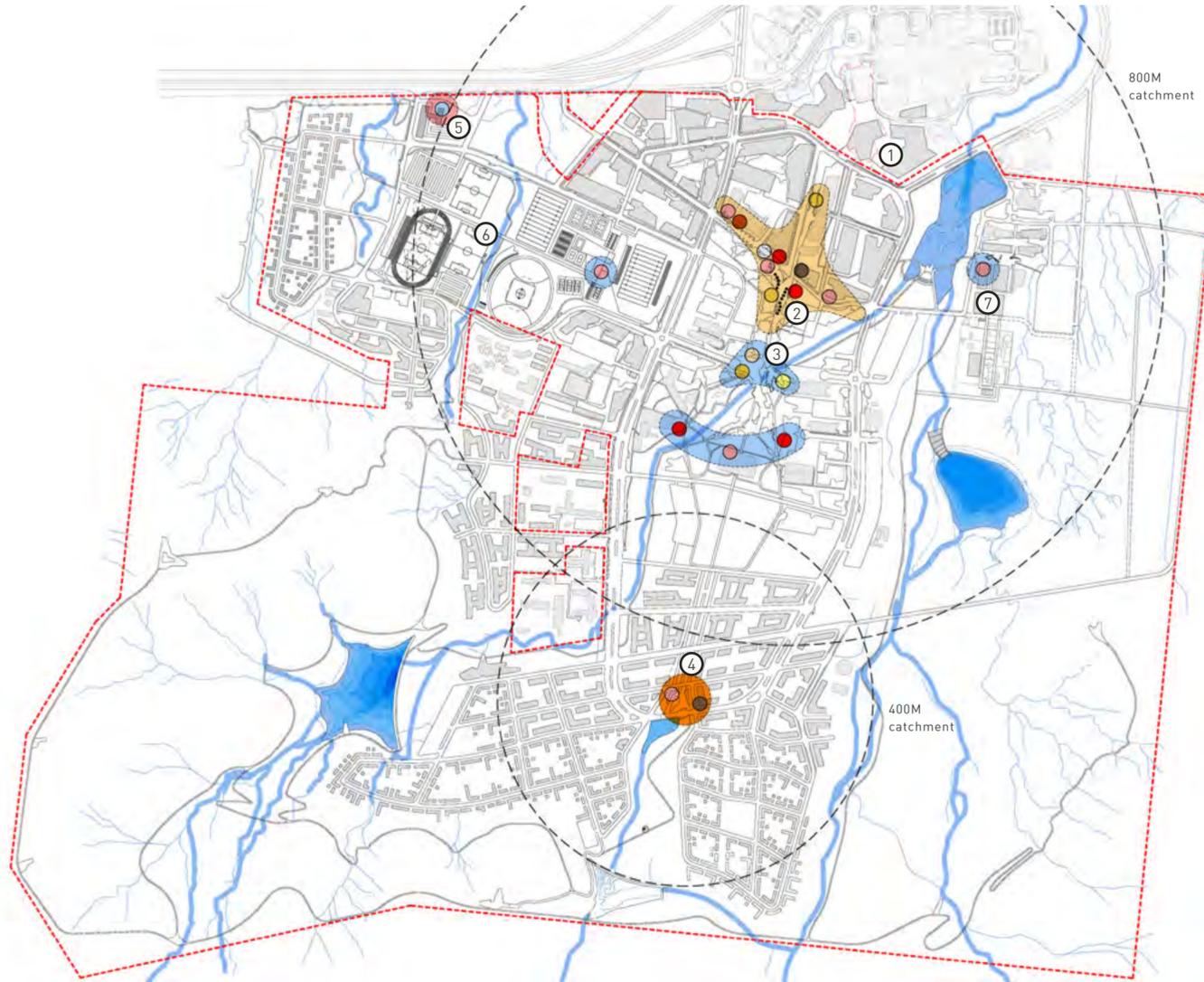
1. A museum/gallery/interpretative centre that could include Indigenous acknowledgement and a formalisation of some of the university's artefact collection. A fine gallery component consistent with many major universities
2. A building for performance, recitals and graduations
3. A flexible flat floor building which may be part of the sports precinct for varied uses.

LEGEND

- Graduation
- Global Village / O'Week
- Learning Retreats & Special Guest Events
- Performance / Recitals / Graduations
- Art + Other Exhibitions
- Concerts + Festivals
- Camp Fires
- Smoking Ceremony + Welcome to Country
- Markets
- Bonfire Nights
- Concert Stage
- Busking + Performance Art
- Kup-Murri Indigenous Feasting Ceremony

STUDENT + COMMUNITY LIFE

4.2 RETAIL, FOOD & BEVERAGE



JCU have previously undertaken formalised food and beverage planning for the campus which was largely fulfilled with the completion of Education Central and the Science Place.

Both of these projects have demonstrated the F&B offer is an important activation of buildings and promoting informal collaboration and peer to peer learning. The size of the campus and the oppressive weather continues to suggest a single campus heart is not realistic as a regular central gathering space.

Subject to commercial viability for sitting tenants' it is proposed that new buildings proposals do include a retail, food and beverage component with emphasis on the north south spine and Mount Stuart Street as natural locations.

Three outlying areas may have particular consideration:

1. A convenience centre that may include a service station along Angus Smith Drive
2. Café, bar and kitchen in a new sports precinct building
3. A residential village corner store/café.

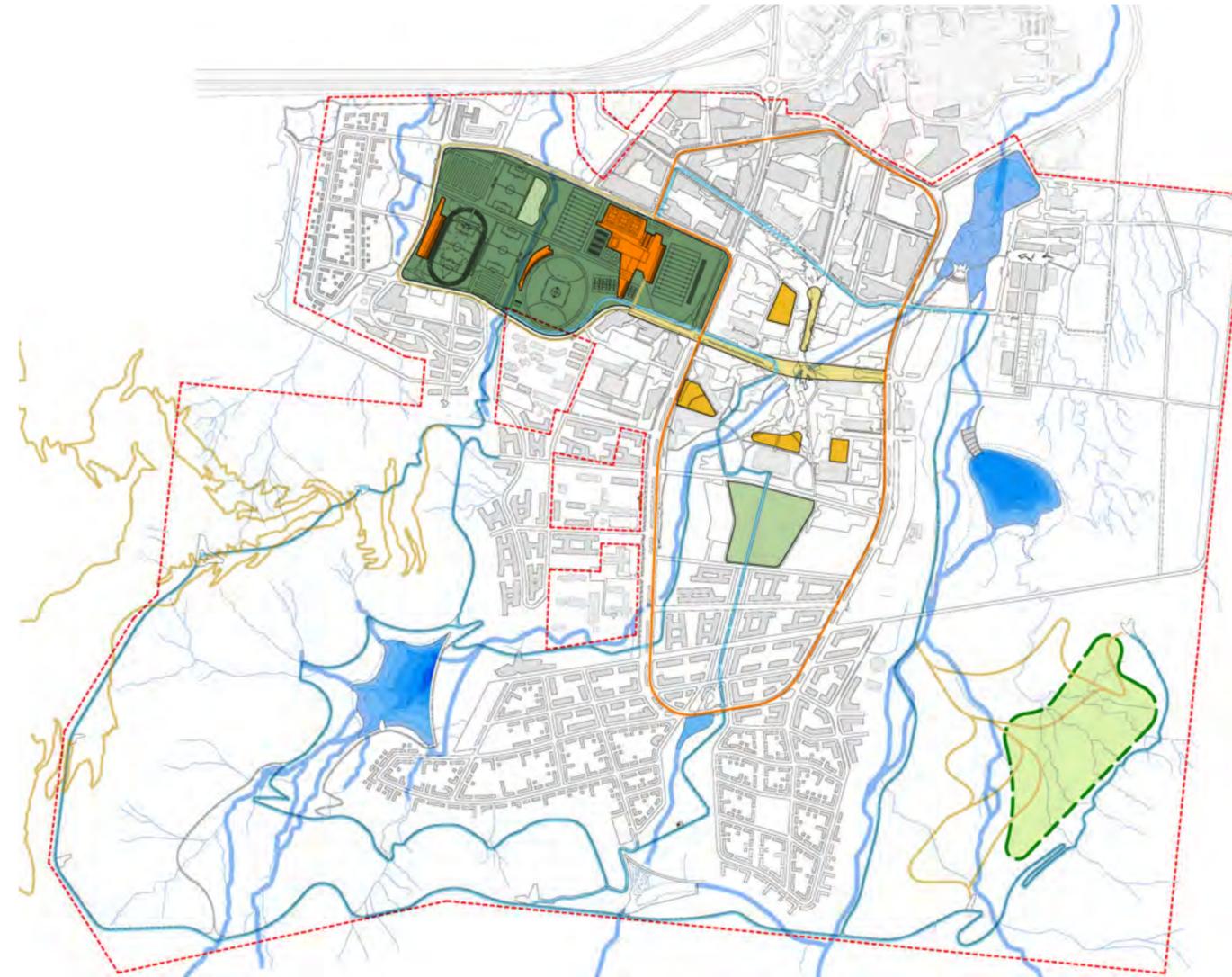
- ① Hospital / North
- ② Ideas Market / Mt Stuart Street
- ③ Central Plaza
- ④ Residential Village
- ⑤ Angus Smith Drive Convenience Centre
- ⑥ Sports Precinct
- ⑦ Vet Precinct

LEGEND

- Corner Store
- Cafe
- Convenience Centre / Fuel Station
- Fast Food
- Tavern / Bar
- Existing Offer

STUDENT + COMMUNITY LIFE

4.3 SPORT AND RECREATION



JCU has prepared a separate sports Master Planning Report as a series of accommodation requirements (not plan based). This Master Plan incorporates the accommodation requirements into a unified plan.

Consolidation and augmentation of existing sports fields is proposed with the reorganisation of the precinct boundary for access and the introduction of a major sports building containing indoor sports courts.

A new swimming pool/s consistent with the campus and community expectations is proposed.

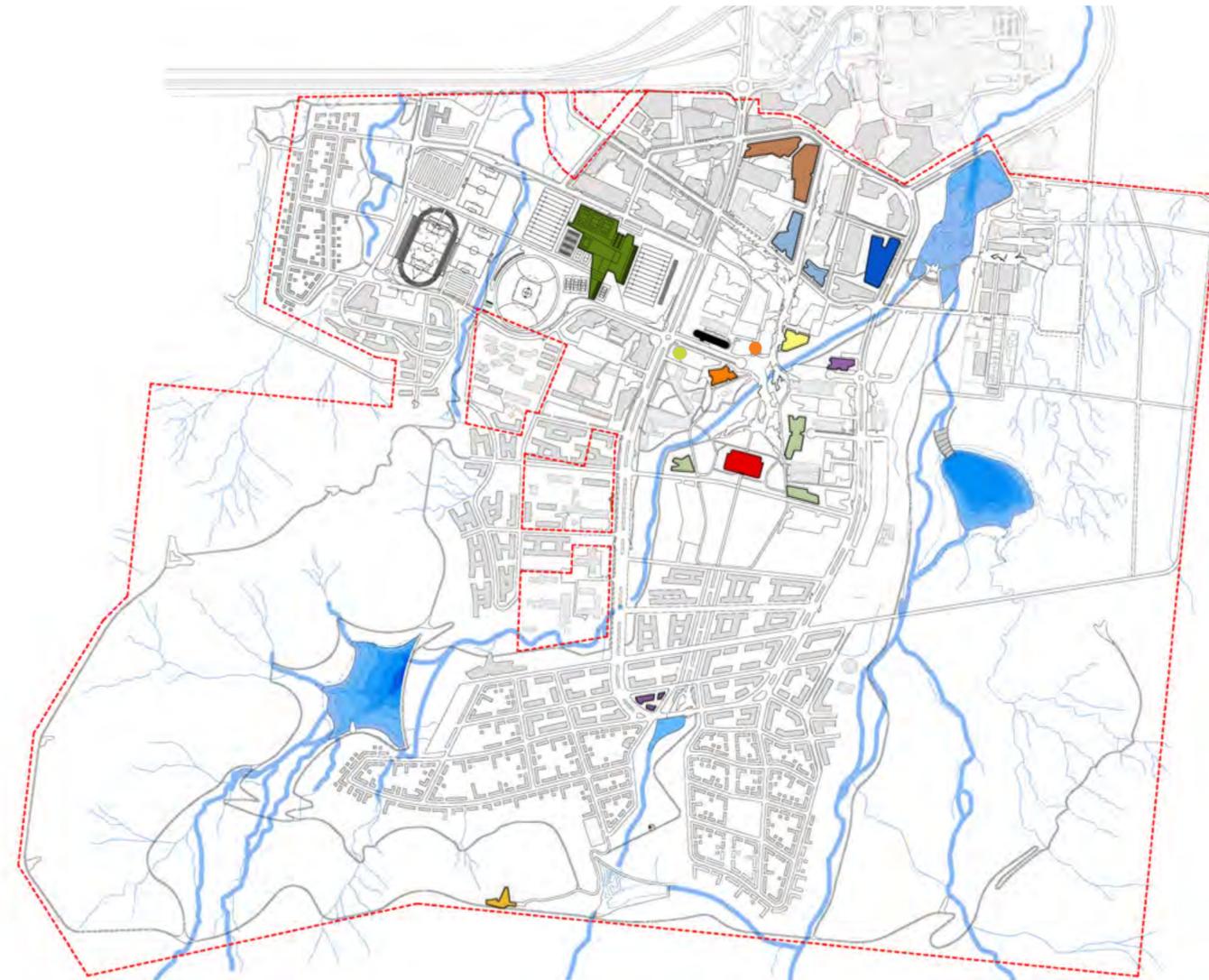
Informal sporting and recreational space is identified and greater use of the site topography for mountain bike and trail walks and runs is proposed.

Sport as a community engagement vehicle is considered important in addition to student recreation and research opportunities.

LEGEND

- Formal Sports Fields
- Community Fields
- Sports Centre & Clubhouse
- Informal Games Area
- Occasional & Temporary Games
- Trail Runs
- 3.5km Run
- 1.5km Run
- Potential Adventure Challenge Course Locations
- Mountainbike Trails

4.4 KEY BUILDING OPPORTUNITIES



The Master Plan identifies a structure for development of new built form with significant flexibility.

There are some known specific buildings and some identified in the Master Plan that may benefit from specific location.

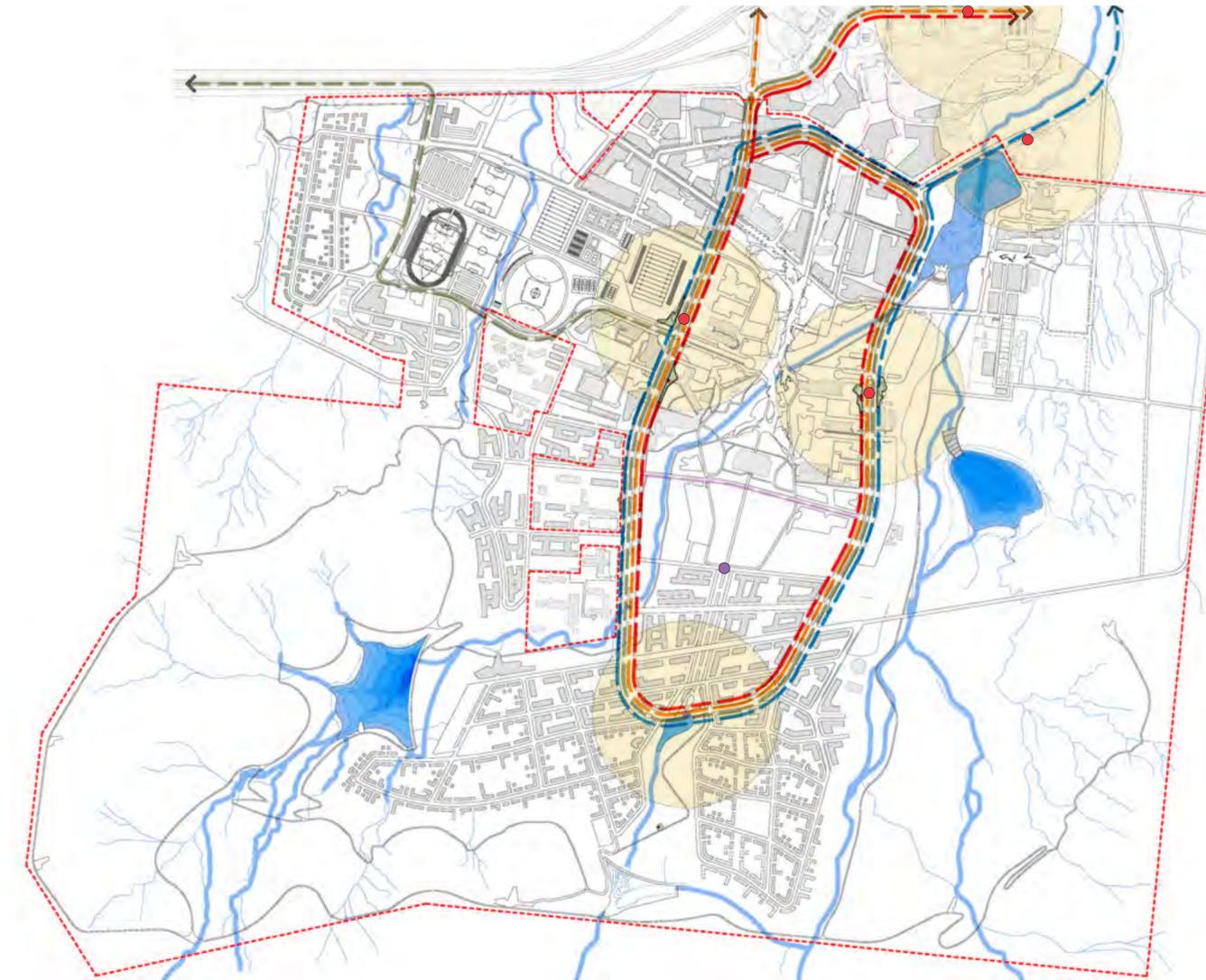
1. Learning Hub. All benchmarking suggests the library is significantly undersized for the university population. The library continues to be a place for study and learning independent of the association with bookshelves. The library is a formal building in the landscape. Physical additions to the library are unlikely to occur, however support for expansion of a learning hub is proposed with adjacent built form
2. The Central Plaza node is the forecourt to up to three new building opportunities. A museum, art gallery, interpretative centre and multipurpose hall are potentially well located off the plaza
3. The sports centre is a major building within the sports precinct
4. The University Private Hospital proposal has previously been located logically in the north west associated with Townsville Hospital and the existing JCU Medical School
5. Catalyst and associated industry opportunities within the academic core along Mount Stuart Street as a CPB
6. As a part of embracing the full size of the campus, a proposal for a 'Winter House' in the foothills to the south with elevated views of the campus and the region is locate based on topography. A learning centre as part of the arboretum is proposed.

Additional elements for delivery would be student services and multi faith centres which are potentially stand-alone opportunities or integrated into larger projects.

LEGEND

- Museum, Art Gallery & Interpretive Centre
- Winter House
- Sports Centre
- Learning Hub
- Multipurpose Hall
- Catalyst Industry
- University Private Hospital
- Student Services
- Multi-Faith Centre

5.1 PUBLIC TRANSPORT



The Townsville Public Transport offer is generally considered to under-serve the city. While several bus routes serve the campus, the timetables are often cited as a reason for a large reliance on transport by private vehicles.

All routes stop at one location only on the campus; on the western arm of James Cook Drive close to the Student Admin. This puts a large part of the campus more than 800m away from the bus stop, which is the equivalent to a ten minute walk. In summer this distance is significantly challenging.

Over time and particularly within the proposed developments of the southern and western extremities of the campus, this distance is problematic.

Fundamental change to the Public Transport of JCU's direct control, however notwithstanding this, greater coverage should be championed by the University.

The long and unpopulated circuit of the James Cook Drive loop was noted as one of the reasons for a single stop.

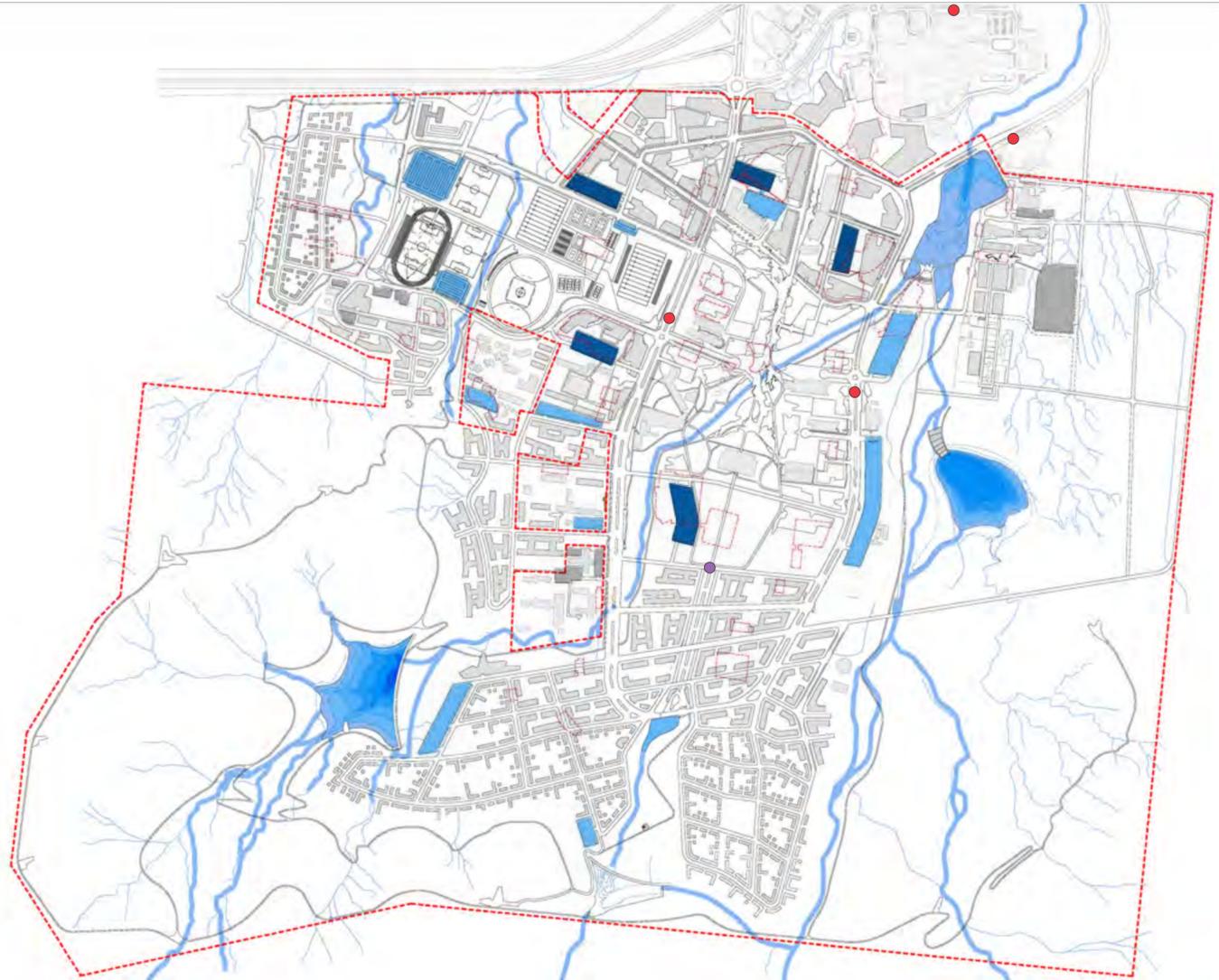
The Master Plan proposal of the additional cross roads to shorten this loop, may be part of an argument for a modified route.

LEGEND

- Sun Bus Route 201
- Sun Bus Route 208 & 209
- Sun Bus Route 202 (Continues to Hospital on Saturday only)
- Sun Bus Route 210
- Bus Stop Locations
- Future Bus Stop Location
- 200m Radius (3 minute walk)
- Primary Bus Stop

NOTE: Watercourse based on Flanagan Consulting Group JCU Environmental Assessment Report - Opportunities and Constraints Analysis 2008.

5.2 PARKING



Carparking is a complex challenge for the university and is often referred to by stakeholders including staff and students as problematic.

There are competing issues:

- The carparks are generally extremely over full at the start of the term and less in demand as the term continues
- The desire for carparking in proximity to buildings influences students to drive between lectures at different parts of the campus
- Carparks currently dominate the campus experience and are located where they detract from the Urban Design as well as denying logical development opportunities, (the Chancellery carpark and Medical Precinct carparks on Mt Stuart Street would be examples of this)
- Carparking is currently free and does not support maintenance or investment in alternative solutions (the university is currently investigating pay per use parking systems)
- The university currently has little pressure on land use, however this may change based on the university's consolidation strategy.

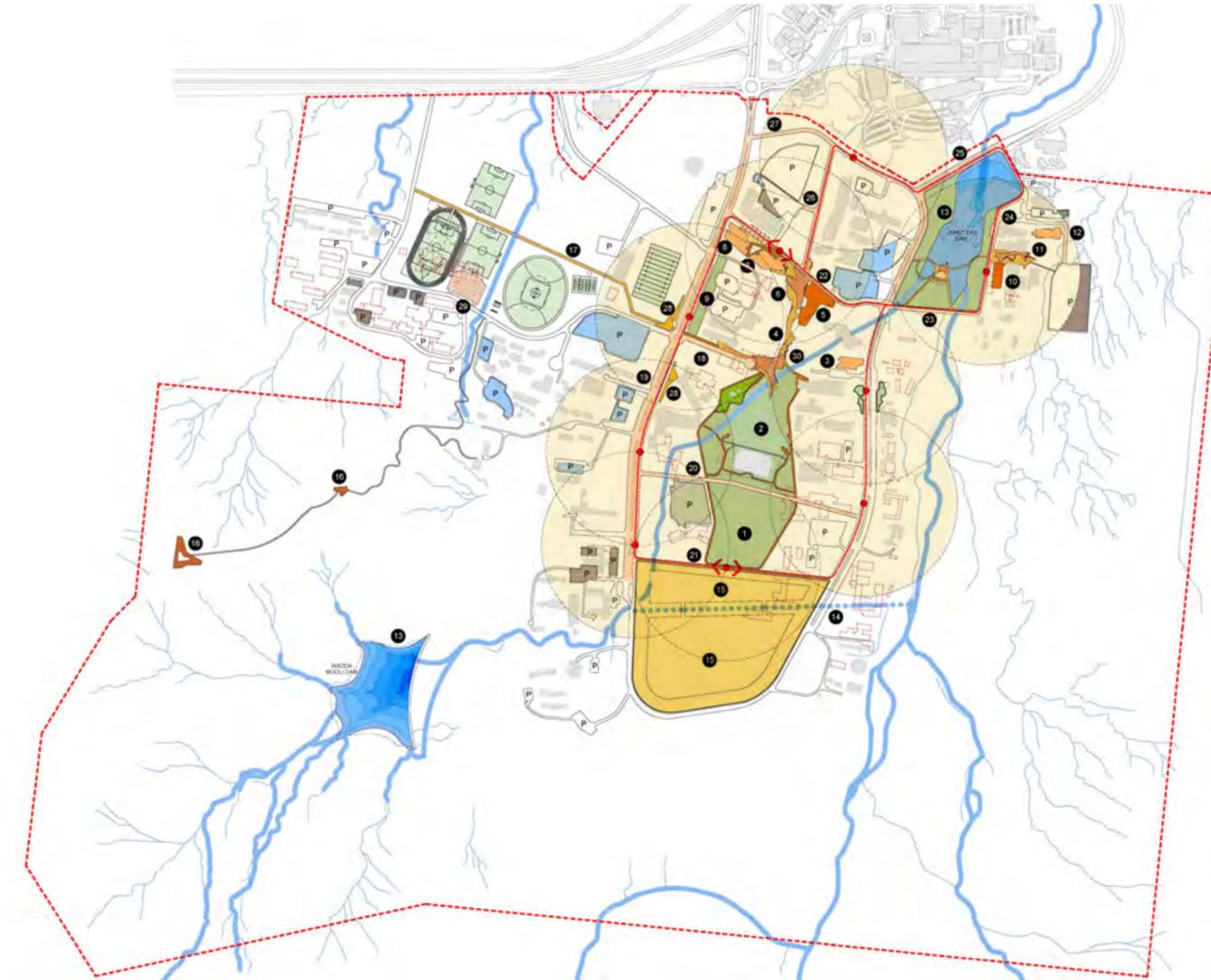
LEGEND

- Proposed At-Grade Carpark locations
- Proposed At-Grade Carpark Locations with Future Multi-Storey Carpark Potential
- Existing At-Grade Carpark Locations Retained
- Existing Carpark Locations Demolished

NOTE: Watercourse based on Flanagan Consulting Group JCU Environmental Assessment Report - Opportunities and Constraints Analysis 2008.

5.3 CAMPUS ELECTRIC BUS LOOP

CAMPUS ELECTRIC BUS LOOP SHORT TERM



As part of an holistic transport solution an internal bus loop at the JCU Townsville campus is proposed. Parking has been identified as one of the biggest issues on campus, and rather than construct an expensive multi-storey carpark that could be made redundant in 20 years' time by ride-sharing and other transport offerings, it is proposed to build a number of large at-grade carparks that are connected by a continuous internal bus loop. Based on preliminary calculations, this bus loop can be run for approximately ten years for the same cost as a multi-storey carpark. Not only is this solution simpler and easier to implement than a large multi-storey carpark, but it can be done with a smaller up-front cost in a shorter time and will provide additional benefits to the campus due to the increased campus mobility and connection.

LEGEND

- Proposed JCU Internal Bus Loop (Approx. 3km/10 Minute Loop)
- Bus Hail and Ride
- 200m Radius (3 minute walk)
- Primary Bus Stop
- Proposed Temporary On-grade Carpark Location
- Existing Carpark Locations Retained
- Existing Carpark Locations Retained for Short Term

NOTE: Watercourse based on Flanagan Consulting Group JCU Environmental Assessment Report - Opportunities and Constraints Analysis 2008.

TRANSPORT

5.3 CAMPUS ELECTRIC BUS LOOP - CONT.

EXEMPLARS

Several Universities currently employ a free intercampus bus service:

- The University of Queensland accommodate two morning and two evening buses to enable intercampus connections for the day
- Griffith University employs an intercampus bus every 15 minutes during the semester between Nathan campus and Mt Gravatt campus which is approximately 4.3km each direction [8.6km round trip]
- Queensland University of Technology employs a shuttle bus every 10 minutes during the semester between Kelvin Grove campus and Gardens Point campus which is approximately 3.2km each direction [6.4km round trip].

PROPOSED INTERNAL BUS LOOP

Short term proposal:

- The proposed internal bus loop will consist of a 3km loop with bus stops connecting the majority of the academic core to be accessible within a 3-minute walk
- The loop will consist of two buses in total, going in opposite directions to enable ease of campus connection with the loop taking approximately 10-minutes .

Long term proposal:

- The proposed internal bus loop will consist of a 6km loop with bus stops connecting the majority of the campus to be accessible within a 3-minute walk
- The loop will consist of four buses in total, with two going in opposite directions to enable ease of campus connection with the loop taking approximately 20-minutes but maintaining the 10-minute frequency.

OUTCOMES

- Reduced reliance on private vehicles can be enhanced through the implementation of a free internal shuttle bus
- Use of parking facilities will still be maintained however intercampus trips via private vehicles will be reduced thus increasing the hours of parking duration which is currently very short
- Encouraged use of public transport by providing suitable infrastructure and facilities to support the use.

FEASIBILITY CALCULATIONS

- There are currently 3327 parking bays available at JCU Townsville campus.

Short term feasibility (20 years):

- 2x medium sized buses
- \$750 per day x 2 buses = \$1500 per day
- \$1500 per day x 330 days = \$500K
- \$500K for 20 years = \$10M
- Equates to a \$10M, 200 multi-storey car park at \$50K per parking spot.

Long term feasibility (30 years):

- 4x medium sized buses
- \$750 per day x 4 buses = \$3000 per day
- \$3000 per day x 330 days = \$990K
- \$990K for 30 years = \$29.7M
- Equates to a \$29.7M, 594 multi-storey car park at \$50K per parking spot.

Bus operating costs based on:

<http://www.freightmetrics.com.au/Calculators%7CRoad/BusOperatingCost/tabid/671/Default.aspx>

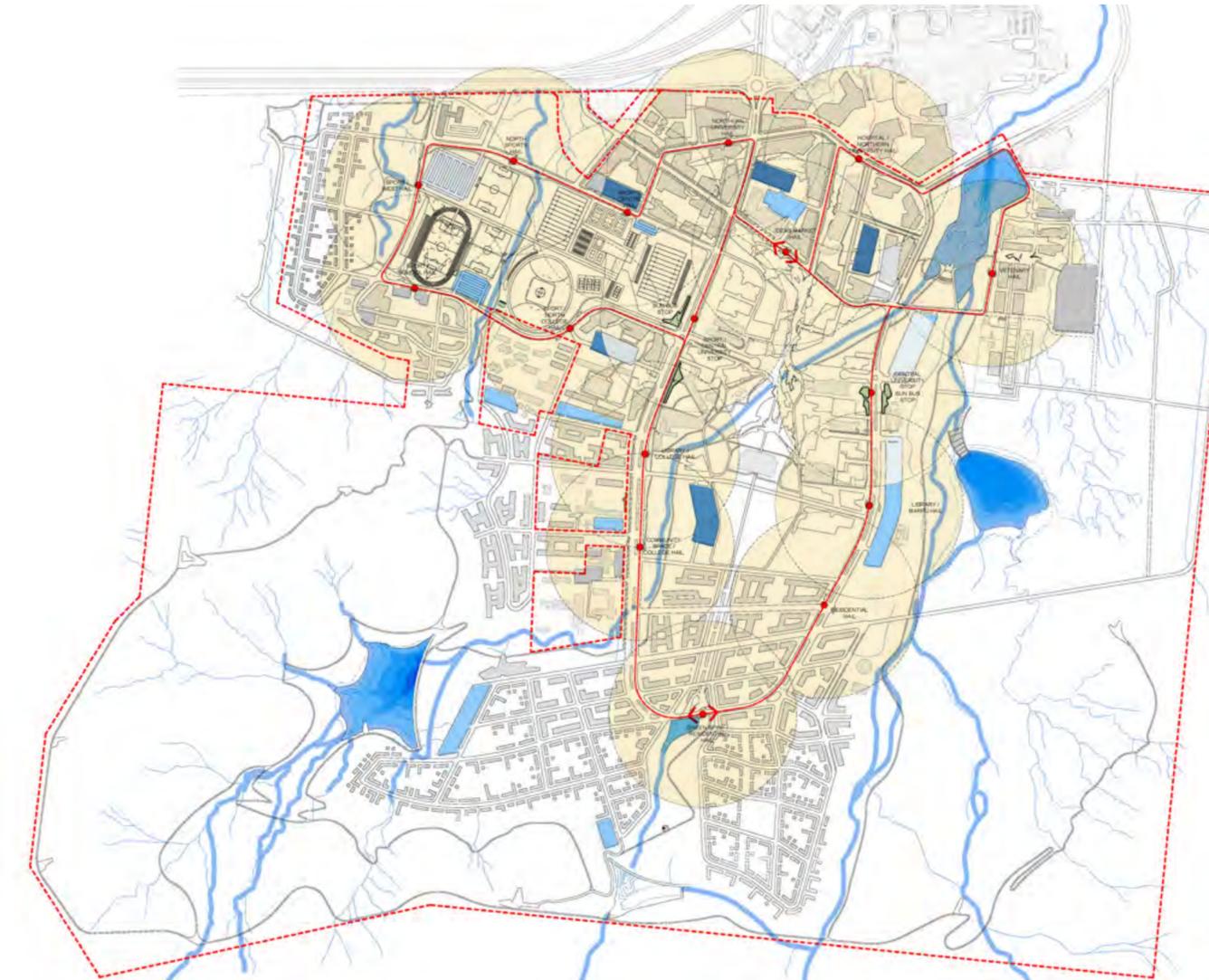
Car park cost based on:

<http://www.joondalup.wa.gov.au/files/councilmeetings/2012/Attach23agn111212.pdf>

TRANSPORT

5.3 CAMPUS ELECTRIC BUS LOOP - CONT.

CAMPUS ELECTRIC BUS LOOP LONG TERM



LEGEND

- Proposed JCU Internal Bus Loop (Approx. 6km/20 Minute Loop)
- Bus Hail and Ride
- 200m Radius (3 minute walk)
- Primary Bus Stop
- Proposed On-grade Carpark Locations
- Proposed On-grade Carpark Locations with Future Multi-Storey Carpark Potential
- Existing Carpark Locations Retained

NOTE: Watercourse based on Flanagan Consulting Group JCU Environmental Assessment Report - Opportunities and Constraints Analysis 2008.

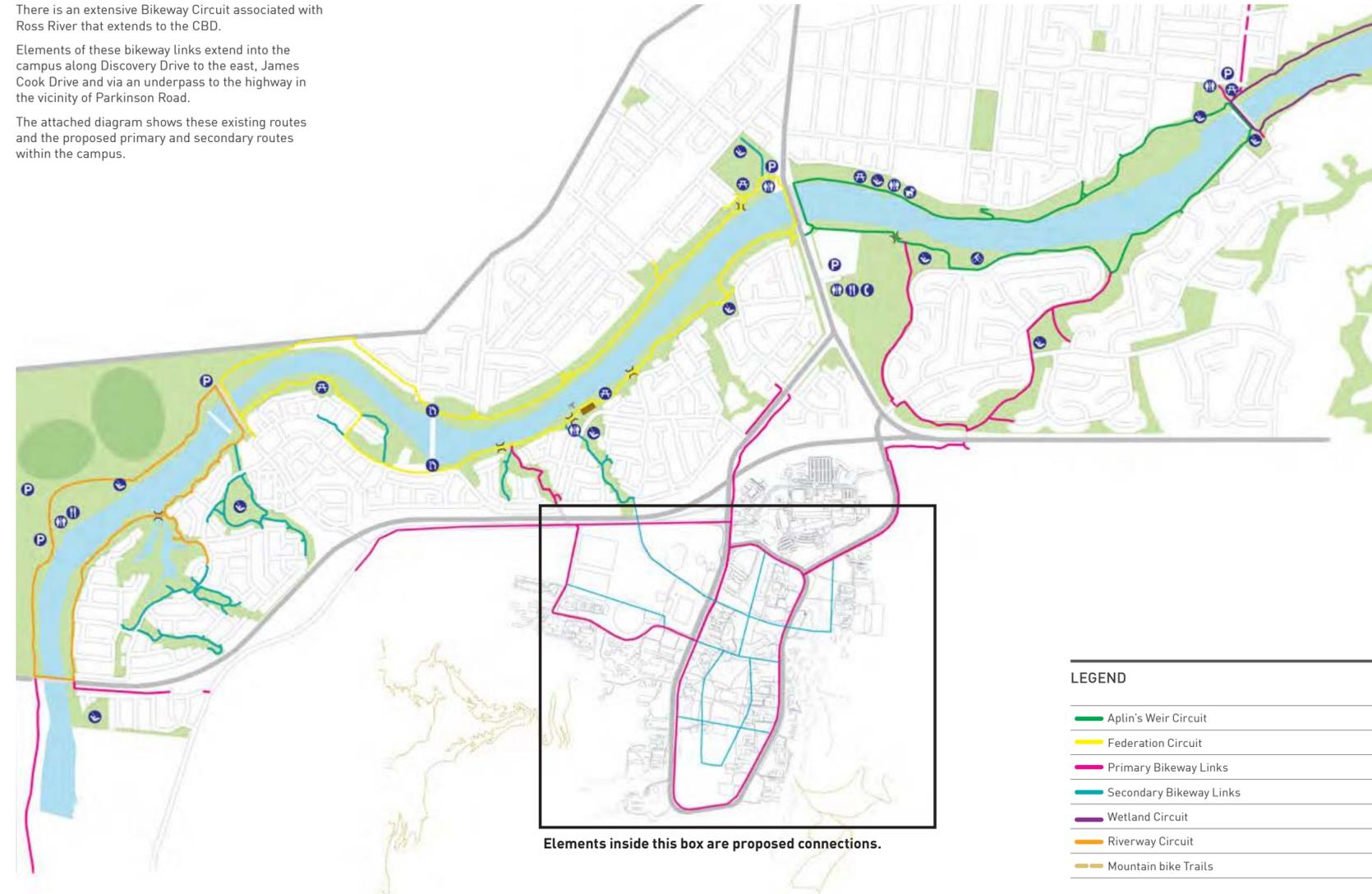
TRANSPORT

5.4 OVERALL CYCLE STRATEGY

There is an extensive Bikeway Circuit associated with Ross River that extends to the CBD.

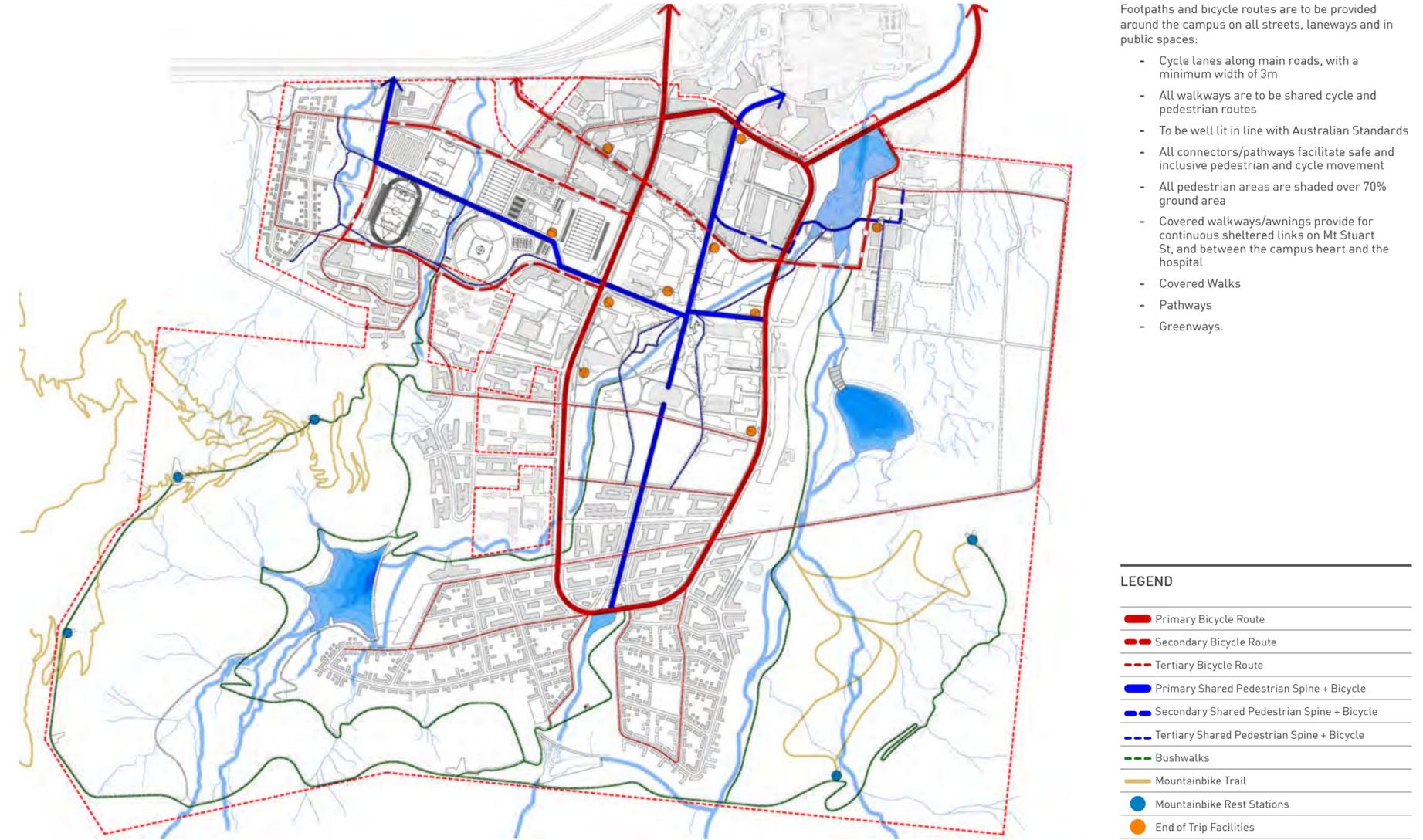
Elements of these bikeway links extend into the campus along Discovery Drive to the east, James Cook Drive and via an underpass to the highway in the vicinity of Parkinson Road.

The attached diagram shows these existing routes and the proposed primary and secondary routes within the campus.



TRANSPORT

5.5 BICYCLE ROUTES AND END OF TRIP FACILITIES

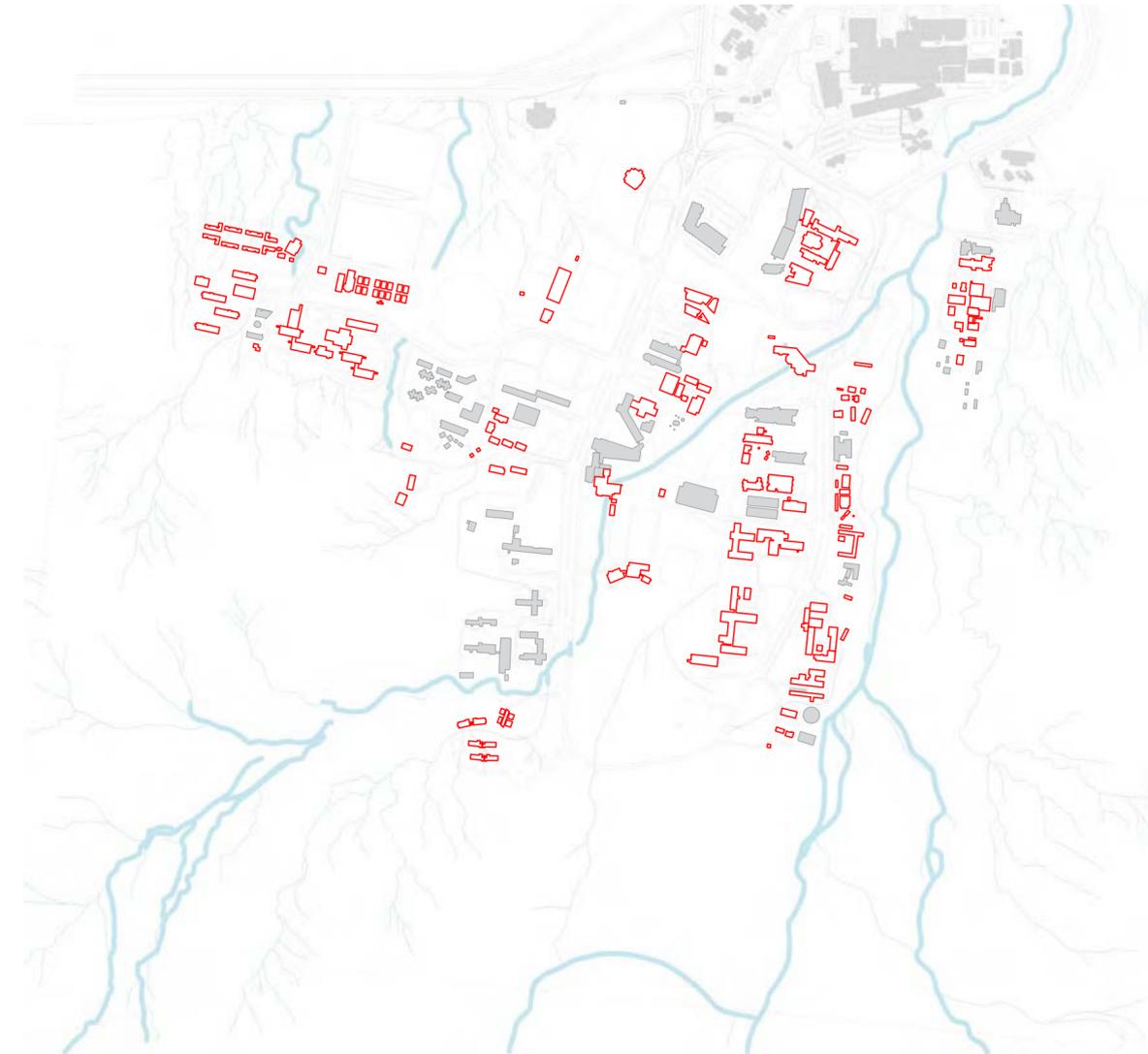


Footpaths and bicycle routes are to be provided around the campus on all streets, laneways and in public spaces:

- Cycle lanes along main roads, with a minimum width of 3m
- All walkways are to be shared cycle and pedestrian routes
- To be well lit in line with Australian Standards
- All connectors/pathways facilitate safe and inclusive pedestrian and cycle movement
- All pedestrian areas are shaded over 70% ground area
- Covered walkways/awnings provide for continuous sheltered links on Mt Stuart St, and between the campus heart and the hospital
- Covered Walks
- Pathways
- Greenways.

DEMOLITION

6.1 DEMOLITION AND REFURBISHMENT (LONG TERM SCENARIO)



JCU has undertaken a separate campus building assessment and demolition program.

The university has many old and, in some cases, redundant building stock. Whilst this is something that many universities would envy given their space shortages, JCU has advise they have no need nor the capacity to continue to maintain this building stock.

The University has identified a strategy of consolidation of the academic core of the campus as a means of addressing inefficient space allocation, ballooning maintenance costs and fostering greater academic collaboration through the proximity of buildings and the people working or studying in them.

The buildings on the southern side of the academic core of the campus, and the estates and other buildings on eastern flank are proposed for demolition in the next ten years so the land can be redeveloped, but this needs to be balanced with the contraction of the academic core that this represents, the potential impact of the adjacency for other uses and the potential limitation it presents for accommodating future growth. The western campus poses another short to medium term challenge in the quantum of floor space available in its now-redundant buildings.

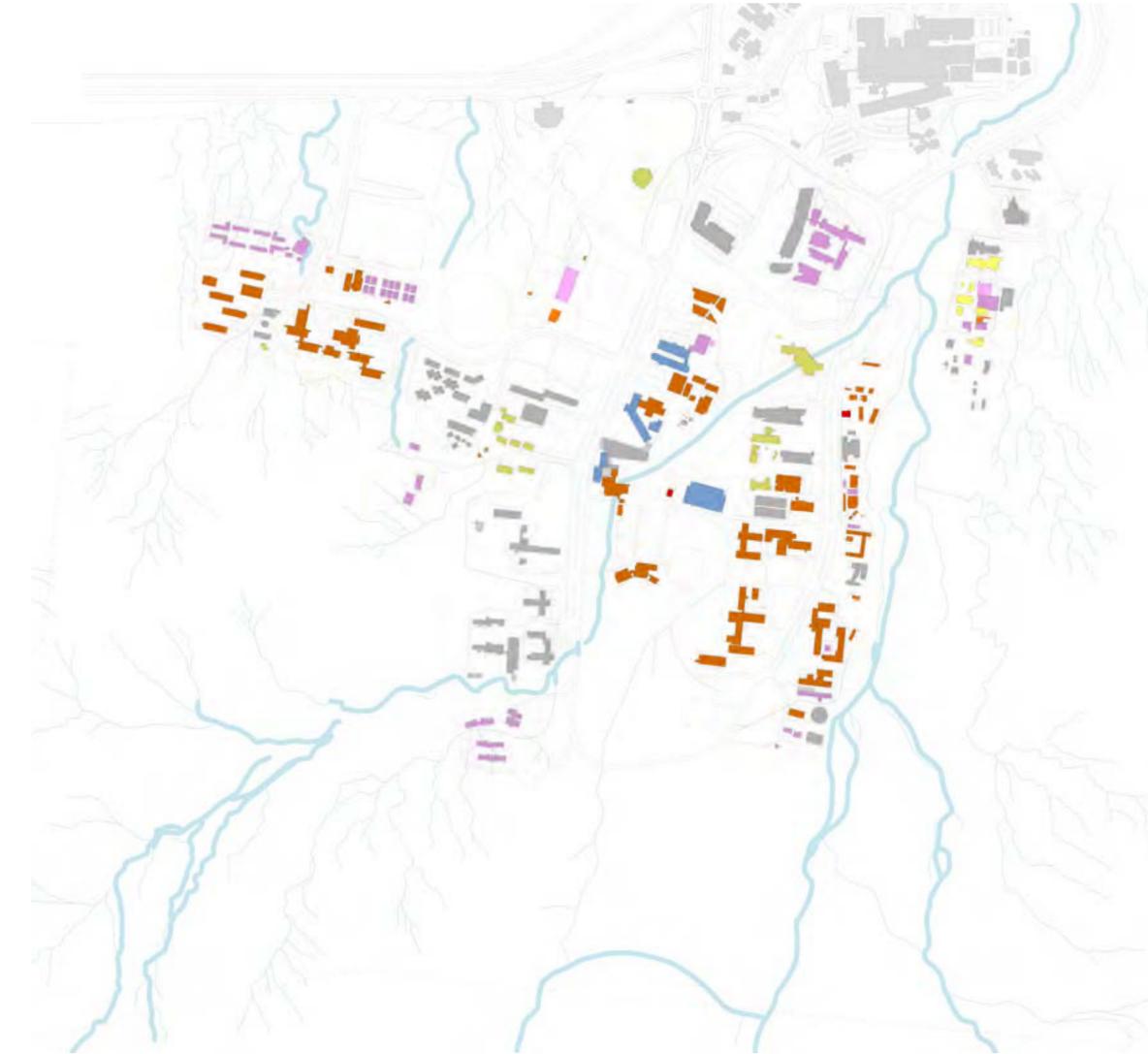
The adjacent diagram represents the overall consideration.

LEGEND

- Buildings to be Demolished
- Existing Buildings to Remain

DEMOLITION

6.2 DEMOLITION - TIMELINE



The Program for demolition of identified building stock is long. The attached diagram represents a notional timeline as prepared separately by JCU.

LEGEND

- Building Refurbishment
- Buildings Demolished by 2025
- Buildings Demolished by 2035
- Buildings Demolished post 2035
- Existing Buildings to Remain

06

STAGING

6.1 STUDENT GROWTH & SPACE REQUIREMENTS

Student growth and space requirements were determined through working closely with JCU.

Mindful of TEFMA benchmarking, JCU developed m2 area targets based on the specific circumstance of the university including teaching profile and space utilisation.

The work was prepared in the context of JCU's space rationalisation studies.

The work involves educated guesses and a capacity to see into the future demolition of existing buildings and construction of new buildings is also subject to budget considerations.

In essence the work established a 'likely' requirement for space in the short term (to 2025), the medium term (to 2035) and the long term (to 2065).

The total growth is accommodated in the Master Plan and if certain buildings are developed earlier or later than forecast period there is no dramatic consequence. The relatively limited requirement for space in the short term means that there is a limited number of buildings that will assist in defining the Master Plan edges on to the University Mall, Mt Stuart Street, Chancellery Place etc. and therefore the change of identity in the campus will be determined more by the landscape, streets and other connections and activities as by the buildings themselves.

STUDENT & FLOOR AREA SUMMARY

STUDENT ENROLMENTS

2017	11,887
2035	16,560 (+39%)

Student growth of 38% over the period to 2035 correlates with modelling provided by finance. This predicts strong growth in 2018 and 2019 of about 5-7%, tapering off to around 1% by 2026.

CURRENT FLOOR AREA*

TEFMA LOWER RANGE	83,160m ²
JCU CURRENT	154,241m ²
TEFMA UPPER RANGE	250,820m ²

The current floor area at JCU is well within the TEFMA benchmark range, although this will be gradually reduced by the Space Rationalisation project that seeks to become more efficient with existing space on campus.

PROJECTED FLOOR AREA GROWTH REQUIREMENT

TEFMA LOWER RANGE	114,761m ²	(-26%)
JCU TARGET	123,582m ²	(-20%)
BUSINESS AS USUAL	172,758m ²	(+12%)
TEFMA UPPER RANGE	346,132m ²	(+124%)

The target floor area represents an ambition to be more efficient with space on campus, and it is anticipated by JCU that 39% additional students can be accommodated in 20% less space than the university currently has on campus. This efficiency will be realised by providing more efficiently planned space that can be better utilised.

DEMOLITION BY 2035

DEMOLISHED	80,260m ²
REMAINING	94,165m ²

A number of buildings are expected to be demolished during the period leading up to 2035, which will be equivalent to almost half the current floor area.

NEW FLOOR AREA REQUIRED

TEFMA LOWER RANGE	20,596m ²	{1,114m ² / year}
JCU TARGET	29,417m ²	{1,634m ² / year}
BUSINESS AS USUAL	78,592m ²	{4,366m ² / year}
TEFMA UPPER RANGE	251,967m ²	{13,998m ² / year}

Projected student growth to 2035, the key determinant of academic space requirement, indicates that JCU will need to construct a minimum of three new buildings. New buildings are expected to improve functionality, be fit for purpose, provide more relevant research, teaching building learning space, and improve the campus appearance. To date JCU has been able to procure a major building equivalent to the The Science Place every 4-5 years, but this turnaround may need to increase to every 3-4 years.

EST. COST OF NEW BUILD*

TEFMA LOWER RANGE	\$144 million	(\$8 mil. / year)
JCU TARGET	\$206 million	(\$11 mil. / year)
BUSINESS AS USUAL	\$550 million	(\$30 mil. / year)
TEFMA UPPER RANGE	\$1.76 billion	(\$98 mil. / year)

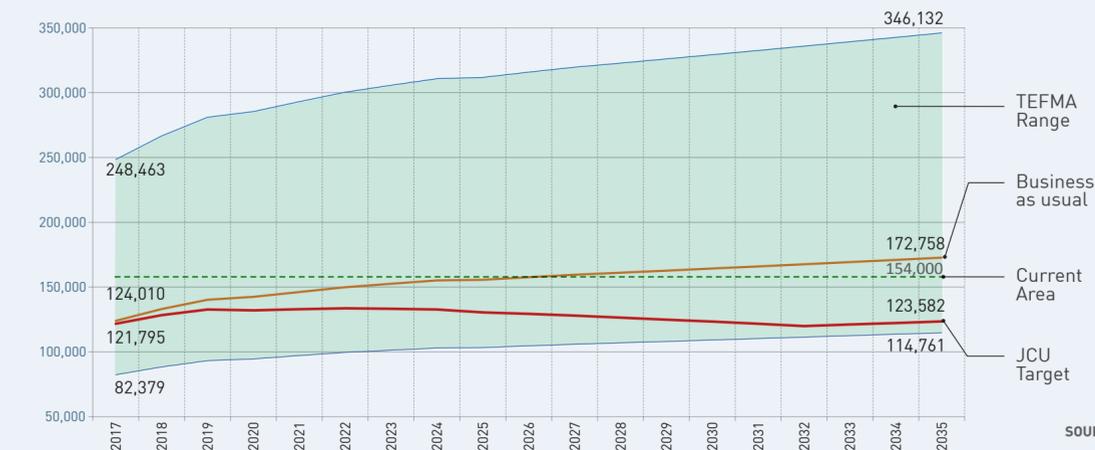
Based on an average of \$7000 per sqm, JCU will need to invest continuously in significant new buildings through to 2035. This will require an absolute minimum capital raising of \$11 million per year, preferably closer to \$15-20 million.

- * As at June 2017. Excludes student accommodation and mothballed space
- + Excludes associated infrastructure, management & landscaping costs
- TEFMA = Tertiary Education Facilities Management Association
- EFTSL = Effective Full Time Student Load
- Floor Area = Gross Floor Area (GFA)

REQUIRED GROSS FLOOR AREA

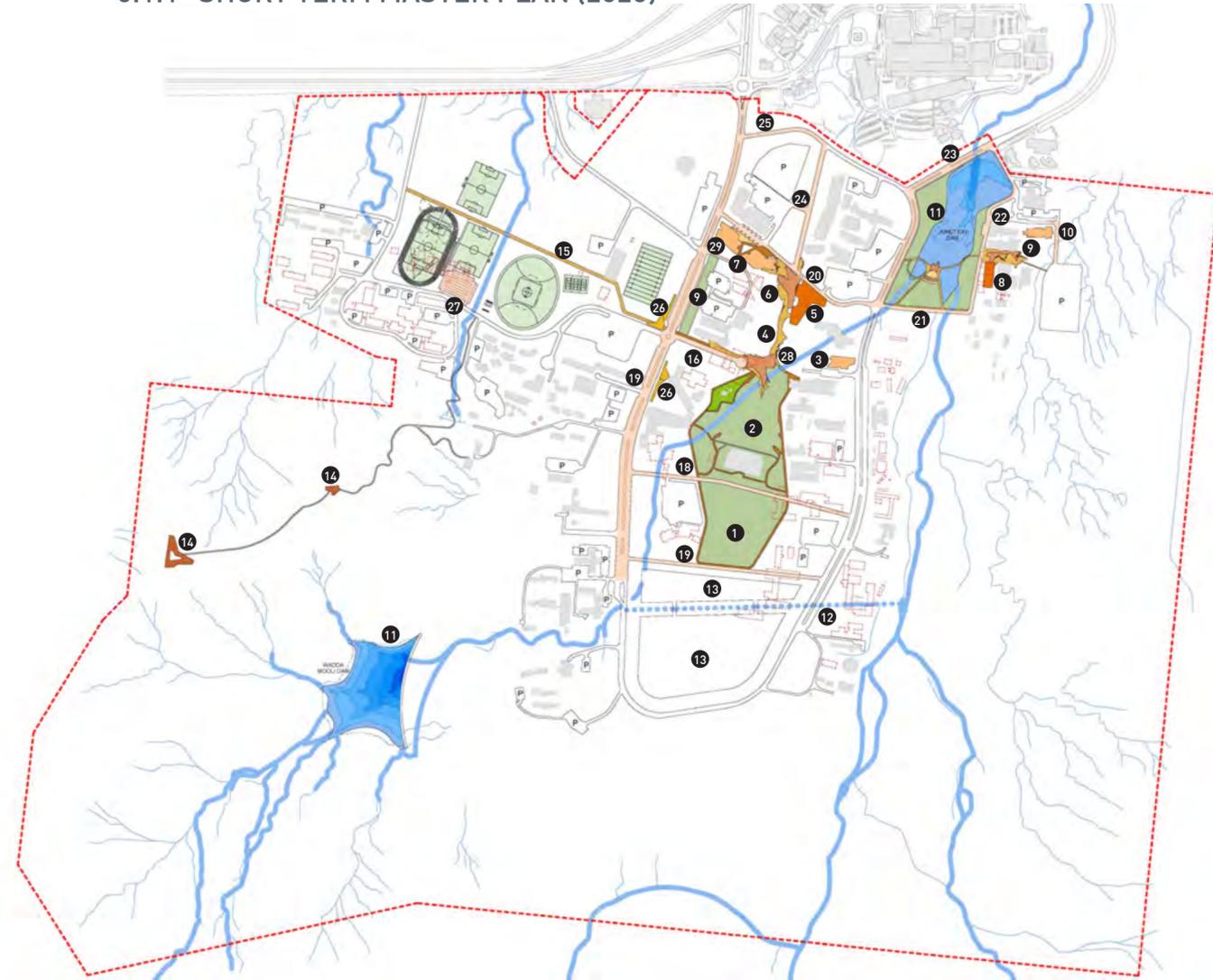


STUDENT ENROLMENT NUMBERS



SOURCED FROM JCU QPA 2017

6.1.1 SHORT TERM MASTER PLAN (2025)



1. Events lawn and Community Park
2. Library Green
3. Childcare
4. University Mall
5. TIC
6. Ideas Market
7. Student Accommodation
8. Veterinary Building
9. Eastern Goondaloo heart
10. BIOsecurity Building
11. Creek Dams
12. Swale/Underground Diversion For Flood Mitigation
13. Temporary On-Grade Parking
14. Trail Lookouts
15. Sports Fields/Sports Walk
16. Chancellery Place
17. James Cook Drive Refurbishment
18. Eddie Koiki Mabo Way
19. Stock Route Drive
20. Mt Stuart Street Refurbishment
21. Mt Stuart Street Continuation
22. Solander Road
23. Discovery Drive Refurbishment
24. Magnetic Island Way
25. Northern Drive
26. Primary Bus Stops
27. Car Park
28. Central Plaza
29. Hotel and short stay

LEGEND

- Existing Building
- New Building
- New Building Externally Funded
- New/Refurbished Road

SHORT TERM KEY INVESTMENT INITIATIVES

- Flood Mitigation
- Landscape + Parks
- Ideas Market / Central Plaza
- Eastern Goondaloo Heart
- TIC.

The short-term Master Plan aims to address immediate factors to enhance the campus fabric. The campus heart is focused on through initiating the ideas market, university mall, central plaza, library green events lawn and community park. Temporary on-grade parking is included to the southern end of the campus to offset the existing car park demolished due to the events lawn. Beautification of James Cook Drive and Mt Stuart Street is an short term opportunity. Discovery Drive is also refurbished to enhance the second entry and create a superior roadway for the vet precinct and vehicular loop. The initial primary bus stops and Chancellery Place are prioritised to create an arrival point in the heart of the campus and encourage the use of public transport. The sports walk and vet walk have been included for enhancing pedestrian connections across the site to the various precincts which is enhanced through the relocation of the sports fields and initial stage of the veterinary heart. The Ideas Market has the primary building focus as it is the gateway to the campus and creating this entranceway is vital to the pedestrian spine which is enhanced through the following stages of development. Flood mitigation is addressed in two main areas through the inclusion of Wadda Mooli Dam and Junction Dam as well as the cross-campus swale.

POTENTIAL DEVELOPMENT SCENARIO NOTIONAL VIEW ACADEMIC BUILDINGS

BLDG	FOOTPRINT GFA	STOREYS	TOTAL GFA
5	2,500 m2	4	10,000 m2
8	1,100 m2	3	3,300 m2

TOTAL 2 BLDG'S 13,300 m2

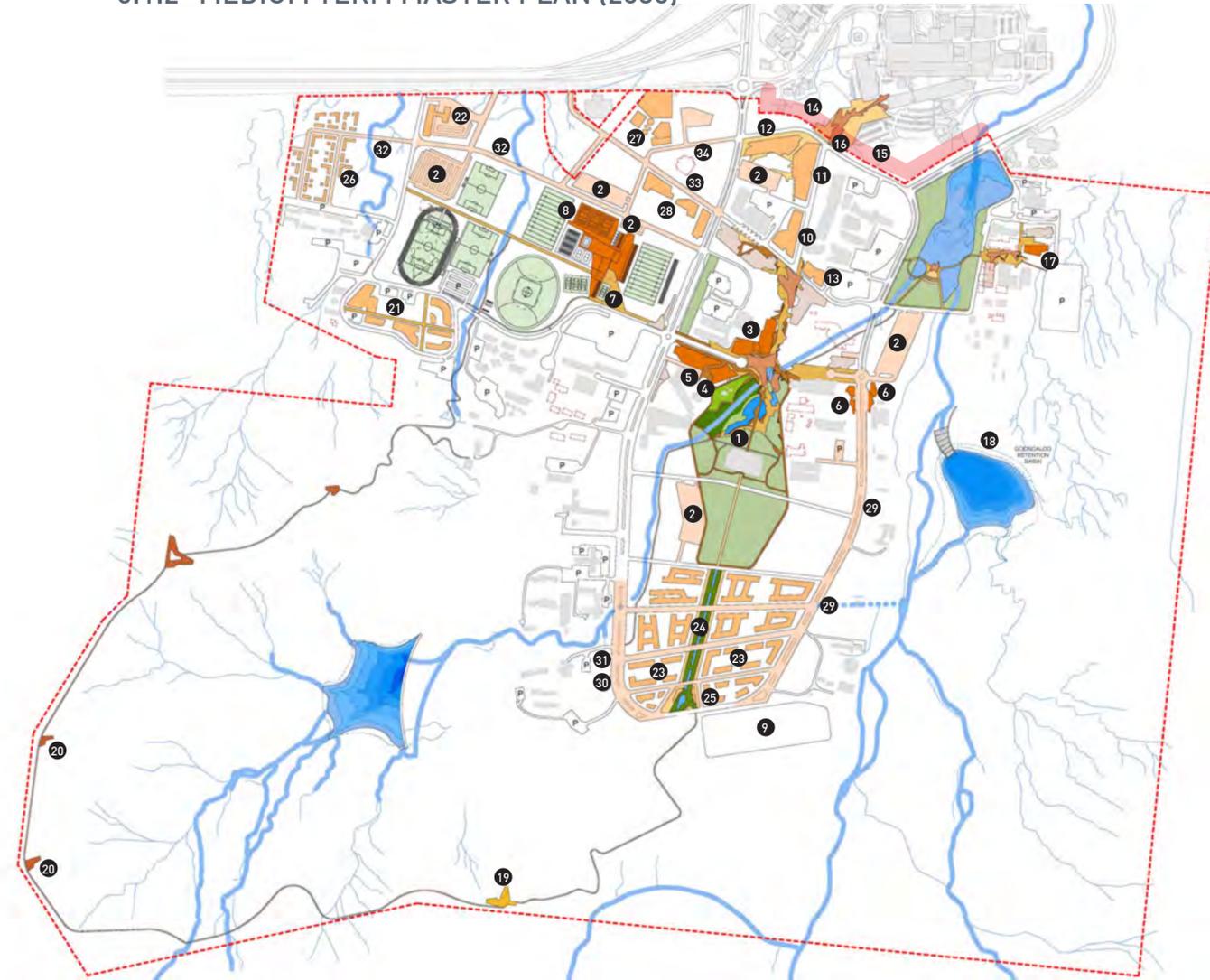
NOTIONAL VIEW NON ACADEMIC BUILDINGS

BLDG	FOOTPRINT GFA	STOREYS	TOTAL GFA
3	1,150 m2	5	5,750 m2
7	2,000 m2	6	12,000 m2
10	1,100 m2	3	3,300 m2
29	2,000 m2	5	10,000 m2

TOTAL 4 BLDG'S 31,050 m2



6.1.2 MEDIUM TERM MASTER PLAN (2035)



1. The Lagoon
2. Car Park
3. University Building
4. University Building
5. University Building
6. Primary Bus Stops
7. Sports Plaza
8. Sports Complex
9. Temporary on-grade parking
10. Commercial Building
11. University Private Hospital
12. University Private Hospital
13. Non-University Building
14. Future Collaborative Design Stage
15. Future Collaborative Design Stage
16. Hospital Plaza
17. Veterinary Building
18. Creek Dams
19. Winter House
20. Trail Lookouts
21. Residential Village North/ school
22. Convenience centre & Service Station
23. Discovery Rise - Courtyard Apartments
24. Orchard Walk
25. Community Plaza
26. Residential North - Courtyard Housing
27. Infrastructure
28. University High School/Academic
29. Discovery Drive Refurbishment
30. James Cook Drive Refurbishment
31. Stock Route Drive
32. Joseph Banks Avenue
33. 33 Mt Stuart Street
34. Northern Drive

LEGEND

- Existing Building
- New Building
- New Building Externally Funded
- Previous Phase/s Building
- New/Refurbished Road

MEDIUM TERM KEY INVESTMENT INITIATIVES

The medium-term Master Plan aims to enhance the previous stage by focusing on the campus heart, green spine and sports precinct. The campus heart has the surrounding buildings prioritised, the inclusion of University Place and the inclusion of the Lagoon. Cross campus parking has been accommodated as the campus expands and the previous stage temporary on-grade parking size is reduced. The green spine has been further strengthened as the Discovery Rise precinct commences through the inclusion of the Orchard Walk and Community Plaza which links up to the Winter House. The sports precinct becomes a major hub through the inclusion of the Sports Plaza and complex which enhances the sports walk which now connects the initial stages of the courtyard housing. Mt Stuart Street realigns as a main entranceway and the inclusion of Joseph Banks Avenue enhances the sports precinct and cross-campus vehicular connections. The Discovery Drive and James Cook Drive beautification and reconfiguration is completed which enhances the ring road capacity for vehicles, parking and bicycle paths. Flood mitigation is further addressed through the inclusion of Goondaloo Retention Basin and capping of the swale to make it an underground diversion.

POTENTIAL DEVELOPMENT SCENARIO NOTIONAL VIEW ACADEMIC BUILDINGS

BLDG	FOOTPRINT GFA	STOREYS	TOTAL GFA
3	3,250 m ²	4/5	14,600 m ²
4	1,400 m ²	5	7,000 m ²
5	2,550 m ²	5	12,750 m ²
8	10,150 m ²	1/2	15,225 m ²
17	950 m ²	3	2,850 m ²

TOTAL 5 BLDG'S 52,425 m²

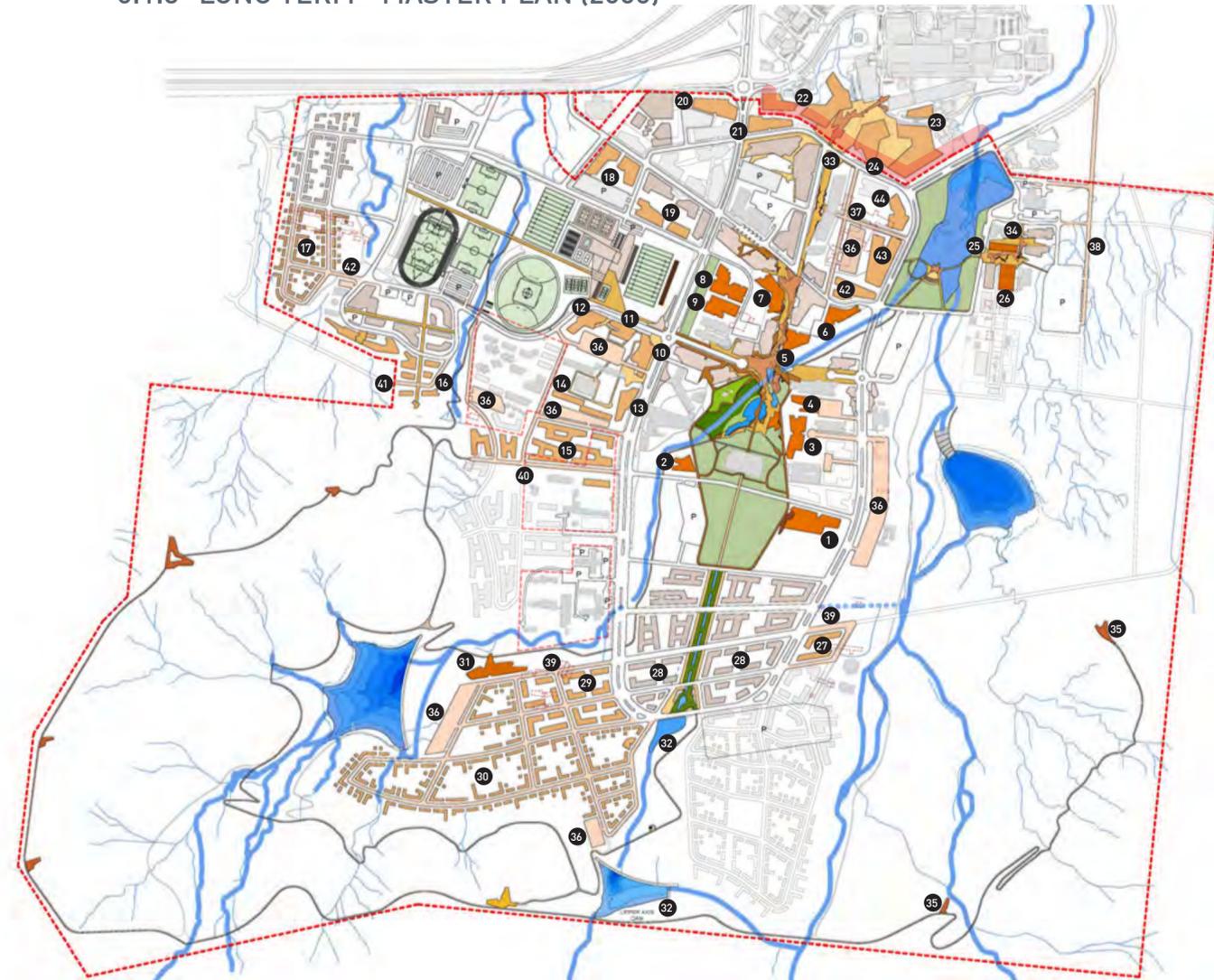
NOTIONAL VIEW NON ACADEMIC BUILDINGS

BLDG	FOOTPRINT GFA	STOREYS	TOTAL GFA
11	4,700 m ²	4	18,800 m ²
12	3,500 m ²	5	17,500 m ²
13	1,350 m ²	5	6,750 m ²
14	5,100 m ²	5	25,500 m ²
15	3,800 m ²	4	15,200 m ²
21	7,150 m ²	3-5	28,600 m ²
22	1,650 m ²	2	3,300 m ²
23	17,800 m ²	3	53,400 m ²
26	5,000 m ²	2	10,000 m ²
27	6,200 m ²	4/5	27,900 m ²
28	4,200 m ²	4/5	18,900 m ²

TOTAL 12 BLDG'S 241,100 m²



6.1.3 LONG TERM - MASTER PLAN (2065)



1. University Building
2. University Building
3. University Building
4. University Building
5. Multi Purpose Hall
6. University Building
7. University Building
8. University Building
9. University Building
10. University High School/Academic
11. University High School/Academic
12. University High School/Academic
13. Student Accommodation
14. Student Accommodation
15. West - Courtyard Apartments
16. Residential Village North
17. Residential North - Courtyard housing
18. University High School/Academic
19. University High School/Academic
20. Non University Building
21. Non University Building
22. Future Collaborative Design Stage
23. Future Collaborative Design Stage
24. Future Collaborative Design Stage
25. Veterinary Building
26. Veterinary Building
27. Residential South - Townhouses
28. Discovery Rise - Townhouses
29. Residential West - Townhouses
30. Residential West - Courtyard Houses
31. Environmental Centre
32. Creek Dams
33. Hospital Link
34. Veterinary Plaza Completed
35. Trail Lookouts
36. Car Park
37. New Roads
38. New Veterinary Entry Road
39. Amphitheatre
40. Eddie Koiki Mabo Way Extension
41. James Cook Drive Refurbishment
42. Non-University Building
43. Aged Care
44. Non-University Building

LEGEND

- Existing Building
- New Building
- New Building Externally Funded
- Previous Phase/s Building
- New/Refurbished Road

LONG TERM KEY INVESTMENT INITIATIVES

- Establish Key Partnerships:
- Discovery Central Expansion
- University High School
- Retirement Living
- Discovery Rise Residential
- Parklands.

The long-term Master Plan finalises key public areas across the campus. The Hospital Link finalises the connection between the University Mall and the Hospital Plaza. Cross-campus connections are further enhanced through the extension of Eddie Koiki Mabo Way and the inclusion of Amphitheatre Avenue. The flood mitigation process is finalised through the inclusion of the Upper Axis Dam.

POTENTIAL DEVELOPMENT SCENARIO NOTIONAL VIEW ACADEMIC BUILDINGS

BLDG	GFA	STOREYS	TOTAL GFA
1	4,100 m2	4	16,400 m2
2	1,150 m2	4	4,600 m2
3	2,500 m2	4	10,000 m2
4	1,550 m2	4	6,200 m2
5	1,650 m2	5	8,250 m2
6	1,700 m2	5	8,500 m2
7	2,400 m2	6	14,400 m2
8	3,000 m2	5	15,000 m2
9	2,150 m2	4	8,600 m2
25	950 m2	3	2,850 m2
26	1,750 m2	3	5,250 m2
31	2,850 m2	4	11,400 m2

TOTAL 12 BLDG'S 111,450 m2

NOTIONAL VIEW NON ACADEMIC BUILDINGS

BLDG	GFA	STOREYS	TOTAL GFA
10	2,400 m2	5	12,000 m2
11	1,400 m2	5	7,000 m2
12	1,950 m2	5	9,750 m2
13	1,750 m2	4	7,000 m2
14	1,700 m2	3	5,100 m2
15	10,050 m2	3	30,150 m2
16	5,150 m2	2-4	15,450 m2
17	5,700 m2	2	17,100 m2
18	3,750 m2	4	15,000 m2
19	2,750 m2	3/4	9,625 m2
20	2,850 m2	6	17,100 m2
21	2,250 m2	4	9,000 m2
22	2,050 m2	3	6,150 m2
23	1,100 m2	4	4,400 m2
24	6,950 m2	5	34,750 m2
27	1,900 m2	3	5,700 m2
28	9,450 m2	3	28,350 m2
29	8,300 m2	3	24,900 m2
30	19,400 m2	2	38,800 m2
42	2,500 m2	5	12,500 m2
43	4,950 m2	4	19,800 m2
44	2,150 m2	5	10,750 m2

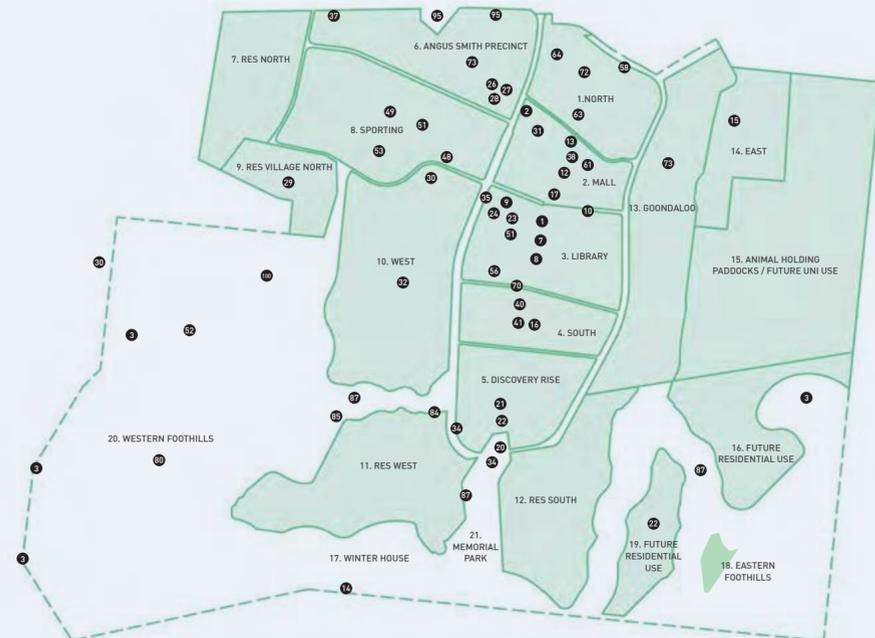
TOTAL 22 BLDG'S 340,375 m2



07

INITIATIVES

INITIATIVES



Not all Initiatives are site specific. Only Initiatives with identified locations are indicated on this map.

A number of enabling projects and priority developments have been identified throughout the master planning process. These initiatives support the overall vision to create a globally significant, integrated, and tropical knowledge community, which together will transform the campus over time.

Each initiative contributes to the overall placemaking and development strategies that are outlined in the previous 'Strategies' section, where they are combined into thematically similar overlays so the overall intent of the campus can be understood. Each initiative is designed as manageable sized project that can be developed in whole or in part as a specific project. Together these initiatives will drive incremental but fundamental change across the campus.

It is important to note that the initiatives are diverse in their character, and include new events, facilities, infrastructure, policies and landscape interventions, amongst others. They are therefore relevant to a broad cross-section of the University community, and a coordinated and collaborative approach across the various academic and administrative departments will need to be adopted to achieve the ultimate vision.

For ease of reference, the initiatives have been divided into thematically similar groupings, with priority projects identified in each section. The priority projects are considered to be those that will contribute most significantly to the transformation of the campus and are achievable in the next five years.



MEMORABLE PLACES

- 1. Central Plaza
- 2. Mt Stuart Street
- 3. Trail Lookouts
- 4. Entry Statements
- 5. Public Art
- 6. Entry Boulevards
- 7. The Lagoon
- 8. Library Green
- 9. Chancellery House
- 10. University Place
- 11. Tropical Courtyards
- 12. University Mall
- 13. Ideas Market
- 14. Winter House
- 15. Eastern Goondaloo Precinct Heart



CULTURE AND COMMUNITY

- 16. Events Lawn and Community Park
- 17. Big Screen
- 18. Indigenous Outdoor Learning Garden
- 19. Multi-Purpose/ Performance Hall
- 20. Village Plaza
- 21. Orchard Walk
- 22. Woodland Memorial Park
- 23. Uni Pub
- 24. Museum, Art Gallery & Interpretive Centre
- 25. Multi-Faith & Chaplaincy
- 26. Aged Care
- 27. Child Care Centres
- 28. Young Care
- 29. Retirement Living
- 30. University High School
- 31. Hotel and Short Stay Accommodation
- 32. Student Accommodation
- 33. Residential Developments
- 34. Discovery Rise Village
- 35. Student Service Centre
- 36. Digital Economy and Connectivity
- 37. Convenience Centre



EVENTS

- 38. Farmer's and Craft Markets
- 39. Campfire and Bonfire Nights
- 40. Multi-Cultural Festival
- 41. Summer Concerts Stage
- 42. Conferences
- 43. Welcome to Country and Smoking Ceremonies
- 44. Graduation
- 45. Campus Games
- 46. Open Air Cinema
- 47. Tropical Triennial



SPORTS AND RECREATION

- 48. Sports Walk and Plaza
- 49. Safe Run/Walk Routes
- 50. Mountain Bike Trails
- 51. Sports Centre
- 52. Trail Run
- 53. Sports Fields
- 54. Adventure Challenge Course



TEACHING, LEARNING AND RESEARCH

- 55. Learning Innovations Centre
- 56. Library Expansion
- 57. Biosecurity Hub Building
- 58. Translational Research
- 59. Engagement Centre
- 60. Outdoor Collaboration, Study and Teaching Spaces
- 61. Technology Innovation Centre
- 62. General Purpose Teaching Building



INDUSTRY, INNOVATION AND TRANSLATIONAL RESEARCH

- 63. Catalyst Industry Building
- 64. University Private Hospital
- 65. Start-up Incubator
- 66. Industry Partnerships



TRANSPORT, CONNECTIVITY AND WAYFINDING

- 67. Electric Bus Loop
- 68. New Bus Stops
- 69. Parking
- 70. Mabo Way Road Link
- 71. Walking and Cycling Routes
- 72. Hospital Link (Magnetic Island Way)
- 73. Mt Stuart Street East & West Extensions
- 74. High Speed Public Transport Corridor Link
- 75. Covered Walkways and Verandahs
- 76. Shaded Greenway Links
- 77. Cycle Facilities
- 78. Signage and Wayfinding



NATURAL ENVIRONMENT

- 79. Landmark Trees
- 80. Nature Reserve
- 81. Ecological Corridors
- 82. Waterway Restoration
- 83. Living Laboratory
- 84. Bush Walk
- 85. Environmental Centre
- 86. Lakes
- 87. Arboretum



SUSTAINABILITY

- 88. Electric Vehicle Infrastructure
- 89. Sustainable Procurement Guidelines and Policies
- 90. Solar Farm
- 91. Public Realm Lighting Efficiency
- 92. Urban Heat Islands and Green Roofs
- 93. Landscape Water Reduction
- 94. Planning for Building Adaptation
- 95. Centralised Energy System
- 96. Water Refill Campus
- 97. Green Labs
- 98. Fair Trade Campus
- 99. Advanced Utilities Monitoring System
- 100. Sustainability Walk

7.1 MEMORABLE PLACES

01 CENTRAL PLAZA

This plaza is designed to be the new academic and social heart at the centre of the campus. Major new buildings with important social, student and community functions will surround and activate this important civic space, which straddles the creek and connects the southern half of the campus to the northern half along the central cross-axis.

The space will be activated by an engagement centre, end of trip facility, multi-faith centre, multi-purpose hall, interpretive art gallery/museum, student services, and cafés.

Shade canopies, tropical planting, and urban water features will keep the space shaded and cool, whilst a rich and diverse ground-scape will provide spaces for seating, socialising, performances, public address, games,

markets, gatherings, and other pop-up activities. Events that are hosted in the space will be supported by digital connectivity, a permanent PA system, and a large display screen.

As the central plaza sits at the intersection of the Magnetic Island axis and the new entry axis, the adjacent spaces and routes should all be considered when designing this space.

Reference spaces include Union Square at UQ, Campus Heart at Griffith Nathan, and the plaza at Harvard.

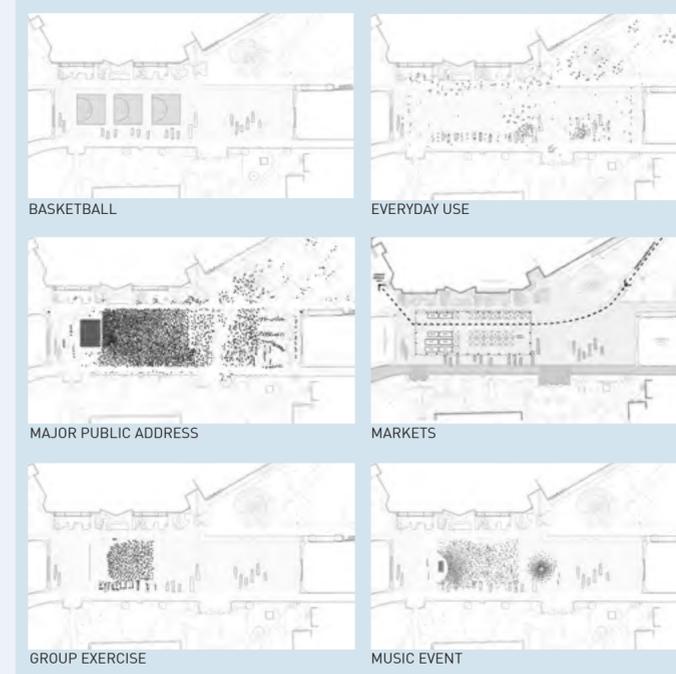
For more detail on this space, refer to the Campus Urban Design Guidelines.



JCU TOWNVILLE - CENTRAL PLAZA



MEMORABLE PLACES



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Main High Street
- New shaded academic and social heart
- Tropical planting and water features
- Commercial destination
- Major Connection & Wayfinding Route
- Active edges

RELEVANT STRATEGIES

- 1.2 Public Spaces
- 2.1 Landscape Structure & Character Zones
- 2.6 Public Art
- 2.7 Vistas & View Corridors
- 2.8 Connections to Country
- 3.4 Street Naming & Wayfinding
- 3.6 Signage
- 4.1 Art, Culture & Events
- 4.2 Retail, Food & Beverage
- 4.3 Sport & Recreation

REFERENCE PROJECTS

- West End Brisbane
- Campus Revitalisation, Griffith University
- Harvard Central plaza
- CREATE, Singapore
- Praca Da Se, Sao Paulo
- Orquideorama, Columbia
- Queen Street, Brisbane

MEMORABLE PLACES

02 MT STUART STREET

Mt Stuart Street is the high street of the campus – it is the great retail and hospitality street that connects the campus and supports a range of diverse commercial and civic activities. It is a significant commercial destination and focal point for the campus, unifying the north with the south and connecting various precincts from east to west.

Community facilities and commercial services will be located along this road, including a bank, newsagent, chemist, post office, speciality stores, hairdresser, medical centre, pub, cafés, restaurants and commercial offices.

It has a uniquely tropical character with retail at the ground floor for activation, permeable edges to allow breezes, balconies at the upper levels

to provide casual surveillance, verdant tropical planting at all levels to provide shade and amenity, and views to Mount Stewart along its axis. The speed is restricted to 40km/hr with one lane either way, and car parking is limited to parallel parks along both sides so that the overall width is limited to allow visibility across the street and to encourage pedestrian crossing and activity. Pavements are wide and covered with awnings and building loggia, whilst the central crossing is wide and designed as an extension of the mall where pedestrians are given priority.

Reference streets include Boundary Street in West end, Flinders Street in Townsville, and Chapel Street in Melbourne. Refer to the detailed Campus Urban Design Guidelines for more detail on the design of this street.



JCU TOWNVILLE - MT STUART STREET



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Main High Street of the Health and Knowledge Precinct
- Active edges with retail/commercial opportunities
- Placemaking
- Pedestrian & cycle friendly
- Short term convenience parking only
- Shaded with tropical planting

RELEVANT STRATEGIES

- 1.2 Public Space Structure
- 1.3 Heritage Places
- 2.1 Landscape Structure & Character Zones
- 3.2 Street Naming & Wayfinding
- 2.6 Public Art
- 2.7 Vistas and View Corridors
- 3.1 Campus Address and Arrival
- 3.2 New Roads and Connections
- 3.3 Road Hierarchy
- 4.2 Retail Food & Beverages
- 5.3 Campus Electric Bus Loop
- 5.5 Bicycle Routes and End of Trip Facilities

* Also refer to the Campus Urban Design Guidelines for detailed setout and cross section.

REFERENCE PROJECTS

- Boundary Street, West End Brisbane
- Hastings Street, Noosa
- Kokusai Street, Okinawa
- Collins Street, Melbourne

MEMORABLE PLACES

03 TRAIL LOOKOUTS

The connections to country walk will be enhanced by a number of shelters and rest-stops that are located on the peaks along the eastern and southern edges of the campus. These will provide various levels of amenity depending on their proximity to the campus, and could include water, toilets, shelter and seating. The trail and stops will draw inspiration from indigenous references, whilst celebrating and acknowledging the first inhabitants.



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Sheltered viewing structures
- Indigenous and landscape inspired
- Rest points with views
- Interpretative signage

RELEVANT STRATEGIES

- 1.3 Heritage Places
- 2.6 Public Art
- 2.7 Vistas and View Corridors
- 2.8 Connections to Country
- 4.1 Art, Culture and Events
- 5.5 Bicycle Routes and End of Trip Facilities

REFERENCE PROJECTS

- Dolomites Lookout, Italy
- The Secular Retreat, Peter Zumthor
- Lookout At Las Minas 1De Rioseco

MEMORABLE PLACES

04 ENTRY STATEMENTS

Key arrival points to the University will be marked by entry statements, in line with the concept of creating 'soft edges', they will generally be more subtle than traditional entries. However, they will be welcoming, identify the campus name, and appear as microcosm of the broader campus through application of landscape, building materials and signage consistently found throughout the site.

Pedestrian access points may include signage and wayfinding information, broad canopy shade trees and small scale seating walls



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Located at Key arrival points
- Subtle but distinctive
- May include signage

RELEVANT STRATEGIES

- 3.1 Campus Address and Arrival
- 2.1 Landscape Structure and Character Zones
- 2.6 Public Art
- 3.6 Signage

REFERENCE PROJECTS

- QUT Gardens Point
- Southbank Parklands

MEMORABLE PLACES

05 PUBLIC ART

The university has a unique opportunity to invest in a local, national and international public art collection that could create meaningful connections to the local and international communities across the tropics. This could see the campus recognised as an important cultural destination in North Queensland, where both indigenous and modern art could help tell both the local and global tropical stories.

Across the campus, public art within urban spaces, courtyards and waterways will contribute meaning, uniqueness and attract people to the university. The focus of art should have a contextual relationship with the site and relevance to the campus. Opportunities may include:

- University life
- Large scale or landmark art
- History of the JCU
- Aboriginal
- Art that is fun, quirky and unexpected
- Text art with reference to the site, points of interest, history and everyday campus life
- Poetry
- Performance art
- Temporary art.

A detailed art strategy is recommended to developed and identify art opportunities, concepts and future commissions. The strategy should establish the functional processes of art procurement, including artist engagement, concept development, contracts, implementation, maintenance and establishment of a public art panel. An art budget strategy should be included to assist delivery of future commissions and provide value for money outcome.



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Interpretive and placemaking art
- Indigenous and modern
- Local and global tropical stories
 - Across the whole campus
 - Focussed on key routes and gathering places

RELEVANT STRATEGIES

- 2.6 Public Art
- 2.8 Connections to Country

REFERENCE PROJECTS

- Jezzine Barracks

06 ENTRY BOULEVARDS

James Cook and Discovery Drive will be re-defined as verdant tropical entry boulevards with canopy trees in the median and along the verges to provide unique character and deep shade whilst emphasising vistas to the foothills. Their overall width is to be reduced and parking is to be limited to parallel parking on the outer edges so that pedestrian crossing is supported. The inner side of the ring is to be flanked by a shaded walk and stormwater swales, whilst trunk infrastructure routes are to be allowed for along the outer edge. Two lanes of traffic are to be maintained at all times to support effective and efficient circulation into and around the campus.



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Verdant and tropical character
- Canopy shade trees
- Median and verge planting
- Visitor and convenience parking
 - Cycle and pedestrian friendly
 - Supports trunk infrastructure routes

RELEVANT STRATEGIES

- 1.2 Public Space Structure
- 1.3 Heritage Places
- 2.1 Landscape Structure and Character Zones
- 2.7 Vistas and View Corridors
- 3.1 Campus Address and Arrival
- 3.4 Street Naming and Wayfinding
- 3.3 Road Hierarchy
- 4.3 Sport and Recreation
- 5.1 Public Transport
- 5.3 Campus Electric Bus Loop
- 5.4 Overall Cycle Strategy
- 5.5 Bicycle Routes and End of Trip Facilities

* Also refer to the Campus Urban Design Guidelines for detailed setout and cross section.

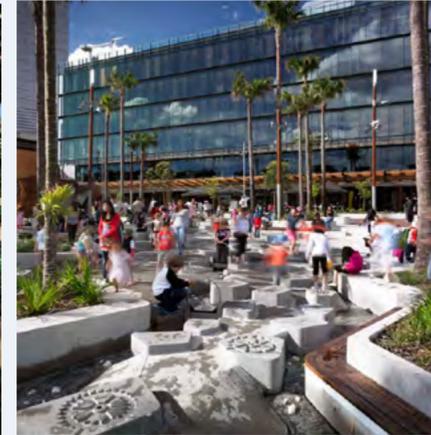
REFERENCE PROJECTS

- Singapore East Coast Park Boulevard
- The Strand

MEMORABLE PLACES

07 THE LAGOON

Located to the south of the central plaza, the lagoon offers a uniquely Townsville opportunity for students and the community to engage with water in a light-hearted and interactive manner. Imagined as a series of swimming holes and paddling pools that respond to topography along the creek edge and the existing stand of poplar gums, this lagoon will be a centrepiece for the community that is activated by the outdoor gathering, performance and community spaces that surround it.



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Verdant and tropical character
- Canopy shade trees
- Median and verge planting
- Visitor and convenience parking
- Cycle and pedestrian friendly
- Supports trunk infrastructure routes

RELEVANT STRATEGIES

- 1.2 Public Space Structure
- 2.5 Waterways and waterbodies
- 2.6 Public Art
- 4.3 Sport and Recreation

REFERENCE PROJECTS

- Darling Quarter Playground
- Orion lagoon, Springfield
- Thuringowa Riverway Arts Centre
- Cairns Esplanade
- Airlie Beach Lagoon

MEMORABLE PLACES

08 LIBRARY GREEN

The Library Green is the primary and most visible park space on the campus. It is a major social, education and recreation destination that is surrounded by major teaching and learning facilities, including the library. The existing character of the space is defined by elegant and tall poplar gums.

Over time, scattered shade trees may be introduced. Other initiatives for the space may include art, wayfinding signage, installation of amenity to support events and management and maintenance of the adjoining riverine vegetation.



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Primary Park on Campus
- Major social, education and recreation destination
- Irrigated grass and tall poplar gums will continue to impart a unique character
- A multifunctional destination
- Cool and shady
- Placemaking

RELEVANT STRATEGIES

- 1.1 Land Use
- 1.2 Public Space Structure
- 2.1 Landscape Structure and Character Zones
- 2.2 Environmental Reserve and Ecological Connectivity
- 2.9 Landmark Trees
- 4.1 Art, Culture and Events
- 4.3 Sport and Recreation

REFERENCE PROJECTS

- Fort Collins Convention and Visitors Bureau
- Duke University, North Carolina
- University of Nebraska
- University Avenue, ANU Canberra
- Melbourne Library

MEMORABLE PLACES

09 CHANCELLERY PLACE

Chancellery Place is the main formal entry to the university, providing direct access to Central Plaza at the heart of the academic core and running alongside the symbolically and historically important Chancellery Building. The tree-lined cul-de-sac is a shared pedestrian and vehicular street that connects the campus along an east-west axis, with views to Mount Stuart in the east and the Sports Plaza in the west. Terminated by the new main bus stop at one end and central plaza at the other, the street is activated along its length by a relocated student services building, a major end of trip facility, an a number of general teaching and learning facilities at the ground floor of the adjacent buildings.



JCU TOWNSVILLE - CHANCELLERY PLACE



MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Primary formal entry to the academic core
- Adjacent to the Chancellery Building
- Provides views to central plaza and Mt Stuart
- Activated by student services
- Connects Central Plaza and Sports Plaza

RELEVANT STRATEGIES

- 1.2 Public Space Structure
- 2.1 Landscape Structure and Character Zones
- 2.6 Public Art
- 2.7 Vistas and View Corridors
- 3.1 Campus Address and Arrival
- 3.2 New Roads and Connections
- 3.4 Street Naming and Wayfinding
- 3.3 Road Hierarchy
- 3.6 Signage
- 4.1 Art, Culture and Events
- 4.3 Sport and Recreation
- 5.5 Bicycle Routes and End of Trip Facilities

* Also refer to the Campus Urban Design Guidelines for detailed setout and cross section.

REFERENCE PROJECTS

- QUT Main Drive
- Locust walk, Pennsylvania University
- Albert Street at Queen Street Mall, Brisbane
- North Terrace Adelaide

10 UNIVERSITY PLACE

Characterised by the large and striking rain trees outside Science Place, University Place is the mirror partner to Chancellery Place on the east. It provides access from Discovery Drive into the heart of the campus and shares all of its characteristics with Chancellery Place.



JCU TOWNSVILLE - EDUCATION CENTRAL

MEMORABLE PLACES INITIATIVE

KEY FEATURES

- Formal entry to the academic core
- Provides views and access to central plaza
- Characterised by the existing and distinctive large rain trees

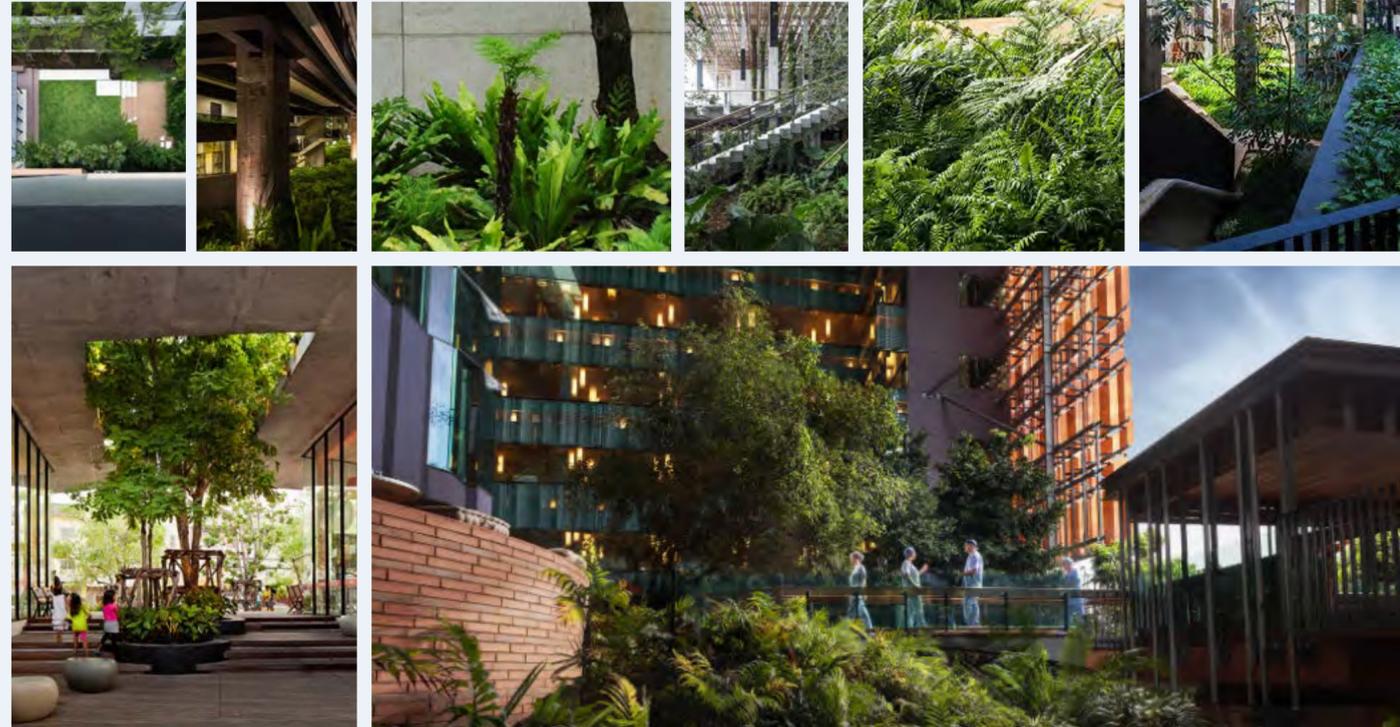
RELEVANT STRATEGIES

- 2.7 Vistas and View Corridors
- 2.9 Landmark Trees
- 3.1 Campus Address and Arrival
- 3.2 New Roads and Connections
- 3.6 Signage

MEMORABLE PLACES

11 TROPICAL COURTYARDS

A network of shaded tropical courtyards will characterise the campus, continuing the pattern of both large and small green public spaces that provide shady, cool spaces as a counterpoint to the built form. These spaces are of varying scale. Larger courtyards occur between buildings and smaller courtyards are formed entirely within the built form of a single building. Each courtyard is to have a different character and feel, defined not only by the surrounding buildings, but also by a variation in the tropical planting that is provided. These spaces will be irrigated by water captured and recycled from adjacent buildings, and will include both lawn, garden and paved areas that support a number of uses for study, relaxation, gathering and meeting. The spaces will be supported by digital connectivity and power points, and will also have integrated artwork that is appropriate to the size and scale of the space, as well as the adjacent building uses.



MEMORABLE PLACES INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Themed courtyards • Cool comfortable spaces • Outdoor learning
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 1.2 Public Space Structure 2.1 Landscape Structure and Character Zones 2.3 Open Space and Parkland 4.1 Art, Culture Events
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Central Park One • QUT Library Forecourt • TRI, Brisbane

MEMORABLE PLACES

12 UNIVERSITY MALL

University Mall is the great public promenade at the heart of the campus, and will act as the backdrop for student and community life on campus. It is a distinctly urban pedestrian street that plays a crucial role in connecting the centre of the campus to Mount Stuart Street, and is regarded as an extension of the central plaza to the south and the ideas market to the north. Shaded by large, distinctive canopies that will redefine the experience, branding and image of the campus, the mall will be characterised by a dense urban built form that creates its edges, integrated tropical shade trees, lush green planting at all levels, and a series of seating and garden pockets along its length. Integrated water features that are appropriately

urban in nature will provide visual interest and cooling to the space, and it is imagined that they will all promote active engagement with the community by providing seating and entries along their edges. The adjacent buildings will be between 5 and 6 stories, with the ground floor spaces typically comprising teaching, learning and study spaces that are able to open out to the mall. Some cafés and other complementary uses will also be included. The centre of the mall will accommodate important underground trunk infrastructure, emergency services access, disability access, and potentially an overland flow path to direct floor and stormwater north to Mount Stuart Street. Digital connectivity and power are to be integrated along the full length of the mall.



MEMORABLE PLACES INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Shaded Walk • Gathering Space • Supporting Events
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 2.7 Vistas and View Corridors 2.8 Connections to Country 3.1 Campus Address and Arrival 3.2 New Roads and Connections 3.6 Signage 4.1 Art, Culture and Events 4.2 Retail Food & Beverages 5.5 Bicycle Routes and End of Trip Facilities
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Griffith Spine, Brisbane • Queens Street Mall, Brisbane • Flinders St, Townsville

MEMORABLE PLACES

13 IDEAS MARKET

The ideas market is the northern hub and commercial activity node of the university. It sits at the important junction between the university mall and Mount Stuart. It hosts a mix of academic, student, accommodation, commercial, retail and public functions that support the life of students, researchers, workers, residents and visitors.

It is a major entry point into the university, and is the starting point for the connections to country walk. A local welcome to country and ground map installation that outlines the Connections to Country journey are featured in the space, along with contemporary art installations that engage, challenge, think and entertain are included in the space.

MEMORABLE PLACES INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Shade and Shelter • Statement Design • Flexible Use
RELEVANT STRATEGIES
2.6 Public Art 2.7 Vistas and View Corridors 2.8 Connections to Country 3.1 Campus Address and Arrival 3.2 New Roads and Connections 3.5 Building Entry, Address and Servicing 4.1 Art, Culture and Events 4.2 Retail Food & Beverages
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Barcelona Parasol



JCU TOWNSVILLE - IDEAS MARKET



MEMORABLE PLACES

14 WINTER HOUSE

The Winter House is to be a prestigious, sophisticated and tropical retreat that is set on the foothills of Mount Stuart with views across the campus to the city, Magnetic Island, and the ocean. It is intended to be a community retreat for learning, reflection, and special events, where students, staff and special guests are invited to escape the activity of the campus and the city to engage with the unique tropical foothills.

MEMORABLE PLACES INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Potential for Intimate Gathering • Flexible Use • Iconic Opportunity
RELEVANT STRATEGIES
2.2 Environmental Reserve and Ecological Connectivity 2.7 Vistas and View Corridors 2.8 Connections to Country 4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Age of Dinosaurs Museum • Frey House II, Palm Springs



JCU TOWNSVILLE - WINTER HOUSE



15 EASTERN GOONDALOO PRECINCT HEART

To accommodate the increased number of staff and student in the eastern Goondaloo precinct, it is proposed that a major new gathering place is built to create a new heart. The current courtyard gathering space will be retained, but will become secondary to the activated plaza at the heart of this neighbourhood.

The precinct is currently characterised by low-scale teaching buildings and dispersed sheds, surrounded and interspersed by several parking lots. Several significant new buildings are planned that will significantly increase the number of staff and students in the precinct, as well as changing the character and scale of the built environment. New buildings will include the Biosecurity hub, which is of national significance, and a new veterinary teaching building.

The new heart will include tropical planting and shade canopies similar in character to the Central Plaza and Ideas Market, but it will likely take on a smaller scale that responds to the existing buildings and animal sheds. The plaza will act as a major wayfinding device and will encourage the ongoing growth of the academic community on the eastern side of Goondaloo Creek. It will be located on the current carpark at the centre of the precinct, connecting to the existing pedestrian bridge and large carpark to the west whilst allowing eastern views to Mt Stuart and western views to Junction Dam.

MEMORABLE PLACES INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Local Gathering • Shade and Shelter • Local Identity
RELEVANT STRATEGIES
3.2 New Roads and Connections 4.2 Retail Food & Beverages
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Harveys, Brisbane



7.2 CULTURE AND COMMUNITY

16 EVENTS LAWN AND COMMUNITY PARK

Located in the green heart of the campus will be a major events lawn and community park. This space will have the capacity to host significant cultural festivals, concerts and other community events. The park will be defined on its edges by a continuous covered path that connects the adjacent carpark and academic buildings with the campus. Planting density will increase to the edges, and water and power points will be located along the covered walk. A temporary stage can be erected to the south of the library, and park elements that encourage their shared use by residents and members of the university community will hug the outer edges. These include BBQ's, shelters, traditional and non-traditional playground equipment. Tropical trees and ground cover plants will dominate with some native species to attract wildlife and reference the surrounding natural setting.

CULTURE & COMMUNITY INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> • Facility for events • Attract the broader community • Residents recreation space 	
RELEVANT STRATEGIES	
1.1 Development Zones 1.2 Public Spaces 2.3 Open Space and Parkland 3.2 New Roads and Connections 4.1 Art, Culture and Events 4.3 Sport and Recreation 5.5 Bicycle Routes and End of Trip Facilities	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> • The Strand • Thuringowa playground 	



17 BIG SCREEN

A large digital screen is proposed to be located in the heart of the academic core at central plaza. This screen will display world and local news, recently published university research, upcoming events and activities, and live sporting events. Reference projects include the screen in Queen Street Mall.



CULTURE & COMMUNITY INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> • Flexibility for Staging • Potential bump-in • Sound Augmentation 	
RELEVANT STRATEGIES	
3.2 New Roads and Connections 3.5 Building Entry, Address and Servicing 4.1 Art, Culture and Events	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> • Federation Square, Melbourne • Flinders St, Townsville • Queens St Mall, Brisbane 	

CULTURE AND COMMUNITY

18 INDIGENOUS OUTDOOR LEARNING GARDEN

This learning garden will extend the concept of the previously completed outdoor teaching space to create a fully integrated outdoor learning garden that supports a range of traditional and contemporary events and activities which aim to expand indigenous knowledge and understanding.

This open-air classroom and learning area is an alternative to the more widely utilised traditional pedagogical space, and will provide a learning environment that benefits from direct access to the Wadda Mooli Creek and the adjacent museum, art gallery and Interpretive Centre.

The garden will include an upgraded covered teaching space to facilitate larger events and discursive teaching and learning groups, a place for kup murri feasting, a yarning circle, a pathway along the creek, useful plants and trees, and an open area for smoking ceremonies and other traditional events.

CULTURE & COMMUNITY INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> • Ceremonial Sensibility • Flexible for Small and Large Gatherings • Expandable 	
RELEVANT STRATEGIES	
2.2 Environmental Reserve and Ecological Connectivity 2.3 Open Space and Parkland 2.8 Connections to Country	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> • Kuril Dhagun (SLQ) 	

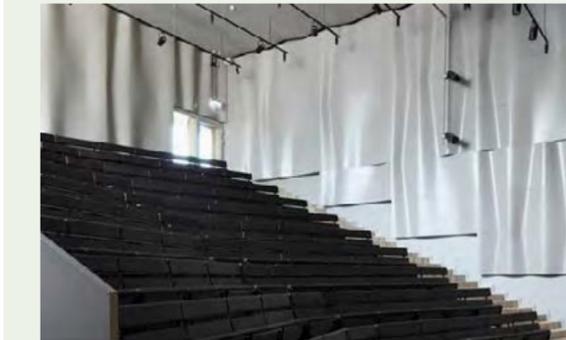


19 MULTI-PURPOSE/ PERFORMANCE HALL

This hall is intended to redefine JCU as a venue for conferences, performances, events and graduations. It is the premier entertainment venue outside the CBD, and will host a variety of events ranging from theatre shows and concerts to exhibitions, school productions and awards dinners.

Flexibility will be key to the success of this facility, which will have the capacity to transform from a tiered seating space to flat floor venue that can cater for every event from small and intimate cocktail parties to sit-down three course award ceremonies, community meetings, full scale music performances and guest lectures. The venue's services and facilities will include an experienced events team and production specialists, full bar, and kiosk, audio-visual and lighting equipment, and on-site e-ticketing system.

CULTURE & COMMUNITY INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> • Iconic Presence • Flexible Modes: flat floor to tiered 	
RELEVANT STRATEGIES	
4.1 Art, Culture and Events 4.4 Significant Buildings	



CULTURE AND COMMUNITY

20 VILLAGE PLAZA

Located along the spine in the heart of the residential community is a small community plaza that provides a stage for suburban residential life. It is activated by an appropriate local activity centre that includes a number of local cafés, a child care, and a convenience store, and will feature a small outdoor room, a public toilet, a small water feature, and deep shade from landmark trees.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Local Gathering Shade Flexible Retail
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 2.3 Open Space and Parkland 3.2 New Roads and Connections 3.5 Building Entry, Address and Servicing 4.2 Retail Food & Beverages
REFERENCE PROJECTS
<ul style="list-style-type: none"> James St Market, Brisbane Ferry Rd Market, Brisbane



21 ORCHARD WALK

This walk is a semi-formal residential walk along Magnetic Island axis that connects the Village Plaza with the campus heart. It acts as a green spine that accommodates an overland flow swale and is lined with a wide range of local and exotic food producing trees and community gardens that extend the residential activity into this parkland area. The walk will include lightweight shade structures, bench seating, pedestrian level lighting, power and water.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Growing food Gardening for fun & recreation Tree Lined Avenue
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 1.2 Public Space Structure 2.3 Open Space and Parkland 2.5 Waterways and Waterbodies 3.2 New Roads and Connections 4.1 Art, Culture and Events
REFERENCE PROJECTS
<ul style="list-style-type: none"> South Bank



CULTURE AND COMMUNITY

22 WOODLAND MEMORIAL PARK

This informal, low-key parkland closely resembles the surrounding tropical dry Savannah woodland and is imagined as a spiritual destination – a modern interpretation of the traditional cemetery. Memorials are to be carefully integrated into the natural setting, and are to be of both historically significant figures and the local community. The park is 85:15% local indigenous: exotic plantings that respond to the natural planting patterns and formations. Seating, indigenous art, and memorials are the only parkland facilities/elements provided within the park.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Informal Expandable
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 2.1 Landscape Structure and Character Zones 2.2 Environmental Reserve and Ecological Connectivity 2.3 Open Space and Parkland 2.5 Waterways and Waterbodies 2.6 Public Art 2.7 Vistas and View Corridors
REFERENCE PROJECTS
<ul style="list-style-type: none"> NGA, Sculpture Garden



23 UNI PUB

The uni pub has become an institution in almost every university around the world, and JCU is no exception. As the current location of this pub is slated for demolition, larger and more modern uni pub is built overlooking the central plaza with good connection to an outdoor beer garden that overlooks Wadda Mooli Creek.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Indoor/ Outdoor Connection Informal
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 4.2 Retail Food & Beverages
REFERENCE PROJECTS
<ul style="list-style-type: none"> Cairns Yacht Club



CULTURE AND COMMUNITY

24 MUSEUM, ART GALLERY & INTERPRETIVE CENTRE

This combined cultural facility is intended to create, curate and exhibit cultural and artistic artefacts from a range of local and international cultures, with a particular emphasis on normalising and promoting indigenous Australian culture within the Townsville society. Art from local, international and student artists will also be exhibited in this centre, and will encourage a cross-fertilisation of ideas and creative energy. The centre will seek to bridge cultural divides and connect the local community by engaging them in events and exhibitions of the art and artefacts that form part of the collection. As the current collection is dispersed and not exhibited, it is expected that the university will embark on a procurement strategy to ensure that the centre opens with a number of new items to display alongside the existing collection.

An important function of the centre will be to physically connect central plaza to the Indigenous Outdoor Learning Garden with the aim of drawing in visitors from all cultural and ethnic backgrounds.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> External Engagement
RELEVANT STRATEGIES
4.1 Art, Culture and Events
REFERENCE PROJECTS
<ul style="list-style-type: none"> Margaret Olley Art Centre UQ Anthropology Museum



CULTURE AND COMMUNITY

25 MULTI-FAITH & CHAPLAINCY

The current chaplaincy will be moved to the centre of the campus and expanded to include a multi-faith centre. It will be a place where people from diverse religious and spiritual backgrounds can deepen their understanding of their own faith and actively participate in positive inter-faith dialogue.

The space will be accessed from the central plaza, and will include several large and small places to accommodate the administration and gathering for various religious groups.

 CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
4.4 Significant Buildings

26 AGED CARE

Full service aged care facilities are planned for the campus to cater for elderly residents that prefer to remain in a familiar community and age in-place. It is widely recognised that the baby boomers will not tolerate residential care environments that mirror hospitals, and the proposed aged care should be designed to mimic their home environments that support them in living as normal a life as possible with good access to amenity. For the residents and their families, it relieves one of the larger stress points of moving from the family home into a care environment.

Coupled with tailored care, a high quality built environment will be key to maintaining a sense of independence, identity and community in what will likely be a large-scale entity offering quality care.

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Aging in Place
RELEVANT STRATEGIES
1.1 Land Use

27 CHILD CARE CENTRES

It is envisaged that the JCU community will need to be supported by multiple child care centres when the community reaches maturity. At least one of these centres should look to co-locate with the proposed aged care facility in an intergenerational setting that has the capacity to generate social capital rather than isolate a section of the population.

 CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
1.1 Land Use



CULTURE AND COMMUNITY

28 YOUNG CARE

Recognising and the growing need to specifically cater for young people that require high care outside of their family home, this facility will provide quality accommodation that meets the needs and aspirations of young lives. It will offer choice, independence and dignity to people under forty who prefer not to move into aged care accommodation where the average age is 84 and the life expectancy is just 3 years. Designed as a welcoming residential environment, residents with a range of complex disabilities will have access to the highest quality care within their homes, and will benefit from communal social spaces that allow them to engage and interact with their peers.

CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Non Institutional
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Youngcare Sinnamon Park



29 RETIREMENT LIVING

Retirement living is to be provided as an integral component of the residential development on the campus, rather than a separate, gated community that is removed from the life of the knowledge community. The traditional retirement village and aged care home typology is an unattractive prospect to many of the current retirees, and an alternative integrated model is required that leverages the university facilities for the use of this community.

JCU recognises the valuable contribution to academia and the general community that retirees are able to offer through volunteer and part-time work, and will seek to provide incentives for developers and residents to build and occupy appropriate housing on campus.

CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Non Institutional
RELEVANT STRATEGIES
1.1 Land Use



CULTURE AND COMMUNITY

30 UNIVERSITY HIGH SCHOOL

A co-located high school at JCU's Townsville campus could act as a "lighthouse school" in North Queensland, demonstrating evidence-based teaching practices in an innovative environment and encouraging tertiary attainment in North Queensland, which is currently lower than the State average. The school would benefit from:

- gifting of land on which it would be built
- sharing of existing facilities on the JCU campus, including libraries, ovals, a swimming pool, a drama theatre and specialised research labs
- capitalising on international networks created through JCU's presence in Singapore and other international markets, and
- importantly, being able to draw on the human and intellectual capital readily available to its staff and students through its co-location on the JCU site.

The school would be an important contribution to the Townsville Knowledge Precinct being developed, which already capitalises on the value of co-location, and includes the Townsville Hospital, CSIRO, AIMS, Tec-NQ, ACT for Kids, JCU research entities and other new elements in development.

Through the use of either new or existing boarding facilities on campus, a JCU High School would provide opportunities for students across the broader North Queensland region, particularly to Indigenous and non-Indigenous students in rural and remote areas. It would also provide the opportunity to cultivate 'international mindedness' through the recruitment of international students, paying particular attention to JCU's international market and opportunities therein.

CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Beijing No.4 High School Fanfshan Campus



31 HOTEL AND SHORT STAY ACCOMMODATION

The proposed Hotel and Short Stay accommodation will satisfy the unmet need to provide conveniently close overnight and short-stay accommodation for students, staff and visitors to the university and the Townsville Hospital. It will specifically cater for students arriving from interstate or overseas who need a temporary base while they arrange longer-term accommodation, visiting academics, research students, rural hospital patients and their families, business people, and other visitors to the area.

CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Parkroyal on Pickering, Singapore



CULTURE AND COMMUNITY

32 STUDENT ACCOMMODATION

 CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> Kensington Colleges, Sydney

Quality new student accommodation is planned for the campus to meet the demands and expectation of today's students for modern accommodation that feels like a home away from home.

Various models for the design and delivery of this accommodation must be considered to ensure a range of cost and living options. Developer driven design is likely to result in cheaper and smaller accommodation that will be attractive to some students, but alternative university led accommodation that embraces the local climate and provides an authentic and high quality tropical living experience should also be delivered. All models should emphasise JCU's strategic positioning as a university for the tropics, and provide living options that reinforce the decision to study and live at JCU as a university of choice.

Forward-thinking accommodation should reject the accepted and traditional model that provides accommodation in hotel-style layouts with central corridors, and embrace a community model that clusters student rooms into small 'family' units that are grouped around their own living, dining and cooking spaces. Designs must embrace the tropical climate and include open corridor circulation, natural ventilation and verandahs to each room.

Reference projects include the Student Residence Project at UQ.



33 RESIDENTIAL DEVELOPMENTS

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Tropical Response
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> Fitzgibbon Chase Varsity Lakes

Sustainable and compact residential housing communities will be developed on the foothills of Mount Stuart, fulfilling the original intention of the 1964 Stephenson Master Plan and the ambition to create a fully integrated knowledge community with all the services and amenity required to support itself as a university town.

This development will include a range of accommodation types and prices that attracts a range of residents, including students, families, couples, retirees, staff, researchers, exchange students and local employees. The development extent is to be restricted to land that is not impeded by geographical constraints such as unstable rock, ecological corridors and slopes of greater than 10%.



CULTURE AND COMMUNITY

34 DISCOVERY RISE VILLAGE

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Tropical Response
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> Fitzgibbon Chase Varsity Lakes

Focused around the Village Plaza, the core of the residential development will comprise denser and taller residential developments in a village type setting. This is intended to create a dense and more urban living environment with active community streets and a compact neighbourhood. Located within only a few minutes' walk of the campus loop bus stop, the village will cater for greater densities and provide a wide variety of housing procurement and ownership models that results in a mix of typologies that appeal to a broad cross-section of the community. Student accommodation, young care, aged care, retirement living and short-stay accommodation is envisaged for this vibrant and active neighbourhood.



35 STUDENT SERVICES CENTRE

 CULTURE & COMMUNITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Welcoming 'Shop Front for JCU'
RELEVANT STRATEGIES
4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> Portada ECU Ngoolark

As student numbers grow, JCU will need to ensure that a high level of service continues to be offered to the students and broader community. This will necessitate the expansion of services and the relocation of the current support team and facilities to the centre of the campus adjacent to the main entry on Chancellery Place.

This new student hub will be as an exciting urban platform for university life, and will seek to create an interactive and integrated building that brings together several functions in a variety of vibrant and active spaces. These should include casual learning and meeting spaces, study areas, a public forum, formal meeting and seminar rooms, innovative workplaces, service desks, and administration space. Services are to include administration, enrollments, employment, counseling, mentoring, careers and guild services.



CULTURE AND COMMUNITY

36 DIGITAL ECONOMY AND CONNECTIVITY

As the digital revolution takes hold and begins to embed itself deeper into the lives of the worldwide community, JCU needs to develop a comprehensive digital strategy that responds to the changes and disruptions to life in the city and on campus, and more specifically to the education and business sectors. Information should be treated as a strategic asset, and the radical shifts towards a comprehensive internet of everything that leverages big data and analytics should be harnessed to create a better teaching and learning experience, attract and retain people on campus, engage the community at a deeper and more meaningful level than before, improve productivity, reduce operating costs, and promote innovation and research.

Specific initiatives that should be implemented include:

- Creating flexible and personalised learning experiences for students that can be delivered and consumed regardless of physical location
- Implementation of emergent technologies to keep JCU at the forefront of innovation. Regular review of important and emerging digital developments, with early implementation of research-stage technologies have the ability to turn the campus into a living laboratory and promote research excellence
- Providing secure, sustainable and scalable infrastructure that can power and facilitate the growth of digital learning and engagement. This should include a large cloud storage facility and campus-wide wi-fi connectivity focused around key activity nodes
- An online engagement and support platform to connect with students, staff, researchers, and the broader community around topical and current conversations, research, administration tasks, events and activities.
- Parking app, similar to Cellopark
- Geo-referenced and location based indigenous overlay app to help the community 'see' the landscape through Indigenous eyes
- Local flora app connected to specific species and locations.

Teaching and learning games should be developed that integrate campus exploration with learning and discovery tasks. These could be modelled on apps like PokemonGo. This way the entire campus grounds could be imagined as a digital learning canvas.



37 CONVENIENCE CENTRE

CULTURE & COMMUNITY INITIATIVE
RELEVANT STRATEGIES
1.1 Land Use 4.2 Retail Food & Beverages
REFERENCE PROJECTS
• BHC Service Centre, Brisbane Airport

Angus Smith Drive acts as a major arterial and feeder road for the university, and a site along this route on university land has been identified as a suitable location for a convenience centre. This would include a service station with a limited offering of convenience retail and fast food. As this would take some business away from the retail on Mt Stuart Street, this project is not seen as a high priority and would only be implemented once Mt Stuart street has established itself as a retail and commercial destination, and when the on-site population is large enough to support the service station. When this centre is established, it will provide an important 24-7 food and retail option that will be attractive to some segments of the university and hospital community that work long hours or shift work.

Noise issues have been addressed by locating this between two ecological corridors and adjacent to the sports precinct, but there are further environmental concerns should be carefully addressed in the detailed planning stage. The retail mix for this centre should also be considered as part of the overall retail, food and beverage strategy.



7.3 EVENTS

38 FARMER'S & CRAFT MARKETS

EVENTS INITIATIVE
RELEVANT STRATEGIES
4.1 Art, Culture and Events
REFERENCE PROJECTS
• Powerhouse Markets, Brisbane

Farmers' markets are an important part of a growing community, and can have far reaching benefits for local businesses and the community. Not only do they provide an economically viable distribution option for local farmers, producers and small businesses, but they also achieve important community outcomes, such as health, education, tourism, social well-being and regional economic benefits.

Weekly or fortnightly markets provide an important platform for farmers, value added food businesses, local artisans and other small businesses to grow their business, test their products with consumers and improve other aspects of their business, such as management approaches and branding. They also provide consumers with alternative access to fresh, local and seasonal food sourced directly from the food producer; exposure to a variety of foods and the opportunity to learn about how the food was produced and how to use it. Local markets also provide community members the opportunity to support the local community, local businesses and the environment.

It is proposed that local markets are located in the ideas market on Mount Stuart Street once stage 1 of the Student Mall has been constructed. They could be run weekly during peak student times in the middle of the week, and can be implemented and grown gradually from just a few stalls to around 50 when the local residential community is large enough to support the economic viability of a market this large.



39 CAMPFIRE & BONFIRE NIGHTS

EVENTS INITIATIVE
RELEVANT STRATEGIES
2.3 Open Space and Parkland 2.8 Connections to Country

Fire holds a unique place in the human psyche, and gathering around a campfire for cooking and warmth under the night sky has tremendous capacity to mesmerise and bond the community as they share food, songs and stories.

Fire also holds an important historical significance for all Australians who lived on and travelled through the land before electric power was introduced to most communities. In many places across Australia, and indeed in several special places on campus, the long tradition of campfire continues to form an important part of community life.

This Master Plan proposes that this important tradition is continued on campus, and that both large and small events are organised throughout the year – particularly in winter – to engage and strengthen the local community. Several locations along Wadda Mooli Creek and on the lower peaks of the foothills are already used as campfire, and it is proposed that these are recognised and as important historical locations and that additional locations are added to cater for larger and more public bonfire nights.

It is also recognised that this event brings with it, a significant risk to individuals, the local community, campus and city infrastructure, and the local environment. Rather than extinguish an important and long standing tradition by shying away from these risks, it is proposed that proper risk management and fire safety measures are implemented so that the community can continue to enjoy the social and psychological benefits of this age-old practice.



EVENTS

40 MULTI-CULTURAL FESTIVAL

The Townsville Cultural Festival is a significant event in the city's calendar, and the opportunity to continue hosting this showcase of diversity in Australian music, food, arts and culture is important for strengthening the local community and promoting cultural diversity and understanding. It also allows the university to showcase its event capacity and excellent campus facilities, which will continue to strengthen the perception of JCU in the local community.

The event typically draws thousands of people together each year, with over 100 performing groups offering everything from folk, jazz, blues, hip-hop and rock, to Indigenous Australian music and dance, drum circles, fire shows, cabaret, poetry, theatre, and traditional dance groups from around the world. There are typically a range of workshops, lectures, discussion panels, theatre and poetry, as well as DJ sets, solo sets, dance workshops, massage exchange stations and yoga classes, and market stalls from around the world selling arts and crafts, cuisines, fashion and produce.

This extensive activation of the campus will be focused on the events lawn, library green and university mall, with art installations, interactive games, roving characters, show rides, Indigenous yarning circle, henna tattoo stalls and gypsy fortune tellers extending the activity across these three areas.

EVENTS INITIATIVE

KEY FEATURES

- Flexible grounds
- Services Provision

RELEVANT STRATEGIES

- 2.3 Open Space and Parkland
- 4.1 Art, Culture and Events



41 SUMMER CONCERTS & STAGE

Continuing the year-round activation strategy for the events lawn, it is proposed that JCU host a series of summer concerts in the cool of the evening as the sun sets behind the foothills. Imagined as an enormous community picnic in the lush gardens of the events lawn, this fortnightly event is intended to reinforce the JCU brand, strengthen community engagement with the university, support local artists, attract national and international artists, and raise money for other community events on campus.

The setting for this event is particularly important for imbuing ambiance, and it is proposed that an attractive and functional performance stage is designed to capture and amplify the natural setting and performances. The design of this stage could be an artistic object in its own right, or it could be designed to be in keeping with the campus canopies and bus stops, extending and reinforcing the design language and tropical brand of the campus.



EVENTS INITIATIVE

KEY FEATURES

- Flexible Grounds
- Services Provision

RELEVANT STRATEGIES

- 2.3 Open Space and Parkland
- 4.1 Art, Culture and Events

42 CONFERENCES

JCU will look to leverage the extensive facilities on campus to host conferences that are both directly and indirectly related to the university. These will utilise a mixture of new and existing facilities, and it is imagined that larger conferences will use a number of rooms and facilities across the campus. The proposed multi-purpose hall, purpose designed conference rooms in the proposed hotel, and existing seminar rooms will all form part of the JCU conference hosting capacity.

The retail, cultural and recreational amenity of the campus, coupled with the conveniently located short-term accommodation and excellent conference spaces means that JCU will be well positioned to benefit from both related and unrelated conferences.

EVENTS INITIATIVE

RELEVANT STRATEGIES

- 4.4 Significant Buildings

EVENTS

43 WELCOME TO COUNTRY & SMOKING CEREMONIES

Welcome to Country is a sacred, symbolic ceremony that has been celebrated for 60,000 years. It is a proud moment for those giving the Welcome and members in the audience are privileged to witness such a sacred ceremony. A Welcome to Country may also include a Smoking Ceremony, and these events are reserved for formal functions or special occasions such as:

- Graduations
- Conferences
- Sod turning ceremonies
- New buildings and space openings
- Student orientations
- Annual, special and inaugural professorial lectures
- JCU Council Inductions
- Senior staff forums, and
- NAIDOC and Reconciliation Weeks.

Several appropriately important and symbolic places in the heart of the university have been identified that can host these ceremonies if they are outdoors and are targeted at large and/or general audiences. The spaces should be designed to accommodate all aspects of these traditional rituals and must accommodate variously sized gatherings of people to witness the ceremonies. Special places for these events include the Winter House, the Ideas Market, the Central Plaza, and the Indigenous Outdoor Learning Garden.



EVENTS INITIATIVE

KEY FEATURES

- To suit varied Gathering Size

RELEVANT STRATEGIES

- 2.3 Open Space and Parkland
- 4.1 Art, Culture and Events

44 GRADUATION

Ceremonies for graduating students date from the first universities in Europe in the 12th century, and remain an important event to celebrate the completion of student's study at most universities around the world. This event is arguably one of the most significant for students that have completed a degree, and most universities seek to mark this important occasion with a fittingly formal and ceremonial event that is attended by the university executive and academia as a mark of respect.

The setting for this occasion should therefore be equally as impressive and significant as the event itself, and whilst the graduation ceremonies will continue to be held in the CBD for the time-being, JCU will seek to shift these to the university grounds as they mature and develop into an appropriately unique and beautiful setting. Some of the more unique and picturesque places on campus will offer fitting locations to stage formal and informal photo opportunities. These include symbolically and socially important places such as the Library Green, Junction Dam, Central Plaza, The Winter House and Orchard Walk, Chancellery Place and University Place.

EVENTS INITIATIVE

RELEVANT STRATEGIES

- 2.3 Open Space and Parkland



EVENTS

45 CAMPUS GAMES

 EVENTS INITIATIVE
RELEVANT STRATEGIES
4.3 Sport and Recreation

A large annual sporting festival and extravaganza is proposed for the campus. This is intended to strengthen the university community, promote awareness of the campus facilities, and reinforce the university's status as the primary academic and sporting institution in Northern Queensland.

This event could be tied into the annual corporate games events that are hosted in other major cities, or organised in a similar way. Sports could include the traditional formal sports such as tennis, volleyball, rugby, running etc, but could also be expanded to utilise all facilities on campus including the mountain bike trails, trail running routes, adventure challenge course, and the events lawn for community based fun events such as sack races and tug-of-war.

The games could also be expanded beyond the campus to include other local facilities, such as rowing on the Ross River and long distance road cycling around Mount Stuart.

47 TROPICAL TRIENNIAL

 EVENTS INITIATIVE
RELEVANT STRATEGIES
4.1 Art, Culture and Events

Leveraging the unique positioning of JCU in the local and global market, and the excellent international ranking of several key colleges, it is envisaged that JCU will host a significant global event every three years to foster and facilitate robust discussion, knowledge sharing and collaboration around critical issues affecting the tropics.

The significant convention will continue the work of the 'Future of Tropical Economies Conference' that was held in 2014 and will be aimed at bringing together thought leaders, policy makers, top academics and researchers, significant businesses and startups to examine opportunities and challenges for tropical economies by presenting new ideas, sharing latest research and helping chart a way forward towards prosperous, equitable and sustainable economies for the tropics in the future.

The event will include a series of presentations, forums, exhibitions, events and shows that are all focused around the key findings and new research that is included in the 'State of the Tropics' report that should be released every three years just before the Triennial.

The Townsville campus will be increasingly well positioned to facilitate this event as the campus grows and matures, and it is envisaged that key enabling projects such as the student mall, central plaza, ideas market, multi-purpose hall, the sports centre, the hotel and short stay accommodation and other important projects will be critical in successfully delivering this event.

7.4 SPORTS AND RECREATION

48 SPORTS WALK AND PLAZA

 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Sheltered Connection
RELEVANT STRATEGIES
3.2 New Roads and Connections
4.3 Sport and Recreation
5.5 Bicycle Routes and End of Trip Facilities
REFERENCE PROJECTS
<ul style="list-style-type: none"> Gold Coast Aquatics Centre

The sports walk is an important spine within the university, acting as a continuation of the main entry into the heart of the campus and connecting all the formal sports fields and facilities along its length. This will be a vibrant, engaging and active pedestrian spine that includes seating and viewing platforms, shaded canopies, a series of walking / jogging tracks around the sport precinct, tropical landscaping, dynamic lighting, and sporting themed public artwork.

The offset alignment creates a sports plaza that acts as a major node and arrival point to the precinct. This important public space is activated by the entry to the Sports Centre, an exhibition tennis court and the Joe Baker field, and has the ability to host a variety of game-day activities including stalls, entertainment, food carts, and demonstration sports, and promotional activities.



JCU TOWNSVILLE - SPORTS WALK AND PLAZA



49 SAFE RUN/WALK ROUTES

 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Recreation options
RELEVANT STRATEGIES
4.3 Sport and Recreation

Several safe running and walking loops are proposed to be implemented on campus, with the start and end points located at the new sports centre. These routes will be marked with route name, distance and directional markers and feature several emergency call buttons to campus security, surveillance cameras, and high level lighting to promote safety and security on the routes.



50 MOUNTAIN BIKE TRAILS

 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Recreation options
RELEVANT STRATEGIES
3.2 New Roads and Connections
4.3 Sport and Recreation

With the renowned Douglas Mountain Bike Park located on the hills and peaks adjacent to the western bowl of the campus, there is an excellent opportunity to extend the trails on JCU land and provide a second gateway and departure point for riders from the heart of the campus. The added activity from these riders will bring significant animation to the campus, and their presence will also bring an economic boost to the local cafés.

The trails in the adjacent park include around 30km of predominantly cross country trails including a beginner's loop and skills park, which could be replicated within the sporting precinct at JCU. The trails could be easily reached from the integrated cycle path network that follows the Ross River and connects to the city. The proposed central lagoon would offer an excellent haven to escape the heat after a ride, shower off the dirt and swim in the cool, multi-leveled lagoon, followed by a coffee in the adjoining café.



46 OPEN AIR CINEMA

 EVENTS INITIATIVE
RELEVANT STRATEGIES
4.1 Art, Culture and Events

Evoking notions of the old drive-ins that were made popular in the 50's and 60's, Open Air cinemas are gaining popularity as pop-up events in major cities around Australia. JCU intends to host these events at the start of every year for around 3-4 weeks to attract the community and activate the events lawn or library green. One option is to set up the cinema so that viewers can lounge in the central lagoon while they watch the movie.



SPORTS AND RECREATION

51 SPORTS CENTRE

A major new indoor sports and multi-purpose centre is proposed to act as an anchor and major focal point for the sporting precinct. This new centre is expected to be a state of the art facility that includes a grand stand for the Joe Baker field and exhibition tennis court, gym, change facilities, indoor courts, a learn to swim pool, clubhouses, administration offices, meeting rooms and a café/restaurant.

It is located within walking distance of the heart of the campus, encouraging more frequent use / membership and an enhanced social aspect where coincidental meetings can occur.

[Responds to the JCU Sports Master Plan].

 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Attractive to internal and external community
RELEVANT STRATEGIES
4.3 Sport and Recreation
REFERENCE PROJECTS
<ul style="list-style-type: none"> Chandler South Pine Sports Complex



SPORTS AND RECREATION

52 TRAIL RUN



With a dramatic surge in popularity around the world, trail running is quickly gaining traction as an attractive form of exercise that leverages the beauty of the natural environment to create compelling exercise experiences that have less impact on runners bodies than road running. JCU has the opportunity to create a range of short, medium and long course races that traverse a range of landscapes from the gardens in the centre of the campus to the natural creeks, foothills and lookouts on the lower peaks of Mount Stuart.

The trails will necessarily interact with the current walking and biking trails, but should ultimately be separated to prevent conflicts and provide a safe exercise environment for all.

 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Recreation options
RELEVANT STRATEGIES
2.3 Open Space and Parkland
REFERENCE PROJECTS
<ul style="list-style-type: none"> Castle Hill Mt. Coot-tha, Brisbane Griffith University Toohey Trail Run, Brisbane

53 SPORTS FIELDS

The sports precinct is set for a major upgrade, with new fields installed and existing ones upgraded to accommodate the growing needs of the university and local community. As far as possible, existing fields and courts with major lighting and ground works have been left in place, with new fields added to the western end of the precinct. All fields are aligned North / South to capitalise on the best solar orientation for optimum playing and spectating conditions.

Each corner of the precinct is activated with specific sporting code (football, soccer / hockey/ athletics, AFL / cricket) to engage the streetscape and create sport specific precincts within the overall sports precinct.

Parking has been spread around the site to enable access to specific grandstands and ease of access to specific fields.



 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Attractive to the broader community
RELEVANT STRATEGIES
1.1 Land Use
2.3 Open Space and Parkland
4.3 Sport and Recreation
REFERENCE PROJECTS
<ul style="list-style-type: none"> AIS Canberra UQ

54 ADVENTURE CHALLENGE COURSE

The Adventure Challenge Course is intended to be the premiere program for offering adventure-based learning experiences to the university and surrounding communities. Set in the foothills of Mount Stuart, it will be available to university, school, industry and community groups to enhance personal and group growth through team challenges that improve communication, cooperation, and problem-solving skills.

A range of challenging, fun and engaging activities will include low ropes, harnessed high ropes, climbing walls and poles, obstacles, flying foxes, giant swings, tube slides and other obstacles.



 SPORTS & RECREATION INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Recreation options
RELEVANT STRATEGIES
4.3 Sport and Recreation

7.5 TEACHING, LEARNING AND RESEARCH

55 LEARNING INNOVATIONS CENTRE

The Learning Innovations Centre will provide facilities for academic staff to experiment with new approaches to learning and teaching, building on the success of the facilities provided in Education Central. The purpose of the Centre will be threefold – to provide a “laboratory for learning” to trial new technologies, to assist academic staff with their Continuing Professional Development programs; and to provide alternate teaching environments for general academic use.

Precedents are the Inspire Centre at the University of Canberra and the Learning Environments Spatial Laboratory (LESL) at the University of Melbourne.

TEACHING, LEARNING & RESEARCH INITIATIVE

KEY FEATURES

- Demonstrating Excellence

RELEVANT STRATEGIES

4.4 Significant Buildings

REFERENCE PROJECTS

- University of Canberra
- University of Melbourne



56 LIBRARY EXPANSION

The expansion of the Eddie Koiki Mabo Library is an important initiative to increase the Library’s capacity for both research and student study and to reinforce its role as the academic core of the University. A key issue will be the manner in which such expansion takes place given the distinctive architecture of the building and a separate study will be required to address this, with the potential for one or more linked buildings located adjacent. A key decision will be whether to move part of the collection to these new facilities in order to increase the existing building’s capacity for informal student study, or to preserve the collections and use the adjunct space for an expansion of student facilities.

TEACHING, LEARNING & RESEARCH INITIATIVE

KEY FEATURES

- Primary University Asset

RELEVANT STRATEGIES

4.4 Significant Buildings

REFERENCE PROJECTS

- The Edge, State Library of Queensland
- William Oxley Thompson Memorial Library



TEACHING, LEARNING AND RESEARCH

57 BIOSECURITY HUB BUILDING

This project is one of state significance and would allow the university to further develop its capabilities in the important field of biosecurity. The building will aim to integrate surveillance and detection support capacity and diagnostic capacity in a coordinated system to underpin biosecurity preparedness, surveillance, detection, diagnostics and response to animal, aquaculture and plant industries across Queensland, Australia and the tropics.

The final location of this building will have implications for other development in the vicinity, notably residential, which should not be in the immediate vicinity.



TEACHING, LEARNING & RESEARCH INITIATIVE

RELEVANT STRATEGIES

1.1 Land Use

REFERENCE PROJECTS

- Ecosciences, Brisbane

58 TRANSLATIONAL RESEARCH

Addressing the communication and collaboration gap between clinicians and researchers, as well as the gap between research trials and full-scale production, this facility aims to promote ‘bench to bedside’ medical research that responds directly to patient needs rather than researcher’s interests. It will combine clinical and translational research to advance the progress of research projects from laboratory discovery to application in the community.

The centre will leverage industry and health-sector partnerships and collaborations to provide deep and meaningful pathways for technologies into the global tropics. The centre will be combined with a small production facility that focuses on small-scale production runs of trial drugs, and will be co-located with the University Private Hospital, The Townsville Hospital, and the JCU’s medical facilities to the north of the campus.

TEACHING, LEARNING & RESEARCH INITIATIVE

KEY FEATURES

- World Leading Research

RELEVANT STRATEGIES

1.1 Land Use

REFERENCE PROJECTS

- TRI, Brisbane



59 ENGAGEMENT CENTRE

The engagement centre will combine several different functions into one immersive, digitally rich and information dense melting pot that captures and intrigues visitors. Acting variously as a student lounge, an information centre, a university marketing space, an events room, and a research ‘publication place’, this room is intended to engage with current and prospective students, academics, high school students, visiting professors, community visitors and university researchers alike. It is intended that this room will put the best research work on display in an engaging setting, with the intention of reinforcing the university’s position in the local and global market place by promoting the brand of JCU and facilitating the cross-fertilisation of ideas throughout the university.

Reference projects include the QUT Cube and the Griffith Red Zones.

TEACHING, LEARNING & RESEARCH INITIATIVE

KEY FEATURES

- External Engagement

RELEVANT STRATEGIES

4.1 Art, Culture and Events
4.4 Significant Buildings

REFERENCE PROJECTS

- Griffith Red Room, Nathan
- QUT Hub, Gardens Point, Brisbane



TEACHING, LEARNING AND RESEARCH

60 OUTDOOR COLLABORATION, STUDY & TEACHING SPACES

A key finding of the student consultation process was a desire for more outdoor collaboration, study and teaching space. Requirements for such spaces include weather protection, shade, location away from noisy circulation and gathering spaces, and laptop power outlets.

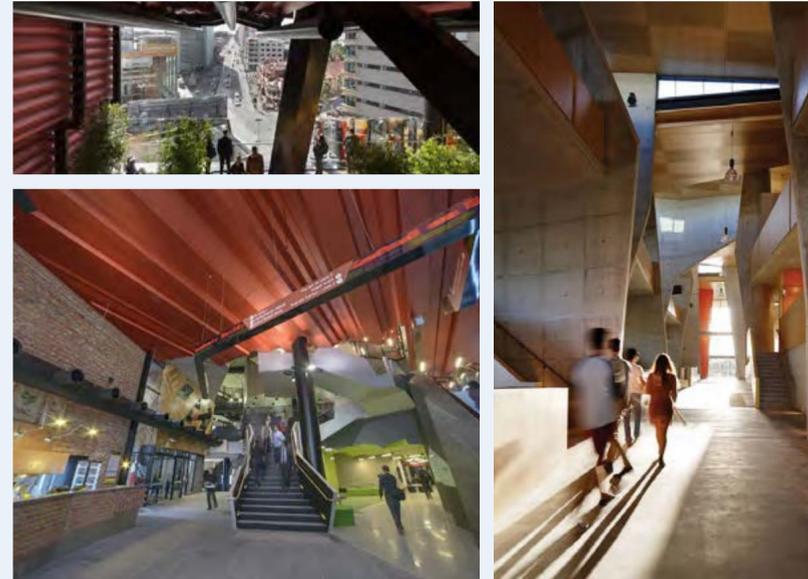


 TEACHING, LEARNING & RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Integration with landscape spaces Outdoor learning and study
RELEVANT STRATEGIES
4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> Griffith University, Nathan

62 GENERAL PURPOSE TEACHING BUILDING

An important recommendation of the Master Plan in achieving both a consolidation of activity on the campus and fostering greater inter-disciplinary interaction and collaboration is the provision of centralised facilities that are used by all academic disciplines. Hence the provision of future learning and teaching space should be made in a central location that is not aligned to any one faculty or department, forming a mixing point where different disciplines come together. This facility building should offer a diversity of teaching spaces, complemented with informal student gathering and study space.

It is recommended that this building include a large component of "technology enabled active learning" where students are seated in groups at tables with access to localised LCD screens that can support local group activity or be linked for whole-of-class instruction and display. These "TEAL" spaces are fundamentally different from traditional lecture theatres and classrooms, in that they have flat floors and modular, mobile furniture which enable multiple seating configurations. They offer significantly greater adaptability to different learning formats, from traditional lecture format to individual self-directed group work.



 TEACHING, LEARNING & RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Collaboration
RELEVANT STRATEGIES
4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> Learning Hub, Nanyang Technological University

7.6 INDUSTRY, INNOVATION & TRANSLATIONAL RESEARCH

63 CATALYST INDUSTRY BUILDING

Attracting key industry partners to the university will be a key focus for JCU, and significant development incentives will be offered to encourage significant businesses with a synergistic research focus to relocate or establish a significant presence on campus. The decentralisation opportunities offered by digital connectivity and the opportunity to be co-located with like-minded researchers and industry partners mean that this opportunity is increasingly likely to be implemented soon.

Businesses involved in the environmental, agriculture, aquaculture, lie sciences, medical and health, digital technologies, mining, energy systems and tourism fields will be actively pursued in an effort to bolster the focus on delivering real-world outcomes as a result of the outstanding research that JCU continues to undertake.

Reference projects include the Cochlear Headquarters at Macquarie University in Sydney.

 INDUSTRY, INNOVATION & TRANSLATIONAL RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> External Engagement
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> Macquarie University



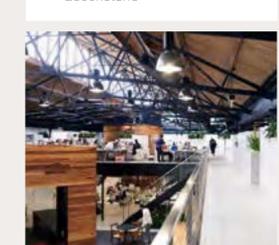
65 START-UP INCUBATOR

With the growth of high-value digital and technology businesses and the growth of Australian seed capital investors, there is an opportunity to create a start-up hub that facilitates the translation of university research and ideas into real-world applications. This hub would derive significant benefit from the presence of specialist academic and industry knowledge on the campus, and would be expected to place a particular focus on solving problems of the tropics around the world.

Emerging innovators, local entrepreneurs, mentors, investors, industry partners and supporters will be provided with low or no-cost space to create high-growth businesses and jobs that advance the global tropical agenda and translational research focus of the university.

Reference projects include The Capital and The Precinct in Brisbane.

 INDUSTRY, INNOVATION & TRANSLATIONAL RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Health and Knowledge Flexible Space Innovative Culture
RELEVANT STRATEGIES
1.1 Land Use
REFERENCE PROJECTS
<ul style="list-style-type: none"> The Precinct, Advance Queensland



61 TECHNOLOGY INNOVATION CENTRE

This building is envisioned as a Science, Technology, Engineering and Mathematics (STEM) centre of activity in northern Australia, and will replace aged and unavailable building stock that is slated for demolition.

Programmatically, it is a companion building to the recently completed Science Place, and focuses on translating electrical and IT innovation from the laboratory to the marketplace.



 TEACHING, LEARNING & RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> World Leading
RELEVANT STRATEGIES
4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> Science Place, JCU Advanced Engineering, UQ

64 UNIVERSITY PRIVATE HOSPITAL

This facility is expected to reinforce JCU's commitment to improving the health of people in the Tropics. The private hospital will offer world-class medical facilities and improve the healthcare options for Townsville and regional areas, ensuring that the Douglas medical precinct is the regional epicentre of health services in northern Australia.

It will be co-located with existing JCU medical teaching and research infrastructure and the public hospital, initially providing around 100 beds and significantly boosting the precinct's medical services, clinical training and research capabilities.

 INDUSTRY, INNOVATION & TRANSLATIONAL RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Health and Knowledge
RELEVANT STRATEGIES
4.4 Significant Buildings
REFERENCE PROJECTS
<ul style="list-style-type: none"> Gold Coast Private Hospital



66 INDUSTRY PARTNERSHIPS

Providing opportunities for industry partnerships is important for both research and undergraduate students. Such partnerships may come in a number of forms: providing industry access to the University's facilities, and in providing opportunities for industry to integrate their operations and facilities on campus.

An example is the CSIRO collocated on campus with the Australian Tropical Science and Innovation Precinct (ATSIP) Facility, to deliver collaborative research and innovation projects.

 INDUSTRY, INNOVATION & TRANSLATIONAL RESEARCH INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Health and Knowledge REsearch & Innovation
RELEVANT STRATEGIES
1.1 Land Use



7.7 TRANSPORT, CONNECTIVITY AND WAYFINDING

67 ELECTRIC BUS LOOP

Parking has been identified as one of the biggest issues on campus, and rather than construct an expensive multi-storey carpark that could be made redundant in 20 years' time by ride-sharing and other transport offerings, it is proposed to build several large at-grade carparks that are connected by a continuous internal bus loop. Based on preliminary calculations, this bus loop can be run for approximately ten years for the same cost as a multi-storey carpark. Not only is this solution simpler and easier to implement than a large multi-storey carpark, but it can be done with a smaller up-front cost in a shorter time and will provide additional benefits to the campus due to the increased campus mobility and connection.

Key outcomes include:

- Reduced reliance on private vehicles
- Intra-campus trips via private vehicles will be reduced and lead to a reduction in congestion.

The bus loop will be implemented in several stages, with the first stage including a short loop around the ring road that connects all major entry point and hubs on campus. The ultimate loop will connect all parts of the campus, including the western and southern residential zones and the eastern veterinary precinct.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Tropical Response
- Smart Land Use

RELEVANT STRATEGIES

- 5.2 Parking
- 5.3 Campus Electric Bus Loop

REFERENCE PROJECTS

- University of Georgia

68 NEW BUS STOPS

First impressions of the campus will be significantly defined by new arrival points at the proposed bus stops on the ring road. It is recognised that these important pieces of infrastructure also have the capacity to dramatically change the commuter experience and increase the use of public transport, and a carefully considered and articulated architectural solution can offer a cost-effective solution to the problem of low public transport usage and poorly perceived campus infrastructure. Rather than just waiting places that provide shelter, these bus stops should be considered as meeting, study and community places that help to define the brand of the campus as an environmentally sensitive and sustainable university that embraces the tropical setting. The architectural expression should be in keeping with the mall canopies to reinforce the sense of a cohesive campus.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Tropical Response

RELEVANT STRATEGIES

- 5.1 Public Transport
- 5.3 Campus Electric Bus Loop

REFERENCE PROJECTS

- Bus Stop Krumbach, Haltestelle Glatzegg
- UBC Bus Shelter



TRANSPORT, CONNECTIVITY AND WAYFINDING

69 PARKING

The issue of parking on campus is an extremely important one, and integrally linked with the provision of effective and efficient public transport to and around the campus. The standout issue for students with respect to the Campus Infrastructure is car parking, and this dominated the "need for improvement" ratings. Both staff and students are committed to the private car and the quality, cost and availability of car parking is a key issue in terms of "the campus experience".

The current arrangement of providing on ground parking adjacent all major buildings provides convenient access but results in a much decried "sea of bitumen". But private car use is well ingrained in the Townsville psyche and therefore increased bus usage is unlikely to happen without active intervention by reducing the availability of on-campus parking and/or increasing the charges for it. But this would be contrary to the concept of encouraging greater use of the campus, particularly by the community. Furthermore, bus services would need to be improved, including reinstating the bus loop around the campus, which will be expensive and may well require financial subsidies until behaviors change and patronage increases.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Flexible Response
- Smart Land Use

RELEVANT STRATEGIES

- 5.2 Parking



70 MABO WAY ROAD LINK

Mabo Way will continue a core principle of the Master Plan to provide key cross axes that create addressable building sites and assist with campus wayfinding and navigation. This link will open a mid-block access route from east to west that provides an important street address for the Eddie Koiki Mabo Library and removes the need to circumnavigate the entire ring road by car.

The street is to be a shared pedestrian and vehicular route, with traffic calming devices and a tiled surface that implies pedestrian priority. The street will include set-down and waiting areas for cars and the electric bus, and will be landscaped with swale storm water edges and minimum visual impact to be in keeping with the adjacent natural parkland setting of the events lawn and library green.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Building Address and Identity

RELEVANT STRATEGIES

- 3.1 Campus Address and Arrival
- 3.2 New Roads and Connections
- 3.5 Building Entry, Address and Servicing
- 3.6 Signage

71 WALKING AND CYCLING ROUTES

A broad expansion of the JCU shared path and cycle network seeks to embrace the eco-conscious travel movement and encourage a shift away from private car transport towards a healthier cycle or walking options. A comprehensive network of on and off-street cycle paths and lanes will be implemented over time to connect with the existing Ross River Parkway shared pathway system. This Parkway network is recognised as one of regional Australia's best recreational parkway networks, and now provides a connection all the way into the CBD from JCU.

These routes will include dedicated on-street cycle lanes, shared streets that prioritise pedestrian and cycle safety, and shared pedestrian and cycle paths that are both covered and uncovered. The cycle routes will be supported by new end of trip facilities spread across the campus.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Greenway connections between key destinations
- Shade and direct routes

RELEVANT STRATEGIES

- 5.4 Overall Cycle Strategy
- 5.5 Bicycle Routes and End of Trip Facilities

REFERENCE PROJECTS

- Ross River Parkway



TRANSPORT, CONNECTIVITY AND WAYFINDING

72 HOSPITAL LINK (MAGNETIC ISLAND WAY)

 TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Health and Knowledge Precinct
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 3.1 Campus Address and Arrival 3.2 New Roads and Connections 3.5 Building Entry, Address and Servicing

Extending the mall north will create a critical link to The Townsville Hospital that is fundamental to the aspirations of the two organisations to continue to deepen their cooperation and collaboration. The ability to freely move between the academic and hospital nodes will significantly enhance the cross-fertilisation of ideas and the integration of the two communities, and a concerted effort should be made to ensure this link is implemented on JCU land and continued north to the hospital entry. This principle is embodied in the Townsville City Deal, which calls for an 'Innovative and Connected City' that seeks develop integrated and vibrant health and knowledge employment hubs.

The street is planned a low-speed shared street that balances pedestrian and vehicular movements, and includes a continuation of the mall canopies along the eastern edge to create a verandah to the medical buildings. A large bus interchange is not considered appropriate for this location.

The proposed future buildings to the west of this street should ensure a high level of ground activation by locating their entries along this edge and providing retail, teaching and learning spaces that are readily accessible from the street.

Kiosks, study spaces, integrated planting and other complementary uses should be considered for the eastern side below the proposed canopies, and the ground floor uses of the existing buildings should be renovated to include learning and study spaces that allow them to open directly onto the shaded canopy verandah.



73 MT STUART STREET EAST & WEST EXTENSIONS

 TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Campus Legibility
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 3.2 New Roads and Connections 3.3 Road Hierarchy 3.4 Street Naming and Wayfinding

Extensions to both the east and west of Mt Stuart Street will reinforce this road as a major commercial destination within the community, and will also assist with access, navigation and wayfinding on campus.

The western extension will provide direct access to the campus from Angus Smith Drive and open new land for additional development and compact urban growth that will extend the vibrant high street activity beyond the academic core. Potential uses along this section of street include aged care, the University High School, retail, commercial and other academic uses. The western-most end of this road could host a centralised energy system adjacent to the substation on Angus Smith Drive.

The eastern extension of Mount Stuart Street is proposed to cross Goondaloo and Wada Mooli creeks to create a new access link to the veterinary precinct. This road will also access the Junction Dam parklands and a new car park to the south between the two creeks.



TRANSPORT, CONNECTIVITY AND WAYFINDING

74 HIGH SPEED PUBLIC TRANSPORT CORRIDOR LINK

 TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> City Response
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 5.1 Public Transport

Reinforcing the commitment of the Townsville City Deal to create an 'Innovative and Connected City', JCU supports the implementation of a high speed, integrated public transport link to the CBD. Connecting these two communities is fundamental to ensuring the economic growth of the city and the region, and should be linked with an urban growth corridor that links compact communities, economic centres, and major transport hubs including the airport.

Developing this important piece of infrastructure could dramatically reshape the growth of the city and lead to significant benefits to the local community through reduced transport costs, increased job opportunities, additional compact and affordable housing development opportunities, industry and government partnerships, effective wealth distribution across the city, safe, efficient and equitable access for a significant portion of the community, and seamless knowledge transfer.

Promoting a modal shift away from private car use towards increased public transport use will rely on increased frequency, capacity and improved timetabling options. It will also require a significant shift in mind-set by the local community that should be promoted by the university, rather than enforced by reducing parking availability and costs. The proposed electric bus loop that provides frequent and easy access around campus should also help to promote this shift.

Two major bus stops are proposed for the campus, one on James Cook Drive near the main east-west link into the centre of the campus, and one on the opposite side of the ring road at on Discovery Drive. A timetable reset and bus waiting area, which could eventually become another bus stop, will be included at the southern end of the ring road loop, which will be shortened by the construction of Stock Route Drive.



75 COVERED WALKWAYS AND VERANDAHS

 TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Tropical Response
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 3.2 New Roads and Connections
REFERENCE PROJECTS
<ul style="list-style-type: none"> Verandah Walk

The verandah walk concept that has been implemented in a few initial stages around the library will be expanded and extended to connect the entire inner green heart of the campus and further define the library green and events lawn.

The concept of the 'verandah' should be extended and amplified so that it moves away from simply being a movement corridor and becomes a connected string of shaded areas that engage in meaningful ways with the edges of existing and future buildings. In this way, the walk will become a true verandah that creates pleasant, shaded and tropically appropriate places at the edges of buildings that can be continuously occupied. It will also allow the adjacent buildings to open outwards and connect to the open parkland spaces via a collection of shaded study, collaboration and engagement spaces.

Beyond the inner ring, shaded walks that are either stand-alone or integrated with the awnings of adjacent buildings should be included along Chancellery Place, University Place, the veterinary bridge, and the Sports Walk. These should be designed for both cyclists and pedestrians.



TRANSPORT, CONNECTIVITY AND WAYFINDING

76 SHADED GREENWAY LINKS

Extending beyond the network of covered walkways and shared paths will be a collection of shaded Greenways, which will be lined on either side by rows of tropical trees that add the rich landscape experience on campus. These are intended to link key nodes outside the academic core, and could be upgraded over time to include shade canopies.



TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Shaded links between key destinations
- A safe open pathway network

RELEVANT STRATEGIES

- 3.2 New Roads and Connections

REFERENCE PROJECTS

- Yarrabilba, master planned community

77 CYCLE FACILITIES

End of trip facilities will be developed across campus, with several major stand-alone facilities included in the academic core to encourage active transport options including running and cycling. These facilities will include showers, toilets, change rooms, and lockers, as well as bicycle hubs with undercover and secure storage spaces and bike repair equipment. These facilities will be access controlled in safe and secure environments that are well lit and have direct access to the cycle routes.

Stand-alone bike racks will also be installed across the campus for quick and easy short-term access to buildings and other facilities, and will be custom designed as pieces of artwork rather than off-the-shelf products.

The existing semester bike hire scheme will continue to operate and will be co-located with the central end of trip facility.



TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

- Transport Choice

RELEVANT STRATEGIES

- 5.4 Overall Cycle Strategy
- 5.5 Bicycle Routes and End of Trip Facilities

REFERENCE PROJECTS

- Bike Shop, Newacton

78 SIGNAGE & WAYFINDING

Signage on campus is set for a major overhaul, with a new system of signage to be designed and implemented over the next few years. This will reinforce the new campus structure and wayfinding system, and will also adopt the new street addressing and building numbering/naming system.

The design of this signage should reflect the branding and tropical setting of the Townsville campus, and should be developed as a variation on a theme in keeping with other campus signage. It should also reflect the design language of other street furniture, including seating, lighting, bins, cycle racks, water fountains and shade structures.

TRANSPORT, CONNECTIVITY & WAYFINDING INITIATIVE

KEY FEATURES

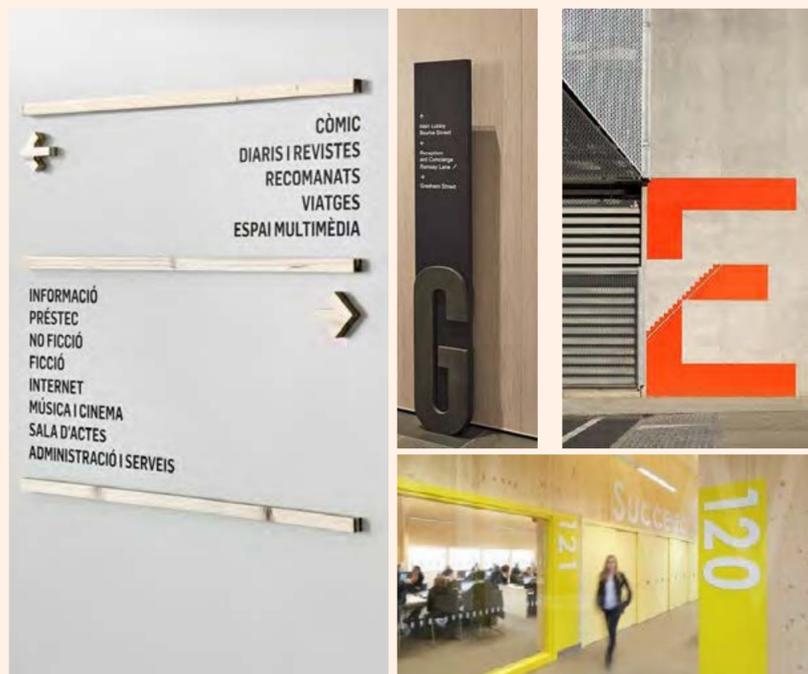
- Legibility
- Identity

RELEVANT STRATEGIES

- 3.5 Building Entry, Address and Servicing
- 3.6 Signage

REFERENCE PROJECTS

- University of Technology Sydney
- Monash University



7.8 NATURAL ENVIRONMENT

79 LANDMARK TREES

Landmark and notable trees will be located on view lines, key intersections, in tropical courtyards, meeting points and streets between buildings where there is space for canopies to develop. They will generally be characterised by large spreading canopies, but may also have distinctive features such as large foliage texture or colourful flowers. Large trees will generally appear as individual specimens at prominent locations. Smaller flowering trees and palms (Wodyetia Bifurca) planted in large numbers may also deliver a landmark effect.

These trees will generally be planted in small sizes and allowed to grow over time. Some trees and palms could be transplanted from within the campus, potentially from locations identified for demolition. Where a need for mature trees is identified, larger specimens may be transported to the university.

Landmark species could include:

- Culturally relevant Ficus species
- Ficus Beughalensis (Banyan Fig)
- Terminalia species including Sericocarpa and Meulleri (Townsville Native Rain Tree and Meuller's Damson)
- Samanea Saman (Rain Tree)
- Wodyetia Bifurca (Foxtail palm).



NATURAL ENVIRONMENT INITIATIVE

KEY FEATURES

- Landmarks and shade
- Recreation trails

RELEVANT STRATEGIES

- 2.3 Open Space and Parkland
- 2.9 Landmark Trees
- 3.1 Campus Address and Arrival

REFERENCE PROJECTS

- The Strand
- Botanic Gardens, Townsville

NATURAL ENVIRONMENT

80 NATURE RESERVE

The nature reserve includes the natural areas on the southern perimeter of the campus which are to be protected and enhanced by JCU. The campus Natural Assets Management Plan sets out the priority actions to be undertaken including the importance of cultural heritage protection.

Rehabilitation will occur over time to maintain healthy flora and fauna communities. These activities will broadly include habitat protection, removal of environmental pests and weeds, as well as additional planting with native species.

The nature reserve will also contribute to active and passive recreation via a series of walking trails with interesting and educational information signage located to align with viewing areas and points of interest.

NATURAL ENVIRONMENT INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> Establish healthy flora & fauna communities Improved campus/fauna relationship 	
RELEVANT STRATEGIES	
1.1 Land Use	
1.2 Public Space Structure	
2.1 Landscape Structure and Character Zones	
2.2 Environmental Reserve and Ecological Connectivity	
2.3 Open Space and Parkland	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> JCU Natural Asset Management Plan Boondal Wetlands 	



81 ECOLOGICAL CORRIDORS

The ecological corridors of the campus create a green framework which bisects the site providing respite from the built form. They connect habitats which might otherwise be fragmented.

These connections have the benefit of enlarging habitats, assisting fauna movement, increasing biodiversity and allowing young animals to disperse. Rehabilitation works throughout the corridors will focus on erosion protection, replanting with appropriate species and removal of environmental weeds.

The corridors will include pedestrian and cycle paths connecting key locations. Passive surveillance will be optimised along these paths so they are open and safe with clear sight lines to adjoining roads and buildings. Canopy shade streets are to be planted and a basic level of amenity including seating, shade structures and lighting in key areas may be included.

NATURAL ENVIRONMENT INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> Assists fauna movement Recreation and shaded pathways 	
RELEVANT STRATEGIES	
2.2 Environmental Reserve and Ecological Connectivity	
2.3 Open Space and Parkland	
2.5 Waterways and Waterbodies	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> Hemmant- Tingalpa Corridor Pine Rivers Rural District Ecological Corridors 	



NATURAL ENVIRONMENT

82 WATERWAY RESTORATION



Waterway and riparian area restoration is a significant part of establishing and maintaining healthy environmental corridors. These areas provide refuge for native plants and animals, ecological connectivity, assist to mitigate flooding and retain water during peak flows.

Water quality will be managed through effective ground stabilisation, retention/detention and rehabilitation using endemic aquatic and fringe vegetation. Restoration will also create an attractive landscape feature for the campus, enhance wildlife habitat and increase campus biodiversity.

The success of other landscape features, such as the Junction Dam will be dependent on maintaining a high standard of water quality.

NATURAL ENVIRONMENT INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> Water quality improvement Healthy flora & fauna communities 	
RELEVANT STRATEGIES	
2.2 Environmental Reserve and Ecological Connectivity	
2.5 Waterways and Waterbodies	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> Waterway Management Townsville Landcaring 	

83 LIVING LABORATORY



The campus, its building program and the local environment present opportunities for research and learning in line with the living laboratory concept. Building works and particularly sustainable design may contribute first-hand experience to teaching programs. Protection and enhancement of the sites natural assets may benefit from this approach, while contributing to the program for teaching, research and field based learning. Particular initiatives to be explored may include the arboretum, waterway restoration, ecological corridors as well as sustainable design and building material section.

NATURAL ENVIRONMENT INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> Learning through real projects Sustainable initiatives 	
RELEVANT STRATEGIES	
2.2 Environmental Reserve and Ecological Connectivity	
2.3 Open Space and Parkland	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> JCU Monash University 	

84 BUSH WALK

Bush tucker walk extends the indigenous garden further upstream along the Wadda Mooli Creek and connects with the proposed environmental centre in the south west of the campus. This walk will form an important part of the Connections to Country route, and will focus specifically on traditional edible plants. It will appear as a natural riverine landscape, but will require active management and curation and should be supplemented with physical and digital signage to assist with interpretation and learning.



NATURAL ENVIRONMENT INITIATIVE	
KEY FEATURES	
<ul style="list-style-type: none"> Education about culturally significant plants Recreation & knowledge 	
RELEVANT STRATEGIES	
2.2 Environmental Reserve and Ecological Connectivity	
2.3 Open Space and Parkland	
2.8 Connections to Country	
4.1 Art, Culture and Events	
REFERENCE PROJECTS	
<ul style="list-style-type: none"> Rainforestation Nature Park, Kuranda 	

NATURAL ENVIRONMENT

85 ENVIRONMENTAL CENTRE

The centre will be a learning and information facility focusing on environmental issues and developments at a local, regional and global level. It will demonstrate the research and initiatives being undertaken at the campus and provide support and information on the arboretum. The information provided may explain the conditions which shaped the Townsville region and identify the historical relationship of aboriginal people with this environment.

The centre is located on the fringe of the ecological corridor and within an easy walk from the central campus, it's an ideal setting to highlight the local environment and vegetation, while fostering a close relationship and with local fauna.

Facilities may include lecture and presentation spaces, office space, areas for public gatherings, café, outside learning and recreation spaces. The centre will be open to visitors, business, the general public, other learning institutions and the broader JCU community.

 NATURAL ENVIRONMENT INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Attraction for campus visitors • Education and Research
RELEVANT STRATEGIES
<p>1.2 Public Space Structure</p> <p>2.8 Connections to Country</p>
REFERENCE PROJECTS
<ul style="list-style-type: none"> • National Arboretum, Canberra



NATURAL ENVIRONMENT

86 LAKES

The series of lakes and water bodies around the campus will provide a variety of experiences, recreation opportunities, a cool environment during hot weather and a local wildlife habitat.

The Junction Dam in particular will be an attractive and welcoming arrival point. Its landscape will include water features, boardwalks, shade structures, shade trees, recreational amenity and the ability to hold small scale community events. Within a short walk of the central campus and Mt Stuart Street, it will be a popular destination for study and passive recreation.

Apart from aesthetic value, the lakes will have stormwater retention capability to assist in controlling flows during peak events. Subject to further investigation, they may also include the ability to draw water for irrigation purposes. As part of future detailed design development, it's recommended that public safety around these lakes be taken into account.

 NATURAL ENVIRONMENT INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> • Water quality & management • Recreation
RELEVANT STRATEGIES
<p>2.2 Environmental Reserve and Ecological Connectivity</p> <p>2.5 Waterways and Waterbodies</p>
REFERENCE PROJECTS
<ul style="list-style-type: none"> • Thuringowa, Townsville • Roma Street Parklands, Brisbane



NATURAL ENVIRONMENT

87 ARBORETUM

The Arboretum is a campus wide initiative for growing trees for shade, conservation, scientific research, education and recreation. Supported by the information centre, the arboretum will showcase rare, endangered and symbolic trees; trees associated with aboriginal heritage and culture, as well as demonstrate techniques for growing trees in the dry tropics.

A network of walking trails will link lookouts, the ridgeline trails and "Connection to Country" initiatives to the central campus through a series of walking trail options. Points of interest and educational Informative will be identified through signage at key locations. The Arboretum can become a destination, recreational asset and education facility for the academic community and the people of Townsville.

 NATURAL ENVIRONMENT INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Landmark trees and shade Plants used by Indigenous people
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 2.2 Environmental Reserve and Ecological Connectivity 2.3 Open Space and Parkland 2.6 Public Art 2.8 Connections to Country 4.1 Art, Culture and Events
REFERENCE PROJECTS
<ul style="list-style-type: none"> National Arboretum Noosa National Park



7.9 SUSTAINABILITY

88 ELECTRIC VEHICLE INFRASTRUCTURE

Planning and provision for a larger percentage of electric vehicles should be undertaken. This includes planning for increased supporting electrical infrastructure (in-ground and substations/transformers) as well as spatial allowances for charging terminals.

 SUSTAINABILITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Technology Response
RELEVANT STRATEGIES
<ul style="list-style-type: none"> 5.1 Public Transport 5.2 Parking 5.3 Campus Electric Bus Loop



89 SUSTAINABLE PROCUREMENT GUIDELINES AND POLICES

Overall campus sustainability guidelines and polices should be developed, and are included in the recommended future reports. The campus building design guidelines should be referred to for individual building sustainability.

JCU's Building Design Guidelines should include performance metrics for sustainability that equal or exceed the university's procurement policy sustainability targets.

For all new buildings and major redevelopments, green building rating performance standards should be pursued for design and construction.

One of the best features of systems such as Green Star and LEED is accountability and a point of defence against value management of capital expense contributing to social and environmental benefits.

Best Practice:

- Pursue Green Star or LEED certification for all buildings on campus and for the Master Plan as a whole
- The University should continue to strive for 6 Star/Platinum ratings where possible, with a minimum of 5 Star/Gold ratings.

Premium Practice:

- In addition to the above, we recommend that all design considerations are tested using a life-cycle analysis filter to ensure that design options are thoroughly vetted for their total impact on the environment, and not just the impacts created through perception or marketing material.

 SUSTAINABILITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Energy Response

90 SOLAR FARM

The Townsville campus has a rare opportunity in the availability of land to support a significant investment in solar photovoltaic energy generation. This Master Plan recommends that a campus-wide solar resource is created through building and shaded walk way roof space (where appropriate) as well as investment in a large field array. The benefits of solar investment, now cheaper than coal-fired energy production, are as follows:

- Offset grid imported electricity with medium-term payback on investment
- Improved payback with avoided carbon-loaded energy purchase, likely to be hit with a carbon pricing mechanism in the near future
- Contribute to net zero emissions for the campus
- Integration into teaching curriculum in engineering and business/economics degrees
- Oversize to base load and supplement with battery storage to move entire campus energy consumption closer to net zero emissions.

Reference projects include the RFV 20 MW Royalla Solar Farm outside Canberra.

 SUSTAINABILITY INITIATIVE
KEY FEATURES
<ul style="list-style-type: none"> Energy Response
REFERENCE PROJECTS
<ul style="list-style-type: none"> ACCIONA Australia UQ Roof Top



SUSTAINABILITY

91 PUBLIC REALM LIGHTING EFFICIENCY

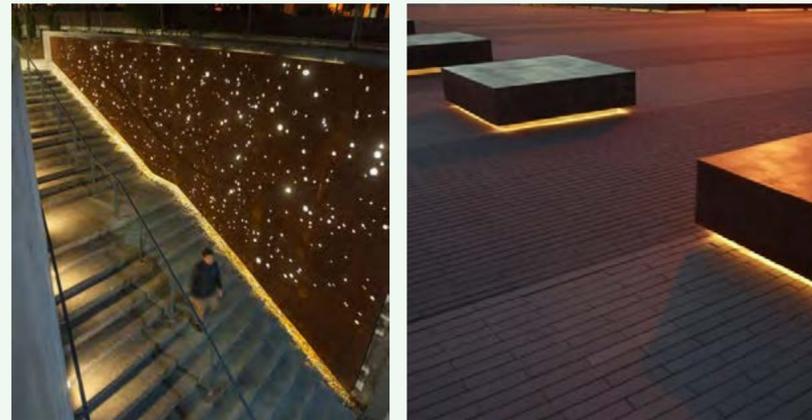
SUSTAINABILITY INITIATIVE

KEY FEATURES

- Energy Response

All public realm lighting should adopt LED technology to reduce GHG emissions. Further, public realm lighting should have locally provided solar-charged batteries to further reduce emissions and grid-dependence.

External lighting should be designed to provide adequate safety but avoid unnecessary illumination of surfaces or areas where lighting is not required for safety. Upward lighting into the sky should be avoided at all times.



92 URBAN HEAT ISLANDS AND GREEN ROOFS

SUSTAINABILITY INITIATIVE

KEY FEATURES

- Energy Response

Urban heat island effect needs serious consideration as it has serious impacts for the global climate and also for the local micro-climate of the campus. Driven by the absorption of solar heat into concrete and other hard stand surfaces it can increase localised temperatures compared to vegetated areas by several degrees. This increases demand on air-conditioning systems and impacts liveability and local biodiversity.

Green roofs have a range of environmental and economic benefits that can help make our cities more liveable. They can reduce building energy use by acting as an insulation layer and limiting heat gain, in turn reducing energy cooling demands by 38%. Green roofs can also act as a sponge, absorbing rainfall by as much as 80%, minimizing runoff and improving the ecology of local streams and rivers. Green roofs create a living habitat through the use of soft landscaping and vegetated areas, removing hard surfaces and mitigate absorption of thermal energy.

Green Roofs not only serve as a beautifying natural feature but can also reduce JCU's energy cooling costs and water runoff which can cause flooding. Similar to community garden projects, JCU could empower the student population to involve themselves in establishing and maintaining green roofs.

Recommendations:

1. Consider implementing green roofs into new buildings within the Master Plan
2. Create a pilot green roof i.e. on a 6 Star Green Star Building to showcase and research the benefits green roofs can have in tropical climates
3. Encourage student groups such as the rotary Sunshine Edible Garden to get involved in the green roof project.



SUSTAINABILITY

93 LANDSCAPE WATER REDUCTION

SUSTAINABILITY INITIATIVE

KEY FEATURES

- Tropical Response

RELEVANT STRATEGIES

- 2.5 Waterways and Waterbodies

All landscapes within core areas of the campus should adopt a global tropical style and where possible use species capable of tolerating high temperatures and drought. Tropical and native plants will be used at other areas. Lush lawns and water intensive plants should be avoided. Generous landscaping can be created without excessive use of water and reliance on these species.

Where irrigation is required, sub-surface drip systems should be used to avoid evaporative water loss. Grassed areas should be irrigated in the same fashion or if sprinkling is required, done in the evening for the same reasons.

Landscapes should be mulched to avoid drying of soil which would otherwise lead to dust creation in drought events.

94 PLANNING FOR BUILDING ADAPTATION

SUSTAINABILITY INITIATIVE

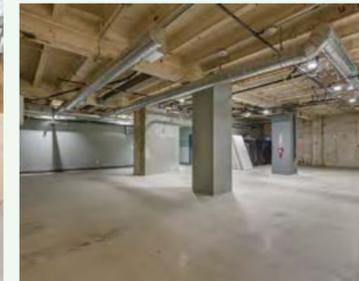
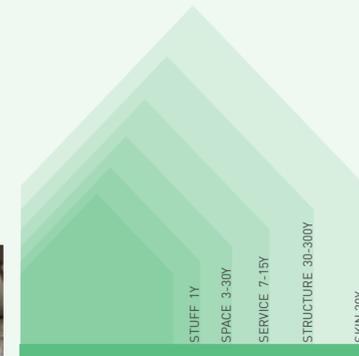
KEY FEATURES

- Flexible Campus

With particular note of multi-storey car parks and basement parking levels for future buildings, consider increasing the floor-to-floor heights above the typical requirements for car park spaces.

Automotive-industry thought leaders suggest that the future of personal vehicle ownership may decline, in favour of fleet-hire or pay-as-you-use systems coupled with autonomous systems. Driverless fleet-owned vehicles operating with complete autonomy will drop passengers at their destination before returning to the field for the next passenger, thus mitigating need for extensive on-site parking.

By increasing floor-to-floor heights, parking structures can be adapted for later reuse as habitable spaces rather than the structure being demolished and added to the waste stream.



SUSTAINABILITY

95 CENTRALISED ENERGY SYSTEM

Confronting the challenges of climate change and the opportunities presented by new energy technologies are the two key drivers behind a centralised energy system, that could allow for realisable savings in energy consumption. JCU already has a significant investment in chilled water storage and this Master Plan recommends that this investment is continued.

The space rationalisation project, with consolidation of built form to a central campus structure, facilitates a more cost effective solution for campus energy infrastructure.

Central energy plant housing should be celebrated with smart architectural design, facilitating learning outcomes within engineering disciplines.

Reference projects include the Stanford Energy Systems Innovations.

 SUSTAINABILITY INITIATIVE

KEY FEATURES

- Energy Response



96 WATER REFILL CAMPUS

Every year Australians spend over \$400 million on bottled water which has a carbon footprint 300 times greater than tap water. Additionally, only approximately 65% of plastic drink bottles end up in landfill with only 35% being recycled. Some campuses around Australia have moved to be water refill only, providing a variety of alternative options to purchasing commercial bottled water on campus and banning the sale of bottled water. This initiative aligns with the University's goals to reduce waste going to landfill and empowers the community to be environmentally responsible by providing a variety of alternative choices to conventional bottled water.

It is plausible for a tropical climate campus to ban the sale of commercial bottled water. Once implemented the initiative is easy to maintain and furthermore showcases a strong commitment to sustainability which can be utilised for advertising and marketing purposes.

Recommendations:

1. Become an accredited Water Refill Campus and ban the sale of commercial bottled water on campus
2. Consider appropriate locations for water fountains/bubblers with preferable at least one for each building
3. Utilise pathway connectivity and popular public spaces as locations for potential refill stations
4. Establish requirement that all commercial food outlets use and provide compostable cups
5. Merchandise JCU through reusable water bottles.

Reference projects include the University of the Sunshine Coast.

 SUSTAINABILITY INITIATIVE

KEY FEATURES

- Tropical Response

REFERENCE PROJECTS

- Sunshine Coast University

SUSTAINABILITY

97 GREEN LABS

Energy consumption in laboratories is generally four to six times higher than in ordinary office buildings. Fume hoods, ventilation systems, chemical waste and equipment make laboratories one of the biggest challenges for universities striving to become more sustainable. The challenge lies in balancing the requirements of research with environmentally friendly initiatives.

Green Lab Programs are a simple but cost effective sustainability initiative. As a University which has multiple laboratories, JCU Townsville should be establishing a Green Labs Program to address unnecessary resource use. A Green Lab Program at JCU will not only establish a culture of sustainability within the campus but also provide extensive cost savings to the university in terms of utility bills.

Recommendations:

1. Approach TropEco (sustainability action group at JCU) and suggest implementing a Green Lab program
2. Consider Green Practices within any future laboratories.

Reference projects include UQ Green Labs program.

 SUSTAINABILITY INITIATIVE

KEY FEATURES

- Energy Response

98 FAIR TRADE CAMPUS

The FAIRTRADE mark guarantees a product meets independently certified, international fair trade social, economic and environmental standards. The mark also guarantees that products meet agreed development and Labour standards. For workers and their families in the developing world, fair trade choices will translate into fairer prices, decent working conditions and greater control over life. Choosing Fairtrade also helps promote greater investment in quality and local environmental sustainability.

There are currently 9 Fairtrade universities accredited in Australia and New Zealand:

- RMIT University
- The University of Melbourne
- Deakin University Australia
- The University of Adelaide
- La Trobe University
- Macquarie University
- Monash University
- The University of Western Australia
- University of Otago.

The requirements of a Fairtrade university are relatively simple and furthermore with an ever growing market the sourcing of Fairtrade products is becoming easier for large scale businesses and outlets. For JCU, becoming an accredited Fairtrade University would demonstrate a commitment to social justice within an internationally accredited scheme. Fairtrade is a globally recognised standard that is becoming common place in many food outlets such as coffee shops.

Recommendations:

1. JCU should become an accredited Fairtrade University
2. Source Fairtrade products when feasible
3. Promote Fairtrade products and utilise the internationally recognised standard in advertising and merchandising.
4. Encourage food outlets across the campus to also support Fairtrade products.



 SUSTAINABILITY INITIATIVE

RELEVANT STRATEGIES

4.1 Art, Culture and Events

REFERENCE PROJECTS

- RMIT University
- The University of Melbourne
- Deakin University Australia
- The University of Adelaide
- La Trobe University
- Macquarie University
- Monash University
- The University of Western Australia
- University of Otago



SUSTAINABILITY

99 ADVANCED UTILITIES MONITORING SYSTEM

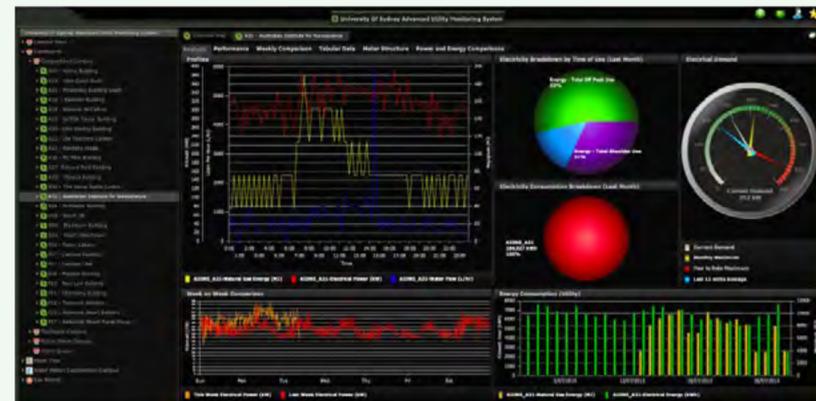
SUSTAINABILITY INITIATIVE
KEY FEATURES
4.1 Art, Culture and Events
REFERENCE PROJECTS
• University of Sydney AUMS

Advanced Utilities Monitoring Systems (AUMS) are designed to provide greater transparency on resources consumption by metering electricity, gas and water consumption on a building by building basis. The initiative requires extensive metering and monitoring infrastructure across the entire campus that is currently not possible using existing meters. However, as a short term measure, educating users on their resource consumption has proven to be an effective tool in reducing resource use in universities. In the longer term, monitoring systems could aid in benchmarking the campus and identifying underperforming buildings.

Recommendations:

1. Implement monitoring and metering systems in all new buildings
2. Retrofit old buildings with metering and monitoring systems when possible
3. Benchmark the campus to identify underperforming facilities, educate users on their resource use and suggest solutions.

Reference Projects include the University of Sydney AUMS.



100 SUSTAINABILITY WALK

SUSTAINABILITY INITIATIVE
KEY FEATURES
• Research Link
RELEVANT STRATEGIES
2.2 Environmental Reserve and Ecological Connectivity
2.3 Open Space and Parkland

A sustainability walk or equivalent outdoor feature can be utilised to showcase JCU's sustainability initiatives as well as the campus's natural beauty and ethos in preserving it. A sustainability walk or feature is a long-term initiative that would probably occur post implementation of other sustainability initiatives. The walk and corresponding features would have to be accounted for within JCU's Master Plan and furthermore could aid in enhancing the campus' connectivity and walkability.

The walk would improve campus-wide engagement and collaboration, and will encourage social connections and interactions with sustainability promotional events. It could also promote exercise and an active lifestyle, which reduces stress and anxiety. The walk would be a physical manifestation of JCU's commitment to environmental sustainability and boost environmental awareness, encouraging a sense of pride in UQ for staff and students.

This could be combined or overlap in parts with the trail walks and the connections to country walk, or it could be a separate, more contained and shorter walk. It should also connect with the environmental centre.

Recommendations:

1. JCU should consider designing a sustainability walk or similar feature into its Master Plan
2. Utilise the sustainability walk as a road map to implementing other sustainability initiatives e.g. habitat corridors, green roofs and drought resistant landscaping
3. Incorporate current initiatives into the sustainability walk i.e. fish ladders on the Goondaloo and Wadda Mooli Creeks
4. Address the health and wellbeing of the campus population by providing an active learning experience
5. Showcase the natural beauty of the campus and JCU's research into tropical sciences i.e. knowledge of fauna and flora.



08

PRECINCTS



8.1 PRECINCT STRUCTURE

The campus has been subdivided into a number of precincts to help identify parcels of land and development zones, and to reduce the scale of the site into manageable portions for detailed consideration.

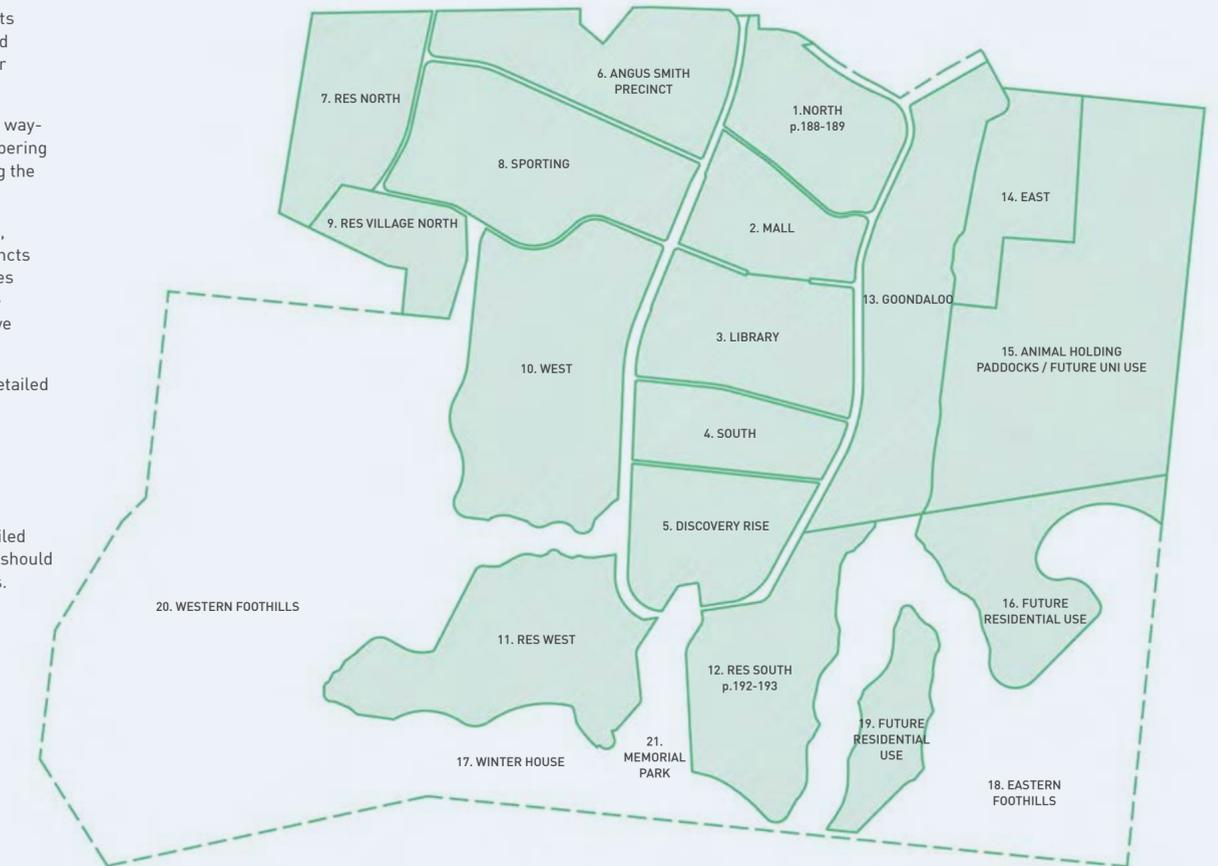
Precinct names are typically not used as part of the public way-finding system (which relies on a city-grid street and numbering system), but instead offer a useful reference for describing the various parts of a large campus.

The precinct names identified are subject to final approval, but specifically shy away from associating individual precincts to specific academic disciplines and/or colleges. The names instead seek to adopt a more neutral and agnostic attitude that encourages a more inter-disciplinary and collaborative approach to locating buildings and facilities.

Each precinct is described in three ways to assist with a detailed understanding of the Master Plan intent:

1. Existing condition
2. Built Form Master Plan
3. Landscape Plan.

Whilst there is sufficient information shown on these detailed precinct plans to understand the general intent, the plans should also be read in conjunction with the Strategy overlay maps.

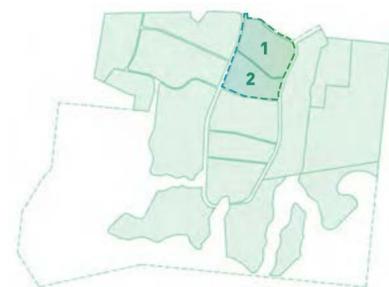


8.2 PRECINCT 1: NORTH & PRECINCT 2: MALL

CONTEXT

Precinct 1 and 2 are shown as a couplet in the Master Plan. They include key existing and future development opportunities.

The Precincts are general defined as being bounded East and West by James Cook Drive, the North by Townsville Hospital and the to the South by an imagined line south of the chancellery and North of Science Place which is proposed to become a major east west circulation alignment. Precinct 1 and 2 are divided by Mt Stuart Street.



KEY PLAN

EXISTING CONDITION

Precinct 1 exists as two halves, to the east of the Magnetic Island Axis (MIA) is a consolidated group of buildings broadly described as the Medical Precinct. To the west is the CPB building with the remainder dominated by at grade carparking.

The opportunities for Precinct 1 are associated with:

- A greater connection to the Hospital
- A stronger arrival opportunity from the north-east approach on Discovery Drive
- A large development opportunity north of CPB which is notionally the Private Hospital

- Greater reinforcement of Mt Stuart Street through active uses and by default relocation of carparking away from key development sites
- Strengthening of the Magnetic Island Axis as a visual and physical connection including connection to the Hospital.

Precinct 2 is a relatively sporadic arrangement of buildings within a bushland setting. Wadda Mooli Creek crosses the Precinct diagonally from South to North East. The Nursing Sciences Building and Creative Arts Building and the Sir George Kneipp Auditorium sit as "buildings in the landscape". It contains the Ken Back Chancellery and its paired sister Building 27. The Chancellery is an important symbolic building for the campus and a unique architectural exemplar. A series of



EXISTING CONDITION

miscellaneous smaller buildings are located east of the Chancellery.

The opportunities for Precinct 2 are associated with:

- Greater reinforcement of Mt Stuart Street through active uses and significant built form
- Strengthening the Magnetic Island Axis as a connection between Precincts 1 and 3
- Consideration of removal of the Nursing Building and the Creative Arts Buildings at the end of their functional life to deliver greater yield opportunities
- Strengthening the amenity to Wadda Mooli Creek including crossings that strengthen the Magnetic Island Axis
- Creating strong east West connection on the boundary of Precinct 2 and 3
- Creating strong Gathering Nodes.

PROPOSED FORM

It is proposed that all development either addresses the perimeter street connections or the MIA. Over a longer time, this will displace carparking and some existing building stock. Buildings will remain in a landscaped context but one with improved wayfinding and gathering places.

Mt Stuart Street will have more built to Boundary developments providing an active edge.

LANDSCAPE PLAN

The pedestrian mall will be open, safe and allow easy pedestrian movement. The design will support adjoining buildings, eating or entertaining venues and provide spaces for events, craft/farmers markets and pop up facilities. Features will include large canopy trees, water, tropical plants, learning spaces, seating nodes and active areas.

1. James Cook Drive includes spreading trees for pedestrian shade, flowering tropical trees and palms
2. Significant intersection and entrance to Mt Stuart Street including global tropical planting and materials that establish JCU character

3. Placemaking elements are to include shade structures, landmark features, shaded seating nodes, art, lighting and wayfinding
4. Primary address and campus arrival will reinforce JCU character through global tropical planting and introduce campus identity
5. High Street with large canopy shade trees, tropical textured planting, shade structures, lighting features, art and placemaking.
6. Integrated connection with pedestrian mall
7. Shaded pedestrian connection to hospital

8. On road cycle lanes
9. Courtyards with shade trees and textured tropical planting at entrances and between buildings - refer typical guideline
10. Existing riverine vegetation to be retained and rehabilitated
11. A low speed environment 'Shared Street' aiding pedestrian movement through the inner campus, including shaded footpaths, feature paving, seating, wayfinding and ability to close the street for events.



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries

8.3 PRECINCT 3: LIBRARY & PRECINCT 4: SOUTH

CONTEXT

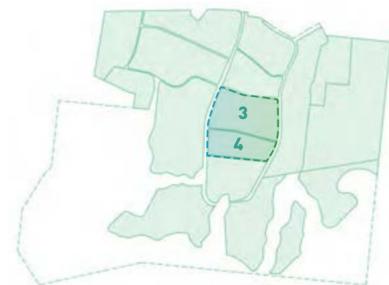
Precinct 3 and 4 are shown as a couplet in the Master Plan. The Precincts are bounded by James Cook Drive to the East and West. The North boundary is the Chancellery/Science Place East-West Link. The southern boundary is the notional boundary of the academic uses with the neighbouring proposed residential uses. The Precinct 3 and 4 boundary is immediately south of the Library.

EXISTING CONDITION

Precinct 3 is generally categorised as having north south facing linear buildings connecting with James Cook Drive on the Eastern Boundary and a more random arrangement of buildings on the western boundary. The relatively recent Education Central on the western boundary plays an important role of wayfinding into the depth of the site. The centre of the site is dominated by the Library and Wadda Mooli Creek crossing from South West to North East.

The opportunities for Precinct 3 are associated with:

- A stronger and clearer connection north to St Stuart Street as a reinforcement of the MIA



KEY PLAN

- Redevelopment of the site immediately opposite the Chancellery Building to reinforce the Chancellery Place address
- Greater pedestrian connection from Science Place to the west
- Supporting the Library as a key building for the campus including consideration of annexed space east and west of the library delivering central learning and gathering functions
- Redevelopment of buildings along the eastern edge of the verandah walk path to strengthen this edge to the library green

- Reinforcement of the Indigenous Interpretative Space to the east of Wadda Mooli Creek
- Consideration of a central recreational water feature.

Precinct 4 has relatively little existing built form. It is dominated by large Faculty of Science and Engineering (17) and Earth and Environmental Sciences Building (34) buildings to the east and the Australian Aboriginal and Torres Strait Islander Centre to the South West. The remainder of the site is largely at grade carparking.



EXISTING CONDITION

The opportunities for Precinct 4 are associated with:

- All major buildings in the site are identified separately for demolition as part of JCU's consolidation strategy
- In the medium term large scale building opportunities are not identified as being particularly required
- Paths connecting the Library further south to the residential precinct will evolve and strengthen as the residential development builds
- Wadda Mooli Creek regeneration could occur as part of a pathway link to the Arboretum and bush trails.

PROPOSED FORM

Precinct 3 will evolve around supporting the primacy of the Library with new buildings focussed on emphasising access to the centre of the campus.

Precinct 4 is the land immediately to the south of the Library, bounded by James Cook Drive to the East and West. Its southern border is currently not clearly defined but is proposed as an opportunity for a new cross street.

Precinct 4 is proposed as the most southern precinct prior to residential development. It is relatively free to be flexible for large scale opportunities. It is expected that interim use as carparking is likely to satisfy issues of proximate carparking for University users, but a more formal landscape free of carparking may evolve as a connection to the residential zones.

LANDSCAPE PLAN

A multifunctional and flexible parklike space at the central core of the campus. Natural surveillance from adjoining courtyards, streets and buildings will be strengthened to improve safety. Art will be located on view lines and gathering points.

1. The Verandah walk and pathway networks facilitate easy and direct pedestrian movement
2. The Library Green lawn extends into adjoining courtyards and streets, increasing surveillance and the perception of space
3. Encourage views to the central space from James Cook Drive and adjoining courtyards
4. Shade trees located over pedestrian paths and scattered throughout the space

5. Pedestrian mall character extends to Library Green
6. Water feature, pool and recreation facility including shade, lockers, kiosk, and deck
7. Retain the existing riverine vegetation for its cultural/historical importance and the lush framework it provides to the campus. Surveillance and safety can be improved by selectively removal of weeds species, dead wood and some trees on view lines with limited or no value
8. Courtyards with shade trees and textured tropical planting at entrances and between buildings - refer typical guideline
9. Passive recreation amenity including lightweight shade structures and seating nodes

10. Public road extends across the library green as a pedestrian priority zone - it includes the ability to be closed off for functions and events
11. The Library Green character extends to James Cook Drive in an open grass area with scattered trees and shared cycle path with good natural surveillance
12. Boulevard road with shade trees
13. Shade structure, gathering space and stage for events
14. Playgrounds with shade and seating.



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries

8.4 PRECINCT 5: DISCOVERY RISE, PRECINCT 11: RESIDENTIAL WEST & PRECINCT 12: RESIDENTIAL SOUTH

CONTEXT

Precincts 5, 11 and 12 are the land at the southern part of the existing James Cook Drive ring road bounded by Precinct 4 to the North. Precinct 11 and 12 continue south of Precinct 5 outside the loop road and their boundaries are defined by the ecological corridors associated with existing water courses. The precincts continue close to the southern University Boundary.

EXISTING CONDITION

The three precincts are largely undeveloped except for the ring road and the Rotary International House buildings accessed off the ring road in precinct 11.

Most of the land has the appearance of grass lands and the Poplar Gum trees.

The ground rises increasingly to the south with parts of Precinct 11 and 12 considerably higher than the remaining campus with views back to Townsville and Magnetic Island.

The opportunities for Precinct 5, 11 and 12 are associated with:

- The largest greenfield opportunity for new residential development
- A combination of different residential product to suit the terrain and market
- Greater density with consideration of mixed use/community services as part of the residential offering is proposed in Precinct 5 on the lower, flatter land
- A continuation of the MIA as landscape and water features through precinct 5 before dissolving into the natural ecological corridor.

PROPOSED FORM

The historical ring road alignment is proposed to be retained and defines Precinct 5. All additional road shown are indicative only and should respond to subdivision and road planning strategies following more detailed survey and nomination of product mix. (It is noted that the density targets can be achieved by a combination of a range of product types and this will influence road and block dimensions. The historical "Natural Amphitheatre Axis" is proposed to be one organising element for road layout.

LANDSCAPE PLAN

1. James Cook Drive includes spreading trees for pedestrian shade, as well as palms and flowering tropical trees
2. Greenway Streets include a wider verge and double tree planting over a 2.5m shared path
3. Courtyards with shade trees and textured tropical planting at entrances and between buildings
4. Orchard walk, a boulevard adjoining residential areas including vegetable gardens, herbs, fruit trees, shade trees, lightweight structures, seating/recreation nodes, art and interpretative signage

5. Informal planting including a mixed selection of street trees
6. Channel and water feature
7. Riverine character is extended from the Library Green and across James Cook Drive
8. Rehabilitation area and Pedestrian connections to natural area trails
9. Pedestrian connections to natural area trails
10. Natural areas connections, information centre, parking and walks
11. Pedestrian connections to Winter House

12. Community park and gathering space for local residents, includes shade structure and playground
13. Community plaza supporting adjoining amenity, includes shade, seating and gateway to foothills
14. Environmental Centre.



KEY PLAN



EXISTING CONDITION



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries

8.5 PRECINCT 6: ANGUS SMITH

CONTEXT

Precincts 6 is the land at the northern part of the site defined by Angus Smith Drive to the North, Parkinson Drive to the West, James Cook Drive to the East and a realignment of Joseph Banks Ave to the south.

EXISTING CONDITION

Precinct 6 is relatively undeveloped with the Unicare centre building located in the east with some at grade parking, part of the hockey fields to the west and services infrastructure located centrally on Angus Smith Drive. It is crossed by a series of overland flow paths that are relatively deep.

The opportunities for Precinct 6 are associated with:

- Realignment of Joseph Banks Drive to be the Northern Boundary a consolidated and intensified sports precinct
- The western continuation of Mt Stuart Street to reinforce wayfinding and campus legibility

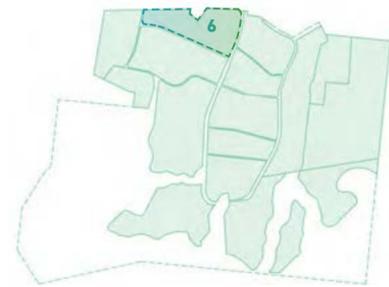
- Intensification of development to James Cook Drive to form significant development on the major entry route into the Campus including consideration of compatible Hospital and public hospital uses
- Intensification of development on Mt Stuart Street
- Potential convenience retail on Angus Smith Drive
- Regeneration of the overland flow paths as landscaped corridors
- Potential location for central energy plant.

PROPOSED FORM

An intensification of built form and associated building height is proposed along James Cook Drive and continuing on Mt Stuart Street marking the entry to the Campus. Non core academic uses are appropriate including external research and tech industry. Reconfiguration of James Cook Drive with regard roundabouts and signalised intersections is possible subject to future traffic analysis and alignment of uses, integration with the hospital could evolve subject to Hospital Master Plan. This site is critical to the Health and Knowledge Precinct opportunities.

LANDSCAPE PLAN

1. James Cook Drive includes spreading trees for pedestrian shade, flowering tropical trees and palms
2. Significant intersection and entrance to Mt Stuart Street including global tropical planting and materials that establish JCU character
3. Placemaking elements are to include landmark features, shaded seating nodes, art, lighting and wayfinding
4. Primary address and campus arrival will reinforce JCU character through global tropical planting and introduce campus identity
5. High Street with large canopy shade trees, tropical textured planting, shade structures, lighting features, art and placemaking
6. Greenway includes double tree planting over a 2.5m shared path
7. On road cycle lanes
8. Courtyards with shade trees and textured tropical planting at entrances and between buildings
9. Boulevard shade tree planting
10. Vegetation community with environmental value, retain and rehabilitate.
11. Buffer planting to the ring road.



KEY PLAN



EXISTING CONDITION

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries



PRECINCT PLAN

8.6 PRECINCT 7: RESIDENTIAL NORTH & PRECINCT 9: RESIDENTIAL VILLAGE NORTH

CONTEXT

Precinct 7 is the land at the far north west of the campus northern part of the site defined by Angus Smith Drive to the North, Parkinson Drive and Endeavour Drive to the East and the JCU lot boundary to the West and South.

Precinct 9 sits south of the proposed expanded Sports Precinct and is primarily the land defined the boundary of Buchan Rd and the Endeavour Drive loop road. The land abuts the southern boundary defined by the spur of Girraween Avenue residential neighbourhood.

EXISTING CONDITION

Precinct 7 is undeveloped in the northern half of the site.

The southern part of the site contains, the George Roberts Hall and Western Hall residential accommodation buildings as well as the Act for Kids centre.

The opportunities for Precinct 7 are associated with:

- Both the Western Halls and Western Courts buildings are not considered to be long term assets for retention. The University has nominated these buildings for demolition

- Retention of Act for Kids Centre
- Development of low scale residential accommodation broadly consistent with the scale of the neighbouring residential product to the west, (possibly as courtyard housing product)
- Introduction of internal roads to suit lot subdivision
- The introduction of new connections to the west connecting JCU to Klewarra Boulevard and Girraween Avenue. (It is noted Girraween Avenue is currently an informal connection into the campus.) It is the case that further negotiation with local authorities and residents would be necessary to fulfil this ambition that is intended to make a more porous campus and suggest a continuation of the scale of residential development form the west into the campus
- Creation of a linear park as a buffer between residential accommodation and the Sports precinct, also acting as community amenity.

Precinct 9 is essentially the disused and abandoned series of Western Campus teaching and support buildings.

The opportunities for Precinct 9 are associated with:

- The existing western campus buildings are nominated for demolition as part of the University's campus consolidation plan
- The existing institutional precinct is considered appropriate to be redeveloped with potential institutional development, potentially a school. A school location with adjacency to sporting fields but separated from main campus activities from the point of view of traffic movements is a nominal strategy. (Alternate School locations are noted in the Master Plan)
- Alternative uses could be Retirement Living or other higher density residential use.

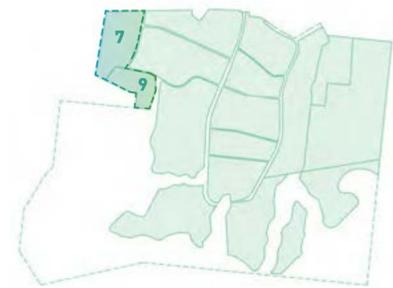
PROPOSED FORM

Low scale built form 1-2 storeys is appropriate in the current context of the neighbouring development to the west. More sustainable built form is desirable and smaller lot sizes are possible.

The notional isolation of the Precinct 9 by the arrangement of Endeavour Drive allows promotes development of a potential different nature to immediate adjacencies. It also supports a Medium level building height.

LANDSCAPE PLAN

1. Linear park with open scatter trees and off road cycle path
2. Buffer planting to ring road
3. Informal planting including a mixed selection of street trees
4. Courtyards with shade trees and textured tropical planting at entrances and between buildings
5. Greenway Street type with double tree planting over a 2.5m shared path
6. Boulevard with shade tree planting.



KEY PLAN



EXISTING CONDITION



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries

8.7 PRECINCT 8: SPORTING

CONTEXT

Precinct 8 is defined to the north by Joseph Banks Drive (and its proposed extension to the west), Parkinson Drive at the west, Buchan Drive to the south and James Cook Drive to the East.

EXISTING CONDITION

Precinct 8 consists mostly of the existing sports precinct constituted by various open ovals, the sport and recreation centre and squash courts. To the west is the temporary Western Courts residential accommodation to the far west is the University 25m swimming pool. The precinct is bisected from north to south by a significant overland flow path and gully.

The opportunities for Precinct 8 are associated with:

- A significant improvement and expansion of the sports precinct responding to the previously prepared JCU Sport Master Plan (a descriptive rather than design Master Plan) with capacity as a community asset

- Beautification of the overland flowpath including associated pathway
- An east west pedestrian connector providing access to all fields and path back to "clubhouse"
- A major new Indoor Sports and recreation building including indoor courts and club facilities
- Major new swimming pool and potential additional recreational and learn to swim pools as facility for the wider community
- Realignment and continuation of Joseph Banks Drive to meet up with Parkinson Drive is proposed as a wayfinding and access strategy to all fields.

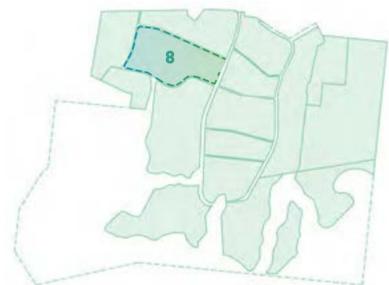
PROPOSED FORM

A large Indoor sport and recreation facility can provide a location for overview of all sporting grounds and be a significant building opportunity expressing University commitment to health and fitness and student life. It is likely to be an expressive design opportunity.

LANDSCAPE PLAN

1. Joe Baker Field is retained and its significance highlighted through signage, art and spectator activity
2. James Cook Drive includes spreading trees for pedestrian shade, as well as palms and flowering tropical trees
3. Large canopy character trees with lighting features
4. Sports walk, a Boulevard of shade trees planting along pedestrian spine with lightweight shade structures, rest points and spectator viewing

5. Plaza landscape to include large shade trees/palm tree grid and support sports demonstration spaces
6. Pathway connects to the broader path network
7. Large scale art with sports theme
8. Sports precinct signage and wayfinding.



KEY PLAN



EXISTING CONDITION



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries

8.8 PRECINCT 10: WEST

CONTEXT

Precinct 10 is defined by Buchan Road to the north, James Cook Drive to the east, Wadda Mooli Creek to the south and a notional line that is the rear of the existing Colleges boundary to the west.

EXISTING CONDITION

Precinct 10 contains the majority of existing Student accommodation including; John Flynn College, University Halls, St Marks College, the Catholic College of St Raphael and St Paul, as well as Unikids and Chaplaincy.

The existing precinct is large and all development is spread out with little to no relationship between colleges.

A large at grade carpark is located at the north east corner of the precinct.

The university hall accommodation and administration building have significant cultural value to the University. The University hall's townhouses component does not have recognised cultural significance.

The precinct is crossed by the historic stock route.

The opportunities for Precinct 10 are associated with:

- Continuation of student accommodation with the benefit of adjacency to the sport and recreation precinct and the location as a retreat from the academic campus
- Enhancement of the James Cook Drive/ Buchan Road intersection as the campus arrival with the south west corner as the location of a significant new building
- Development of any new built form to address James Cook Drive
- Enhancement of ecological corridors
- Consideration of the open St Marks corner as an opportunity for significant development on the axis of the James Cook Drive road alignment

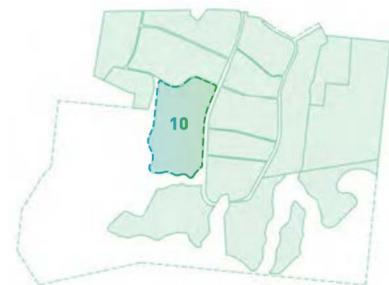
- Where and when practical continuation of the proposed new roads south of the library to cross James Cook Drive and into the Precinct as a way of simplifying address and wayfinding
- Provide additional north south roads to rear of existing college footprints for additional addressable development
- The northern zone is a possible location for consideration of a major multi deck carpark, providing central access.

PROPOSED FORM

3-5 Storey built form addressing James Cook Drive and Buchan Road is considered appropriate.

LANDSCAPE PLAN

1. James Cook Drive includes spreading trees for pedestrian shade, as well as palms and flowering tropical trees
2. Primary address and campus arrival to reinforce JCU character through global tropical planting and introduce campus identity
3. Placemaking elements are to include shade structures, landmark features, shaded seating nodes, art, lighting and wayfinding
4. Greenway includes a wider verge and double tree planting over a 2.5m shared path
5. Courtyards with shade trees and textured tropical planting at entrances and between buildings
6. Informal planting including a mixed selection of street trees
7. Boulevard with shade tree planting.



KEY PLAN



EXISTING CONDITION



PRECINCT PLAN

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- - - Site Boundaries

8.9 PRECINCT 13: GOONDALOO, PRECINCT14: EAST, PRECINCT 15: ANIMAL HOLDING PADDOCKS/ FUTURE UNI USE

CONTEXT

Precinct 13 is defined by Discovery Drive to the north, James Cook Drive to the west, the Natural Amphitheatre axis to the south and Goondaloo Creek to the east.

EXISTING CONDITION

Precinct 13 contains ATSSIP, MARFU and the Estate group of buildings.

At the northern end of the precinct, the deep Goondaloo Creek Banks diverge and the land is used for at grade carparking.

The existing development separates the campus visually from a connection the creek corridor.

The precinct is crossed by the historic stock route.

The opportunities for Precinct 10 are associated with:

- Continuation of student accommodation with the benefit of adjacency to the sport and recreation precinct and the location as a retreat from the academic campus
- Enhancement of the James Cook Drive/ Buchan Road intersection as the Campus arrival with the south west corner as the location of a significant new building
- Development of any new built form to address James Cook Drive
- Enhancement of ecological corridors
- Consideration of the open St Marks corner as an opportunity for significant development on the axis of the James Cook Drive road alignment
- Where and when practical continuation of the proposed new roads south of the library to cross James Cook Drive and into the Precinct as a way of simplifying address and wayfinding
- Provide additional north south roads to rear of existing college footprints for additional addressable development
- The northern zone is a possible location for consideration of a major multi deck carpark, providing central access.

PROPOSED FORM

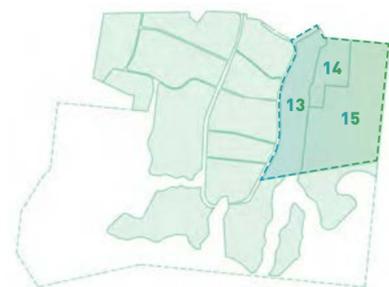
3-5 Storey built form addressing James Cook Drive and Buchan Road is considered appropriate.

LANDSCAPE PLAN

1. Greenway Streets include a wider verge and double tree planting over a 2.5m shared path
2. Courtyards with shade trees and textured tropical planting at entrances and between buildings
3. Riverine character and vegetation community is to extend along the waterway
4. The lake is a welcoming landscape feature at the campus entry and provides a cool recreation amenity easily accessed from the central campus

5. Pedestrian bridges and boardwalks will provide easy connection
6. Off road bike path
7. The lake perimeter provides opportunity for events and recreation, amenity includes grass banks, art, shade structures and seating
8. James Cook Drive includes spreading trees for pedestrian shade, as well as palms and flowering tropical trees
9. Greenway Streets include a wider verge and double tree planting over a 2.5m shared path

10. On road cycle path
11. Bio basin planting and water quality treatment
12. Trail connection to natural areas
13. Existing riverine vegetation to be retained and rehabilitated
14. Future development area.



KEY PLAN



EXISTING CONDITION

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries



PRECINCT PLAN

8.10 PRECINCT 16: FUTURE RESIDENTIAL USE, PRECINCT 18: EASTERN FOOTHILLS & PRECINCT 19: FUTURE RESIDENTIAL USE

CONTEXT

Precincts 16, 18 and 19 are in the south east corner of the campus. They can be considered as the undeveloped bushland and foothills defined by the eastern site boundary, the southern site boundary, Goondaloo Creek (western bank) to the west and the 'Natural Amphitheatre Axis' to the north. Precinct 16 and 19 are effectively the identified developable land (between gullies) within the greater precinct 18 footprint; (the development potential is subject to future geological study).

EXISTING CONDITION

The entire area is undeveloped with the exception of some bush tracks towards the northern and western edge. The ground rises to the rear.

The opportunities for precinct 18 are to maintain and improve upon the ecological conditions associated with Goondaloo Creek and to sensitively accommodate walking tracks to provide a range of views from the southern campus to the region. Adventure challenge and mountain bike trails are other potential uses.

The northern edge of the precinct aligned with the 'Natural Amphitheatre Axis' is the proposed alignment for a future road if and when repaired to suit additional development access to precincts 16 and 19.

The opportunities for precinct 16 and 19 are for residential development towards the end of the residential development staging due to its more difficult terrain.

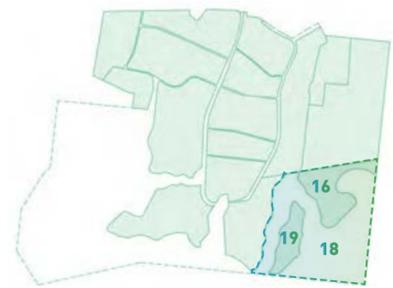
PROPOSED FORM

The area forms a generous component of the overall site and its natural condition contributes to the overall campus bushland setting.

Development in this zone requires a sympathetic response in scale and type. Low density development only is considered.

LANDSCAPE PLAN

1. Trail connection to natural areas
2. Existing riverine vegetation to be retained and rehabilitated
3. Future development area.



KEY PLAN



EXISTING CONDITION

CAMPUS ELECTRIC BUS LOOP LONG TERM

- Bus Hail and Ride
- Site Boundaries



PRECINCT PLAN

8.11 PRECINCT 17: WINTER HOUSE, PRECINCT 20: WESTERN FOOTHILLS & PRECINCT 21: MEMORIAL PARK

CONTEXT

Precinct 20 is defined by the northern campus boundary immediately below the Girraween Ave spur, the campus boundary to the west and south and by precinct 10 to the east and precinct 11 and precinct 17 to the south east.

Precinct 17 is an area south of precinct 11 and constrained by the southern campus boundary precinct 20 and 21.

Precinct 21 is essentially the central creek gully zone from the southern boundary to the intersection with James Cook Drive.

EXISTING CONDITION

All three precincts are undeveloped with some bushwalk and mountain bike trails developed in precinct 20. The precincts command the highest elevation of the campus with dramatic northern and western views.

OPPORTUNITIES

The opportunities for **Precinct 17** essentially pertain to the Winter House. The Winter House is a retreat for the university located with the capacity to survey the campus and the wider region. Dramatic views to Magnetic Island and Castle Hill are achieved at this location. Sympathetic access routes with consideration of contours and vegetation are important to the final location.

Precinct 20 contains the watercourses that develop into Wadda Mooli Creek.

As part of a flood mitigation and water resource consideration, detaining water along this course as a major infrastructure project is proposed for further investigation. Precinct 20 is the proposed location for the JCU Arboretum and accompanying Environmental Centre.

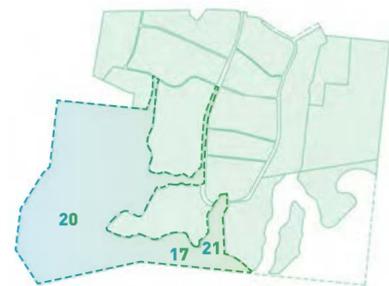
Further expansion of the bike and bushwalk tracks are proposed in precinct 20.

Precinct 20 contains some areas for potential future residential development, subject to further geological studies. Development in this area requires a sensitive approach to scale and design as the elevation makes it clearly visible to the remainder of the campus and further afield to the city.

The opportunities for **Precinct 21** are the Woodland Memorial Park. The park is one of the Master Plan initiatives that extends the influence of the Magnetic Island Axis through the full extent of the site. The gully conditions mean that the axis does not terminate at the southern boundary with any beneficial elevation.

LANDSCAPE PLAN

1. Channel and water feature
2. Riverine rehabilitation
3. Path connections between Winter House and central campus
4. Open space with scattered trees and large shade trees adjoining residential areas
5. Memorial landscape including shade structures and semi private areas for reflection
6. Water storage and landscape feature with native planting
7. Natural area trails with 'connection to country' initiatives
8. Tree planting forms part of the campus wide Arboretum
9. Water storage and landscape feature with native planting
10. Walking trail option with different distances and degrees of difficulty
11. Trail links to learning and education centre
12. Winter House.



KEY PLAN



EXISTING CONDITION

CAMPUS ELECTRIC BUS LOOP LONG TERM

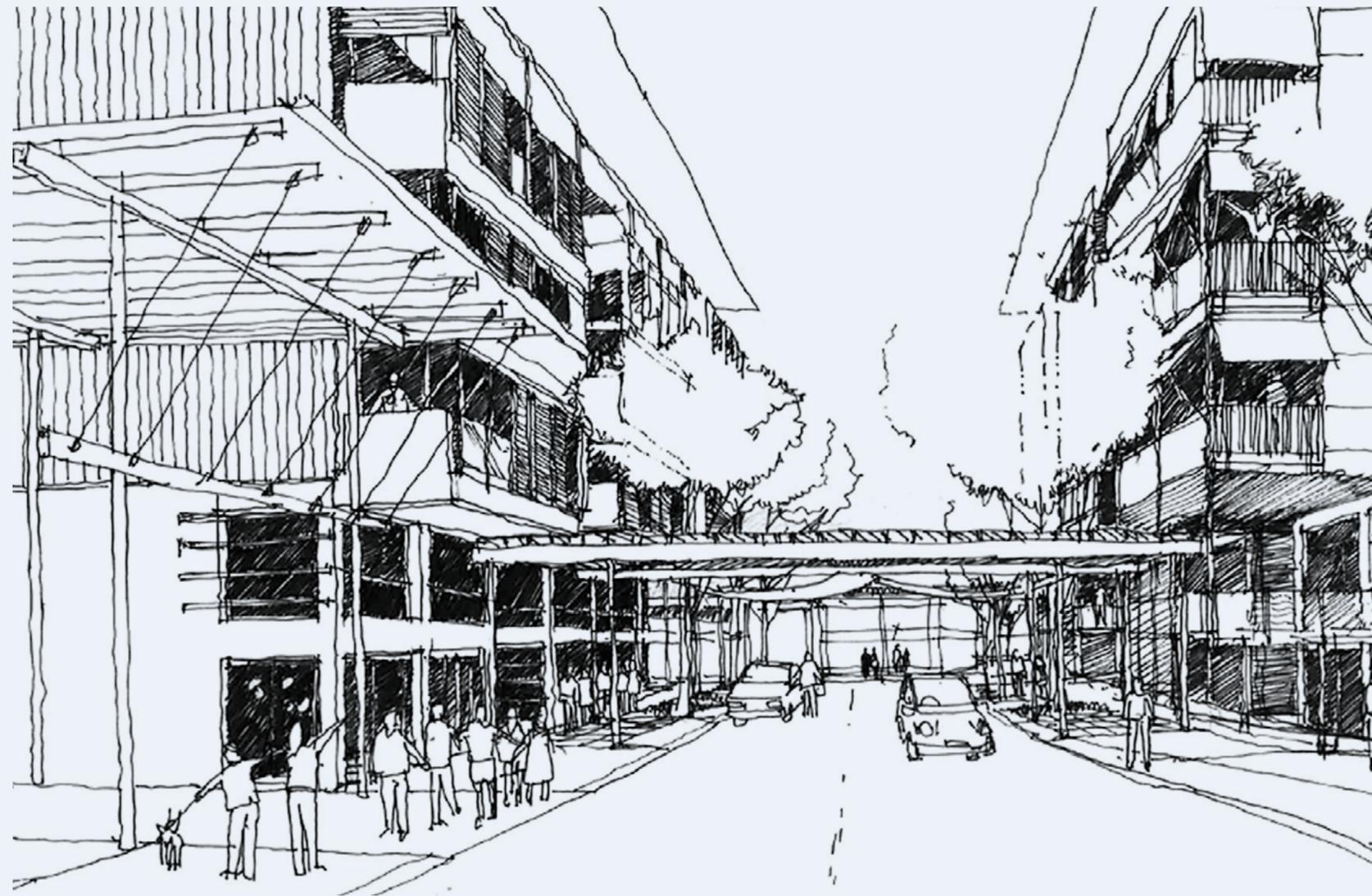
- Bus Hail and Ride
- Site Boundaries



PRECINCT PLAN

09

CAMPUS URBAN DESIGN GUIDELINES



VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

9.1 INTRODUCTION TO THE CAMPUS URBAN DESIGN GUIDELINES

These Campus Urban Design Guidelines are a progression of the Discovery Rise Design Guidelines document prepared by Architectus, which established some of the key urban design objectives described in this Master Plan.

This document is one of three documents pertinent to any new development. The additional documents are the **Building Design Guidelines** and the **Development Assessment Framework**.

These Guidelines include sections that relate to key urban settings - streets, courtyards, plazas - have been expanded to build upon the frameworks set out in this Master Plan.

Design principles have been added and refined where they address ambitions and strategies that have emerged during the Master Plan consultation process, and expanded to incorporate the entire Campus.

THE PLACE

Townsville's summers are intense; very hot and humid, with bucketing rain, fierce midday sun, and intense 'white' light. From March through to October, however, Townsville has one of the most benign climates in Australia, with gorgeous sunny days, mild temperatures and a softer light.

The James Cook University Townsville site is a unique setting; the land framed by rugged hills and dominated by the strong presence of Mt Stuart.

The dispersed campus is dotted with buildings and some small oases of cool shady irrigated landscapes.

Some JCU buildings enjoy and respond to the climate; in particular University Halls with its very deep shaded terraces and its associated cool courtyard most strongly suggesting an appropriate response to this place.

THE VISION

Through good design there will be a complete transformation of this dispersed campus into a thriving community of living and learning. The places of James Cook University; the buildings, the landscapes, will demonstrate a strong, unique, environmentally responsible 'Townsville tropicality.'

The Campus will be an energetic community of exchange with the tropical university at its heart. It will be sustainable, compact, walkable; a place which fosters interaction and exchange.

A TROPICAL URBANISM

The unique setting and Dry Tropical climate will give rise to an urbanism that is uniquely 'Townsville.' The places and spaces will be cool, inviting, green and shaded, with tree lined streets, shady public spaces, and urban verandahs. They will be 'people places' where the opportunity for informal social interaction is ever at hand.

The villages and hubs will all be within an easy and inviting walk to the heart of the University.

The buildings will be responsive to the climate and culture of Townsville - openable, permeable, welcoming, seamlessly connected to the outdoors and the streets, lanes, courtyards, gardens, parks and squares.

Considered, careful and responsive urban, architectural and landscape design will play a pivotal role in the making of this special place.

THE GUIDE

In contrast to the JCU Design Guidelines, which address University-wide design solutions across a broad range of scales from landscape to building detail, this suite of guidelines focuses upon design principles at an urban scale and specific to the Townsville Campus. The following guidelines are intended to complement the more general framework of the cross Campus document.

James Cook University and the Place Making Panel will use this document as the basis for evaluating and ultimately supporting or rejecting development proposals. It is important that designers understand the ambitions of the overall Master Plan that ultimately their project will contribute to.

9.2 DESIGN GUIDELINES



VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

DESIGN GUIDELINES FOR PLACEMAKING

Spaces, landscapes and buildings at the Townsville Campus create places with:

1. A compact and urban built form
2. Lively, inclusive & interactive spaces
3. An active, shaded street network
4. A rich tropical landscape that is immediate and ever-present
5. Sheltered, shady and cool streets and public spaces
6. An architecture with cool shady verandahs, layered edges, deep eaves, screens and loggias and spaces that are open to the outside
7. A sustainable architecture and landscape that minimizes resource and energy use
8. A colour, finishes and furniture palette that compliments its unique setting.

9.2.1 COMPACT & URBAN BUILT FORM

THE 'KEY CONNECTORS' ARE LIVELY AND ACTIVE PLACES:

- In the Academic Core and mixed use areas, 4-6 storey mixed use development with ground floor retail and/or active uses along Mt Stuart St and the Ideas Market. Minimum height 4 storeys
- In Residential Village, 4-6 storey residential with small scale student-oriented retail at the intersection of James Cook Drive
- In Residential Village, 4-6 storey buildings with a child care centre, community facilities
- In Western School Centre, 4-6 storeys
- In Eastern Goondaloo Precinct, 2-4 storeys.

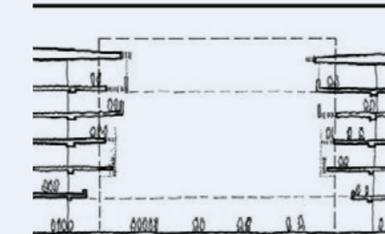
WALKING AND CYCLING IS PREFERRED

Footpaths facilitate pedestrian and bicycle movement:

- Are provided on all streets, laneways and public spaces
- Are a minimum of 3m wide on 'key connectors' and 2.5m wide in all other areas
- Have pedestrian lighting to AS1158.3.1.1999
- Provide for bicycle use
- All connectors/ pathways facilitate safe and inclusive pedestrian and cycle movement, meeting Austroad Recommendations - 6A Pedestrian and Cyclist.



INTERACTIVE BUILDING FRONTAGES



INTERACTIVE BUILDING FRONTAGES



9.2.2 LIVELY, INCLUSIVE & INTERACTIVE PLACES

STREETS, LANES AND PUBLIC SPACES ARE LINED WITH INTERACTIVE BUILDING FRONTAGES:

- Residential buildings orient their primary address, living spaces and verandahs/terraces facing the street or public space
- Commercial, educational, research or mixed use buildings orient their primary entrances, ground floor activities, and upper level verandahs facing the street or public space
- Develop outdoor spaces which foster mixing of university, commercial and recreational activity.

SOCIAL MIX IS FOSTERED:

- New development offers a range of accommodation types and prices
- Buildings are designed to be flexible and allow for changes in use and circumstances wherever possible.

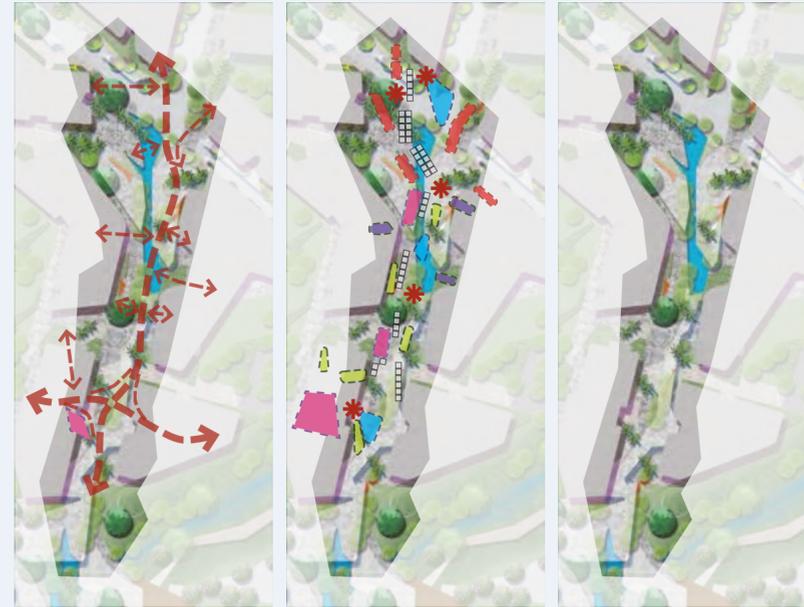
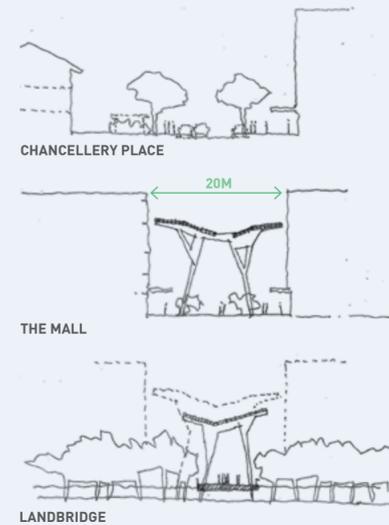
INCLUSIVE AND WELCOMING ENVIRONMENTS ARE CREATED:

- The majority of public spaces are accessible to people of all abilities, ages and life stages
- A range of free social and recreation experiences is provided across the Campus and within individual precincts
- Public spaces are designed to offer safety through visibility, casual surveillance and access choice.

PEDESTRIAN MALLS ARE OPEN, SAFE & ALLOW EASY PEDESTRIAN MOVEMENT:

Designs will:

- Incorporate wayfinding and signage strategies
- Support adjoining buildings characterised by active edges and including eating or entertaining venues
- Provide spaces for events, games, craft/farmers markets and pop up facilities.



MALL ACTIVITY



MALL CHARACTER IMAGERY



URBAN PLAZA

A desirable Plaza has a defined dimension and scale:

- The maximum dimension of the square inside the loggia should be 40m x 50m. The heights of buildings around the square should be 6 stories
- Buildings have their principal address and frontage into the space, and achieve the overall footprint as defined in the plan
- Buildings fronting the Plaza incorporate a minimum two storeyed loggia which is continuous around the edge of the space.

The Plaza is lively and activated day and night:

- Incorporates residential, university and commercial upper level uses
- Ground level incorporates useful shops such as a chemist, travel agent, Asian grocer, bakery, hairdresser, cafés and food outlets. It is designed to support informal gathering and events as well as live streaming of keynote lectures, and incorporation of JCU displays and creative events.

Buildings facing the Plaza will have highly interactive edges at ground level and upper levels.

- Ground uses incorporate 100% of the building frontage as highly interactive retail frontage which spill onto the square. The maximum width of each frontage will be 10m
- Verandas, balconies, projecting meeting rooms, projecting circulation spaces etc. at upper levels overlook the Ideas Market.

Plazas shall be highly permeable and accessible, directly connected to adjacent precincts and parking courts by cool laneways. Wherever possible these laneways should be designed to be tall, narrow spaces rather than single storeyed volumes.

Plazas are designed to support a range of different activities. The floor of the space may accommodate the following:

- Shared zones in connection with adjacent streets
- Set down areas for private vehicles and public transport
- Areas for several hundred people watching a televised lecture or listening to a speaker
- Areas for smaller social groups gathering informally in the space.

Plaza shall incorporate green landscape.

- Landscape connections to adjacent parkland/green spaces should be present
- Green respite areas within the space should be provided and trellises incorporated into buildings around the edge of the space.

The Plaza shall be shaded and cool, evocative of a 'souk', incorporating a canopy over the central space and edge screening which is of a unique design responding to the climate and identity of Townsville.



IDEAS MARKET IMAGERY



VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

9.2.3 ACTIVE, SHADED STREET NETWORK

Streets are cool and shaded, and are lush and human scale, drawing on the character of the precedents of James Cook Drive and the savannah woodland setting.

Streetscapes are characterised by generous shaded pedestrian and cycle paths, intermittent shaded car parking and strong tree patterning, both formal and informal, in keeping with the natural and built setting.

A hierarchy of streets will be used across the campus to assist with wayfinding and placemaking. These are listed below and located in the Street Hierarchy Strategy 5.3.3:

- High Street
- Boulevard
- Shared Street
- Esplanade
- Residential Avenue
- Residential Street.

STREETS, PUBLIC SPACES AND PEDESTRIAN PATHS ARE DESIGNED TO PROMOTE A LIVELY COMMUNITY OF INTERACTION AND EXCHANGE, LEADING BACK INTO THE CENTRAL SPACES OF THE JCU CAMPUS

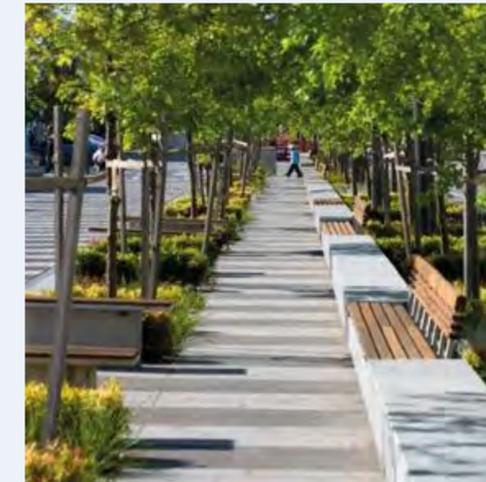
- Continuous pedestrian and cycle paths are provided along the edges of green corridors and green spaces and on streets and Public Spaces
- Dwelling entrances, verandahs and living spaces front onto public spaces
- Shaded informal seating is provided along pedestrian routes to local services and areas for sitting and meeting are provided in proximity.

PARKING DOES NOT DOMINATE STREET FRONTS

- In mixed use, residential buildings above 2 storeys or non-residential buildings, parking is underground or in parking courts behind buildings. No parking is allowed within the street frontage
- In 1-2 storey buildings, parking is integrated into the building envelope and not between the building and the street boundary
- Parking courts do not dominate streetscapes- they are screened by buildings and planting.

IMPACT ON NATURAL TOPOGRAPHY AND HYDROLOGY IS MINIMISED THROUGH STREET DESIGN

- Streets are designed to minimize cut, fill and retaining
- Streets are to be designed where possible to be kerbless, assisting in moving water to permeable vegetated swales and open space areas
- Areas of hard stand are minimised and permeable pavement features within the public and private realms (pedestrian/cycle pavements, on-street car parking areas and private driveways, sections of vehicular carriageway, residential courtyards and gardens).



HIGH STREET

THE ENVIRONMENT IS HUMAN SCALED, SLOW SPEED AND MOST SPACES ARE SHADED FOR MOST OF THE DAY

The set out dimensions of a High Street are designed to create an intimate street but accessible shopping street that allows for street side dining and study, encourages pedestrian crossing, slows vehicle movement and accommodates cycle use.

The overall profile is rationalised to balance all these requirements and provide a more intimate street:

- Current distance between primary building facades: 31m
- Proposed distance between primary building facades: 24m.

Changes to the profile are to take into account the position of the existing CPB1 building, with the southern edge modified to suit:

- 6m road carriage-way
- 1.5m cycle lane either side of the road
- 2.5m parallel parking to encourage pedestrian crossing, reduce overall width and improve visibility across the street
- 1.5 m footpath lighting / signage / ground cover planting / seating zone
- 1 m uncovered pedestrian space zone to allow space for tree canopies
- 2.5m covered pedestrian footpath.

This creates a maximum spacing of buildings either side of the High Street as follows:

- 19m between the outside faces of awnings, pergolas, loggias and projecting balconies
- 24m between primary building walls/ glazing lines.

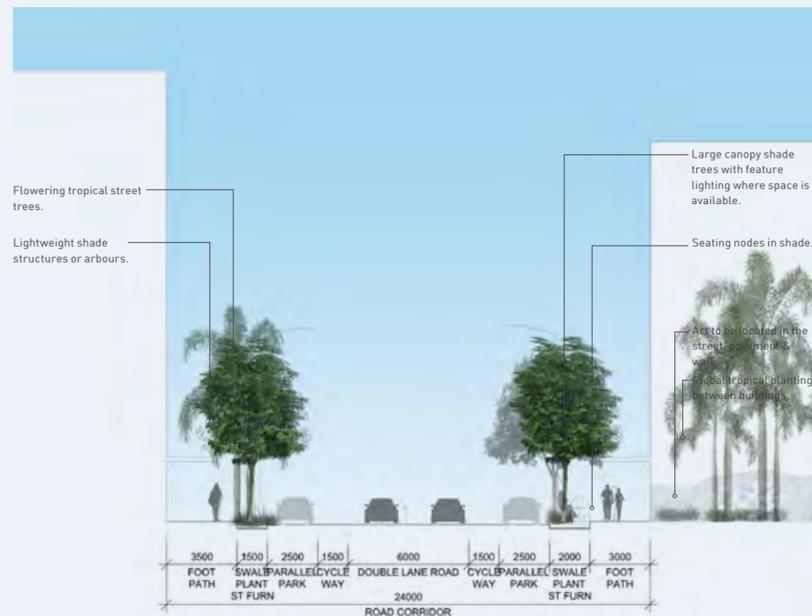
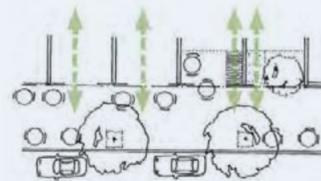
STREET IS LINED WITH ACTIVE RETAIL FRONTAGES THAT CREATE AN INTERACTIVE STREETSCAPE

Street interactivity

- Buildings fronting the High St have interactive ground floor retail and /or active uses to 80% of the length of their frontage
- Building should endeavour to include balconies/ verandas on at least levels 1 and 2 of the building which are comfortable and shaded places overlooking the High Street as follows, and which provide passive surveillance to the street:
 - Where a commercial building, a minimum of 3% of the GFA of levels one and two is a veranda or balcony, with a minimum depth of 2.5m and a minimum width of 3m
 - Where a residential building, each dwelling has a veranda or balcony, with a minimum depth of 2.5m and a minimum of 3m.

SHADE AND SHELTER IS PROVIDED FOR PEDESTRIANS

The building provides a continuous sheltered edge providing sun and rain protection, as either a 2 storeyed trellised pergola, a 2 storeyed loggia, a suspended screen or a shade canopy.



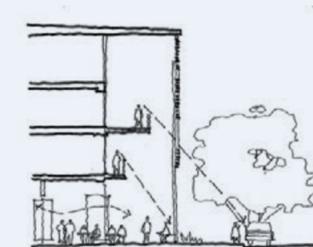
LANDSCAPE DOMINATES THE STREETSCAPE

- Broad canopy street trees are planted within the road reserve
- Trees are planted at 7.5 metre intervals, except at intersections and within the Ideas Market
- Understorey planting utilises the uncovered area within the under-canopy garden bed
- Planting and trellises are integrated into building edges
- Mature canopy cover aims to shade at least 60% of the carriageway and maintain views to Mt Stuart
- Canopy cover at establishment should shade at least 25% of the carriageway
- Notable and landmark trees are located at significant street intersections. Landmark trees in this case are characterised by their stature and breadth of canopy; distinctive form and foliage colour and seasonal flowering display. Landmark trees could be individual specimens or combinations of 2 or more different species.

THE PEDESTRIAN ENVIRONMENT IS OF A HIGH QUALITY, WITH PLACES TO SIT, WALK, AND INTERACT

An attractive, distinctive and comfortable suite of furniture will distinguish the streetscape, support walkability and benefit socializing, meeting, waiting and rest:

- Seating will combine platforms and benches with backs and arm rests, meeting Australian Standard requirements
- Seating will be sited to access winter warmth and to retreat from summer sun
- Bins (an integral component of the furniture suite) will be located strategically for convenience and visual quality (rubbish and recycling)
- Pedestrian pavements will be attractive and robust, involving a variety of materials and finishes and potentially integrating decorative finishes:
 - Pavement selection and finishes must not increase glare
 - Pavement materials must relate to function and a public space hierarchy along the length of the street.



LEGEND

- | | | | |
|---|--|----|--|
| 1 | ON STREET EATERIES AND ADJOINING LANEWAYS. | 6 | LARGE CANOPY TREES WITH FEATURE LIGHTING WHERE SPACE IS AVAILABLE |
| 2 | TROPICAL FLOWERING STREET TREES | 7 | SHADED SEATING AREAS THAT ENCOURAGE COMMUNITY INTERACTION |
| 3 | ARBOUR WITH TROPICAL FLOWERING CLIMBERS | 8 | PUBLIC ART TO BE INCLUDED ALONG THE STREET, IN THE PAVEMENT AND ON WALLS |
| 4 | TROPICAL PLANTS SUCH AS PALMS AND SIMILAR | 9 | WATER POP JET AND LIGHTING |
| 5 | FEATURE PAVING AND BOLD PATTERNING ON THE GROUND PLANE | 10 | LIGHTING/SIGNAGE FEATURES AT PROMINENT LOCATIONS |

BOULEVARD

Boulevards are the primary circulation and entry roads into the campus, providing vehicular and pedestrian linkages to all areas within the campus. The amenity of these streets is therefore paramount to the success of the Master Plan and defines the character and experience of arriving and circulating throughout the entire campus. The design objectives, therefore, are to:

- Create a complete and cohesive tropical boulevard where landscape dominates the streetscape
- Create a high-quality walking, cycling and driving environment in all seasons
- Assist with navigation and way finding around the overall site.

The overall profile is rationalised to accommodate cycling and humanise the scale of the corridor.

- Current inside kerb to inside kerb width: 27m
- Proposed inside kerb to inside kerb width: 23m.

Changes to the profile occur within the outside edge of the corridor, so that the overall width is effectively reduced. This should assist with services corridors and tree planting. Traffic consultants are required to undertake a detailed study of the road profile, but the intent is described below:

- 1 x 3m parallel parking lanes on the inside of the ring road to provide convenient visitor parking and access to the academic core
- 1 x 3m cycleway to provide safe and continuous access around the university. It is anticipated that this cycleway will connect with external cycleways along the Ross River

Parkway and future cycleways along Angus Smith Drive, University Road and Nathan Street to the city

- 2 x 3.5m vehicular circulation lanes in either direction, with turning lanes accommodated within these lanes
- 3m median
- 4.5m verge to property boundary, with a 4.5m typical setback to buildings.

TROPICAL LANDMARK BOULEVARD, WHERE LANDSCAPE DOMINATES THE STREETSCAPES

It is that intent that planting provides strong visual consistency along the full length of the boulevard.

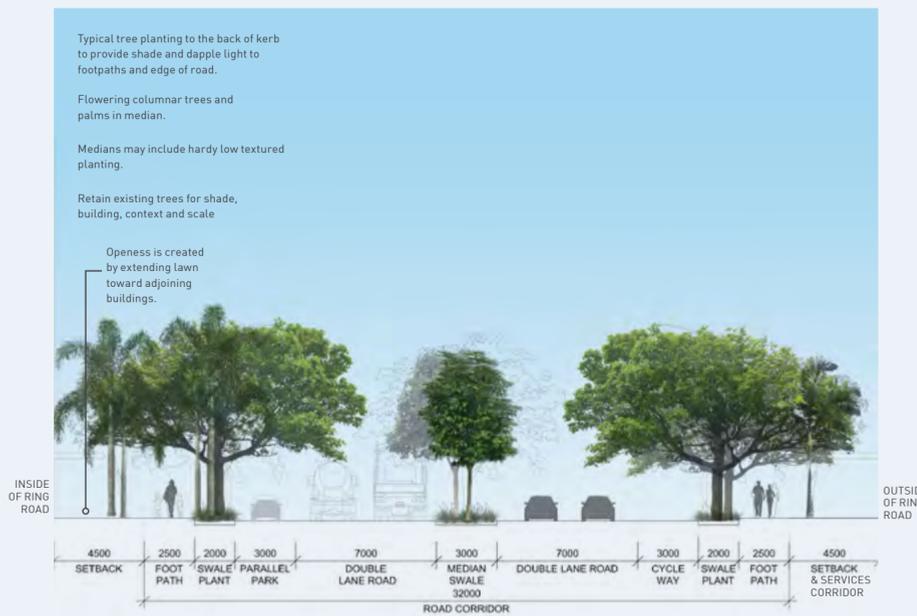
Tall, broad and stately semi-formal avenues of large tree planting that combines existing and new plantings.

Tall, broad and stately semi-formal avenues of large tree plantings combine native and exotic species, existing and new plantings. Refer species list for further information.

The avenue builds on the planting theme and species in place along James Cook Drive between Joseph Banks Avenue and Buchan Road.

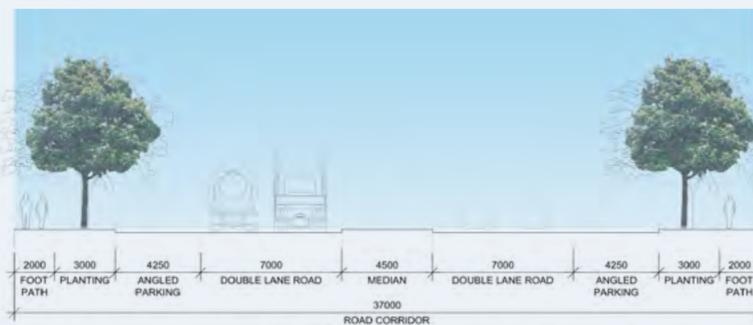
The avenue planting pattern is not symmetrical, as follows:

- Roadside edges support a double avenue of planting
- Dense, broad spreading shade trees line the inside/kerbside edge of the corridor
- 7 metre centres
- Mixed species



TYPICAL BOULEVARD SECTION

1: 250 @ A3



EXISTING JAMES COOK DRIVE SECTION

1: 250 @ A3

- A meandering 'woodland'/parkland avenue of tropical species form the double avenue (to the outside of the formal tree line)
- Varied centres for tree spacing are proposed at minimum 2m – 8m maximum
- Existing eucalyptus are interplanted
- The median combines columnar canopy trees, tall palms and an understorey of dense with colourful foliage and flowering plants
- Woodland/parkland plantings merge with adjoining landscapes.

BOULEVARDS SUPPORT ATTRACTIVE, SAFE AND CONVENIENT PEDESTRIAN AND CYCLE MOVEMENT

Pedestrian safety is provided for:

- Provision of mid-block crossings prioritises people over traffic, enabling full accessibility and incorporating grade separation, colour and pavement differentiation, median refuges and other measures where possible
- Cycling is provided on-road and along broad shared pathways.

Shared and separated pedestrian and cycle paths enable convenient simultaneous use and safe, pleasant walking for groups and families.

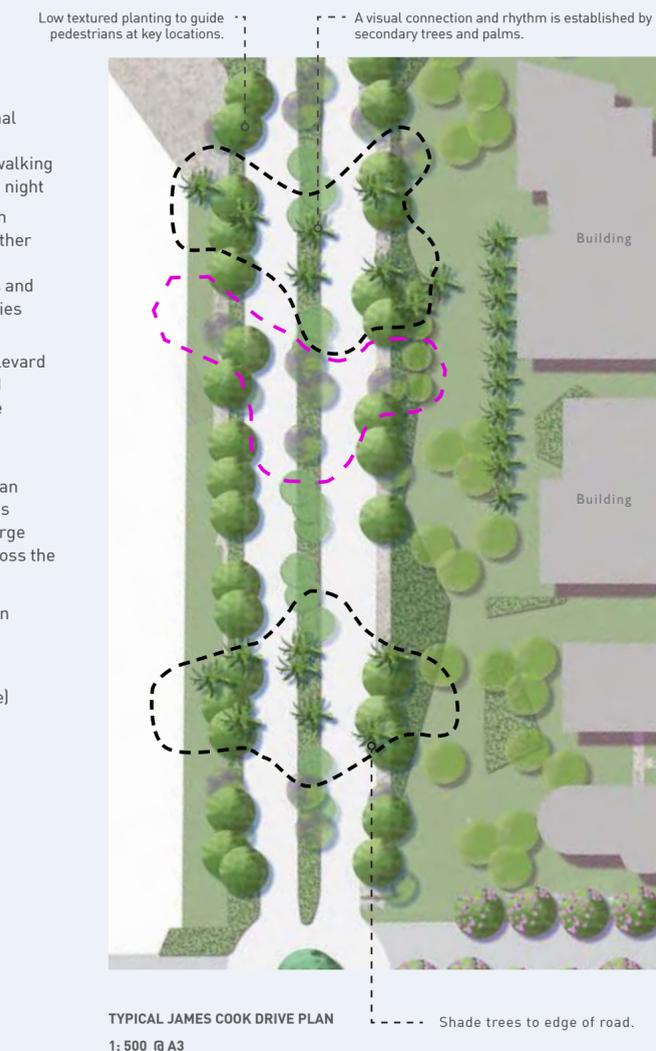
Generally:

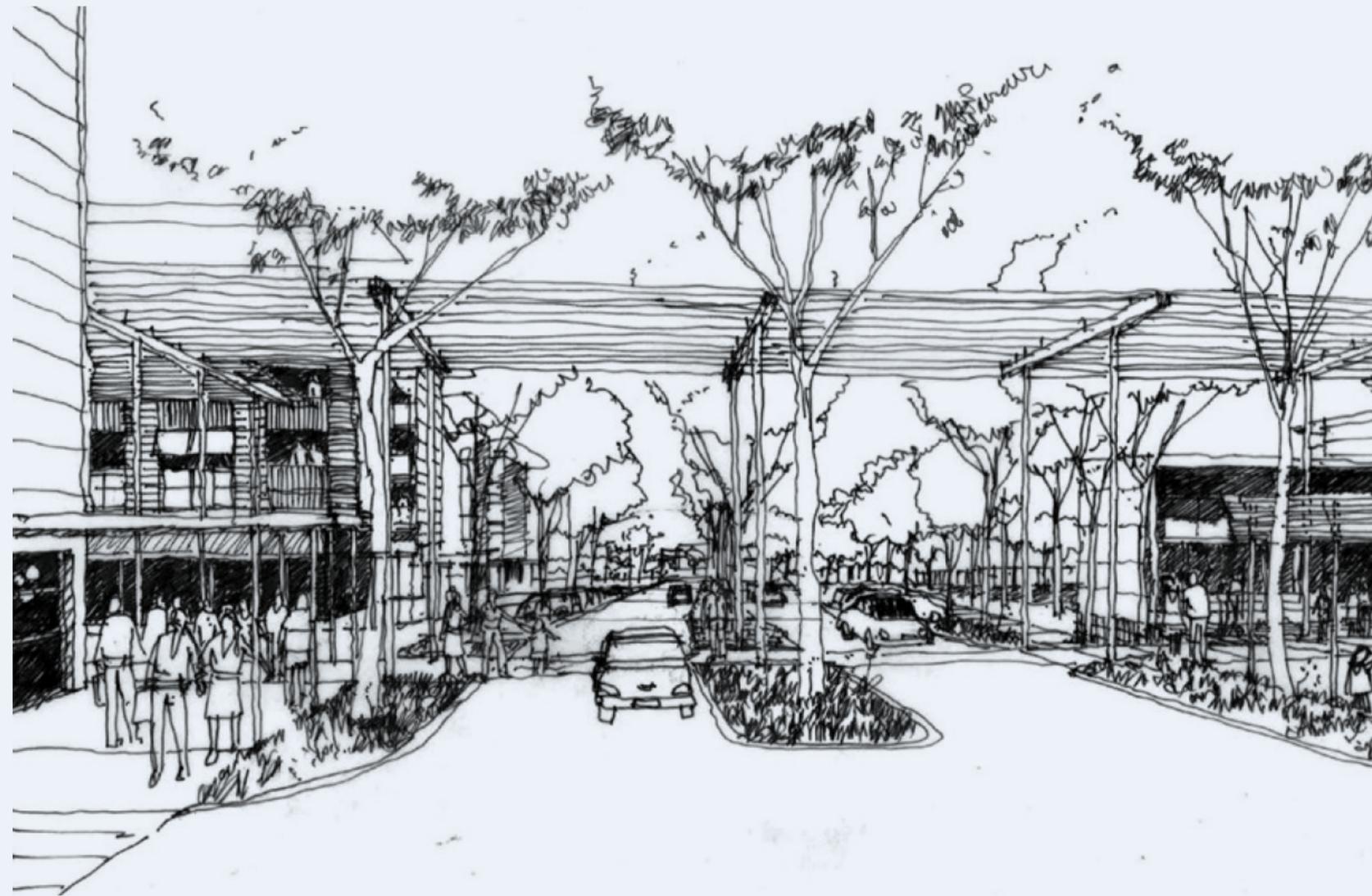
- Shared off-road pathways are broad and generously scaled: minimum 3.0m in width
- Pedestrian pathways are broad: 2.5metres wide

- Off-road dedicated bio-directional cycleway: 2.5m wide
- On-road dedicated single-directional cycle lane: 1.5m wide. Boulevard pathways encourage and support walking and cycling throughout the day and night
- Pathways are illuminated by human scale pole top lighting, which is further supported by ambient light from adjoining buildings and landscapes and carriageway lighting. Refer to species palette in Chapter 7
- After hours activity edging the boulevard encourages pedestrian activity and supports casual surveillance of the pathways.

Boulevard planting will be dominated by Samanea Saman (rain tree) positioned in an informal style. Secondary trees and palms located in the median and the adjacent verge areas will provide a visual connection across the road. These species will include:

- Xanthostemon Chrysanthus (Golden Panda)
- Wodyetia Bifurcata (Fox Tail Palm)
- Tabebuia Rosea (Pink Trumpet Tree)
- Erythrina Sp. (Coral Tree).





VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

THE STREETScape AND PEDESTRIAN ENVIRONMENT IS OF A HIGH QUALITY, WITH PLACES TO SIT, WALK, CYCLE AND INTERACT – IN ALL SEASONS

- Planted shade is provided to 70% of pedestrian and cycle pathways
- Planted shade is provided to 60% of carriageways.

MATERIALS

Planting, structures, furniture and feature pavement treatments are specific to the boulevard. Refer to Materials Palette in Section 9.5. Pedestrian and Cycle Pavements:

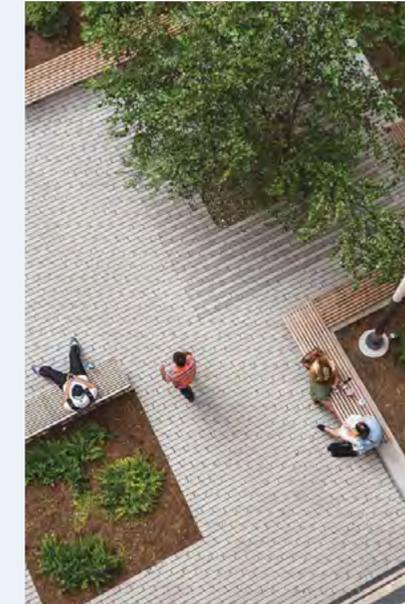
- Pavements are furnished with a mix of materials that provide climatic comfort, stormwater filtering and which distinguish the street, taking cues from materials and colours in the surrounding natural landscape.

FURNITURE:

- Bins (an integral component of the furniture suite) will be located strategically for convenience and visual quality (rubbish and recycling)
- Bicycle parking will be located strategically for convenience, security and visual quality
- Accessible bubblers will be located strategically, and under shade and/or shelter to benefit water quality.

THE DESIGN SUPPORTS THE OVERALL ECOLOGICAL SUSTAINABILITY OF THE SITE

- Biodiversity is evident in each corridor, with two or more street tree species per corridor and mixed under planting and patterning
- Local ecologies are represented within the planting palette and interpreted in the hardscape proximate to natural or historic alignment of waterways
- Incorporation of local native plant species in natural areas and within the campus as support to the tropical vision
- Crossing over creek lines
- Savannah – retention of existing Savannah and native plantings in perimeter areas
- Within pavements, street furniture and public art
- New and replacement of existing kerbs will be flush, to facilitate permeable runoff.



SHARED STREET

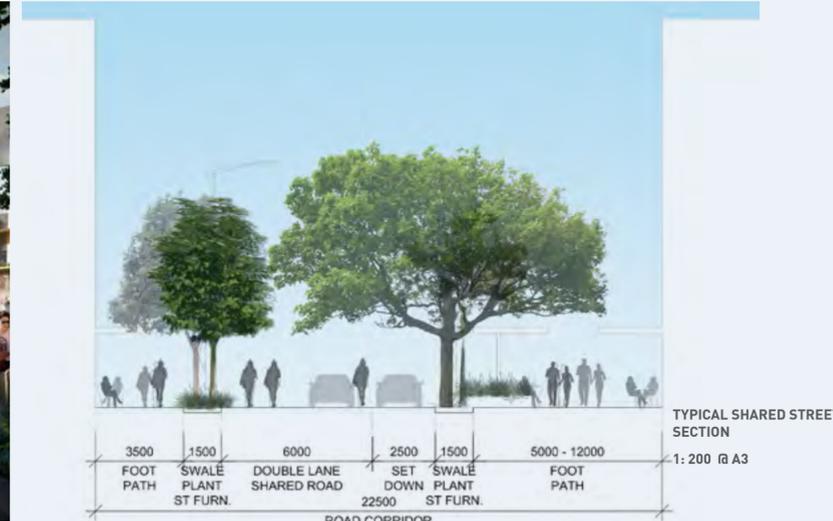
Shared streets are active with a primarily pedestrian focus, characterised by shade trees, street furniture and open learning spaces.

Vehicular access is a secondary function. Vehicles movement is low speed providing opportunity for drop off, ceremonial address and emergency access.

Bollards provide guidance to pedestrians and vehicles where necessary.

Shared streets are located at:

- The junction between the University Place and Chancellor Place cul-de-sac
- Eddie Koiki Mabo Way, and
- Hospital Link.



ESPLANADE

Esplanades skirt the Junction Dam, providing address to the precinct and direct public access to lake amenity.

A new promenade and lakeside picnic areas encourage gathering and activity.

Planting and furniture design preserves lake views.



RESIDENTIAL AVENUE

The character of the Residential Avenue draws on the precedents of James Cook Drive and the Savannah woodland setting.

Streets are cool, shaded lush and human scale.

- Streets display a relaxed but lush tropical formality
- Streets display a lush tropical semi-formality that merges with the parkland/ woodland setting of the Green Heart open space and the architectural tropical urbanism evident in the apartments lining the green spine
- Streetscapes are characterised by generous shaded pedestrian and cycle paths, intermittent shaded car parking and strong tree patterning, both formal and informal, in keeping with the natural and built setting. Car parking is discreet, not dominating the street, and is set within street tree buildouts at 13 metre intervals
- Street trees create a double avenue, with trees aligned closest to the carriageway providing the formal frame, evenly spaced 7 metre intervals, and with generous dense canopies
- The 2nd line of trees sits within the road reserve but additionally flows into adjacent public and semi-private space, integrating the streetscape with its residential setting and requirements for shading and privacy
- This informal group of trees combines various indigenous and exotic species in a loose flowing planting pattern, at varying centres
- A 3 metre wide shared pedestrian/ cycle pathway sits between the 2 lines of trees, and a 3 metre wide central median references the colourful planted

median of the boulevards and additionally features regularly spaced street trees

- The merging tree canopies provide a shaded, cool and welcoming village connector
- Road intersections feature a change in pavement texture and narrow throats with buildouts to define thresholds and for ease and clarity of pedestrian and bike movement
- Crossings are raised and crossings are provided at regular intervals.
- Bus services utilise multipurpose shelter for people and bicycles
- Street and pedestrian lighting utilises the formal tree planting zone (1.5 M) closest to the carriageway. Direct lighting spill away from adjacent townhouses and coordinate with ambient lighting provision from feature and decorative lighting of trees foliage etc
- Softscape is irrigated (during establishment and as part of an on-going management strategy
- Where the avenue crosses the Orchard walk, the streetscape character is informal, strengthening the continuity of the Green Heart open space and the village relationship to the greater Savannah landscape
- The streets do not have kerb and channel. Lawn and native grass swales assist stormwater management and are integrated within the shared pathway and the street trees
- Traffic calming measures may be appropriate along length of these street types. As a minimum, intersections with internal streets exhibit a change in surface texture, and pedestrian and bike crossings are clearly visible and marked.

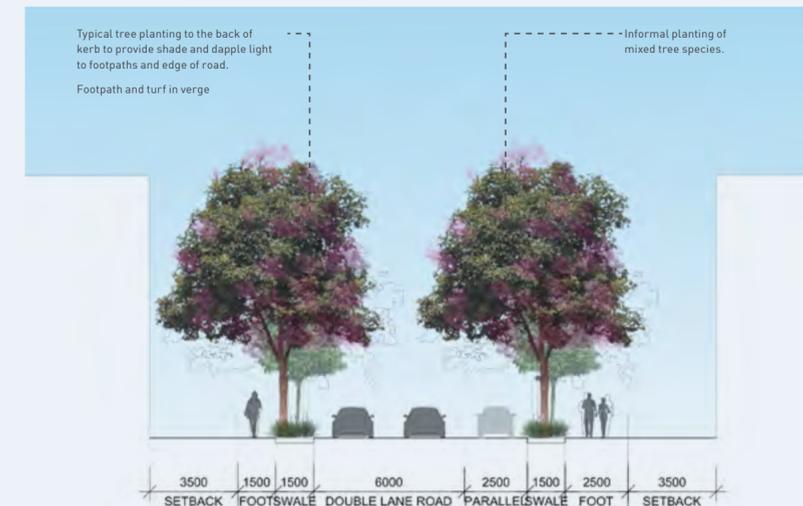


RESIDENTIAL STREET

Residential streets are an extension of private social territories: they are friendly, welcoming, and places where children play and people gather and meet outdoors. These streets have a strong pedestrian and bicycle focus.

- These streets are 'single-loaded', with asymmetrical streetscape schemes and discrete car parking to one side of the street only
- Designed tight kerb-radii help maintain slow vehicle speeds
- Driveways are a minimum width and are clearly visible from the roadway, benefiting pedestrian and maintaining the pedestrian/cycle focus of the street
- Road pavements differ in colour from connector streets (coloured concrete, bitumen – Refer to materials palette in Section 9.5)
- The streets have no kerb and channel and are edged by a turfed and vegetated swale system to assist in cleansing and slowing storm water runoff from the roadway
- Street tree planting is asymmetrical, with a formal edge of generously canopied street trees evenly spaced at 7 metre intervals (Refer to Section 9.6) on 1 side of the street and informal patterns of largely indigenous tree species on the other

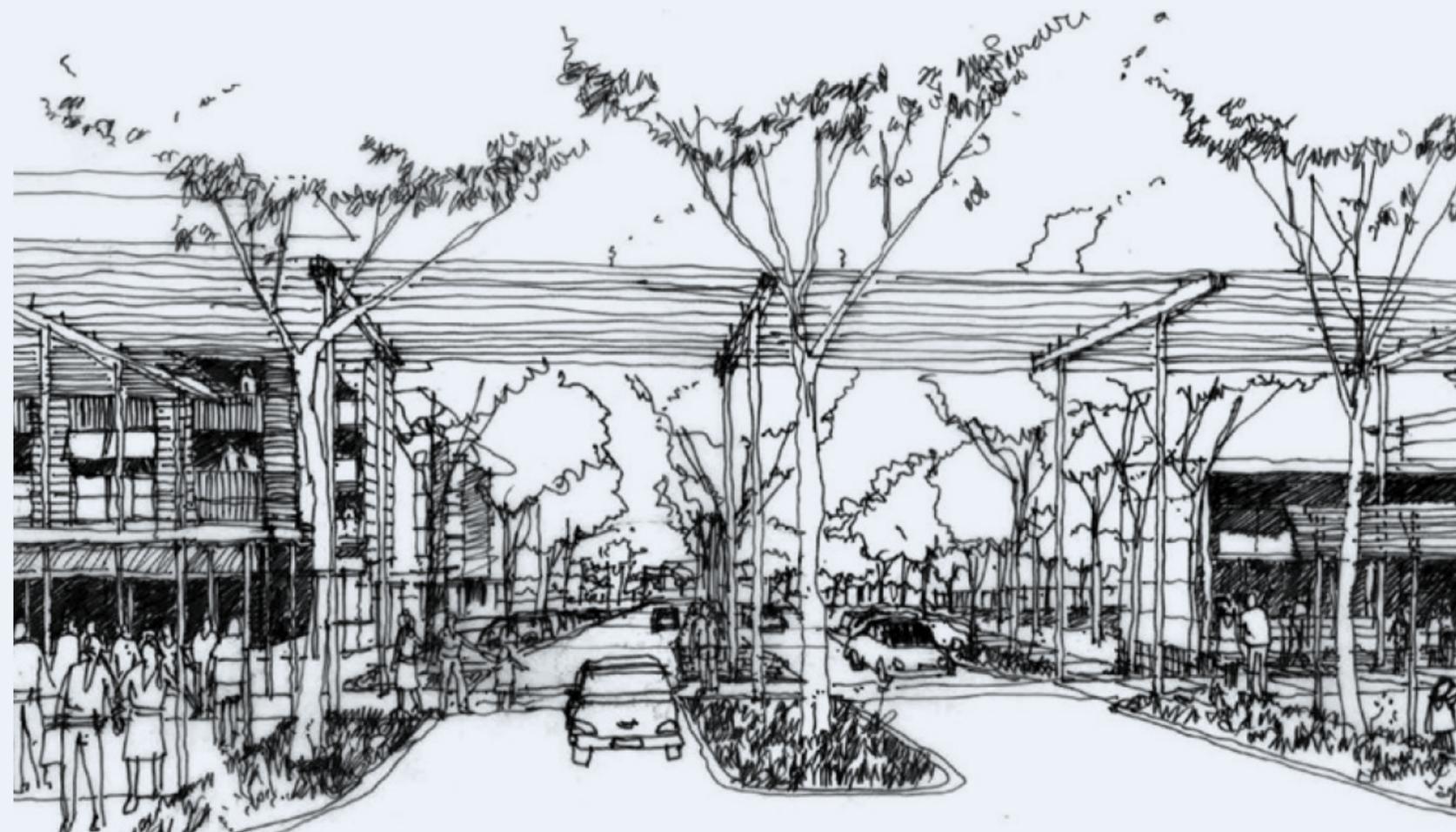
- A 2.5 metre wide shared pedestrian/cycle pathway sits adjacent to the alignment of formal tree
- Lighting is bicycle and pedestrian friendly, combining pole top, bollard and feature lighting. Bespoke cross-street lighting (public art) features within these streets, benefiting their intimate scale and reinforcing the intimacy of these very local communities
- Public seating and small bespoke local play/interpretive elements are situated within small pockets of open space within each street, encourage community interaction and a sense of public space stewardship.



TYPICAL RESIDENTIAL STREET SECTION

1: 200 @ A3





VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

9.2.4 RICH, TROPICAL LANDSCAPE

TROPICAL LANDSCAPE IS OMNIPRESENT

All landscape expresses a lush topicality while promoting views of and access to the dry tropical Savannah.

GLOBAL TROPICAL LANDSCAPE

Global tropical characteristics will influence all aspects of the campus environment including colour, signage, furniture, structures and vegetation. Plants from tropical regions of the world including Southeast Asia, Pacific island nations, the Caribbean, Central America or Equatorial Africa as well as Northern Australia will be showcased across the campus.

Plants typically associated with global tropical landscapes are included in the plant schedule. These species have been selected to achieve the global tropical vision and suitability to the expected growing conditions.

Tropical landscapes typically include:

- Different foliage texture, size and shape
- Foliage colours of red, yellow, orange, pink, purple and lime-green may be seen together
- Plants with colourful flowers including frangipani, hibiscus, ginger and heliconia
- Palms, tree ferns and even bamboo
- Trees with a spreading canopy such as Fig and Rain trees.

Drawing on the international significance of the University, a vision to establish a global tropical landscape has been developed. The underlying rationale for this vision is supported by:

- Consistency with the original JCU Master Plan undertaken in the 1960's
- Studying global tropics, in a broad tropical setting
- Creation of an easily identified and memorable brand
- A campus that is a window to tropical landscapes of the world
- Delivery of a global environment for staff, students and community.

Refer Planting Selections, Section 9.6.

LEGEND

- 1 SHADE TREES OVER FOOTPATHS AND PAVED AREAS
- 2 MULTIFUNCTIONAL PAVED AREA FOR FUNCTIONS, LEARNING AND STUDYING
- 3 SHADED SEATING NODES AND SEMI-PRIVATE AREAS
- 4 FEATURE PAVING
- 5 ART AND FEATURE LIGHTING
- 6 TROPICAL PLANTING WITH STRONG FOLIAGE TEXTURES AND COLOUR
- 7 LARGE CANOPY SHADE TREES WITH FEATURE LIGHTING
- 8 LAWN
- 9 EXTEND LAWN AND OPEN CHARACTER FROM ADJOINING SPACES TO INCREASE NATURAL SURVEILLANCE AND SENSE OF SPACE.



TROPICAL COURTYARD

9.2.5 SHELTERED, SHADY AND COOL STREETS AND PUBLIC SPACES

LANDSCAPE CREATES COOL SHADY PLACES

- Water elements such as misting devices and ornamental features are used to cool public spaces
- Tropical plants are used with support from locally relevant species
- Green landscapes include upper level trellises and green walls.

LARGE SHADE TREES THRIVE

Tree planting conditions optimises healthy tree growth of large size trees. Sufficient rooting space is to facilitate:

- Contiguous tree planting within streets, using open or covered trenches (ideally 3 metres across) to support the maturation of large canopy shade trees
- Grouping trees in open planting areas in wide setbacks and pedestrian areas, parks, gardens or plazas, and environmental corridors
- All street trees and street planting is irrigated.

The landscape setting of each development is lush and rich and experienced both internally and externally

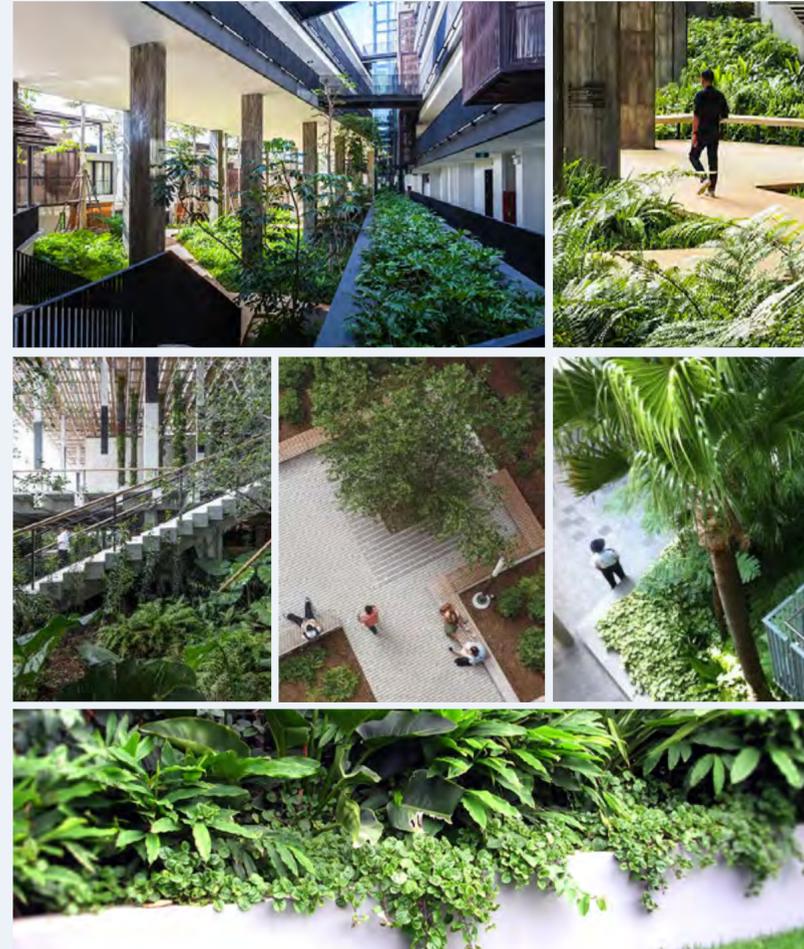
- Combinations of tree and understory species in streetscapes are used
- Substantial planting is incorporated to the front and rear of buildings and into landscaped courtyards within a site, within and between buildings
- Wherever possible, mature trees are retained
- Deep planting zones are provided
- All planting in communal areas is irrigated
- Internal spaces open onto and frame views of landscape.

TROPICAL COURTYARDS

- Courtyard spaces between buildings will support building function, access and movement between spaces and provided opportunities to demonstrate a global tropical identity.

CONTINUOUS SHADE AND SHELTER IS PROVIDED

- All pedestrian areas are shaded over 70% ground area
- Covered walkways/awnings provide for continuous sheltered links on Mt Stuart St, and between the campus heart and the hospital
- All vehicular pavements include substantial canopy trees in medians or in parking bays.



TROPICAL COURTYARD CHARACTER IMAGERY

UNIVERSITY COURTYARD

A multifunctional and flexible parklike space at the central core of the campus.

Natural surveillance from adjoining courtyards, streets and buildings will be strengthened to improve safety. Art will be located on view lines and gathering points.

LEGEND

- 1 VERANDAH WALK AND PATHWAY NETWORKS FACILITATE EASY AND DIRECT PEDESTRIAN MOVEMENT
- 2 THE LIBRARY GREEN LAWN EXTENDS INTO ADJOINING COURTYARDS AND STREETS, INCREASING SURVEILLANCE AND THE PERCEPTION OF SPACE
- 3 ENCOURAGE VIEWS TO THE CENTRAL SPACE FROM JAMES COOK DRIVE AND ADJOINING COURTYARDS
- 4 SHADE TREES LOCATED OVER PEDESTRIAN PATHS AND SCATTERED THROUGHOUT THE SPACE
- 5 PASSIVE RECREATION AMENITY AND SEATING NODES
- 6 EVENTS AREAS WITH SUPPORTING AMENITY.
- 7 ORNAMENTAL LAKE OR "OFF LINE" WATER FEATURE
- 8 PUBLIC ROAD EXTENDS ACROSS THE LIBRARY GREEN AS A PEDESTRIAN PRIORITY ZONE - IT INCLUDES THE ABILITY TO BE CLOSED OFF FOR FUNCTIONS AND EVENTS
- 9 RETAIN THE EXISTING RIVERINE VEGETATION FOR ITS CULTURAL/HISTORICAL IMPORTANCE AND THE LUSH FRAMEWORK IT PROVIDES TO THE CAMPUS. SURVEILLANCE AND SAFETY CAN BE IMPROVED BY SELECTIVELY REMOVAL OF WEEDS SPECIES, DEAD WOOD AND SOME TREES ON VIEW LINES WITH LIMITED OR NO VALUE
- 10 THE LIBRARY GREEN CHARACTER EXTENDS TO JAMES COOK DRIVE PARKING BAYS



LIBRARY GREEN
1:2500 @ A3

COVERED WALKWAYS AND VERANDAH WALK

All covered walkways are to be in keeping with the existing verandah walk completed in 2017, which is a wide and meandering shared walkway that incorporates landscaping, seating and study areas, and a vibrant and tropical architecture.

Covered walkways incorporate:

- Pedestrian and cycle connections
- Public transport connections
- A varied experience as the journey progresses
- A variety of cost structures on journey (economical spaces vs cost intensive spaces)
- Way finding
- Landscape connections beyond the campus
- Light and shade in the density of the development
- Legibility, orientation and distance association
- Reflects in a full landscape sense, that JCU is a University for the Tropics, and a variety of tropical landscape experience is included along its journey
- Planting. Vines on structures is permitted. May include as Indigenous food garden
- Indigenous features
- Public art including current and future items
- Water collection
- 100% sun and rain cover for at least 50% of path width

- Future services corridor
- Seating, drink fountains, lighting, security cameras, power, wireless and data
- Design to lower bicycle speeds
- Organised rather than casual bike attachment
- Low maintenance materials.

CANOPIES

Distinctive canopy structures may:

- Reflect the campus setting, celebrate the region and respond to the Tropical climate
- Articulate the university's unique tropical brand and positioning
- Provide an experience which connects memorable places and structures
- Assist with wayfinding by connecting the campus from north to south
- Creating comfortable places that will be actively occupied year-round
- Create shaded cool places to sit, study and socialise
- Provide adequate cover from the sun and rain
- Incorporate sustainable initiatives and materials
- Be sustainability sourced and of local materials
- Be buildable, affordable and maintainable
- Give consideration to future adjacent buildings
- Include Indigenous narratives and culture where appropriate.

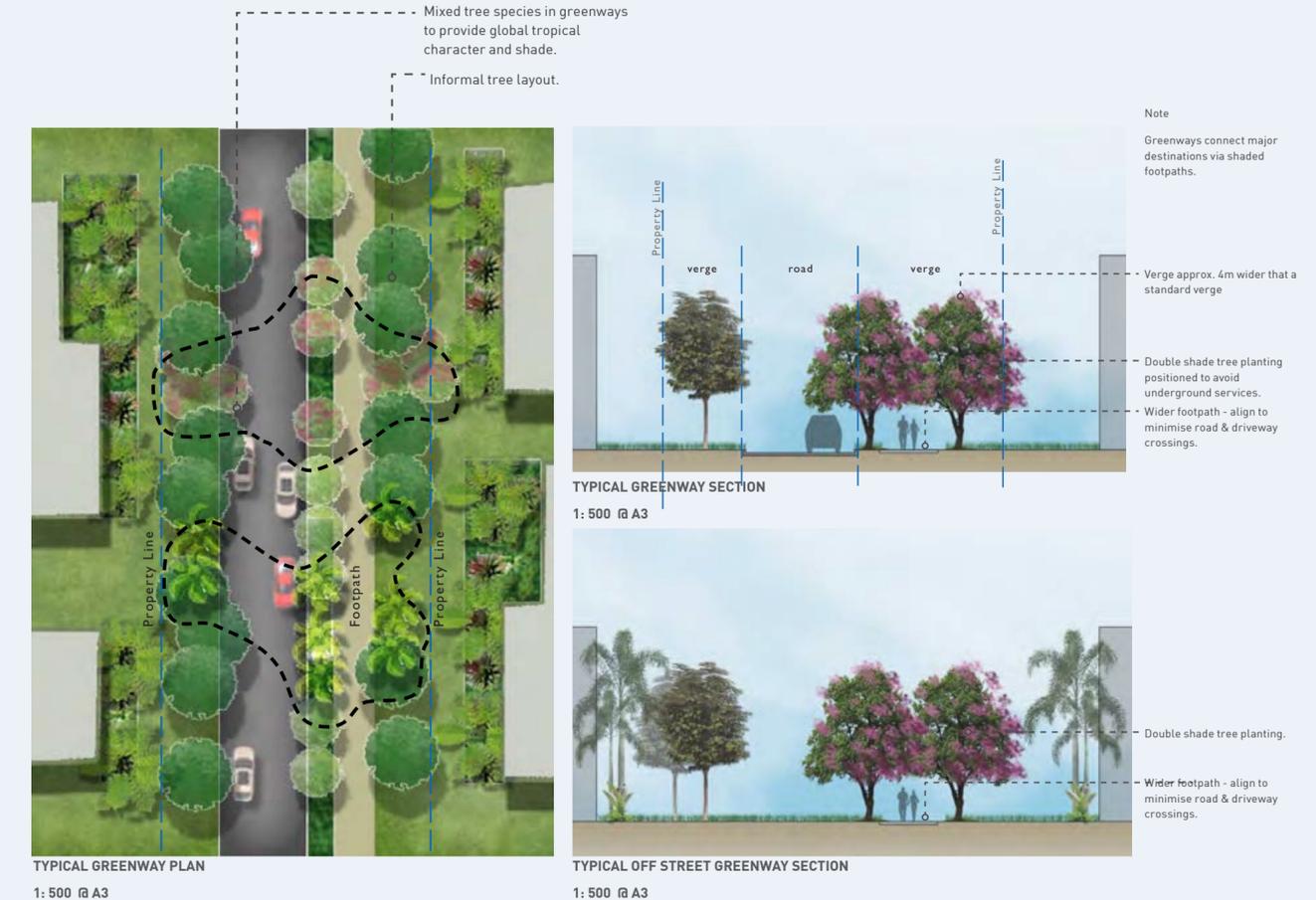


CANOPIES CHARACTER IMAGERY

GREENWAYS AND GREENWAY STREETS

CONTINUOUS PEDESTRIAN AND CYCLE LINKS ARE CREATED

- Greenways have a wider verge to allow space for double tree planting, a wider and safer footpath and provision for underground services. They will connect pedestrians and cyclists to key destinations
- Continuous pedestrian and cycle paths are provided through and along the edges of green corridors and green spaces, and on streets in public spaces
- Pathway links are of widths appropriate to the requirements of both recreational and commuter cyclists and pedestrians (2.5 metre minimum on smaller streets to 5 metres within the village green/parkland). These links are supported by high levels of amenity (shade, seating, drinking fountains, bins, cycle parking etc.) and their legibility relies on clear and accessible wayfinding signage and strong visible connections
- Structures, furniture and streetscape/amenity elements should be clearly visible and be in character with each section of adjacent pathway, maintaining all mandated travel clearances
- Wayfinding signage is complimented by a diverse array of travel distance, motivational, environmental and interpretive information – set within pedestrian/ cycle pavements or integrated within landscape, streetscape elements or public art pieces.



WATER IS INTEGRATED WITH LANDSCAPE AND ARCHITECTURAL DESIGN

Incorporating water into landscape design provides environmental, visual, economic and experiential benefits.

- Water bodies are places of significant visual amenity, providing a focus for activity, gathering and relaxation
- Water plays a role in easing temperatures, cooling landscapes, helping reduce energy use and carbon emissions
- Water supports greenery in integrated landscape design and strengthens the tropical focus of the setting.

STORMWATER MANAGEMENT IS A POSITIVE AND VISIBLE LANDSCAPE COMPONENT

- Swales (grass and planted)
- Low key water retention /slowing prior to exiting overall site and entering wide storm water management network
- Stormwater to penetrate soil for plant life and underground natural water storage
- Protect the site's and adjoining natural features and environmental processes
- Maintain the natural hydrological characteristics of the catchment
- Protect quality of both surface and ground water – ecological and amenity purposes
- Integrate water into the landscape for environmental, visual, economic and experiential benefit
- Employ WSUD (Water Sensitive Urban Design) best practice
- Stormwater filtration prior to exiting the site
- Minimise 'traditional' stormwater management via kerb and channel.



9.2.6 AN ARCHITECTURE WITH COOL SHADY VERANDAHS, LAYERED EDGES, DEEP EAVES, SCREENS & LOGGIAS AND SPACES THAT ARE OPEN TO THE OUTSIDE

BUILDINGS EXEMPLIFY SUSTAINABLE DESIGN IN THE DRY TROPICS

Buildings are expressive of a 'Tropical Urbanism'; an architecture of the Dry Tropics that demonstrates openness, deep shadiness, integration of breezeways, and responds both internally and externally to the intensity of the heat & humidity summer, and the benign conditions of winter.

BUILDINGS PROVIDE SHELTERED AND SHADY PLACES AT STREET LEVEL

- Continuous shelter is provided along the frontage in the form of loggias, densely planted trellises or awnings
- Buildings incorporate planted courts and large shade trees within their frontages.

BUILDINGS ARE DESIGNED WITH EXTERIOR SHADE AND SHELTER AT ALL LEVELS

Buildings are designed to have deep exterior shade that protects the buildings' occupants from hot sun either through:

- Light weight materials used externally to provide a shading 'second skin' and/or
- Deep horizontal and/or vertical shade elements incorporated into the building structure
- Loggias and 'shady retreats' built into the edges of buildings.

BUILDINGS RESPOND TO THE LANDSCAPE AND CLIMATIC SETTING

- Architectural solutions express creative interpretations of the JCU setting and climate. This is a cool shady architecture evocative of the Dry Tropics, which demonstrates a clear architectural response to the quality of light, the colours in the land, the volumes of rainfall, the intensity of the heat and humidity, and the benign conditions of cooler months.

INTERIOR SPACES CONNECT WITH THE OUTDOORS

- An open and permeable architecture is designed which forms strong connections with the outdoors and the public realm
- Living and working spaces are to have a direct relationship with shaded outdoor living spaces.



9.2.7 A SUSTAINABLE ARCHITECTURE AND LANDSCAPE THAT MINIMIZES RESOURCE AND ENERGY USE

BUILDING MINIMISE HEAT GAIN THROUGH PASSIVE DESIGN

- Long axes of buildings must be principally oriented east-west where possible. Where site boundaries, or physical constraints force a more north-south orientation, additional shading measures are to be adopted to allow for the additional heat load
- Building frontages are designed to incorporate deep shade and sun control which excludes undesirable summer sun
- Outdoor and interior landscapes do not impede the movement of air and support the sustainable cooling of edge and interior spaces.

HEAT ISLANDS ARE AVOIDED

- Surface carparks are designed as 'parking orchards' with a minimum ratio of 1:5 shade-tree-car ratio within 3 metre wide deep planting trenches
- Site planning and design of elements on the site facilitates the movement of breezes across the entire precinct
- Buildings with continuous frontages greater than 30m long are fragmented or incorporate ventilation courtyards and breezeways to promote airflow across the site
- Parking courtyards are created which are cool and pleasant places to be and to overlook Large shade trees are provided at intervals of one tree per 4 parking bays
- Surface carparks comprise a mix of pavement materials: combining asphalt or concrete with porous pavements and including sections comprising different materials (eg timber boardwalks) to minimise the effect of radiant heat and glare.

BUILDINGS MAXIMISE NATURAL VENTILATION

While during the hot season air conditioning will be required, buildings should be designed to be able to be naturally ventilated during the more benign months between May and September, as follows:

- A maximum plan depth of 18m is preferred
- Residential buildings should be designed to optimize natural ventilation in both private and semi-public areas
- Commercial buildings should incorporate naturally ventilated 'outdoor rooms' and breezeways into arrival and entry areas.

BUILDINGS DEMONSTRATE A CLIMATIC CONSTRUCTION RESPONSE

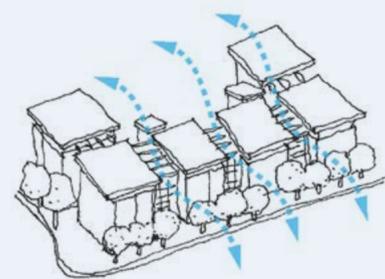
Design buildings for passive internal climate control through:

- Management of solar gain (orientation and/or shading and/or insulation), management of ventilation
- Management of heat gain (insulation)
- Management of internal heat flows (thermal mass, ventilation)
- In housing design, constructional ventilation solutions suited to the climate are adopted where, for example, thermally stable 'retreat spaces' with high thermal mass for the hotter months are combined with lightweight naturally ventilated 'edge spaces' for use during the remainder of the year.

BUILDINGS AND LANDSCAPES ARE DESIGNED TO MINIMISE RESOURCE CONSUMPTION

- Materials from renewable sources are used wherever possible. Materials that are not from renewable sources are durable, re-used/reusable and/or recycled/recyclable
- Use materials that have minimum biophysical and social impacts related to their source, manufacture, delivery
- Use materials with high durability related to their use, resisting weathering, decay, wear and tear and forces. Design to enhance the durability of materials
- Promote environmentally efficient systems for water and wastewater management and reuse
- Promote environmentally efficient systems for waste management and recycling within buildings and the landscape
- Irrigation regimes, storm water treatment, carpark designs and carriageway profiles work in concert to minimise water wastage, control erosion and control water quality downstream.

Note: For further detail refer Enviro Development Technical Standards.



9.3 RESIDENTIAL DESIGN GUIDELINES

9.3.1 LOT CONFIGURATIONS AND SITE DESIGN

The following residential building types are drawn from Discovery Rise and have provided a basis for the urban form and yield ambitions described in this Master Plan.

These types should be read in conjunction with the Development Controls Section 10 of the Master Plan, describing associated building heights, setbacks and plot ratios.

THE LOCATION OF HOUSING TYPES IS A FUNCTION OF URBAN DENSITY AND LANDSCAPE

- Higher densities are located in areas close to the Campus Centre, at the Residential Town Centre and Village Plaza
- Density decreases, the higher the position in the foothills.

THE CONFIGURATION OF SITES SUPPORTS PEDESTRIAN AND BICYCLE LINKS TO JCU CAMPUS HEART

- An open and permeable street network is created which connects into James Cook Drive
- Cul-de-sac are avoided.

SITE DEVELOPMENT MINIMIZES IMPACT ON SLOPE AND NATURAL HYDROLOGY

- Development on slopes above 10% shall be subject to future investigation. Refer Land Use Strategy 5.1.1
- Wherever possible sites are to be graded to suit natural land form rather than cut and filled and benching is minimized in all instances
- No retaining walls above 1m in height are to be constructed.

LOT SIZES ARE CONSISTENT WITH INTENDED URBAN DENSITIES

- Tropical townhouse lots are between 150m² and 300m²
- Small lot courtyard lots are between 300m² and 450m²
- Courtyard apartment sites are a minimum of 1,200m² and are a minimum of 3 storeys
- No lots are above 450m² in Discovery Village.

LOCAL SERVICES ARE PROVIDED

- A childcare centre and small convenience store are integrated into development at the Village Plaza.



TOWNHOUSE SECTIONAL PERSPECTIVE



APARTMENT SECTIONAL PERSPECTIVE

9.3.2 YIELD

DISCOVERY RISE

The residential development described in this Master Plan seeks to match yield ambitions set out in the Discovery Rise Master Plan and retain the required 30 Dwellings/ Ha minimum average density required by the Townsville City Council (TCC).

The adjacent yield studies explore opportunities for achieving the previously established yield and density benchmarks.

Discovery Rise established typical densities for Apartments, Townhouses and Small Lot Houses, forming the basis for the yield target. These Dwelling Types and their associated densities have been adopted by this Master Plan and are described in greater detail in 9.3.4 - 9.3.6 of these Design Guidelines.

The residential land area set out in Discovery Rise (101.49Ha) incorporated land that is described in this Master Plan as 'Residential' and 'Future Residential'.

Development Summary	Site Area	Apartments	Townhouses	Small Lot	Medium Lot	Total	Dwelling/Ha
	101.5						
Density per Type		91.2	46.0	17.8	14.6		
TOTAL DWELLINGS		1,110	795	780	455	3,119.0	30.7
Dwelling Type Mix		36.0%	25.0%	24.0%	15.0%	100.0%	



RESIDENTIAL LAND

Without the incorporation of 'Future Residential' Land, the extent of residential development to the south of the Academic Core is markedly reduced (43.12 Ha).

As such, a significant increase in density is required to achieve the targeted yield, by way of either a move towards denser Dwelling types, or an increase in apartment building height. The below describes a combination of these two strategies.

Development Summary	Site Area	Apartments	Townhouses	Small Lot	Medium Lot	Total	Dwelling/Ha
@Dwellings/ HA from above		123.0	46.0	17.8			
Apartments (4 Storeys)	19.02	2,339				2,339	
Townhouses	14.23		655			655	
Courtyard Houses	9.87			176		176	
TOTAL DWELLINGS	43.12	2,339	655	176		3,170	73.51
		74%	21%	6%			



ADDITIONAL RESIDENTIAL DEVELOPMENT (FUTURE RESIDENTIAL LAND)

Incorporation of 'Future Residential' Land alone does not achieve the required yield, as the low density dwelling types suited to foothill areas with physical development limitations do not achieve additional Dwelling numbers significant enough to reach the yield benchmark.

The below indicates that apartment density would need to double, in addition to 'Future Residential' Land development.

Development Summary	Site Area	Apartments	Townhouses	Small Lot	Medium Lot	Total	Dwelling/Ha
@Dwellings/ HA from above		182.5	46.0	17.8			
Apartments (6 Storeys)	6.62	1,208				1,208	
Townhouses	12.40		570			570	
Courtyard Houses	24.10			429		429	
Future Residential	51.52			917		917	
TOTAL DWELLINGS	94.64	1,208	570	1,346		3,125	33.02
		39%	18%	43%			



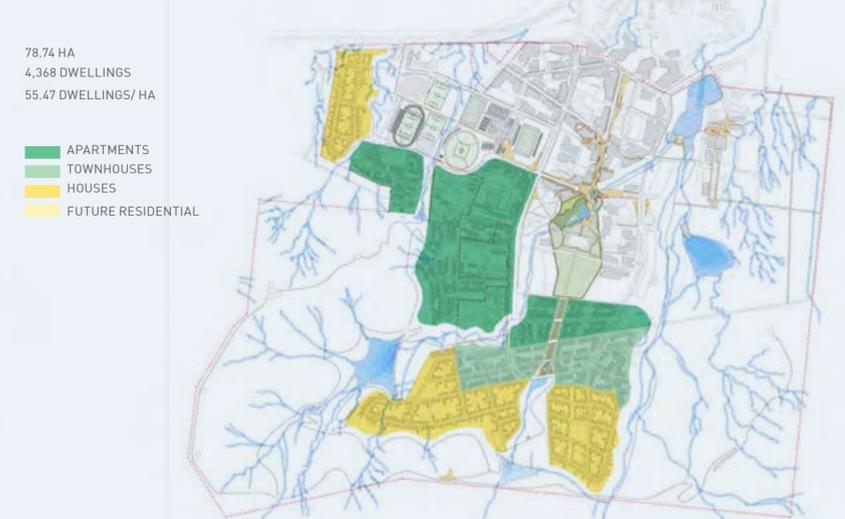
ADDITIONAL RESIDENTIAL DEVELOPMENT (WEST OF ACADEMIC CORE: PRECINCTS 7, 9, AND 10)

Land to the west of the Academic Core is readily developable and offers greatest flexibility for future Residential Land Use.

Large, flat land tracts offer good proximity to transport, community facilities, and the University proper and suit any Dwelling Type.

The below describes the opportunity presented by development in this area without incorporation of 'Future Residential' Land.

Development Summary	Site Area	Apartments	Townhouses	Small Lot	Medium Lot	Total	Dwelling/Ha
@Dwellings/ HA from above		91.2	46.0	17.8			
Apartments (3 Storeys)	35.62	3,249				3,249	
Townhouses	12.40		570			570	
Courtyard Houses	30.72			547		547	
TOTAL DWELLINGS	78.74	3,249	570	547		4,366	55.45
		74%	13%	13%			



9.3.2 OPEN SPACE PRINCIPLES

MATURE AND SIGNIFICANT VEGETATION IS MAINTAINED WITHIN OPEN PARKLAND AREAS/GREEN SPACES

- Retain to the greatest extent possible, all significant and/or mature vegetation with a trunk diameter of larger than 200mm. As a minimum standard, a tree's canopy drip line demarcates the tree protection zone during any construction
- Hard surface construction is not permissible under existing tree canopies. Where footpaths are required to lie within the canopy line, it is mandatory that construction techniques avoid soil excavation under the canopy and pavements are comprised of permeable material only. (Refer to separate Tree Protection Guideline).

LANDSCAPE PATTERNING AND MATERIALS REFERENCE THE LOCALE

- Colours, textures and materials reference a tropical landscape with support from the endemic landscape in the design of all soft and hardscape elements
- Retained trees are supported and given greater ecological integrity and trees by planting local provenance trees to form vegetation clumps within the Green Heart landscape spine
- The intensification of indigenous/local tree planting towards the outer edges of development dissipates the edge between the undisturbed environment and new development
- The landscape design uses a combination of culturally relevant and proven species, tropical plants.

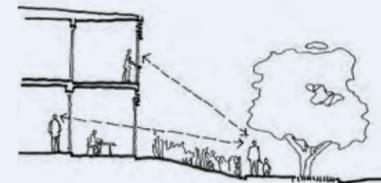
STREETS AND PUBLIC SPACES FEEL WELCOMING AND SAFE

- Rear and side boundary fences are a maximum of 1200mm high
- Front fences are only supported in the creation of courtyard areas attached to residences
- A change in fence material is required if fences run continuously longer than 4m. Fences need to be permeable to allow for air movement, to facilitate casual surveillance of the public realm, and to promote community interaction
- Street lighting combines pole top luminaires; ambient lighting from up-lighting/feature lighting of vegetation and lighting from adjoining houses. Pathway lighting avoids overspill into adjacent residential properties
- Living spaces are oriented to overlook streets and public spaces.
- Car parking does not dominate frontages. In particular
- In courtyard houses, car parking is an open carport integrated into the primary building line
- In tropical townhouses, parking is incorporated into the building envelope and accessed from the rear, not the street address of the dwelling
- Courtyard apartments have basement or semi-basement parking. Where semi-basement, parking structure will not protrude more than 1m above finished ground level. Planting is to be provided around parking structure to screen from streets and courtyards
- The main entry, including the entry path and/or forecourt, must be clearly visible from the street



COURTYARD HOUSE SECTIONAL PERSPECTIVE

- Dwellings at ground level must have individual front, landscaped courtyards addressing the street, with a minimum 1 small-medium size tree per courtyard
- All outdoor storage or refuse disposal areas are screened from public view. Screens are integrated with the architecture and utilise a combination of constructed elements and screen planting
- Mechanical plant is not prominent on the streetscape. They are located either within the building setback or below grade. Alternatively they can be accommodated within the landscape, but at below grade or screened by a combination of mounding, planting and constructed screens. They offer the potential for integration with other open space elements such as shelters and storage facilities



- Seating for play and exercise elements are located strategically adjacent to shared paths that connect with local destinations and the university campus, promoting social interaction, community sense of ownership and ultimately a safer neighbourhood.

9.3.3 DWELLING DESIGN

BUILDING MATERIALS RESPOND TO THE LOCALE

- Colours, textures and materials of the endemic landscape are reflected in the design of all elements.

OUTDOOR LIVING IS ENCOURAGED

- There is a high level of integration of indoor and outdoor living spaces
- Each dwelling provides a minimum of one 15m² covered outdoor living space with a minimum depth of 2.8m which is linked directly to indoor living spaces.

LANDSCAPE DESIGN

- A combination of tree retention and generous new planting creates a development that is set in vegetation
- Healthy existing trees are retained and protected throughout development in particular open space area during construction
- The landscape design uses a combination of proven culturally relevant, tropical and local native species
- Deep planting is accommodated in private outdoor spaces
- Apartment shared open space areas have a minimum of 70% soft and permeable landscape
- The landscape design uses tropical plants and local native species
- Deep planting is provided for in private outdoor spaces.

DWELLINGS ARE DESIGNED FOR THE CLIMATE

Dwellings are designed to incorporate the following strategies:

- Fragmentation of building forms and design of landscape to facilitate air movement
- Cooling of urban setting by excluding sun through shade trees, built shade and cool narrow streets
- Creating 'Cool Tanks' between buildings with landscape and thermal mass
- Shallow (one room deep) and 'fragmented' plans to facilitate air movement
- Small footprint low hardstand area, maximize shade tree planting on site
- Optimal solar orientation
- 360% shade of walls
- Use of thermal mass for creating thermally stable spaces
- Planted trellises along western facades
- Green roofs and green walls to control fluctuating internal temperatures and ameliorate glare from external reflective surfaces.

9.3.4 SMALL LOT COURTYARD HOUSES

COURTYARD HOUSES ARE NATURALLY VENTILATED

- Buildings are designed as pavilions which are one room deep
- Prevailing breezes across the site are plotted and responded to in the dwelling design.

A 'TANK' OF COOL AIR IS CREATED IN AN INNER COURTYARD TO HELP COOL THE RESIDENCE IN THE SUMMER MONTHS

- A planted and shaded courtyard is created in the centre of the dwelling which is protected from direct sun and which is densely planted to retain cool air
- Deep planting is provided for in private outdoor spaces
- Planting arrangements facilitate breeze access and do not block air movement.

THE HOME CAN BE CONSTRUCTED IN STAGES, OR ACCOMMODATE A STUDENT OR BOARDER

The dwelling is designed as separable pavilions that can be constructed in two stages.



TOWNHOUSE GROUND PLAN

TOWNHOUSE LEVEL 1 PLAN



9.3.5 TROPICAL TOWNHOUSES

TROPICAL TOWNHOUSES HAVE OPTIMAL SOLAR ORIENTATION

- Dwellings have living spaces oriented to the north.

TROPICAL TOWNHOUSES ARE NATURALLY VENTILATED

- Dwellings are designed with ventilation courtyards, or stepped living levels to achieve natural ventilation to each room.



GROUND FLOOR PLAN
TOWNSVILLE TOWNHOUSE TYPE 1
FLOOR PLANS

LEVEL 1 FLOOR PLAN

LEVEL 2 FLOOR PLAN

TOWNSVILLE TOWNHOUSE TYPE 1 FLOOR PLANS



TOWNHOUSE SECTIONAL PERSPECTIVE



9.3.6 COURTYARD APARTMENTS

APARTMENTS ARE DESIGNED TO BE NATURALLY VENTILATED

- Prevailing breezes across the site are plotted and responded to in the dwelling design
- Apartment building incorporate semi-public terraces and spaces that act as breezeways to promote air movement.

APARTMENTS ARE GROUPED AROUND A COURTYARD WHICH CREATES A COOL 'TANK' OF AIR

- Dwellings are designed with ventilation courtyards, or stepped living levels to achieve natural ventilation to each room
- A planted and shaded courtyard is created in the centre of the building which is protected from direct sun and which is densely planted to retain cool air.



COURTYARD APARTMENT SECTION



VIEW FROM DISCOVERY RISE DESIGN GUIDELINES

9.4 MATERIALS PALETTE

LIGHTING

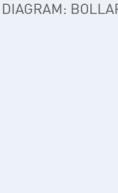
HARDSCAPE ELEMENT	LOCATION	PRINCIPLES	PERFORMANCE CRITERIA	INDICATIVE IMAGES
Street Lighting	Major Roadway Luminaire <ul style="list-style-type: none"> James Cook Drive Connector Streets 	<ul style="list-style-type: none"> Suitability for installation in alignment with street tree planting at street edges Ability to avoid/control spill to residential zone 	<ul style="list-style-type: none"> Simple geometric form Energy efficient lamp or LED Impact-absorbing base Grey colour - Dulux windspray or similar 	DIAGRAM: STREET LIGHTING 1
	Major Roadway Luminaire <ul style="list-style-type: none"> Mt Stuart Street Discovery Village Avenues 	<ul style="list-style-type: none"> Suitability for installation in alignment with street tree planting at street edges 		DIAGRAM: STREET LIGHTING 2
	<ul style="list-style-type: none"> Discovery Village All Pedestrian Boulevard Mall Central Plaza Orchard walk 	<ul style="list-style-type: none"> Suitability for installation in alignment with street tree planting at street edges Ability to avoid/control spill to residential zone 		DIAGRAM: STREET LIGHTING 3 
Park Lighting	Robust and efficient solar lamp with suitable power to illuminate parkland areas <ul style="list-style-type: none"> Discovery Village Library green <p>Siting:</p> <ul style="list-style-type: none"> In larger open spaces and parks Near ovals, shelters and playgrounds 	<ul style="list-style-type: none"> Installation away from large tree canopies Install along pathways evenly spaced, uniform pattern 	<ul style="list-style-type: none"> Solar panel with energy efficient lamp Simple geometric form (formal relationship with street luminaries) Galvanised or Grey colour - Dulux windspray or similar Comfortable and safe pedestrian spaces at night 	DIAGRAM: PARK AND PEDESTRIAN CYCLE LIGHTING 1 
Seating	Functional Range <ul style="list-style-type: none"> All campus areas where furniture is required outside premium locations 	<p>Inspiration:</p> <ul style="list-style-type: none"> Indigenous narratives A palette of general purpose furniture for common locations Robust, easily maintained and repaired. Located at key activity points, shady areas, nodes, and 'pause spots' Set back from circulation routes Singular and grouped seating to encourage interaction and flexible use 	<p>Durable Materials:</p> <ul style="list-style-type: none"> Off form concrete Timber with metal frame Comfortable materials throughout the year Seats with backs and arms at 50% of locations 	 

STREET FURNITURE

STREET FURNITURE

HARDSCAPE ELEMENT	LOCATION	PRINCIPLES	PERFORMANCE CRITERIA	INDICATIVE IMAGES
Seating	Premium Range <p>Furniture general located within the central core premium locations such as:</p> <ul style="list-style-type: none"> Mt Stuart Ideas Market Mall Central plaza Library Green Sports plaza Courtyards Lobbies 	<p>Inspiration:</p> <ul style="list-style-type: none"> Organic forms found in surrounding landscape Encourage interaction between people in shady location Provide a comfortable location to rest, study or socialise. Colours that reinforce a global tropical landscape Sense of fun and creativity Spaces that warrant bespoke treatment 	<p>Durable Materials:</p> <ul style="list-style-type: none"> Concrete as primary material With timber/recycled plastic With colour With metals With inlays Formal + informal Moulded plastics Stone Materials which are comfortable throughout the year Materials complimentary to surroundings 	DIAGRAM: SEATING BESPOKE SUITE 1-9    
Bike Parking	Functional Range <p>Stainless steel Inverted U and Circular Racks</p> <p>Siting:</p> <ul style="list-style-type: none"> At key activity points, close to destination Utilise building awnings and other sheltered whenever possible Well lit places with good passive surveillance 	<ul style="list-style-type: none"> Offers flexibility in terms of siting: singly or in groups Ability to be used from one or both sides Robust racking - for rack and cycle Siting and number of racks to be approved by the management team Inverted U may be preferred in areas with space constraints Provide access kerbs and grades to racks/parking areas suitable for all cycles 	<ul style="list-style-type: none"> Clean, sophisticated and timeless aesthetic Satin polished stainless steel Minimal maintenance Minimal obstruction to pedestrian movement when not in use 	DIAGRAM: CYCLE RACKS 1-4  

STREET FURNITURE

HARDSCAPE ELEMENT	LOCATION	PRINCIPLES	PERFORMANCE CRITERIA	INDICATIVE IMAGES
Seating	<p>Premium and Bespoke</p> <p>Includes bike shelters and site specific bike racks</p> <ul style="list-style-type: none"> End of trip facilities Mt Stuart street Ideas market <p>Siting:</p> <ul style="list-style-type: none"> Existing and proposed carparks Proximate to envisaged destinations Near pathways and cycle routes 	<ul style="list-style-type: none"> Bespoke racks to be integrated within key character spaces Laser cut panels reflecting notable patterning/contextual design features Dedicated bicycle storage facilities provide greater security and weather protection Incorporation of storage facility within carparks to maximise 	<ul style="list-style-type: none"> Racks mounted on concrete and/or paved surface Satin finish stainless steel, powder coating, laser cut steel 	<p>DIAGRAM: CYCLE RACKS 5-7</p> 
Drinking Fountain	<p>Drinking fountain with bottle refill tap</p> <p>Stainless steel inverted U and circular racks</p> <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street Pedestrian walkways Sports fields All parks <p>Siting:</p> <ul style="list-style-type: none"> At key activity points beside pathways In shade where possible 	<ul style="list-style-type: none"> Provide access for people with a disability Install adjacent to key pathways 	<ul style="list-style-type: none"> Stainless steel for hygiene and durability Satin polished finish Wheelchair accessible Integrated tap for bottle refill Minimise vandalism Solid ground mounting outside line of pedestrian/cycle movement Minimum maintenance Dog bowl 	<p>DIAGRAM: BUBBLER 1-2</p> 
Bollards	<p>Vehicular barrier</p> <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street <p>Siting:</p> <ul style="list-style-type: none"> To manage vehicles and protect bike riders and pedestrians Pedestrian priority/only areas adjacent to vehicular circulation routes Restricted parking/access areas 	<ul style="list-style-type: none"> Control of vehicle movement Must not impede pedestrian or cycle circulation Retractable /moveable systems require maintenance contracts (inclusive of labour and parts) Hinges, hydraulics, or surfaces with critical tolerances to weather conditions require added attention by local operators 	<ul style="list-style-type: none"> Durable, robust material and construction Combination of permanently fixed and retractable bollards Premium range to be stainless steel or coloured Functional range to be galvanised 	<p>DIAGRAM: BOLLARDS 1</p> 
Bin	<p>Recycling bins, integrating and screening standard wheelie bins</p> <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street Ideas Market Sports precinct Green Heart parklands All parks <p>Siting:</p> <ul style="list-style-type: none"> Along pedestrian pathways Eating areas/gathering spaces 	<ul style="list-style-type: none"> Minimal amount of bins at critical locations only to reduce maintenance Laser cut panels to reflect notable patterning/contextual design features – within DR pattern design suite Easily cleaned surfaces – particularly regarding removal of posters Easily accessible from roads for wheelie bin removal Floating top to shield against weather and deter bird access 	<ul style="list-style-type: none"> Durable, robust SS Integration of colour to differentiate recycling Fits standard 240L wheelie bin Wildlife proof Weather protection 	<p>DIAGRAM: BIN 1</p> 

PAVEMENT

HARDSCAPE ELEMENT	LOCATION	PRINCIPLES	PERFORMANCE CRITERIA	INDICATIVE IMAGES
Porous Pavement	<p>Range of compatible porous pavement types</p> <p>Includes bike shelters and site specific bike racks - functional and feature pavements.</p> <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street Green Heart parklands Discovery Village <p>Siting:</p> <ul style="list-style-type: none"> Pedestrian /cycle pathways Carparks Low speed shared zones Sections of footpaths Courtyards and outdoor rooms Tree surrounds along footpaths and within hardstand 	<ul style="list-style-type: none"> Contribute to on- site storm water management and water quality Reduce water run off and assist ground infiltration 	<ul style="list-style-type: none"> Concrete, segmental pavement Cobble stone Terrabond (typically pebbles bound with bonding agent) Robust, durable and sustainable Use of recycled materials Enable water porosity over time 	<p>DIAGRAM: POROUS PAVING 1- 7</p> 
Pedestrian pavement Functional Range	<p>General purpose pavements - porous and impervious</p> <p>Stainless steel Inverted U and Circular Racks</p> <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street Green Heart parklands Discovery Village Parks Linear Pedestrian and cycle paths Creek corridors Beneath structures & furniture 	<ul style="list-style-type: none"> Contribute to on- site storm water management Control sun glare Provide distinction overall and to individual landscapes Extend the aesthetic and materials of adjoining architecture 	<ul style="list-style-type: none"> Robust, durable and sustainable Readily and affordably maintained Non slip finish Broom finished, coloured & exposed agg concrete Painted asphalt Decomposed granite and gravels Exposed agg concrete to match campus standard 	<p>DIAGRAM: PEDESTRIAN PAVING 1- 4</p> 
Feature pavement Premium Range	<p>High quality urban pedestrian pavements</p> <ul style="list-style-type: none"> Mt Stuart Street Ideas market, mall & central plaza <p>Siting:</p> <ul style="list-style-type: none"> High pedestrian traffic areas Low speed shared zones 	<ul style="list-style-type: none"> Colour selection to respond to native vegetation context -grey and charcoal Combination of materials creating patterns, movement and rhythm Extend the aesthetic and materials of adjoining architecture 	<ul style="list-style-type: none"> Durable Natural stone, insitu concrete/ composite unite pavers Non-slip Semi honed – honed or exfoliated finish 	<p>DIAGRAM: FEATURE PAVEMENT 1-4</p> 
Road Crossings Paving	<p>Combinations to highlight intersections and support the pedestrianised setting s</p> <ul style="list-style-type: none"> James Cook Drive and major collector roads Discovery Village <p>Siting:</p> <ul style="list-style-type: none"> Intermediate crossings along bicycle and pedestrian routes 	<ul style="list-style-type: none"> Raised platforms Combination of pavement surfaces Landscape and streetscape integration Any level changes/platforming to benefit pedestrians and cyclists 	<ul style="list-style-type: none"> Safe and durable Non-slip Clearly visible both day and night Slows vehicular traffic Material differentiation Colour differentiation Safe zones for pedestrians crossing –buildouts and havens within medians 	<p>DIAGRAM: ROAD CROSSINGS 1-2</p> 

STORMWATER MANAGEMENT

LANDSCAPE WALLS

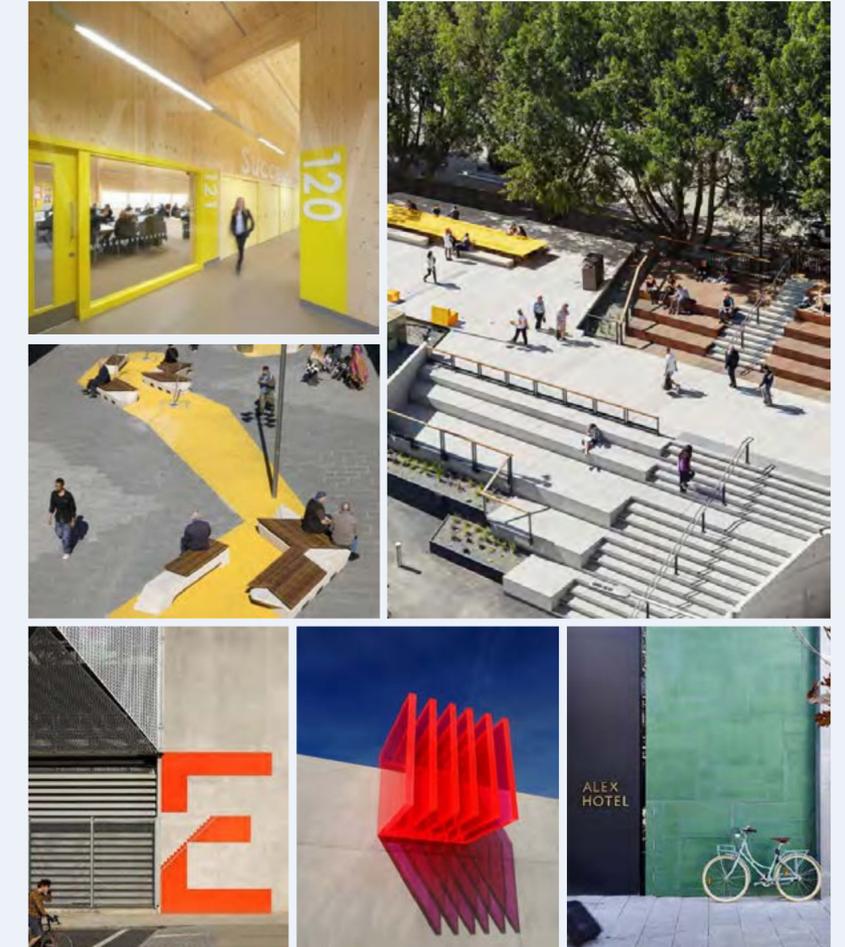
HARDSCAPE ELEMENT	LOCATION	PRINCIPLES	PERFORMANCE CRITERIA	INDICATIVE IMAGES
Stormwater Manage	Throughout the whole campus where appropriate <ul style="list-style-type: none"> James Cook Drive Discovery Village Green Heart parklands Carparks Creek corridors Sports precinct Parks 	<ul style="list-style-type: none"> Protect the site's and adjoining natural features and environmental processes Maintain the natural hydrological characteristics of the catchment Protect quality of both surface and ground water – ecological and amenity purposes Integrate water into the landscape for environmental, visual, economic and experiential benefit Employ WSUD best practice Stormwater filtration prior to exiting the site Minimise 'traditional' stormwater management via kerb and channel 	<ul style="list-style-type: none"> Swales (grass and planted) Low key water retention /slowing prior to exiting overall site and entering wide storm water management network Stormwater to penetrate soil for plant life and underground natural water storage Permeable pavement 	DIAGRAM: WSUD 1-7 
Retaining, stabilisation or feature walls	Walls as part of landscapes or public realm structural elements <ul style="list-style-type: none"> James Cook Drive Mt Stuart Street Green Heart parklands Discovery Village 	<ul style="list-style-type: none"> Utilise materials that reflect the natural context Utilise materials that extend the aesthetic of adjacent architecture Stone and concrete Evidence interplay of solid and void, light and shadow 	<ul style="list-style-type: none"> Robust and durable Attractive Safe Deter application of posters Easily cleaned if posters applied Off form concrete Anti-graffiti treatment (natural no-gloss finish to stonework) Structural certification in accordance with building regulations 	DIAGRAM: WALLS 1-2 

9.5 COLOUR PALETTE

Application of the global tropical vision will extend beyond planting in the landscape. Elements such as paving, furniture, signage and how colour is applied to these components will assist in delivering this vision.

Vivid and bold colours of global tropical vegetation which thrive in a tropical climate can be used as highlights across the campus. These colours will be used for different types of furniture, signage, thresholds, entries, highlights for features and potentially art. Application of colour in this way will increase legibility of the campus, provide visual interest and contribute to a sense of place.

Colour from the landscape of surrounding natural areas will inspire material selection of functional elements within the campus. Components such as pavement, walls and metal structures will be made of muted earthy tones such as light grey, dark grey and robust metallic shades.



9.6 PLANTING SCHEDULE

GLOBAL TROPICAL PLANTING SCHEDULE

BOTANICAL NAME	COMMON NAME	BOULEVARD	LIBRARY GREEN	HIGH STREET & PEDESTRIAN MALL	COURTYARD AND URBAN SPACES	RESIDENTIAL STREETS	SPORTS PRECINCT	BOTANICAL NAME	COMMON NAME	BOULEVARD	LIBRARY GREEN	HIGH STREET & PEDESTRIAN MALL	COURTYARD AND URBAN SPACES	RESIDENTIAL STREETS	SPORTS PRECINCT
TREES								LOW SHRUBS							
Barringtonia calyptata	Cassowary Pine				●			Heliconia sp.	Heliconia	●	●	●	●		●
Bauhinia blakeana	Hong Kong Orchid		●	●		●	●	Hibiscus sp.	Hibiscus				●		●
Cassia siamea	Cassia		●		●	●	●	Ixora sp.	Ixora	●	●	●	●	●	●
Delonix regia	Poinciana		●		●	●	●	Larsenaikia ochreatea	Native Gardenia				●		●
Erythrina sp.	Coral Tree	●	●			●	●	Monstera deliciosa	Swiss Cheese Plant				●		●
Ficus beughalensis	Banyan Fig					●	●	Philodendron 'Rojo Congo'	Rojo Congo				●		●
Ficus hillii	Hillis Fig				●		●	Philodendron selloum	Philodendron						●
Lagerstromia speciosa	Crepe Mytle				●		●	GROUNDCOVERS							
Peltophorum pterocarpum	Yellow Poinciana		●				●	Alpinia sp	Ginger	●	●	●	●		●
Plumeria	Frangipani			●	●		●	Bromeliad	Bromeliad						
Samanea saman	Rain Tree	●	●			●	●	Gardenia psidioides	Gardenia 'Glennie River'			●	●		
Tabebuia palmeri	Pink Trumpet Tree	●	●	●		●	●	Hymenocallis littoralis	Spider Lilly	●	●	●	●	●	●
Xanthostemon chrysanthus	Golden Penda	●		●		●	●	Liriope sp	Green and variegated	●	●	●	●	●	●
PALMS								Lomandra sp.	Mat Rush	●	●	●	●	●	●
Cyathea cooperi	Tree Fern			●	●			Ophiopogon japonicus	Mondo Grass		●	●	●		
Licuala grandis	Ruffled Fan Leaf Palm			●	●			FERNS/CYCADS							
Livistona decora	Weeping Cabbage Palm	●		●	●		●	Blechnum "Silver Lady"	Silver Lady Fern			●	●		
Macrozamia moorei	Moore's Cycad			●	●			Calathea sp.	Zebra plant			●	●		
Raphis sp.	Lady Palm			●	●			Lepidozamia peroffskyana	Peroffsky's Lepidozamia			●	●		
Strelitzia nicolai	Giant Bird of Paradise			●	●			Phyllanthus multiflorus	Fountain Plant			●	●		
Wodyetia bifurca	Foxtail Palm	●		●	●		●	Spathiphyllum sp	Peace Lilly			●	●		
LOW SHRUBS								Strelitzia reginae	Bird of Paradise	●	●	●	●	●	●
Alpinia mutica	Dwarf Ginger				●			CLIMBERS							
Alocasia brisbanensis	Cunjevoi				●			Cissus antarctica	Kangaroo Vine			●	●		●
Codiaeum sp.	Croton	●	●	●	●	●	●	Paudorea pandorana	Wonga Wonga Vine			●	●		●
Cordylone sp.	Lily Palm	●	●	●	●		●	Thunbergia mysorensis	Clock Vine			●			
Dracaena fragrans 'Massangeana'	Happy Plant	●	●	●	●		●	Trachelospermum jasminoides	Star Jasmine	●	●	●	●	●	●

PLANT SPECIES EXAMPLES

TREES / PALMS



PLUMERIA OBTUSA BAUHINIA BLAKEANA CYATHEA COOPERI XANTHOSTEMON CHRYSANTHUS SAMANEA SAMAN WODYETIA BIFURCATA ERYTHRINA VESPERTILIO

SHRUBS



ALPINIA MUTICA ALOCASIA BRISBANENSIS CYATHEA COOPERI DRACAENA FRAGRANS CORDYLONE CANNIFOLIA GARDENIA PSIDIOIDES LICUALA GRANDIS

GROUNDCOVERS



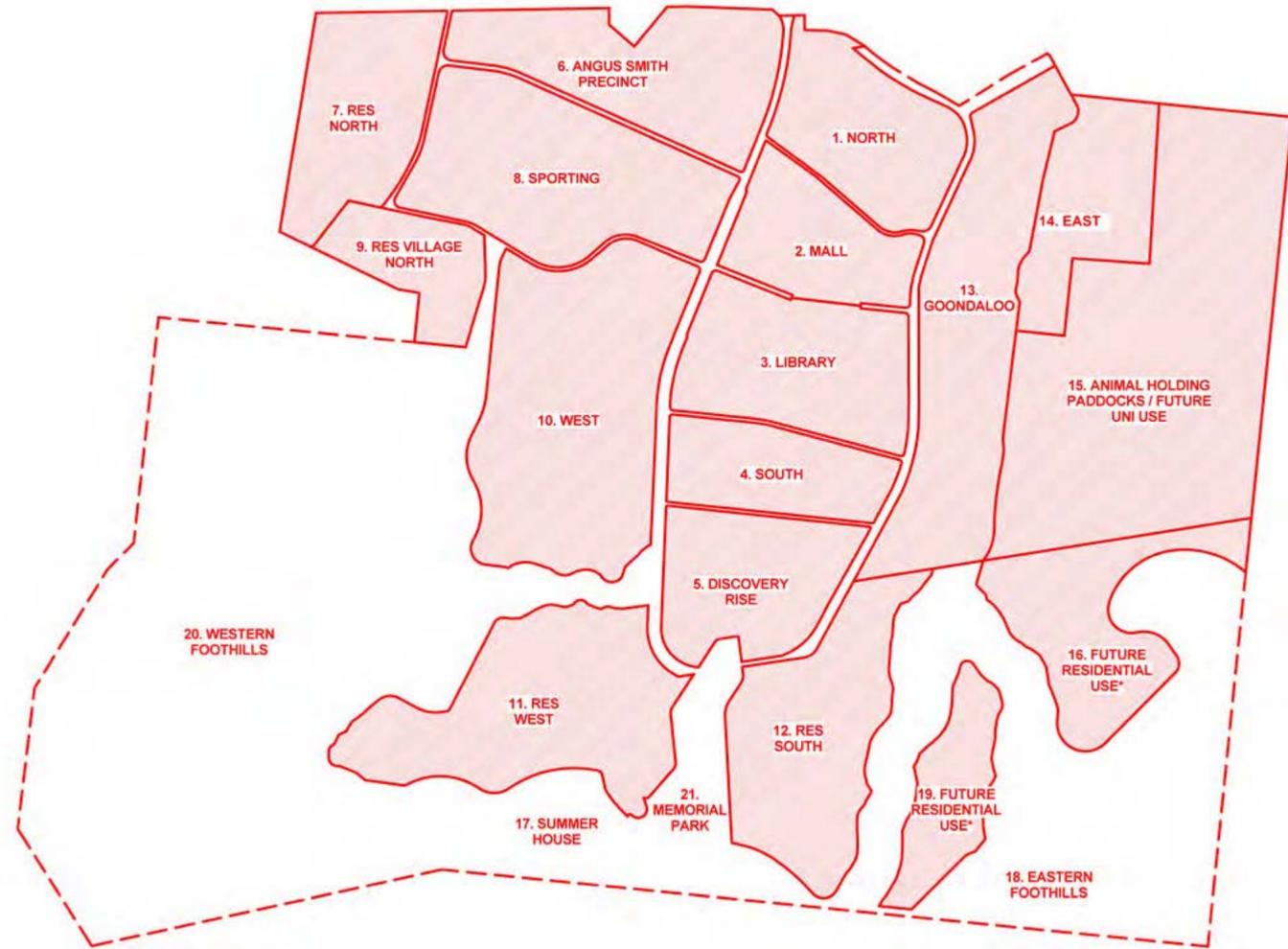
CALATHEA SP. BLECHNUM INDICA BROMELIAD SP. CORDYLONE CANNIFOLIA LIRIOPE VARIGATED HYMENOCALLIS LITTORALIS

10

DEVELOPMENT CONTROLS

DEVELOPMENT CONTROLS

10.1.1 CAMPUS PRECINCTS



DEVELOPMENT CONTROLS

The development controls are an additional layer of precision in identifying lots for development rather than the current loose description of land parcels which has historically evolved from the generosity of the site and the 'buildings in a landscape' architectural response.

The lot definition evolves from adoption of the campus precincts which are generally developed from existing and proposed roads.

A series of super lots are developed using the precinct number for identity with further subdivision to building lots.

As a result, for example, lot 2.3.5 would be lot 5 within super lot 2.3 in precinct 2.

Actual survey identity and definition of the lots is not fundamental to occur until development is proposed for the area.

It is also the case that some lot boundaries are configured based on proposed future development rather than existing development. Subdivision arrangement in the residential district is shown generically and subject to more detailed civil road design and development type.

LEGEND

- Site Boundary
- Precinct Extent

DEVELOPMENT CONTROLS

10.1.2 SUPER LOTS

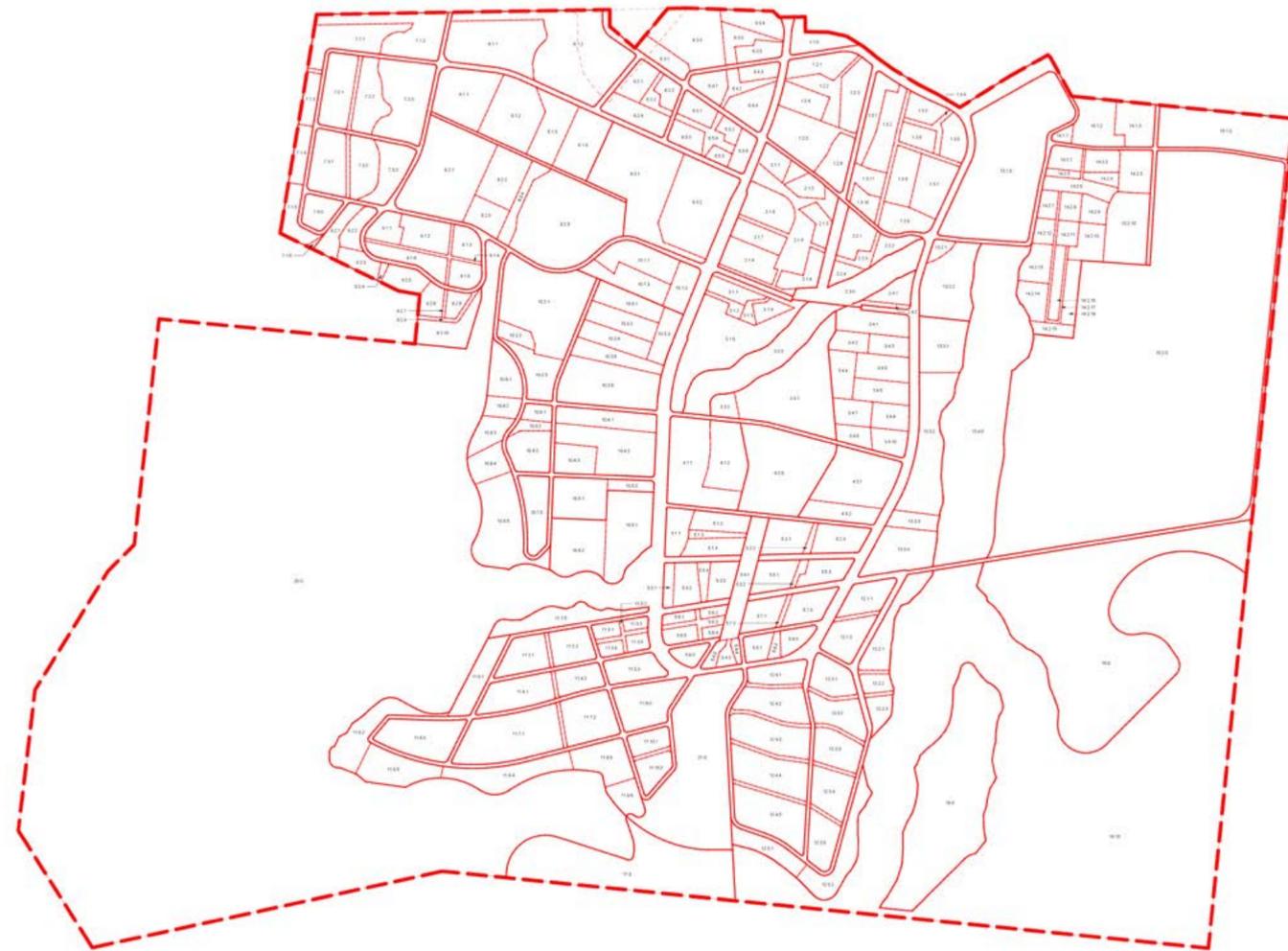


LEGEND

- Site Boundary
- Precinct Extent

DEVELOPMENT CONTROLS

10.1.3 LOT CONFIGURATION



- Sites for courtyard homes create square not rectangular blocks. Small lot courtyard lots are between 300m² and 450m²
- Sites for tropical townhouses are configured so that living spaces face due north, and vehicular access is to the south. No tropical townhouse garages are to face a street. Tropical townhouse lots are between 150m² and 300m²
- Courtyard apartment sites are a minimum of 1200m².

LEGEND

- - - Site Boundary
- - - Precinct Extent
- - - Site Boundaries

DEVELOPMENT CONTROLS

10.1.4 INDICATIVE BUILDING FOOTPRINTS



LEGEND

- - - Site Boundary
- - - Super Plot Boundary
- - - Plot Boundary
- - - Building Footprint

DEVELOPMENT CONTROLS

10.1.5 LOT NUMBERING AND ADDRESSING SYSTEM

Street name	Street No	Precinct Name	Precinct Number	Super Lot Number	Lot Number	Building Number	Building name
Mt Stuart Street	1	Angus Smith	6	6.2	6.2.3		
Mt Stuart Street	2	Angus Smith	6	6.3	6.3.1		
Mt Stuart Street	5	Angus Smith	6	6.2	6.2.4		
Mt Stuart Street	6	Angus Smith	6	6.3	6.3.3		
Mt Stuart Street	9	Angus Smith	6	6.5	6.5.1		
Mt Stuart Street	10	Angus Smith	6	6.4	6.4.2		
Mt Stuart Street	13	Angus Smith	6	6.5	6.5.4		
Mt Stuart Street	14	Angus Smith	6	6.4	6.4.3		
Mt Stuart Street	15	Angus Smith	6	6.5	6.5.5		
Mt Stuart Street	17	Mall	2	2.1	2.1.1	734	
Mt Stuart Street	18	North	1	1.2	1.2.4		
Mt Stuart Street	21	Mall	2	2.1	2.1.9	745	Student Living
Mt Stuart Street	22	North	1	1.2	1.2.5	500	Clinical Practices Building
Mt Stuart Street	25	Mall	2	2.2	2.2.1		
Mt Stuart Street	26	North	1	1.3	1.3.2		
Mt Stuart Street	29	Mall	2	2.2	2.2.7		
Mt Stuart Street	30	North	1	1.3	1.3.4	704	Technology Innovation Complex
Mt Stuart Street	31	North	1	1.3	1.3.5		
Mt Stuart Street	33	Goondaloo	14	14.4	14.4.2		
Mt Stuart Street	34	Goondaloo	14	14.3	14.3.2		



The lot numbering system is independent of the street numbering opportunity.

The attached diagram and schedule is provided as an illustration of this opportunity on Mt Stuart Street.

In this circumstance the Clinical Practice Building is on lot 1.2.4 within Precinct 1 and its address would be No. 22 Mt Stuart Street.

DEVELOPMENT CONTROLS

10.1.6 BUILDING HEIGHTS



The proposed building heights indicate an intention with regard to efficiency of land use around the academic core and an appropriateness of scale within the residential zones.

They are provided as a guide and would be subject to specific circumstances

Examples:

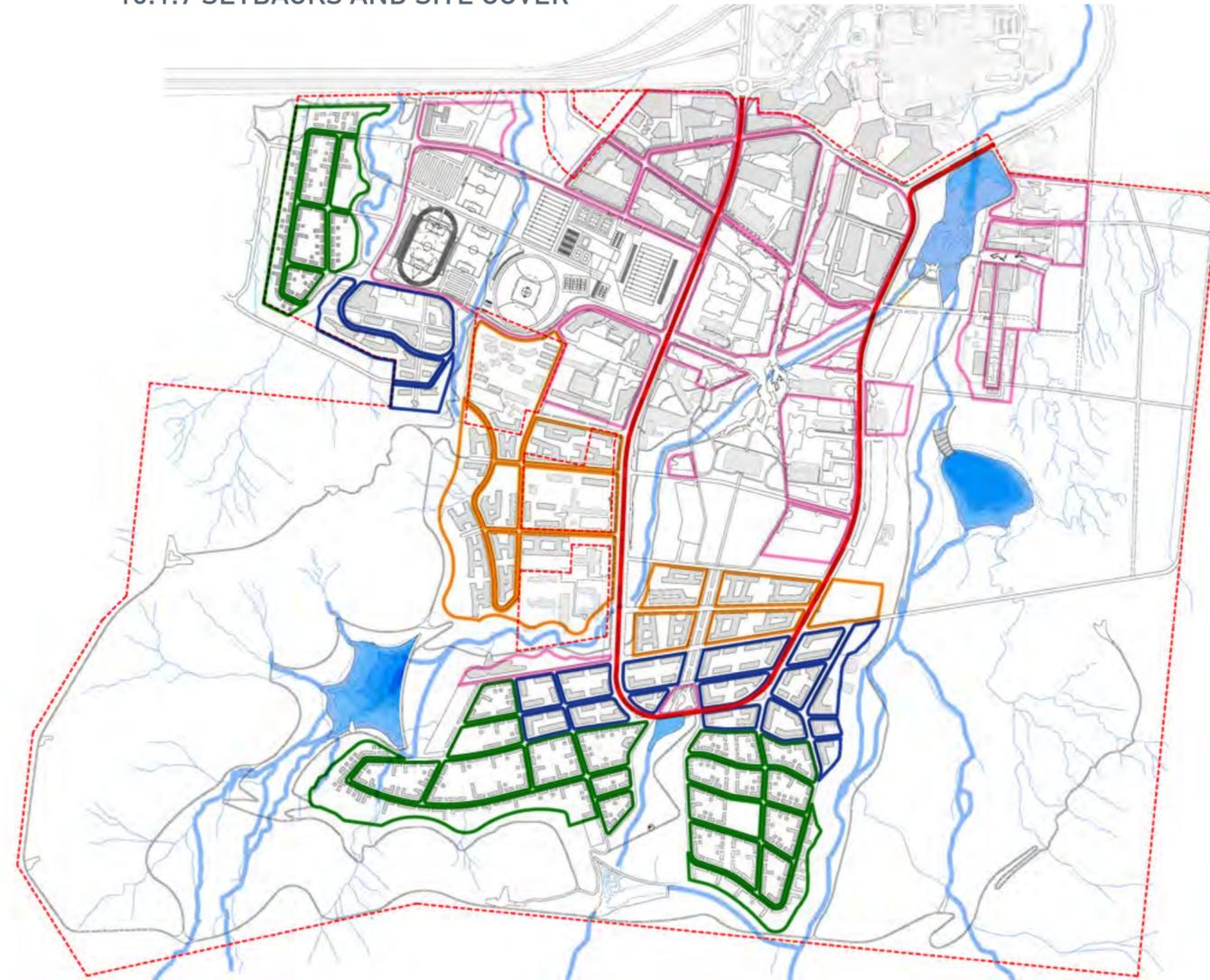
- In Discovery Central, 4-6 storey mixed use development with ground floor retail along Mt Stuart St and the Ideas Market. Minimum height 4 storeys
- In Discovery Village, 4-6 storey residential with small scale student-oriented retail at the intersection of James Cook Drive
- In the Discovery School Precinct, 4-6 storey residential with small-scale convenience retail at ground floor within 200m of the School on Buchan Rd
- In Discovery Village, 2-4 storey residential with a child care centre, community facility, and convenience shop sited.

LEGEND

- 1 Storey
- 2 Storey
- 3 Storey
- 4 Storey
- 5 Storey
- 6 Storey

DEVELOPMENT CONTROLS

10.1.7 SETBACKS AND SITE COVER



SETBACKS

Site cover and setback figures are provided to guide development in terms of Urban Design considerations. They are subject to specific circumstances.

Verandahs and balconies on the upper levels of buildings can project over the footpath/public space to 2.8m past the site boundary or setback.

The creeks on the campus are classified as Category R. The Campus is an urban area for an urban purpose. Consequently, any significant development proposed within 20 metres of a creek bank will be assessed on a case by case basis.

General Campus

Setback to James Cook Drive 4.5m

Academic and Mixed Use Buildings

Front Boundary setback 0m for 80% of the frontage, up to 3m for 10%

Side boundary setbacks 3m

Rear boundary setbacks 6m

LEGEND

- Front 4.5m Setback to James Cook Drive & Discovery Rise
- Front on Academic, Mixed Use & Commercial - 80% Site Cover
- Front 3.5m Apartments - 60% Site Cover
- Front 3.5m Attached Tropical Townhouses - 60% Site Cover
- Front 3.5m Small Lot Courtyard Houses - 50% Site Cover

Courtyard Houses

Front Boundary 3.5m

Side boundary setbacks Where block is 18m frontage and above, 0m for 40% of site boundary, 8m for 60% of site boundary.

Rear boundary setbacks 0m for 40% of site boundary, 8m for 60% of site boundary.

Townhouses

Front Boundary 3.5m

Side boundary setbacks 6m Rear boundary setbacks N/A

Apartments

Front Boundary 3.5m

Side boundary setbacks 6m

Rear boundary setbacks 6m

SITE COVER

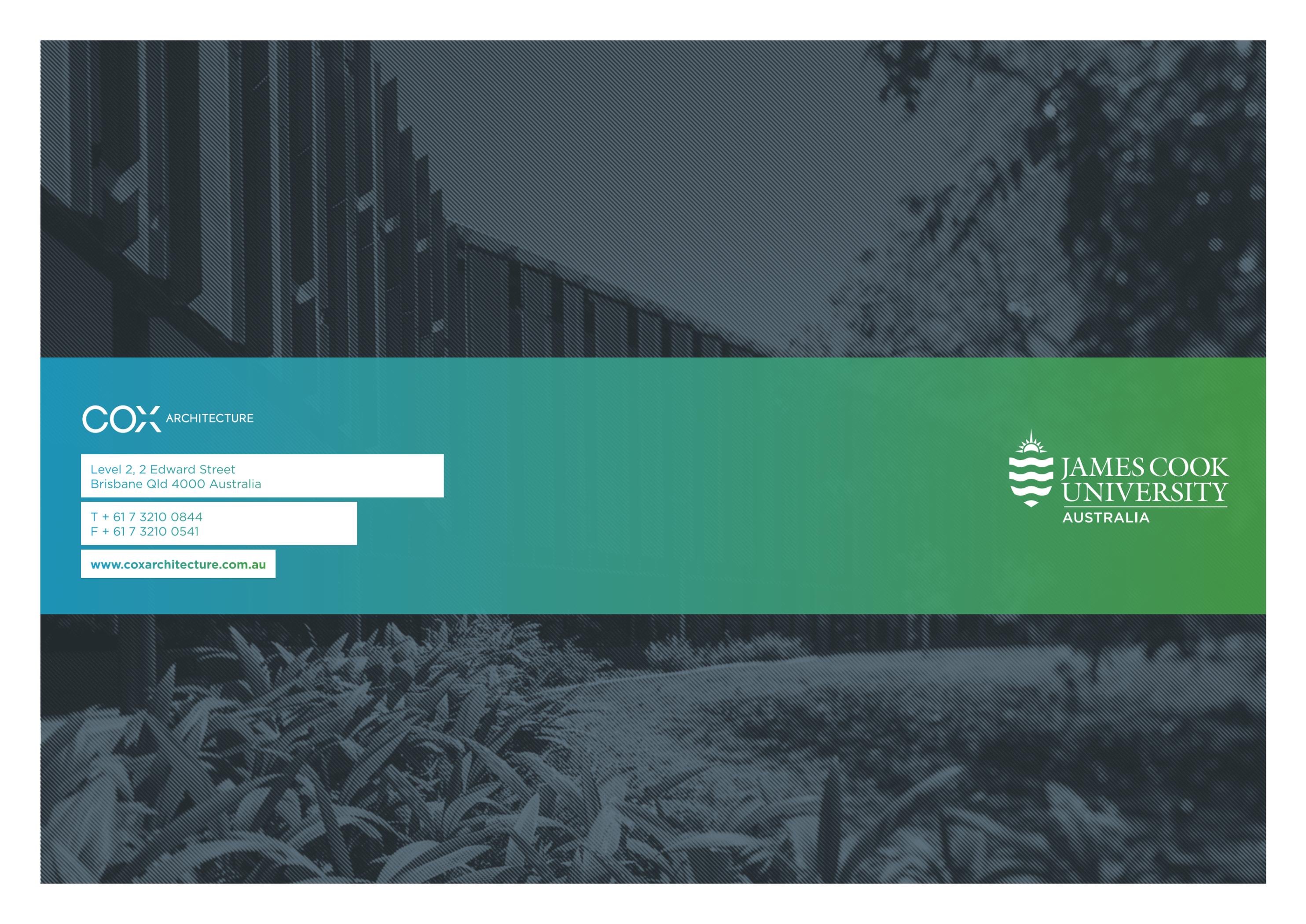
- The calculation of site cover excludes blinds, screen, external covered balconies, and sunhoods or shading devices.
- Eaves pergolas, porticos, gatehouses, sunhoods, blinds, screens and entry porches are not included in site cover. Can cover private open space greater than 2.8m wide and less than 25m² in area and connected directly to an internal living space is not included in site cover.

Academic, Mixed Use and Commercial 80%

Apartments 60%

Attached tropical townhouses 60%

Small lot courtyard houses 50%



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